# National Priorities Pool (NPP)

# HEPPP-funded Grant

Individual-based measure of socio-economic disadvantage:

Making identification "agile"

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# EXECUTIVE SUMMARY

## Background

Achieving equity not only of access but also of outcomes for those experiencing socio-economic disadvantage is a fundamental objective for both Government and universities in Australia. Identifying undergraduate students who are experiencing socioeconomic disadvantage both as they transition into higher education and throughout their university career is, therefore, critical.  However, such identification has proved to be a complex undertaking for universities as reliable data are required for a variety of purposes.

Firstly, data are needed at an aggregate level to meet the requirements set out for funding and performance monitoring of equity goals. For this purpose, socio-economic status in Australian higher education is determined using a student's residential address. This approach makes use of the Australian Bureau of Statistics (ABS) formula which utilises census data on household educational and occupational status to construct the Socio-Economic Index for Areas – Index of Education and Occupation (SEIFA). This is frequently further refined to Statistical Area 1 (SA1) data which are areas typically smaller than postcodes. Low SES students are then defined as those students who live in the bottom 25 per cent of SA1 areas. SEIFA SA 1 is thus a proxy measure of socio-economic status and is effective in meeting the objectives for which it was designed: to broadly identify level of (dis)advantage at area levels (Australian Bureau of Statistics Methodology Advisory Committee, 2007).

Secondly, identification measures or processes are also needed to enable the targeting of individual students for support, case management and scholarships funded by universities. Some refinements of how the SEIFA could be used more effectively at this level have been attempted. For example, consideration has been given to whether home or current address (if the student is living away from home to attend university) is likely to give a more accurate reading of socio-economic status. In addition, the point has been made that SEIFA may not be accurate across all areas. At question is its comparative accuracy when used in metropolitan, regional and remote areas where differences in size of area and community mix may result in considerable variability when identifying socio-economic disadvantage. Individual measures are therefore needed in addition to area-based identification of socio-economic status.

However, such measures are not without their own difficulties. Thus, the factors that best indicate socio-economic disadvantage need themselves to be determined. That done, how best to gather such data efficiently needs also to be ascertained since there are obvious sensitivities that must be taken into account if the intent is to gather information which is likely to be seen as highly personal directly from the students themselves, even though this might lead to their being able to access relevant support services and resources.

Two further, complicating factors also play into the identification of students from low SES backgrounds. These are the impact of multiple disadvantage where an individual may be a member of more than one group that is underrepresented in higher education (such as being from a rural or remote area, having Aboriginal or Torres Strait Islander status or having a disability) and the language used to describe the target group.

It can be argued that a potentially more positive way of framing the identification of students in need of support because of their circumstances is to use the concept of socio-economic disadvantage rather than low socio-economic status as, indeed, was the case in the naming of this project. Under this view it is the experiencing of disadvantage which is at issue; whether it is a result of low socio-economic status or the compounding of factors leading to multiple disadvantage is immaterial to the experience of the individual. It is the financial hardship and the consequences flowing from it which need to be addressed to achieve best educational outcomes. The significance of this project therefore lies in its working to identify factors that might be used to develop a non-intrusive individual measure of socio-economic disadvantage that could be used throughout students' university experience.

## Project aims:

This current, multiphase project had four broad objectives. These were to:

1. determine a method, or range of methods, that can assist Australian universities to identify socio-economic disadvantage at the level of the individual student;
2. develop an instrument, or suite of instruments, that Australian universities can use to implement the method with the goal of informing the planning and implementation phases of activities funded by the Program to ensure, to the maximum extent possible, that funding is used to support students from a low socio-economic status background;
3. determine the extent to which this individual-based measure is correlated with the current, area-based measure defined in the Other Grants Guidelines; and
4. evaluate and make recommendations on the utility, value and cost-effectiveness of this individual-based measure to Australian universities.

## Methodology:

A mixed-methods design was used which had the following phases:

- Phase 1:
  - *Staff questionnaire* – an online questionnaire was distributed to staff working in the area of widening participation and student support at each of the 42 universities in Australia. The questionnaire, which was completed by 256 participants, explored the practices and procedures currently being used to identify students from low SES backgrounds and to identify what they saw as indicators of socio-economic disadvantage.
  - *Student Questionnaire* – data were collected through an online questionnaire from undergraduate students at three universities (one a member of the Group of Eight and the other two members of the Innovative Research Universities group – one a multi-campus metropolitan university and one a rural university). This questionnaire was designed to identify the factors that might be highly correlated with socio-economic status and was completed by 4,114 students.

- Phase 2:
    - *Staff and students focus groups*
        - Staff focus groups were conducted both face-to-face and via Zoom technology to enable broad representation across Australia. Five staff focus groups were held.
        - Student focus groups were conducted face-to-face at the three universities that were represented in Phase 1. Six focus groups were held.
- Phase 3:
    - *Desk audit of university websites*
        - The websites of all Australian universities were audited to provide data on the information currently and publicly available to students experiencing socio-economic disadvantage.
- Phase 4:
    - *Student questionnaire to evaluate possible approach to individual measurement*
        - Undergraduate students at the two metropolitan universities which had been part of Phase 1 were approached during Orientation week and asked to complete an online questionnaire. This included questions around the factors found in Phase 1 to be predictors of socio-economic disadvantage. Ninety–one students completed the survey.

## Findings

The following factors were found to be indicators of socio-economic disadvantage. Whether the student:

a.  provides financially for their family;

b.  is the first in family to attend university;

c.   is experiencing financial hardship; and/or

d.  is in receipt of Youth Allowance, Austudy or ABSTUDY during Years 11 and/or 12 (or another Centrelink income and asset-tested entitlement) for a period of at least three months during Years 11 and/or 12 or equivalent.

These were found to be questions that students were willing to answer and which would lead to effective and efficient identification.

# Recommendations

*What could individual universities do immediately?*

1.  Use a combination of measures to identify socio-economic disadvantage, viz.:

    a.  Continue to use the SEIFA-Index of Occupation and Education to enable identification of undergraduate students experiencing socio-economic disadvantage. When calculating the SEIFA index of Occupation and Education, it is best to use the finest measure of area available, i.e. Statistical Area 1. This could be done by targeting students that fall within the lowest quartile of SEIFA.

    b.  Develop an individual measure of socio-economic disadvantage that derives from the factors identified in this project and which takes account of the specific context and student cohort of the university.

2.  Individual measures of socio-economic disadvantage should comprise a pool of questions chosen from items asking:

    a.  whether they provide financially for their family;

    b.  are the first in family to attend university;

    c.   experiencing financial hardship; and/or

    d.  are in receipt of Youth Allowance, Austudy or ABSTUDY during Years 11 and/or 12 (or another Centrelink income and asset-tested entitlement) for a period of at least three months during Years 11 and/or 12 or equivalent.

3.  Where ethical clearance is given, use data linkage to collect data for undergraduate students on whether they receive Centrelink benefits, have Private Health Insurance or have entered university by an Alternative Pathway.

4.  Count the number of indicators of low SES (or subset that is feasible) for each undergraduate student, to develop an individual based measure of disadvantage. Choose the students with the highest number of indicators to offer access to higher education equity programs targeting low SES students.

5.  Set up a reference group of students and staff to evaluate individual questions to be used to identify disadvantage to determine whether they are acceptable or deemed too sensitive.

6.  Ensure that information on the services and supports available to those experiencing disadvantage is easily found on universities' websites with clear instructions on how they may be accessed.

*What could individual universities do in the long term?*

1.  Set up opportunities for students to identify as being in need of support throughout their university career as their circumstances may change.

2.  Set up processes to monitor both the currency and accessibility of information on the services and supports available to those experiencing disadvantage on universities' websites with clear instructions on how they may be accessed.

3.  Pursue the potential for Learning Analytics metrics for identifying SES disadvantage at an individual level. This would involve identifying the data available via a university's CMS and LMS, deciding on appropriate metrics, and developing a process of analysis.

*How could the Commonwealth facilitate this process?*
1. Facilitate data linkage using the Unique Student Identifier(USI) and ATO/ABS data.
2. Provide clarity on the relationship among low socio-economic status, socio-economic disadvantage and financial hardship with respect to widening participation and support

*Where is future work needed?*
1. The models arising from this project could be further developed and refined by collecting data from students at a larger sample of universities, especially those in regional settings. Such data collection should include SEIFA collected at the finest level of Statistical Area 1.
2. When calculating the individual based measure of disadvantage, weight the indicators by their beta coefficients in the regression analysis.
3. Pursue the potential of Learning Analytics (LA) for ascertaining SES disadvantage at an individual level.
4. Change the language of disadvantage used in higher education equity programs targeting low SES students so that applying for support is not seen as shameful or stigmatising.

## THE CURRENT PROJECT: AIMS AND SIGNIFICANCE

Ensuring that all Australians, regardless of their socio-economic status, have the opportunity to reach their educational goals is fundamental to a just and equitable society. However, achieving access to higher education remains problematic for many experiencing socio-economic disadvantage. Critical to this endeavour is determining the focus for supporting those experiencing socio-economic disadvantage. Students from low socio-economic backgrounds have increased in participation from 644,784 in 2012 to 759,151 in 2017; an increase of some 17.7% (Koshy, 2018). Participation is not, however, sufficient. Retention is required. Enrolments must therefore be balanced against attrition rates which the Grattan Institute (2018) has found to have returned to 2005 levels. As Zacharias (2017) has stated, those with money continue to have more opportunities than those with less financial resources. Moreover, what also needs to be considered is whether there is a direct equivalence between low socio-economic status and socio-economic disadvantage. May other factors lead to financial hardship that affect the educational outcomes of undergraduate students?

For example, Harvey, Szalkowicz and Luckman (2017) found that people who have had a care experience are severely underrepresented in Australian higher education. Similarly, young people in regional and remote communities experience poorer education outcomes including lower school completion rates and lower personal and parental aspirations for post school study, challenging transitions into post school pathways and significant financial, social and emotional costs associated with relocating to access higher education (Centre for Education Statistics and Evaluation, 2013). Accessing higher education for those from other equity groups such as those with disability, from Aboriginal and Torres Strait Islander backgrounds or from culturally and linguistically diverse backgrounds can be equally difficult. If compounded with low socio-economic status the multiple disadvantage that results can lead to poorer educational outcomes than those of their peers not experiencing such disadvantage.

Central to achieving equity of both access and outcomes is the identification of undergraduate students experiencing socioeconomic disadvantage not only as they transition into higher education but also throughout their university career. This has proved to be a complex issue for universities since two levels of identification are

necessary. Firstly, there is a need to gather data at an aggregate level to meet the requirements set out for funding and performance monitoring with respect to meeting equity goals. Secondly, effective targeting of students for individual support, case management and scholarships funded by the university may only be realised through individual measures of socio-economic disadvantage.

With respect to the former, and as will be discussed in more detail below, socio-economic status in Australian higher education is determined using a student's residential address. This approach makes use of the Australian Bureau of Statistics (ABS) formula which utilises census data on household educational and occupational status to construct the Socio-Economic Index for Areas – Index of Education and Occupation (SEIFA). This is further refined to Statistical Area 1 (SA1) data which are areas typically smaller than postcodes. Each SA1 then receives a SEIFA score which is standardised against a national mean of 1000. Low SES students are defined as those students who live in the bottom 25 per cent of SA1 areas. SEIFA SA 1 is thus a proxy measure of socio-economic status and is useful in meeting the objectives for which it was designed: to broadly identify level of (dis)advantage at area levels (Australian Bureau of Statistics Methodology Advisory Committee, 2007). In doing this, it enables universities to track and report on equity targets. However, it does not allow close examination of students' individual and current circumstances (Karmel & Lim, 2013).

Thus, in order to identify individual students in need of the various forms of support offered by universities, a refinement of the data is needed (Lim & Gemici, 2011) to meet this second objective. For example, when using SEIFA data, users need to consider whether it is the student's home address or their current address (if living away from home to attend university) that is the best indicator of their level of disadvantage. Also to be considered is whether the SEIFA data are accurate across all jurisdictions. At issue here is their comparative accuracy when used in metropolitan, regional and remote areas. Size of area and community mix may result in considerable differences in reliability and validity when identifying potential disadvantage as has been demonstrated by Goldie, Kakuk and Wood (2014) in looking at a more confined area in their analysis of Canberra. They argue that:

> *"Area-level and individual-level socio-economic disadvantage are related but separate concepts, and while many population attributes contribute to both, due to the ecological fallacy there are considerable issues associated with using area-based indices to predict patterns at an individual level." (p.536).*

Individual measures of socio-economic disadvantage are therefore also needed as an adjunct to area-based identification of socio-economic status. However, such measures are not without their own difficulties as there are obvious sensitivities in asking students to disclose personal information which they may see as tangential to their enrolment at university but which would allow them to be directed to appropriate support services and resources.

Rurality, Aboriginal and Torres Strait Islander status and disability may also need to be included as potential indicators in the development of individual measures of disadvantage when these statuses occur in conjunction with financial stressors. However, and critically, membership of one or more of these other underrepresented groups should not be seen in and of itself as an indicator of low socio-economic status. It should also be acknowledged that universities typically offer support to those groups through other, targeted programs.

Furthermore, a potentially more positive way of framing the possible compounding of these factors is to place the emphasis on the concept of socio-economic disadvantage rather than low socio-economic status. It is the experiencing of disadvantage which is at issue and whether it is a result of low socio-economic status or the compounding of factors leading to multiple disadvantage is immaterial to the experience of the individual. Financial hardship affecting the educational outcomes of that individual is what needs to be addressed. The significance of this project therefore lies in its working to identify factors that might be used to develop a non-intrusive individual measure of socio-economic disadvantage that could be used throughout students' university experience.

This current, multiphase project had four broad objectives. These were to:

1.  determine a method, or range of methods, that can assist Australian universities to identify socio-economic disadvantage at the level of the individual student;
2.  develop an instrument, or suite of instruments, that Australian universities can use to implement the method, with the goal of informing the planning and implementation phases of activities funded by the Program to ensure, to the maximum extent possible, that Program funding is used to support students from a low socio-economic status background;
3.  determine the extent to which this individual-based measure is correlated with the current, area-based measure defined in the Other Grants Guidelines; and
4.  evaluate and make recommendations on the utility, value and cost-effectiveness of this individual-based measure to Australian universities.

The mixed-methods approach used for this project has allowed triangulation of the data, whilst the large scale quantitative phases (especially that related to the student questionnaire) have enabled sophisticated statistical analyses to be undertaken ensuring confidence in the findings and in the items determined to indicate the need for support.

The significance of the current project is demonstrated by the reaction of participants to the initial staff questionnaire. Many commented on the importance of the project with staff at a regional Queensland university asking if they could participate more fully. As a result, for the quantitative and qualitative phases, the study was expanded beyond its original parameters with all undergraduate students from three universities, two in NSW and one in Queensland, receiving the questionnaire and being invited to participate. In addition, the student focus group phase was expanded to include this third university. The universities therefore comprise a member of the Group of Eight (a metropolitan university) and two from the Innovative Research Universities group (one a metropolitan multi-campus university and one a regional university).

# REVIEW OF THE LITERATURE

## Introduction

The Higher Education Participation and Partnerships Program (HEPPP) aims to ensure that Australians from low SES backgrounds who have the ability to study at university have the opportunity to do so. It provides funding to assist Table A universities to undertake activities and implement strategies that improve access to undergraduate courses for people from low SES backgrounds, as well as improving the retention and completion rates of those students (https://www.dese.gov.au/heppp). Such funding is also supplemented by the universities themselves through support services to students and equity scholarships of various kinds.

However, as already indicated, how best to identify students experiencing socio-economic disadvantage in the undergraduate years remains an issue for universities. This is so even though universities are using ICSEA to good effect to identify schools that have a high proportion of students with low socio-economic status. In these cases, widening participation programs target students at both the Primary and Secondary level to make them aware of the possibility of undertaking a university degree. Since such programs may result in the student's choosing to attend a university other than the one where they received the introduction to university, the receiving institution may not be aware of their participation in the program or their status; an important consideration in terms of providing ongoing support to these students. This review of the literature therefore sought to consider the:

1.  historical context in which current approaches to identification have been developed;
2.  current situation and definitions of disadvantage which are driving approaches to identification;
3.  measurement of socio-economic status;
4.  challenges faced by low socio-economic status students; and
5.  approaches to identification of students in need of support and their ethical implications.

Throughout this review, *low SES* and *low SES* students are the terms used to describe students who fall below the lowest quartile of the Socio-Economic Index For Areas (SEIFA) measure (Koshy & Seymour, 2014, p. 6).

# THE HISTORICAL CONTEXT

In 1990, the Australian Government Department of Employment, Education and Training published a report entitled *A Fair Chance for All*: *Higher education that's within everyone's reach*. The title is both self-explanatory and instructive. It identified six groups who were under-represented in university student populations and recommended the need for an equity policy that enables participation for: people from socio-economically disadvantaged backgrounds; Aboriginal and Torres Strait Islander people; women, with a particular emphasis on non-traditional courses and research and higher degrees; people from non-English speaking backgrounds and people with disabilities.  The title of the report is instructive because it points to the view, echoed in the later 2008 Review of Higher Education by Bradley, Noonan, Nugent and Scales (2008), that disadvantage can be conceptualised as underrepresentation. In this view, disadvantage results in 'a lower chance of participating and succeeding in higher education due to circumstances beyond the control of the individual' (ISSR, 2017).

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However, arguably, the most important initiative to come out of the Bradley Review (2008) was that of the Demand Driven System and with it, the establishment in 2010 of the Higher Education Participation and Partnerships Program (HEPPP) which funds eligible universities to 'undertake activities and implement strategies that improve access to undergraduate courses for people from low SES backgrounds and improve their retention and completion rates' (Other Grants Guidelines (Education) 2012, Section 1.40.1).

HEPPP has three components:

1. Participation component, the purpose of which is "to increase participation of both current and prospective students from low SES backgrounds in accredited undergraduate qualifications at providers" (the *Other Grants Guidelines (Education)* 2012, Section 1.55.1);
2. Partnership component, which has the objective of increasing the amount of people from low SES backgrounds engaging with higher education through outreach and similar activities "with appropriate stakeholders including, but not limited to, schools, State/Territory Governments, VET Providers and community groups" (*Other Grants Guidelines (Education)*), 2012, Section 170.1); and,
3. National Priorities Pool which is aimed at increasing the effectiveness and implementation of HEPPP "nationally and at an institutional level" (ACIL Allen Consulting, 2017, p. xiv).

The participation and partnerships components currently use the same SA1 formula and so have effectively been combined with respect to distribution of funding.

In looking at HEPPP projects between 2010 and 2015, ACIL Allen Consulting (2017, p.44) found that the most common activities were related to academic preparation and support (36% aspiration raising, 32% pre-university experience) followed by mentoring and peer support (31%). They argued that such programs had been "shifting the perceptions of low SES students" to engage meaningfully with higher education, although the impact of these activities had not been consistent across all schools (p. xv). They also found that research projects arising from HEPPP had led to universities adopting "new approaches and analyses" that were continued beyond the initial funding periods of such projects and were assisting universities to better meet the needs of their disadvantaged students (p. xvi). Importantly, they also noted that some of these impacts had been blurred by the "co-introduction" (p. xvi) of the demand-driven system, making it impossible to quantify the impact of HEPPP itself (ACIL Allen Consulting, 2017, p. xvi). Another complicating factor was that some of the HEPPP projects reviewed were targeted not only at low SES groups, but also at the wider student population. In these instances, a broader, universal design approach had been implemented to maximise participation in the programs. They also found it difficult to determine which HEPPP programs could be seen as having replaced those that would have occurred as part of the institutions' usual operations despite most participating institutions stating that this was not the case (p. 136). The use of universal design approaches is likely to obviate the need for individual identification of low socio-economic status and may be preferred by institutions for that reason since it may be more cost-effective and still allows targeting of students in need of support.

The failure by the then government to gain agreement to pass the Higher Education Reforms that came out of the Kemp and Norton (2014) review led to a freeze of the Demand Driven System. As part of MYEFO 2017-2018, the Government announced that maximum demand driven Commonwealth contributions under the Commonwealth Grant Scheme (CGS) would be frozen at 2017 levels with universities receiving the lower of the 2017 total and actual full-time equivalent student numbers relevant cluster funding rate. Under this announcement, universities receive the student contribution for all undergraduates enrolled. This situation will remain in 2020 except that maximum CGS payments will be increased in line with population growth in the 18 to 64 years old age bracket with universities able to access this growth if they meet specified performance requirements (Grattan Institute, 2018). Importantly, HEPPP funding was not frozen. It is, then, in this funding climate that higher education sector must continue its efforts to widen participation.

In addition, in 2014 Koshy and Seymour reported that the demand-driven system (DDS) had led to changes in the demographic makeup of universities. Growth in the number of undergraduate students increased from 528,844 in 2007 to 668,665 in 2013; an increase of 139, 821 (26.4%) in a six-year period. Most of this enrolment (82.5%) took place after 2009 and mostly in universities belonging to the unaligned universities category that had 28.5% of nationwide enrolments in 2007 to 31.9% in 2013; an increase of 41.9%. The Group of Eight Universities had a reduced share from 27.9% to 25.2%. The Grattan Institute (2018) also reported a substantial increase in the number of low SES students from around 22,000 in 2005 to approximately 41,000 in 2015.

Koshy and Seymour (2014) also observed that in that same period the expansion in equity enrolments had led to a percentage growth in reported students with disability (57.6%) and from Indigenous (45.6%) backgrounds. Regional (26%) and remote (11.8%) enrolments also increased in this period, alongside women in non-traditional areas (WINTA) by 15.5% from 2008. By 2013, low SES attendance was 37.4%, with NESB at 36.9%. State and territory aggregates are a national ranking, where some states have smaller low SES populations than others, and therefore less low SES SA1s within their state/territory. Western Australia had a low SES ranking of 12.5% in this period, whereas Queensland had 20.0%. "The strongest growth in low SES share is in those states with relatively smaller low SES populations – New South Wales, Victoria and Western Australia" (Koshy & Seymour, 2014, p. 7), which suggests that institutions were focusing on these areas and increasing participation therein where historically, engagement with these low SES populations may have been more isolated from recruitment efforts. These differences are also seen as a consequence of the fact that Australian students tend to enrol in universities in their home state or territory (Koshy, 2018).

# THE CURRENT SITUATION

From 2011-2016, the Group of Eight (Go8) universities had lower levels of enrolment of low SES students (less than 9%) compared to the Australian Technology Network of universities (ATN) (14.1%) and the Innovative Research Universities (IRU) (18.4%), while the Regional Universities Network (RUN) had the highest level of enrolment (26.9%) (Koshy, 2017). Since the change to a demand driven system, there has been a "convergence across these institutions" (Koshy, 2017, p. 8), with regionally headquartered universities declining in low SES enrolments (26.3% in 2011 compared to 25.7% in 2016), while metropolitan institutions are increasing (p. 8). The current response of metropolitan universities to the Demand Driven System and to widening participation, then, must take into account how to best assist an increasing number of low SES students, the unique realities they face, and how the development of individual-based measures might alter how services are delivered to increasingly diverse student cohorts. Regional universities may also need to adopt new strategies and/or support services to increase access and retention, to ensure that the services they provide are as competitive as their metropolitan counterparts.

It must also be realised that recruiting more low SES students into institutions has the potential to widen access (but not necessarily widen participation in all areas of study (Tonks & Farr, 2003, p. 26). This disparity is shown in an analysis of the fields increasing domestic bachelor enrolments by 2,000 or more from 2008 – 2016 (Grattan institute, 2018); the four fields with the highest increases were Science, Nursing, Business and Economics and Allied Health. The increase found for Science was some six times that of Creative Arts and Criminology. Dockery et al. (2016) have also argued that increases in low SES participation at universities do not equate to widening participation for those experiencing socio-economic disadvantage and they advocate for a more precise evidence base to show low SES participation "as measured using individual or household data" (p. 1697).

Despite the challenges, the strategy to widen the participation of students from low SES backgrounds can be seen to have been successful at a number of levels although, as Koshy (2018, p.7) notes, this is, to some extent, due to the shift in census base from 2011 to 2016. It must also be acknowledged that despite strategies for widening participation, as the Productivity Commission's 2019 report attests, school students from low socio-economic backgrounds remain less likely to participate in higher education than their more advantaged peers.

In addition, the importance of not only focusing on the number of enrolments but emphasising retention is demonstrated by the finding that attrition rates in 2015 in commencing domestic bachelor degree students were back up to 2005 levels and that, although subject fails are declining, they are still above pre-demand levels (Grattan Institute, 2018). Whilst it is not possible to determine accurately how many of these students come from low SES or other equity groups since students may choose not to identify as belonging to one of these groups, the Productivity Commission's (2019, p.2) report on the demand driven university system notes that:

> *"the growing risk of students dropping out of university requires attention. On average, the additional students need greater academic support to succeed."*

They add that "While universities had strong incentives to expand student numbers, the incentives for remedial support are weak." Identification of individuals experiencing disadvantage is again shown to be critical not just at the initial enrolment and transition to university stage but throughout the life of their degree.

An additional issue relating to the question of socio-economic disadvantage has been raised by Zacharias (2017, p. 53) who reported from her study that:

> "The focus on low SES as the main target group for the national equity program was universally confirmed by interviewees. The consensus among stakeholders was that people with money have a lot more choices than those without even if they belong to another equity group. At the same time, the heterogeneity of the low SES community was recognised and an argument made to legitimise other equity groups to address multiple disadvantage while the focus remained on poverty and the socio-cultural disadvantage it creates."

Thus, whilst low SES was seen as appropriate as the prime focus for equity programs, there was agreement that issues of multiple disadvantage need to be acknowledged and addressed. Indeed, Harvey, Szalkowics and Luckman (2017, p. 17 - 18) reported that in 2014, 56.4% of Australian domestic undergraduate students who were identified as low SES also belonged to more than one equity group (p. 18), with 38.2% of low SES students coming from a regional area.

These students may have to work harder to "catch up" to their higher SES peers both in terms of social capital and academically and can encounter more hardship than other students (Bell & Benton, 2018; Jury et al., 2013). Bell and Benton argue that they may have to maintain "various identities", some of which may be in conflict with one another and become additional stressors which may be further compounded if they belong to one or more equity groups. Rather than viewing low SES students from a deficit approach, Barnett (2007) advocates for universities to be proactive in being institutionally prepared to meet the needs of these students.

Added to this is the "broadly held principle amongst some universities that any identification or targeting of low SES students risks stigmatising these students" (ACIL Allen Consulting, 2017, p. 87). This points to a limitation arising from the method of identification. Where the identification is broadly or community area based, as with the SEIFA (SA1) measure, students may not be aware of it. Whilst this means that they will not feel themselves to be labelled or stigmatised, it also means that they may not receive the targeted support which would assist their having the best outcomes from their university career. The need for a sensitive, individual measure of socio-economic disadvantage is apparent. Furthermore, from the data presented it seems that different approaches to identification may be needed by universities depending upon the group to which they belong. For example, a GO8 university is likely to have a different cohort of equity students to that of a member of the Australian Technology Network (ATN), the Innovative Research Universities (IRU) or the Regional Universities Network (RUN). Such differences need to be considered in developing individual measure of socio-economic disadvantage and tailored to meet their specific cohorts.

# MEASUREMENT OF SOCIO-ECONOMIC DISADVANTAGE/STATUS

Measurement of socio-economic disadvantage needs to be based on a clear definition of the construct. Blakemore, Stranzdins and Gibbins (2009, p. 121) describe SES from a sociological perspective as the "social experiences and economic characteristics of families" as well as the "social and economic resources available to family members, including to children" (p. 121). SES is characterised by "strong feedback cycles which operate across generations and within social strata" (Dockery et al., 2016, p. 1697). Within institutions themselves, a "status exchange" takes place where universities "draw institutional status from the presence of… valued persons, and apply individual status back to them" (Marginson, 2011, p. 31). These institutions are therefore argued to be "instruments in the creation and reproduction of social status" (31). These "valued persons" are typically from "relatively narrow SES backgrounds" (Dockery et al., 2016, p. 1697); those with higher SES that possess the cultural and social capitals that low SES students tend to lack.

 This accords with the Australian Bureau of Statistics (2008) defining socio-economic status as:

> *Relative socio-economic advantage and disadvantage in terms of people's access to material and social resources, and their ability to participate in society. (p.5)*

It is this definition which has largely driven its measurement with its being seen as related to the familial and community context in which the person lives and functions. Thus, Bradley et al. (2008, p.39) argued for the development of measures of SES disadvantage that take into account "information about parental education levels and occupation, and parental or household income" as well as the need to link such data with "population reference points or occupational classifications in order to define the socio-economic status groups to which the student belongs". It has also been stated that these measures ought to be "based on the individual circumstances of each student" (ACIL Allen Consulting, 2017, xxii) that will "provide opportunities for all capable people to participate to their full potential and supports them to do so" (Bradley et al. 2008, p. 6). This is an issue that Australia has been wrestling with for some time (Dockery, Seymour& Koshy, 2016) as debate continues around if and when area-based and individual measures of disadvantage should be applied.

Several measures exist in different contexts to identify SES, often determined by similar, though not identical, factors. The Index of Community Socio-Economic Advantage or ICSEA is one such measure that is used as a measure of the SES of Australian schools, and is developed on the basis of parents' occupation, school education and non-school education which "have an influence on students' educational outcomes at school" (ACARA, 2012, p. 7), and influence how students are categorised according to widening participation programs at university. Parental occupation group and educational attainment are used as two separate indicators of SES, allowing governments and school bodies to ascertain the impact of separate variables upon educational outcomes across different government areas, and also separating them out from other factors such as language background other than English, Indigeneity, or physical location. However, there is a need for more rigorous obtaining of student background information, so that response rates to questions (which affect assessment) are improved.

It is SEIFA, however, which has had the greatest currency. The rationale for using the SEIFA tool is that it measures more than one form of disadvantage. It uses five quintiles, which allows a "degree of subtlety to measure SES that is not afforded by the binary variables such as government pensioner / beneficiary" (Australian Government, 2012, p. 7), can be aligned with "service use data in administrative datasets and surveys (unlike SEIFI data)" and is well recognised and understood in social research. As such, it is considered pragmatic at an aggregate level (Lim & Gemici, 2011).

The SEIFA comprises four measures:

1. The Index of Relative Socio-economic Disadvantage (IRSD), which draws upon 17 area-based variables (low income, high rates of unemployment, unskilled occupations, low education);
2. Index of Relative Socio-economic Advantage and Disadvantage (IRSAD): 21-area based measures (including high/low income, occupation and education, internet connection);
3. Index of Economic Resources (IER): 15 area-based variables (including household income, wealth, and housing expenditure);
4. Index of Education and Occupation (IEO): 9 area-based variables (including enrolment in further education, occupational information such as skill level, educational attainment and unemployment status) (Australian Bureau of Statistics, 2011b, p. 2; Lim & Gemici, 2011, p. 17).

There are, however, problems that arise when trying to ascertain SES disadvantage at a more individual level. The "electoral conundrum" indicates disadvantaged areas without identifying the most disadvantaged people within those areas (Australian Government, 2012, p. 9). Thus, Government's selection of where to place, for example, Government housing affects the SEIFA index of that area. The "ecological fallacy" is also present: not all people living in low SES areas have low SES backgrounds.

Whilst SEIFA is considered a "reliable measure of the differences between States [sic] in their socio-economic mixture" (Australian Government, 2012, p. 18), it has been labelled as "unreliable" at an individual level (Bowden & Doughney, 2010, p. 115) as it cannot show a "link between students' socio-economic status and their post-secondary aspirations" (Bowden & Doughney, 2010, p. 116). SEIFA does not account for the "educational and occupational diversity that exists within postcode areas" (p. 126) which would diversify SES status for students coming from the same geographical area. When using granulated data that takes into account students' SES background and their aspirations, Bowden and Doughney "[were] unable to detect a relationship between [SES status and students' aspirations] even at the 10% significance level" (2010, p. 126). Palermo et al. (2012) state that "'while the SEIFA index provides a reasonably accurate measure of SES higher education participation at the aggregate level, it is a poor reference measure for individual student performance". As a consequence, since 2011, the Statistical Area 1 (SA1) measure is used for higher education student data rather than postcodes (Australian Bureau of Statistics, 2016).

The current use of SEIFA does not typically have data on "underlying characteristics that make up the concept of SES" (Lim & Gemici, 2011, p. 3). This reality reinforces the need *to develop individual based measures of SES disadvantage that are able to look at the underlying characteristics that impact upon university students' SES disadvantage*, and how these students can be better supported.

Lim and Gemici (2011, p.3) used the Longitudinal Surveys of Australian Youth (LSAY) 2003 cohort data to measure the SES of young people aged 15 to 25 to test the reliability of SEIFA on more individual bases. They developed a measure that draws upon factors previously demonstrated as indicators of (dis)advantage:

1. Parental education: mother's education or, if missing or unknown, the father's,
2. Parental occupation: father's occupation or, if missing, mother's, and
3. Cultural and educational resources to measure SES: owning a desk, own room at home, place of study, computer software, internet, calculator, literature, poetry and art, textbooks, dictionary, dishwasher and number of books at home.

They then compared their model (called SES-C) with SEIFA, SEIFA + parental occupation, SEIFA + parental education and SEIFA + parental occupation + parental education measures. It was found that, at the individual level:

1. SEIFA: correct classification of 26%, 35% somewhat misclassified and 40% severely misclassified;
2. SEIFA + parental occupation: correct classification of 28.5%, 37% slightly misclassified and 34.5% severely misclassified;
3. SEIFA + parental education: correct classification of 30.7%, slight misclassification of 37% and severe misclassification of 32.3%; and
4. SEIFA + parental occupation + parental education: 31.3% correct classification, slight misclassification of 38% and severe misclassification of 30% (Lim and Gemici, 2011).

When compared to the SES-C developed, it was found that SEIFA and all SEIFA composites are "biased" (Lim and Gemici, 2011, p.22) in predicting higher education performance, as they "overstate participation probabilities" for low and medium SES groups, and marginally understate those from high SES backgrounds. At best, the SEIFA + parental occupation + education variable "performs well for predicting participation for high-SES individuals" (23). Even with these additions, SEIFA measures still misclassify at least 69% of students, emphasising the need for a more specific individual measure. Although useful at the area level for reporting and planning at an institutional level, it does not allow the identification of individuals requiring support because of socio-economic disadvantage with sufficient accuracy.

However, whilst the approach suggested by Lim and Gemici (2011) may be seen as more nuanced, it remains rooted in an emphasis on the family of origin. How relevant it is to those who enter university study as mature age students bringing with them a wealth of cultural capital gained throughout their life needs to be determined.

The information currently used is therefore "limited information" (Dockery et al., 2016, p. 1693), and needs refining, something acknowledged by the Australian Bureau of Statistics (2008). The ABS recommends that a "potential new measure" ought to consist of parents' educational level, parents' income, parents' occupation and the location of student's usual residence (Australian Bureau of Statistics, 2011a, 25).

As suggested above, one of the measures available is the SEIFI index (Socio-economic Index for Individuals), that considers "income, education, occupation and a range of other indicators to determine the socio-economic status of individuals" (Australian Government, 2012, p. 6), and measures those aged 15-64, assumes that these individuals are working. While this measure does not focus only on income, it cannot be "used to measure use rates from administrative sources, or even from ABS surveys" (Australian Government, 2012, p. 6). Its comparative efficacy compared to the SEIFA index has been tested, as already discussed, by Goldie et al. (2014, p.532) who found that within Canberra (the city on which their analysis was based), inconsistencies occurred when areas of similar ranking (on both SEIF and SEIFI scores) were compared. SEIFA emerged as a poor predictor of individual disadvantage with area measures masking disadvantage experienced by individuals.

The ABS (2011a) has set out various types of measures that might be used to determine socio-economic status, and how they can be applied in different contexts. Some measures can be used to identify an individual at a specific point in time while others can "track the relative position of individuals, families, households or areas over time". As already noted, SES is typically conceptualised as belonging to an individual, family or household, but measured for an area. Some of the measures used to determine SES include identified income, consumption (personal and equivalised household consumption, wealth, education and employment as key indicators, as well as country of birth, family setting (single / coupled parent family) and area (by state or remoteness classification) (ABS, 2011a, p. 9). As these realities change over time, so should the measure of SES, as they can show if "societal progress or regress is masking a different outcome for sub-populations of particular interest" (p. 2). In all instances, these are proxies for socio-economic disadvantage based on assumptions of the impact of these factors on an individual's life and the availability of physical and emotional resources. Again, as already discussed, the relationship between low socio-economic status, socio-economic disadvantage (which may or may not be equivalent to low SES) and financial hardship need to be teased out when seeking to measure disadvantage.

A very small cluster of projects identifies the *potential* of using data mined from university administration systems, and activity data from Course Management Systems (CMS) or Learning Management Systems (LMS) (for example, Blackboard and Moodle), for ascertaining SES disadvantage at an individual level. Data mining techniques have become popular in business, but there are few instances in the education sector (Yasmin, 2013). Moreover, research into data mining at university remains limited (Colvin et al., 2016). Whilst universities are rich in data, their "data warehousing and business intelligence systems are often naive and unsophisticated," which results in limited access to the institutional data required (Palermo, et. al. 2012).

Learning Analytics (LA) is the area of education research concerned with mining students' data for digital traces in order to identify "patterns of learning behaviour" that can "inform educational practice" (Colvin et. al., 2016, p. 5). A primary focus of LA research to date has been analysing student data (typically demographic information and online engagement data) in order to develop predictive analytics to address retention issues by identifying "at risk" students. Palermo et. al. (2012) examine two case studies at Australian universities were data mining techniques were used to track student cohorts. For example, the researchers explain Southern Cross University's objective to develop a predictive model for students likely "at risk" and/or to drop out. The model measures "the impact of teaching and learning activities" and "monitors outcomes related to student cohorts" (p. 44). Palermo et. at. (2012) explain that a student's access to their own activity data, and personal reflection on what that data "says" about

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their engagement with course materials, can potentially prompt a student to seek academic intervention early in their studies - before dropping out. Here, data are a means for students to reflect on their engagement and their motivation and (potentially) any antecedent factors impacting on their level of motivation.

Projects such as these identify the *potential* of data mining for ascertaining SES disadvantage at an individual level. Given the association of lower SES with attrition rates, low engagement and fluctuating attendance (noted above), the predictive model is also a potential indicator of SES.   The same data could be used by teaching/administrative staff to identify individual characteristics of students themselves.

Yasmin (2013) analyses the use of data mining techniques to predict student attrition in open and distance learning (ODL). The researcher establishes at the outset of the study the influence of the following ("intertwined") factors on attrition: personal and circumstantial factors, educational background, personality, finance, family relationships and circumstances, housing conditions and household income level (p. 219). Yasmin (2013) gathered data from the university's electronic admission database and implemented a classification tree methodology, as "classification trees offer the best approach for prediction when demographic data such as student information which is predominantly categorical in nature" (p. 221) are used. Decision rules were developed to obtain insights into the mode, and revealed, for example, that learners over 25 years of age who had taken mathematics were most likely to leave the course, and also, that remotely located learners who had taken English are "also more prone to drop out" (p. 225). In addition, the classification tree showed that 46.5% of the total employed male learners over the age of 25 are more likely to leave the course (p. 226). Yasmin's (2013) use of the classification tree demonstrates the value of using student data sets to "discover meaningful patterns and rules" (Yasmin, 2013, p. 221) to predict student behaviour and, at the same time, to identify those factors in students' personal environments underlying the predicted behaviour.

In terms of the factors identified previously in this literature review, Yasmin's (2013) analysis could be developed to include a combination of metrics from university big data and LMS data to potentially identify low SES. These metrics could identify changes in students' personal environments linked to SES, such as increased part-time/full-time work demands linked to financial support and/or stress. Such metrics could include: attendance, rates of failure to submit assignments (FNS rates), rates of requests for assignment extensions, and rates of late submission of assignments. Moreover, it would be valuable to triangulate these metrics with a student's stage of study at university (first year, second year etc.) and degree/course/program.

While LA research, to date, has been acknowledged to focus on developing predictive analytics for identifying students at risk, there is potential to broaden the scope of data analysis involved to consider in detail the relationship between retention and antecedent factors, such as those informing students' personal environments noted above (Yasmin, 2013). Colvin et. al. (2016) note this potential in terms of the need for universities to move away from attempting to solve retention and "broaden their conception of what LA has to offer" (p.29).

In addition, it is important to note the Australian Government's current Public Data initiatives; for example, the Data Integration Partnership for Australia (DIPA). There may be an opportunity for DIPA's components and/or analytical units to explore the data mining potential noted above: identifying SES disadvantage at an individual level. There may be complexities, however, regarding access to university data, given it may be stored within institutional systems; for example, a university's CMS and LMS.

Determining SES status is therefore dependent upon the context of those being measured, and specific elements need to be considered to ensure these measures reflect the realities of people within these contexts.

## CHALLENGES FACED BY LOW SOCIO-ECONOMIC STATUS STUDENTS

In working to identify those experiencing socio-economic disadvantage, the dangers are twofold. Firstly, such identification may lead to a deficit model which may, in turn, result in students' being unwilling to self-identify. Secondly, such a view fails to recognise that low SES students bring cultural and social capital of their own and typically show high levels of resilience derived from their backgrounds, persistence and determination and "extreme self-reliance" (David 2010, p. 58 in Bell & Santamaría, 2018, p 7). These are attributes that are often not acknowledged within the university context (Harvey, Szalkowicz & Luckman, 2017, p. 17) where a strengths based approach to support may not be at the forefront but where, if it were, more effective identification might occur.

Yet, despite these positive attributes, some students from low SES backgrounds, and especially those studying by distance, "may not feel confident in their interactions with academics" due to a perceived lack of particular kinds of cultural capital which can inhibit their development and performance (Small & Attree, 2016, p. 2091). Being separated from family also makes university participation more difficult as it is often "outside accepted norms within their families, friendship groups and committees" (Devlin & McKay, 2017, p. v). First year students have to adjust to a "culture of individualism", adopt a new persona and face the challenge of parents and communities that have no experience of higher education (Bell & Santamaría, 2018, p. 4). The overlap between coming from a low SES background and being first in family is likely to compound disadvantage and have a negative effect on educational outcomes.

With respect to first generation mature aged students, O'Shea (2018, p.146) argues that they can: feel a sense of culture shock in assuming the "'student role'"; feel like outsiders; and experience a sense of "'foreignness' or unfamiliarity" (p. 155) within a university context. It is therefore incumbent upon universities to provide "the support needed to translate the opportunity access provides for success" (Tinto, 2014 cited in van Zyl, 2016, p. 22) in order for disadvantaged students to adjust to the new culture and ways of learning they are exposed to at university (ACIL Allen Consulting, 2017, p. 73).

SES factors impact upon the "development, well-being and physical and mental health" (Saegert, Adler, Bullock, Cauce, Liu, & Wyche, 2006, p. 1) of all, especially as they pertain to the subjective experience of low socio-economic status. Saegert et al. (2006, p.19) suggest that SES can be defined as "a psychological feeling and comparison of self to others". This comparison, when combined with a perceived lack of cultural and social capital when compared to those from higher SES backgrounds, does little to motivate low SES students to engage in higher education. These students may experience psychological barriers as a consequence of emotional experiences, identity management, self-perception and motivation (Jury, Smedling, Stephens, Nelson, Aelenei & Darnon, 2017, p. 23), especially when they are unaware of how to engage with the "rules" of higher education institutions and reacting to the commonplace "imposter syndrome" experienced by many first year, first in family students (Bell & Santamaría, 2018, p. 7). Such students have reported greater emotional stress, more frequent self-reports of depression, lower levels of well-being compared to non-first generation students, fewer

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opportunities to talk about these experiences, and "are more likely to feel guilty about their educational achievements" (Covarrubias & Fryberg, 2015 in Jury et al., 2017, p. 26).

In addition, these students tend to have "misunderstandings…about the costs of attending university, and…may lack knowledge of available sources of financial support" (ACIL Allen Consulting, 2017, p. 69). They also tend to struggle to meet their basic financial needs, and any "unforeseen expenses exacerbate the problems they face" (van Zyl, 2016, p. 3). A lack of anticipation of the financial costs of university may also result in a lesser likelihood of their being resilient (van Zyl, 2016, p. 11). These same students can come from families where housing affordability due to high rental costs and low income are constant concerns and pressures (Ong, 2017, p. 16), leading to competing priorities between study and work. They also report believing that they will fulfil stereotypical assumptions about themselves and will underperform in their studies (Jury et al., 2017, p. 27).

Faced with the range of barriers to and within higher education, some students from low SES backgrounds do not have the emotional capacity demanded by the pressures of their situation and / or a desire to openly "identify that they are experiencing problems and / or to recognise that they need to seek external support" (Mission Australia, 2017, p. 31; Karimshah et al., 2013). For these students there can also be difficulties in adjusting to the style of teaching and engaging with university content compared to their medium SES peers (Karimshah et al., 2013), with time being needed to adjust to the "'college student role'". This may be especially so for students from Pacific, Māori and other non-Western backgrounds (Wolfgramm-Foliaki & Santamaría, 2018, p. 30). As such, increased support is needed for these cohorts.

Conversely, it has been argued that SES status has been given an overemphasis regarding educational outcomes, and that cognitive ability and prior achievement are more reflective of educational outcomes (Marks, 2017). The correlations between family income and student achievement, parental occupation and parental education are comparatively weak when compared to the student's cognitive ability and prior achievement (Marks, 2017). Marks also challenges notions of cultural capital and educational outcomes, explaining that SES inequalities can arise in part from a student's cultural capital: "According to this theory, students from elite backgrounds convey cultural signals which teachers and other gatekeepers unconsciously receive, and thus subsequently reward students from such backgrounds" (p. 205). Marks argues against the idea that teachers "unconsciously favour students from elite backgrounds…[and] mediate the relationship between cultural capital and student achievement" (Wildhagen, 2009 in Marks 2017, p. 206). What needs to be considered here is the extent to which a threshold effect might be operating where a base level of factors such as SES, ability and prior achievement are required for positive educational outcomes.

There is also the proposition that, in terms of educational success, students from low SES backgrounds are more likely to develop 'a fixed mindset' in relation to their understanding of themselves and education. In other words, that the students come to believe that one's intelligence and capabilities 'are fixed' rather than developed (Gonski, Arcus, Boston, Gould, Johnson, O'Brien, Perry & Roberts, 2018, pp. 20-21). By contrast, 'a growth mindset'– I will succeed if I work hard – is often found amongst higher SES background students (Gonski et al., 2018, p. 21). According to Gonski et al (2018, p. 20) these mindsets are "twice as predictive of students' PISA scores as their home environment and demographics". Gonski et al found that PISA data show that students from high SES backgrounds are more than twice as likely to have strong growth mindset than students from low SES backgrounds, and students from low SES backgrounds are close to twice as likely to have a fixed mindset than

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students from high socio-economic backgrounds (p. 21).[1] Supporting students to develop a growth mindset may be a consideration for equity programs. It is one that is supported by research and gaining significant currency in schools (Dweck, 2006).

# IDENTITY AND SELF-IDENTIFICATION OF DISADVANTAGE

Whilst acknowledging the difficulty of defining equity in higher education with precision, James (2014, p.84) points to a range of implicit and explicit conceptions which variously operationalise it as: those individuals who have the ability to do so going on to university; there being no barrier to access; determining university places by merit; there being no discrimination for university places on the basis of social class, gender, religion or ethnicity; and, all individuals having the same opportunities to develop their talents.  James goes on to argue that the differences amongst these conceptions are subtle but that they are likely to lead to different outcomes in terms of policy, its implementation and, indeed, the evaluation of those strategies. Furthermore, James (2014) contends that the under-representation of students from low SES backgrounds in higher education internationally is a consequence of a combination of factors that build one on the other, viz.:

> *Lower school completion rates; lower levels of educational attainment in schools, thus limiting opportunities in the circumstances of competitive entry based on academic achievement; lower levels of educational aspiration; lower perceptions of the personal and career relevance of higher education; and perhaps alienation from the culture of the universities in some cases. (p. 85)*

James (2014) sees these factors as being further confounded by and with financial considerations.  One of the challenges for universities, then, is the need to implement programs that effectively target the needs of students belonging to equity groups to ensure that they have equal opportunity to access and benefit from tertiary education. At the same time, they must also employ a nuanced approach that, whilst acknowledging the disadvantage that may arise from being a member of an equity group, enables the individual's specific educational disadvantage to be identified and acted upon.

In this regard, Norton and Cherastidham (2018) have identified some of the leading causes of attrition amongst university students, when considering socio-economic background, Indigeneity and rural or remote status (see also: Palermo et al., 2012, p. 40). They found that the single greatest risk factor for a student dropping out of higher education is undertaking part-time study, with more than 60% of these not completing their degree within eight years (Norton & Cherastidham, 2018, 26; also see Higher Education Standards Panel, 2017, p. 6). While the risk of Indigenous students' non-completion is still well above the rest of the population (45% compared to around 30%) (Norton & Cherastidham, 2018, p. 31), the part time risk of non-completion is noticeably higher: less than 30% students of continuous part-time students will complete a course.

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[1] It should be noted that there is a difference between how schools and universities identify low socio-economic status. Australian schools use the Index of Community Socio-Economic Advantage (ICSEA), whereas higher education institutions use the SEIFA (specifically SA1) measures based on students' postcodes.

Furthermore, when compared to other types of institutions, regional universities have the lowest completion rates (Edwards & McMillan, 2015, p. 9). Regional students who identified as first in family to attend university were found to lack the "familiarity with university life and expectations of them as students" (Higher Education Standards Panel, 2017, p. 24) alongside financial and family commitments and required travel time that other non-regional students do not necessarily face.

In comparison to higher SES background students, those from lower SES backgrounds have been found more likely to drop out sometime during their first year: 7.7% difference for full-timers, and 6.6% for part time (Edwards & McMillan, 2015, p. 13). Age is also a characteristic that impacts likelihood of completion, with those under 19 years of age having a 75.7% (low SES), 79.2% (medium SES) and 84.3% (high SES) completion rate, whilst there was a 66.15%, 69.2% and 73.8% chance of completion for those aged 20-24 from these SES quartiles, and for those 25 and over, 54.9%, 58.1% and 61.9% from the three quartiles (low, medium, and high) (Edwards & McMillan, 2015, p. 15). They add that Indigenous students are likely to be older, regional or remote students, part-time and low SES; "all variables associated with lower completion rates" (p. 22). These statistics make clear that there are specific risk factors that affect students from different equity groups, such as the amount of hours they work (especially for part time students, see Norton & Cherastidham, 2018, p. 29) and family and parenting responsibilities (see also Higher Education Standards Panel, 2017, p. 7). These factors need to be considered in the development of individual measures that aim to assist these students.

Low ATAR scores, and studying externally (which may work in isolation or together) are further individual risk factors that are not identified via simply establishing membership of identified equity groups (Edwards & McMillan, 2015, p. v). Whilst higher SES students tend to emphasise choice and lifestyle as reasons why they would leave tertiary education, lower SES students point to "finance, family obligations and core issues related to 'getting by'" (p. vi). Financial and health reasons have been cited as reasons for attrition by Indigenous students, students with a disability, and those from a rural and remote background (Li & Carroll, 2017, p. 5). These differences have been found to persist past graduation, with those from the targeted equity groups being less likely to be in employment compared to their more advantaged peers. These are factors that need to be acknowledged when formulating an individual-based measure of student disadvantage.

Central to the development of an effective measure of individual socio-economic disadvantage is an understanding of the extent to which students both recognise their own circumstances as disadvantaged and their willingness to self-identify. Thus, there is a difference between one's perceived socio-economic status, referred to as subjective socio-economic status, and SES status derived from objective measures. These subjective realities, however, can influence one's self perception, and can lead to poorer health outcomes (Goodman, Huang, Schafer-Kalkhoff & Adler, 2007, p. 480). There is a discrepancy between perceived and actual SES (pp. 485-486), and how others perceive one's SES status, which can impact "students' self-evaluations, social comparisons and identity-related expectations" (Thiele et al., 2017, p. 55). Students who struggle to fit in with their peers in primary and secondary school can downplay social engagement within other educational contexts, choosing rather to focus on school's "educational aspects" (p. 56). This can lead to "disaffection, periods of not engaging… and even temporarily withdrawing" due to the isolation, exclusion, bullying or stigmatisation that can come from peers (p. 56). These students can compare what they have to what other students have, what they ought to do, and feel shame and attempt to "conceal their social class" or other aspects of their person that may

be considered "stigmatising or negatively perceived" (Aries & Seider, 2005 in Thiele et al., 2017, p. 56; Goffman, 1963; Granfield, 1991). Parents and teachers can be those who impose identities upon these students (Maunder et al., 2012 in Thiele et al., 2017, p. 57). However, despite being considered as "members of a devalued group" (Thiele et al., 2017, p. 58), some of these students use these stereotypes to fuel their own success, and do succeed within this context (p. 58). Conversely, this concealment of social class and the stigma some students feel about their socio-economic background can make a willingness to identify as from this background unlikely, consequently making access to university supports for low SES students less probable. More individual-based measures of socio-economic disadvantage may be able to challenge some of these stigmas, and further assist students in accessing the services that universities provide.

Social identity and one's understanding of self is constructed through interaction with society at large (Thiele et al., 2017, p. 58), the groups to which one subscribes, and the meanings created by interactions between self and others that are "negotiated and managed in interaction" (Stets & Serpe, 2013, p. 31). Often, this identification valorises the 'in-group', who hold similar values, and this group is therefore esteemed as better or favoured than those outside it (Brown, Hiltin & Elder, 2006, p. 415). Positive feelings can be attached to the in-group, with negative feelings directed to the outgroup (Rodriguez & Gurin, 1990, p. 251). These positive feelings can even extend to the practice of noting deficiencies, but then making comparisons to alleviate the need for change: 'they may be like this, but we are like this'. This attitude allows "the person [to] feel better without changing the actual conditions of the world" (Liu, 2012, p. 6). These comparisons across groups can create a sense of resilience and result in those from disadvantaged backgrounds not asking for assistance and not accessing university services. These services depend upon student identification to access help and this can, therefore, work against students who are in genuine need. An individual measure that considers the multi-faceted nature of students' experiences may be able to counteract some of this resistance to identifying as from a low SES background, and therefore be of greater assistance to a wide number of students.

## CONCLUSION

This review has highlighted the need for the development of individual-based measures that include the range of factors that have been shown to be indicators of socio-economic disadvantage. The multiplicity of factors means that such measures need to be flexible and targeted to, not just the student's individual circumstances but to the context of the university they are attending.  It is with achieving this that the current project was concerned.

# METHODOLOGY

## Research Questions

As previously stated, this project was designed to:

1. determine a method, or range of methods, that can assist Australian universities to identify socio-economic disadvantage at the level of the individual student;

2. develop an instrument, or suite of instruments, that Australian universities can use to implement the method, with the goal of informing the planning and implementation phases of activities funded by the Program to ensure, to the maximum extent possible, that Program funding is used to support students from a low socio-economic status background;

3. determine the extent to which this individual-based measure is correlated with the current, area-based measure defined in the Other Grants Guidelines; and

4. evaluate and make recommendations on the utility value to and cost-effectiveness of this individual-based measure to Australian universities.

The formula to identify students experiencing socio-economic disadvantage is, as has been discussed, built around the SEIFA measure and is used in universities across Australia. Given that the intent of the project was to develop (a) measure(s) at the individual level it was thought prudent to garner the experiences and expertise of university staff charged with using this measure and providing services to undergraduate students experiencing disadvantage. Their insights into implementing the SEIFA measure and the procedures and processes they used in their own institutions to identify disadvantage were seen to be a valuable resource in the development of an individual measure. Equally, it was critical to understand the experience of the students themselves as they navigated their university experience within the context of disadvantage. Comparing those experiencing disadvantage with those who had adequate resources was seen to be a precursor to identifying the critical indicators that would enable the development of an individual measure of disadvantage. Furthermore, research has consistently pointed to the importance of easily accessible information (Johnston, Tracey, Mahmic & Papps, 2013; Tracey, Johnston, Papps & Mahmic, 2018); conducting a desk audit of all Australian university websites to gauge the accessibility and nature of the information offered on support services for those experiencing disadvantage was therefore seen as providing another insight into the implementation of measures currently used to identify students.

In order to address these aims, the following research questions were put:

1. What practices and procedures are currently being used by Australian universities to identify students from low SES backgrounds who are in need of support?

2. What information is available on university websites to enable students experiencing socio-economic disadvantage to access services and supports? How easily found is such information?

3. What do university staff engaged in widening participation and retention see as the indicators of socio-economic disadvantage?

4. What do undergraduate students see as the indicators of socio-economic disadvantage?

5. What factors should be included in an accurate, easy-to-obtain and non-intrusive measure of socio-economic disadvantage?

## Rationale for approach taken

A mixed-methods design was chosen as the most appropriate to address the aims and research questions. Specifically, a sequential exploratory design was employed (Creswell, 2013) with respect to the quantitative and qualitative phases of the study. Four phases were conducted: the first a quantitative phase utilising questionnaires to both university staff and undergraduate students (albeit with some open-ended questions allowing qualitative data to be collected); the second a qualitative phase employing focus groups with both staff and students; the third, a desk audit of all Australian university websites to explore the nature and accessibility of information on the programs and supports available for students experiencing disadvantage and the fourth, a smaller quantitative phase where the individual measure developed from phases one and two was piloted.

A mixed-methods approach is seen as having a number of advantages. The most significant of these is that, because different sources of data are used, triangulation of the data obtained is possible. This, in turn, leads to perspectives and understandings which might not be gained were only one data source to be employed (Greene et al.,1989). Ultimately, this is seen as assisting in the generation of new theories and models: an important consideration for this project.

Furthermore, in a sequential design, there is a direct relationship among the phases. In this instance, analysis of the data from the quantitative phase (staff and student surveys) led to the formulation of questions for the qualitative phase (the focus groups) as key factors were identified and could then be explored in more depth. The desk audit of university websites enabled a deeper understanding of the basis of the comments made by both staff and students in the qualitative phase where they discussed the accessibility of information about programs and supports.  The triangulation of the data from these three phases then led to the development of a potential individual measure of socio-economic disadvantage which was tested with a sample of commencing undergraduate students.

## Project Design

### Phase 1 – Staff questionnaire and student questionnaire

#### *Staff Questionnaire*

A list of 20 academic and professional staff who acted as first year advisors[2] , worked in disability units or Aboriginal and Torres Strait Islander units as well as those involved in direct delivery of HEPPP and other student services was compiled for each of the 42 universities in Australia (a total of 820 staff was therefore identified). Each person was emailed individually by the research team to invite them to complete the survey and subsequently sent reminders. To preserve anonymity, the name of the university at which the respondents' worked was not collected. The questionnaires were distributed using the Qualtrics software platform and frequency counts, means and standard errors were calculated using SPSS 25. The questionnaire is set out in Appendix D.

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[2] Staff designated to support first year students regardless of their SES status

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The staff questionnaire was designed to address the following research questions:

1. *What practices and procedures are currently being used by Australian universities to identify students from low SES backgrounds who are in need of support?*

and

2. *What do university staff engaged in widening participation and retention see as the indicators of socio-economic disadvantage?*

## *Student Questionnaire*

Data were collected from undergraduate students at three universities, henceforward named University 1, University 2 and University 3, through an online questionnaire that was distributed via email by staff in the central administration of each of the universities. The invitation to complete the questionnaire was sent to all undergraduate students at the three universities. The questionnaire was anonymous. The questionnaire recruitment email and the list of questions are contained in Appendix E.

The questionnaire was designed to provide quantitative data that could be used to answer research question 5: *"What factors should be included in an accurate, easy-to-obtain and non-intrusive measure of socio-economic disadvantage?"*

It should be noted that:

- the questionnaire questions included variables deduced from the literature review that were hypothesised to be correlated with socio-economic status (SES).
- a more accurate measure of the area-based SES of the students could have been obtained by asking for their address since such information could then be mapped to a smaller area (Statistical Area 1). However, gathering information at this level would have rendered the data identifiable. This would have not only made it more difficult to gain ethics approval for the study but would have led to a lower response rate since participation would not be viewed as anonymous.  As a consequence, students were asked for their postcode, in order to estimate their level of area-based socio-economic status. Regression models were then used to see if variables obtained from the questionnaire questions could predict the area-based SES of the students.
- In order to test an alternative measure of SES, Likert scales were used to collect data on the level of stress students were experiencing on a range of financial commitments. viz.: credit cards, mortgage/rent, fines, mobile phone, internet, car, parking / other car related costs and other financial commitments. Regression models were then used to predict this alternative measure of SES.

These models were developed using statistical linear regression, in this case backward stepwise regression. In this method all terms are initially entered into the equation, the least related term is removed by the software and the regression is run again until all terms meet the inclusion criterion which was set at p-value < 0.05 (the standard definition of significance).

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The models were created using 80% of the data, so that they could then be tested on the remaining 20% of the data. This technique is called cross-validation where the 80% of the data set used to create the models is known as the training data set, and the 20% of the data used to test the models is called the validation set. The training and validation data sets were created using the pseudo-random number-based sample selection procedure in SPSS 25, selecting 20% of the sample and splitting it into a separate file. The analyses were then initially conducted on the 80% data set, the training data set, which is therefore independent of the validation data set. Once the model is developed using the training data set, the regression coefficients are applied to the dependent variable in the validation set and the predicted results based on those regression coefficients are correlated with the observed scores. A bivariate correlation similar to the R value obtained by statistical regression implies a robust model. The model is therefore cross-validated on an independent data set, which increases the confidence that it will apply to future, independently-gathered data sets.

Further, as there were missing data on a number of variables, which is typical when a large number of variables are included, the result was that the sample size left to conduct the analysis, and the number of questions that could contribute to the model, was substantially reduced. The approach taken was to generate 5 data sets using the SPSS multiple imputation procedure with up to 20% of any variable imputed. Therefore, variables with more than 20% missing data could not be included in the model.  A Model was estimated for each of the 5 imputed data sets in addition to the original data set, and the results were pooled across these 6 models. In this report, the results reported are the pooled results.

Two-way interactions between all variables in the final models were calculated using the Generalised Linear Models module. Interactions which were significant at p-value < 0.01 were reported. The non-parametric, Kruskal-Wallis procedure was used to test for differences between groups of ordinal variables, and the parametric ANOVA procedure was used to test for differences between groups of continuous variables. Stepdown procedures were used to control for familywise error in both parametric and non-parametric tests and to test for significant differences between groups. Where differences were tested on counts the $\chi^2$ test of independence, and adjusted residuals were used to test for cell differences. All analyses were conducted using SPSS 25.

Four underrepresented groups (Aboriginal and Torres Strait Islander, People with Disability, Carer and Recent Migrant) were examined for associations between the equity groups and the SES predictors: SEIFA index, sum of financial stresses and "do you contribute financially to your family" using a generalised linear mixed effect model, with university as a random effect. For predicting "do you contribute financially to your family" a log binomial model was used and when predicting the other SES predictors, a Gaussian model was used.

Demographic comparisons with the national Longitudinal Survey of Australian Youth (LSAY) were conducted using the year 09 cohort for the year 2014. In that year the 09 cohort had the highest percentage of students undertaking an undergraduate degree and were not all newly commencing students.

One question in the student questionnaire generated qualitative data. This question simply asked: "Is there anything else you would like to say". These data were analysed using the software *Leximancer* to generate themes that can be seen across the range of responses.

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## Phase 2 – Staff and student focus groups

Focus groups were identified as the most appropriate approach to operationalise Phase 2 of the project for both the student and staff population cohorts. The focus groups aimed to explore the core issues that emerged from the literature review and the staff and student questionnaires. Furthermore, they aimed to ensure high validity and reliability of the data sets through data triangulation and the saturation of themes and findings. The student focus groups data, along with the student questionnaire, were used to answer research question 4: *What do undergraduate students see as the indicators of socio-economic disadvantage?*

Similarly, the staff focus groups aimed to further explore issues identified through analysis of the staff questionnaire. The data obtained from staff were used to address research question 3: *What do university staff engaged in widening participation and retention see as the indicators of socio-economic disadvantage?*

The focus groups thus enabled the research team to explore the questionnaire findings in greater depth for each specific cohort, and to then compare and contrast findings across the two groups for the development of thematic categories. Focus groups were administered separately for each of the cohort groups: students and university staff. The questions asked, however, were very similar (See Appendix F and Appendix G).

To ensure national representation in the staff focus groups, both face to face and e-focus groups were held (the latter using Zoom Video Conferencing technology to enable multi-site engagement). This approach further enriched the comparative analysis by enabling a diversity of staff from across Australia to be involved in any one group and had the effect of encouraging comparisons in approaches used by the staff in the particular focus group.

The student focus groups were conducted face-to-face with students' being given a gift voucher to cover the cost of their travel to participate in the group. The student focus groups were drawn from the three universities whose students had participated in the quantitative phase.

All of the focus groups were audio-recorded and transcribed for analysis.

### *Staff Focus Groups - Participation Rate*

Relevant staff engaged in equity and widening participation roles were identified from university websites and invited to participate in a focus group. A national university participation rate of 26.2% was achieved in focus group participation (11 of 42 universities). Representation was achieved across urban and regional universities with staff from five states and territories participating.

Five staff focus groups were held. Four of these focus groups were conducted using Zoom Video Conferencing technology, with 16 staff from across the 11 participating universities taking part. All focus groups had representatives from urban and regional areas. The one face to face focus group was held with six staff from a regional multi-campus university in Queensland. In addition, one interview was conducted with a staff person involved in a project that provides culturally engaging and relevant support for Aboriginal and Torres Strait Islander students.

***Location of staff participating in the focus groups:***

New South Wales: four universities

Queensland: four universities

Victoria: one university

Western Australia: one university

Northern Territory: one university

***Student Focus Groups – Participation Rate***

A total of six student focus groups were held with a total of 37 students participating. A larger number had accepted the invitation to participate but, inevitably a substantial number failed to attend. Whilst the sample obtained was smaller than anticipated, the students came from the three universities that completed the questionnaire phase. The issues raised from the quantitative phase could, then, be further explored with participants from the same cohort of students.

The student group was diverse and, while greater participation was envisaged, the primary purpose was to explore identified patterns, trends and correlations that arose from the student questionnaire in greater depth. Triangulation between data sets occurred and saturation of findings between focus groups and student questionnaire data was achieved.

Specific focus groups for Aboriginal and Torres Strait Islander students were attempted across Universities 1 and 2 with the intention of gaining a more nuanced understanding of the experience of Aboriginal and Torres Strait Islander students in higher education. The aim was to ensure such students were not labelled as being from a low socio-economic background by virtue of their Indigeneity, but given an opportunity to discuss in more detail broader factors that may reduce participation and retention within this context. However, only 3 Aboriginal and Torres Strait Islander students from University 2 agreed to attend the focus group, and none from University 1.

***Location of students participating in the focus groups:***

New South Wales: Greater Sydney area

Queensland: Regional Urban Centre

## Phase 3 – Desk audit of university websites

The availability of information on services and what they offer has been found to be critical in decision-making in other fields of study such as when parents are making decisions about service provision for their child with a disability (Johnston, Tracey, Mahmic & Papps, 2013). Without easily accessed information individuals are apt to feel disempowered and unable to make decisions which would lead to their better achieving their aims. For students experiencing disadvantage, two factors are critical. Firstly, they must recognise and acknowledge that they are disadvantaged compared to many of their university peers and, therefore, in need of support. Secondly, they need to be able to identify what support they need. Finally, such supports must be easily found and accessed. Determining how clearly universities set out definitions of and criteria for disadvantage and how easily students can access relevant information on the website may be a significant factor in their successfully completing their studies.

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A desk audit of the websites of all 42 Australian universities was, therefore, conducted concurrently with the other phases to provide a snapshot of the information currently and publicly available on their websites. The aim was to determine:

- what each university identified as "disadvantage";
- the ease with which information on services and resources for those experiencing disadvantage could be found, and
- the nature of the services offered.

This phase was designed to answer Research Question 2: *What information is available on university websites to enable students experiencing socio-economic disadvantage to access services and support? How easily found is such information?*

This phase was undertaken by one member of the research team who used a uniform approach to searching the websites. It should be acknowledged, however, that the researcher was not naïve in the sense that there were clear objectives driving the audit and, most importantly that it was done with the knowledge that information on support services would be present. This may be fundamentally different to the experience of a student who may not be aware that such supports exist nor what search terms to use to find them.

The approach taken was to go to each university's website as a student who was looking to see what support was available might do. This entailed going to future and current students' sections of the website to see if information on supports for those in the equity groups was readily found.

## Phase 4 – Student questionnaire to evaluate approach

In Orientation week ("O-Week") 2019, undergraduate students from University 1 and University 2 were approached when visiting the expo stalls on campus and asked to respond to an online questionnaire of 28 questions set up on the Qualtrics platform. iPads were used to enable students to respond immediately. Ninety-one students accepted the invitation to complete the questionnaire. The questions were based on the factors that had emerged as the best predictors of socio-economic status in the data analysis of the student questionnaire in Phase 2). Student postcode and the number of SES stressors experienced were also included. The rate of missing data amongst study participants was used to measure the willingness of students to answer the questions most related to SES. By comparing the questionnaire results to area based SES, the usefulness of the students' responses in measuring SES was further assessed. The questionnaire is to be found in Appendix H.

The Phase 4 questionnaire was designed to test the findings of Phase 2 with an independent data set and to further refine the answer to research question 5: *"What factors should be included in an accurate, easy-to-obtain and non-intrusive measure of socio-economic disadvantage?"* As suggested by the approach taken, particular emphasis was given to considering the students' willingness to respond to sensitive questions as this had been a factor that had come through strongly, especially in the focus groups phase of the project.

## Ethics approval

Ethics approval for the conduct of the study was obtained through the Western Sydney University Human Research Ethics Committee (Approval number H12582). As this was a mixed-methods sequential study approval was initially sought for the quantitative phase only. Amendments were then submitted and approved when the questions and methods for Phases 3 and 4 had been developed.

It should be noted that it did not prove possible to receive ethics approval for the use of student learning analytics (LA) data in a timely way. The decision was therefore made not to proceed with this aspect of the initial study design. The potential of using LA data for identifying student SES is noted in the literature review.

The three universities included in Phase 1 (the quantitative phase) have not been named to ensure some degree of anonymity as the project was not intended to focus on particular institutions but rather on ways of identifying students experiencing socio-economic disadvantage. The findings across all of the phases suggest that the results can be generalised across the university sector in Australia.

## Results

### Phase 1 – Staff questionnaire and student questionnaire

***Staff questionnaire***

***The respondents and their roles***

Of the 820 staff members invited to participate, 256 completed significant sections of the questionnaire: a 32% response rate. Table 1 shows participants' self-selection of their category of participation at university, and also that the largest group comprised people who identified themselves as "other" than the categories nominated. However, when they were then asked to identify their positions in a text response, they unanimously nominated that they were in student support/engagement or Indigenous related positions.

**Table 1:** Where staff participants work in the universities

| | | |
|---|---|---|
| Other | 85 | 32.08% |
| Widening participation | 47 | 17.74% |
| Aboriginal and Torres Strait Islander centres / services | 44 | 16.60% |
| Academic support services (literacy / numeracy / mathematics) | 27 | 10.19% |
| Disability services | 26 | 9.81% |
| Student support advisor | 15 | 5.66% |
| First year advisor | 6 | 2.26% |
| Student welfare officer | 6 | 2.26% |

79% of participants stated that they worked at a university that was either a city-based university or a university that had campuses in both city and regional centres, a percentage that matches the proportion of enrolled undergraduates from regional areas (Department of Education and Training 2017b). 76% of participants worked

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at a university that had a total student population of greater than 20,000 students. For confidentiality reasons, participants were not asked to name their university nor to nominate any grouping to which it might belong.

### *Staff perceptions of how socio-economic disadvantage is identified*

Only a third of participants were sure that their university had a central repository of information to refer to so that students experiencing socio-economic disadvantage could be identified. Three quarters (76%) of these people thought that there was a need for a more individual-based measure to assess socio-economic disadvantage and 80% thought that the measure would be best implemented at the university level rather than the subject level.

While only 62% of staff participants stated that they were definitely aware of what socio-economic indicators were collected by their university, they were able to suggest the main ways that they thought their university used to identify socio-economic disadvantage (Figure 1). The figure shows that, from the responses of the staff surveyed, the Higher Education Information Management System is not widely used but that SEIFA is widely used, with nearly 70% saying that it was used at their university. All of the other widely used methods relied on some form of self-identification by the student such as identifying as belonging to an equity group or providing other information such as basic demographics or directly requesting assistance.

**Figure 1:** Criteria used to identify students with socio-economic disadvantage (N=237)
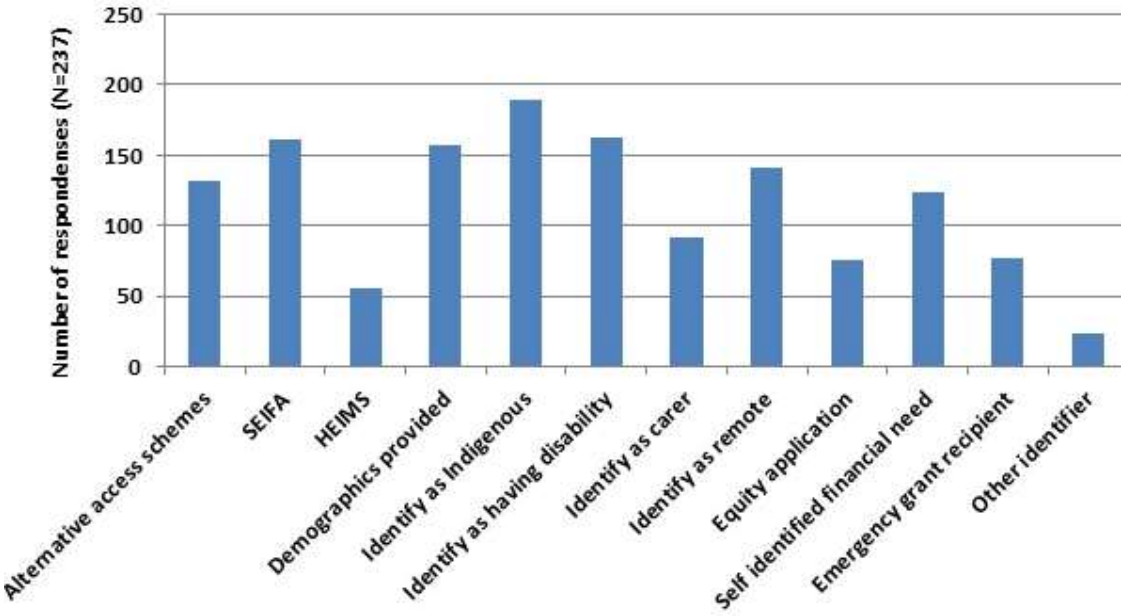
Figure 2 shows that the staff surveyed believe that the more individual-based measures are the more accurate identifiers of socio-economic status. The range of possible responses to this question is on a scale of 1-5 and therefore the 'indifference point' is 3. As can also be seen in the chart below, the staff consulted in this questionnaire think that both SEIFA and HEIMS are of indifferent value in identifying students' socio-economic status. It is acknowledged that HEIMS was not meant to be used in this way; its inclusion in the questionnaire was at the suggestion of the reference group who were interested to determine if any universities were utilising it in this way.

**Figure 2**: Which method staff think is an accurate identifier of socio-economic status (mean and standard error)
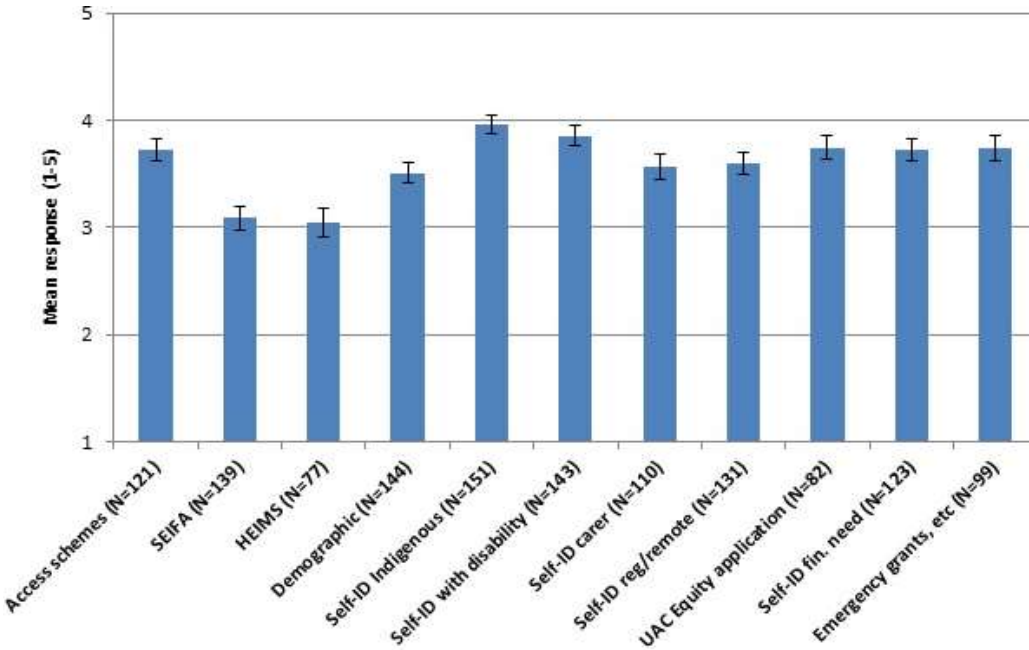


However, while SEIFA was not thought to be an accurate measure (Figure 2), almost 150 out of 250 responders indicated that it should be used (Figure 3).
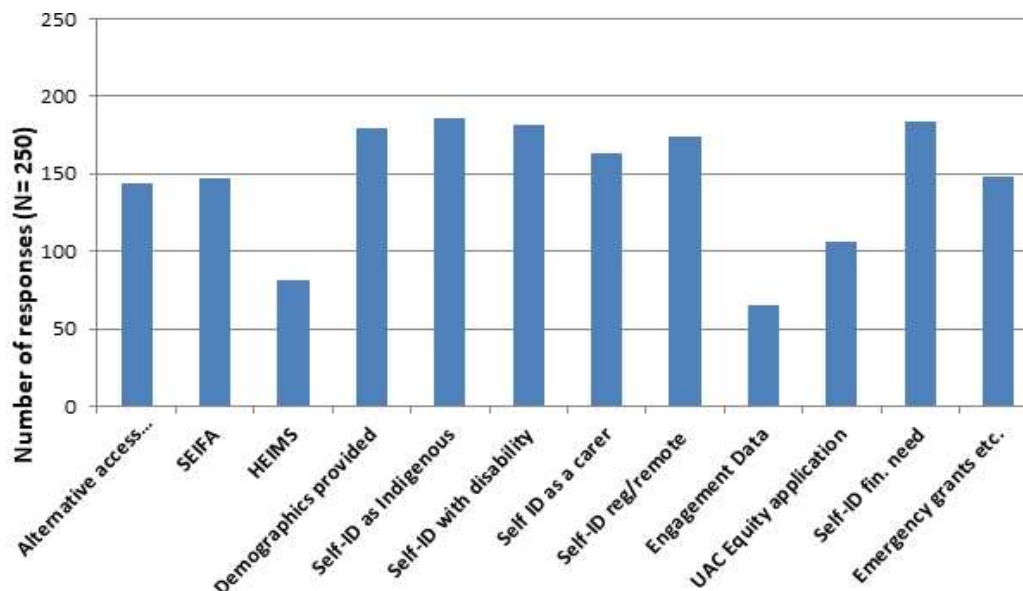
*Student questionnaire*

*The respondents*

To reiterate, between June and September 2018 all undergraduate students at three Australian universities were emailed a link to a questionnaire that explored their perceptions of socio-economic status. Emails were sent to 33,397 undergraduate student email addresses at University 1; 13,018 at University 3; and 30,104 at University 2, of whom 618 were identified as scholarship students. Three weekly reminders were sent with the exception of the 29,486 non-scholarship students at University 2 who received one reminder only.

The questionnaire was completed by 4,114 people; a response rate of 5.4% This figure needs to be understood in context. Students were emailed through each of the universities through "email blasts". As a consequence, the invitation to participate was sent to large numbers of students who were not the target of the research such as international students and, in some instances, students who were in post-graduate programs. The response rate is therefore an underestimation.

There was a female bias in each university with between 69% and 78% of the sample being female and the overall percentage of females being approximately 74% (Table 2). These ratios are higher than the overall Australian undergraduate enrolment ratio in 2016 of 57.8% female (Larkins, 2018). Although that same document points out there is variation among universities and that 2 out of the 42 universities in Australia have more than 70% female undergraduate enrolments. National statistics from the *Longitudinal Surveys of Australian Youth* (LSAY) Survey, Year 09 cohort show that 40.5% of the males in the questionnaire were undertaking an undergraduate degree in 2014, and 50.2% of females were undertaking an undergraduate degree. This also supports the picture of over-representation of females in the current sample as representative of the population.

**Table 2:** Gender breakdown and overall sample proportion by university

|  | University 1 | University 2 | University 3 | Total | LSAY |
|---|---|---|---|---|---|
| **Males N (%)** | 378 (24%) | 372 (30%) | 267 (21%) | 1017 (25%) | 47,117 (42%) |
| **Females N (%)** | 1185 (75%) | 875 (69%) | 1011 (78%) | 3071 (74%) | 65,155 (58%) |
| **Other N (%)** | 8 (0.5%) | 13 (1%) | 5 (0.4%) | 26 (~1%) | - |
| **Overall sample % by University** | 38.2% | 30.6% | 31.2% | 100% | 100% |

Universities 1 and 2 have campuses in one of Australia's major cities and are both in the same state, while University 3 has campuses in regional centres in another state. The campuses of University 2 are in more affluent neighbourhoods than University 1. Differences in the summary statistics of study respondents reported in this section, reflect these differences in the universities.

From Figure 4 it can be seen that the majority of these undergraduate students are under 25 years of age, but that University 2 has the youngest cohort in the study, followed by University 1 and then University 3 which had the oldest cohort of students. A Kruskal-Wallis test showed that there were significant differences in the age distributions of students from the three universities ($H$=173.7, *d.f.*=2, *p-value*<0.001). The mean age group of Universities 1,2 and 3 were 2,08, 1.81 and 2.18 respectively, where the age groups are 1=17-19, 2=20-24 and 3=25+. The age groups are older than the LSAY comparison cohort which is composed of people approximately 20 years of age.

**Figure 4:** Age ranges of participants
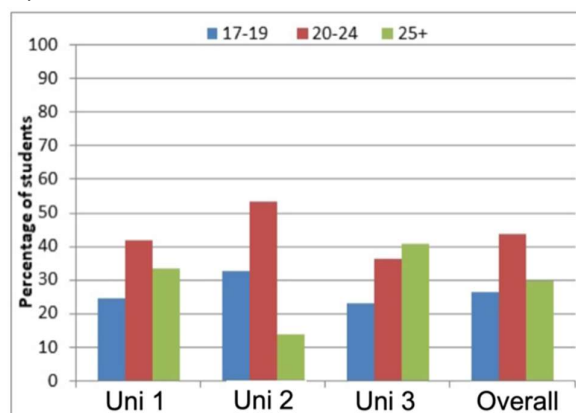
### Students' housing mobility

Table 3 shows the number of places where the students report having lived in the past 5 years. There was a significant difference among the three institutions (*Kruskal-Wallis Test*, *H*=129, *d.f.*=2, *p-value*<0.001). University 3 students had lived in more locations than those at either University 1 or University 2 which were not significantly different from each other (University 3 mean number of places of 2.58 compared to 2.09 and 2.13 respectively). Almost half (48%) of University 3 students had changed postcode in the last year compared with University 1 (25%) and University 2 (30%).

**Table 3:** How many places have you lived in the past 5 years?

| Number of places | University 1 | | University 2 | | University 3 | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| 1 | 725 | 46.4 | 592 | 47.2 | 360 | 28.1 |
| 2 | 409 | 26.2 | 293 | 23.4 | 363 | 28.4 |
| 3 | 201 | 12.9 | 166 | 13.2 | 267 | 20.9 |
| 4 | 100 | 6.4 | 82 | 6.5 | 126 | 9.9 |
| 5 | 56 | 3.6 | 52 | 4.2 | 74 | 5.8 |
| More than 5 | 73 | 4.7 | 68 | 5.4 | 89 | 7 |
| Total | 1564 | 100 | 1253 | 100 | 1279 | 100 |

In exploring housing further, Table 4 shows that University 3 students are much less likely to live with their parents or guardians and more likely to be living with partners, friends, in a share house or on their own than University 1 and University 2 students. This is likely a function of their greater housing mobility, and older age group.

**Table 4:** With whom do you live?

|  | University 1 (%) | University 2 (%) | University 3 (%) |
|---|---|---|---|
| **Parents / guardians** | 56.9 | 65.2 | 26.9 |
| **I live on my own** | 6.1 | 5.7 | 9.4 |
| **Partner** | 8.4 | 6.3 | 14.4 |
| **Partner and child(ren)** | 10.1 | 2.1 | 15.6 |
| **Friends** | 2.3 | 5.6 | 8.6 |
| **Flatmates** | 5.2 | 7.3 | 12.2 |
| **Owners of property** | 0.7 | 0.4 | 0.7 |
| **Other:** | 5.2 | 2.8 | 8.3 |
| **Other family members** | 5.2 | 4.5 | 4 |

With respect to secondary schooling, Figure 5 shows that approximately 50% of students at each university attended a public high school. Students at University 2 were more likely to attend an independent or a Great Public School (GPS), and those at University 3 were more likely to have attended a Catholic school. The percentages below were not remarkably different from the LSAY sample of people undertaking an undergraduate degree, which were 48.2%, 26.5% and 25.3% of public, Catholic and Independent schools respectively.

**Figure 5:** Type of school that students attended prior to enrolment
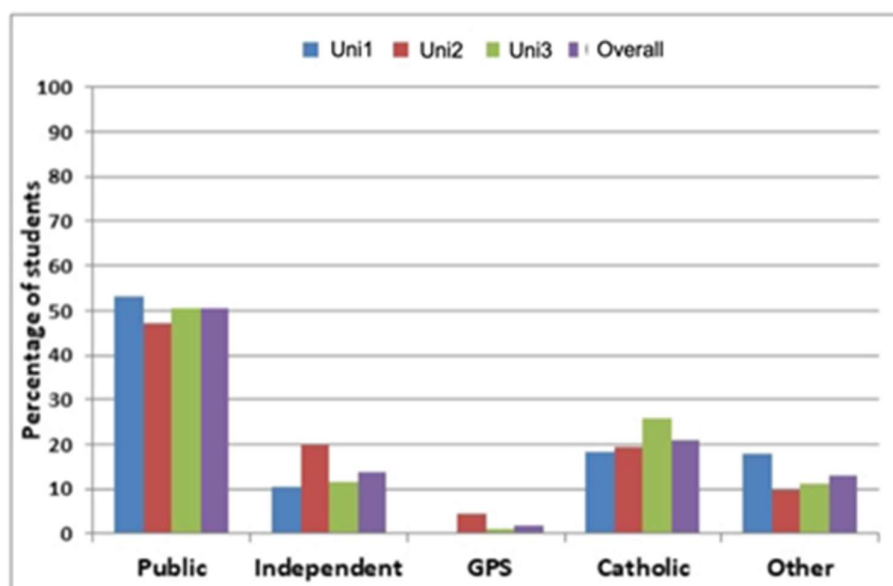
### The ethnic heritage with which the respondents most identified

Respondents were asked to nominate the ethnic heritage with which they *most* identified. A comprehensive list of choices was given with Australian, Australian Aboriginal and Torres Strait Islander being set out as three, separate choices (see Appendix E). Nearly half (47%) of those who responded stated that Australian was not the heritage with which they most identified. The number of students who identified as coming from ethnically diverse backgrounds was much lower at University 3 than it was at the other two universities. Finally, only 21% of participants stated that they spoke a language other than English at home (Table 6). This compares with the LSAY sample of people currently undertaking an undergraduate degree which found that 81.4% were born in Australia.

**Table 6:** Ethnic identification of participants

| | Signifier | % | Signifier | % |
|---|---|---|---|---|
| **University 1** | Identify as not Australian ethnic heritage | 57.4 | Language other than English | 28 |
| | Australian identified ethnic heritage | 42.6 | English | 72 |
| **University 2** | Identify as not Australian ethnic heritage | 52.3 | Language other than English | 24.8 |
| | Australian identified ethnic heritage | 47.7 | English | 75.2 |
| **University 3** | Identify as not Australian ethnic heritage | 29.1 | Language other than English | 7.7 |
| | Australian identified ethnic heritage | 70.9 | English | 92.3 |
| **Overall** | Identify as not Australian ethnic heritage | 47 | Language other than English | 20.7 |
| | Australian identified ethnic heritage | 53 | English | 79.3 |

### Financial factors

As indicated in Table 7, no significant differences were found among the three universities with respect to the amount of money spent travelling to university although the students with the lowest incomes were those at University 2. The latter finding may be related to the relative youth of University 2 students and that they are more likely to be living with a parent or guardian.

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**Table 7:** Money spent travelling to university per week, and pre-tax income

| $ Spent travelling to uni/week | University 1 (%) | University 2 (%) | University 3 (%) | Overall (%) | $ Pre-tax income | University 1 (%) | University 2 (%) | University 3 (%) | Overall (%) |
|---|---|---|---|---|---|---|---|---|---|
| $0-$10 | 11.2 | 15.7 | 25.9 | 17.1 | 0-5000 | 27.8 | 29.8 | 26.6 | 28.0 |
| $11-$20 | 20.8 | 30.4 | 21.5 | 23.9 | 5,000-10,000 | 14.9 | 18.8 | 15.4 | 16.3 |
| $21-$30 | 19.3 | 28.8 | 18.1 | 21.8 | 10,000-20,000 | 22.2 | 27.6 | 24.2 | 24.6 |
| $31-$40 | 12.1 | 11.6 | 11.2 | 11.7 | 20,000-30,000 | 14.2 | 12.5 | 14.2 | 13.7 |
| $41-$50 | 14.0 | 6.9 | 9.6 | 10.5 | 3,0000-40,000 | 9.1 | 5.6 | 7.5 | 7.5 |
| More than $50 | 22.6 | 6.6 | 13.7 | 15.0 | More than 40,000 | 11.7 | 5.7 | 12.2 | 10.0 |

Table 8 shows that the current sample has a higher proportion of individuals of high socio-economic status relative to the LSAY sample.

**Table 8:** The proportions of study participants in the current sample and the LSAY sample, that are defined to be in the lowest, 2nd, 3rd or highest quartile of socio-economic status nationwide, as defined by the SEIFA index of education and occupation

|  | Lowest quartile | 2nd Quartile | 3rd Quartile | Highest Quartile |
|---|---|---|---|---|
| **Current sample** | 16.2% | 21.3% | 21.3% | 41.2% |
| **LSAY sample** | 16.1% | 26.5% | 25.4% | 32.0% |

Figure 6 shows that the majority of students reported that they had not been late in paying nor missed a rental or mortgage instalment due to financial stress. For University 1, more than 30% of students were frequently or sometimes late or missed a payment. Differences between the universities were significant (*Kruskal Wallis Test*, *H*=118.4, *d.f.*=2, *p-value* < 0.001). University 2 students had the fewest issues, followed by University 3 and then University 1 whose students had the most frequent issues. The mean level was 1.84, 1.4 and 1.66 for universities 1,2 and 3 respectively, where the study participant was 1 ="Never", 2 = "Rarely" , 3="Sometimes" and 4="Frequently" late or missed a payment.

**Figure 6:** Percentage of students being late or missing a mortgage or rent payment due to financial stress
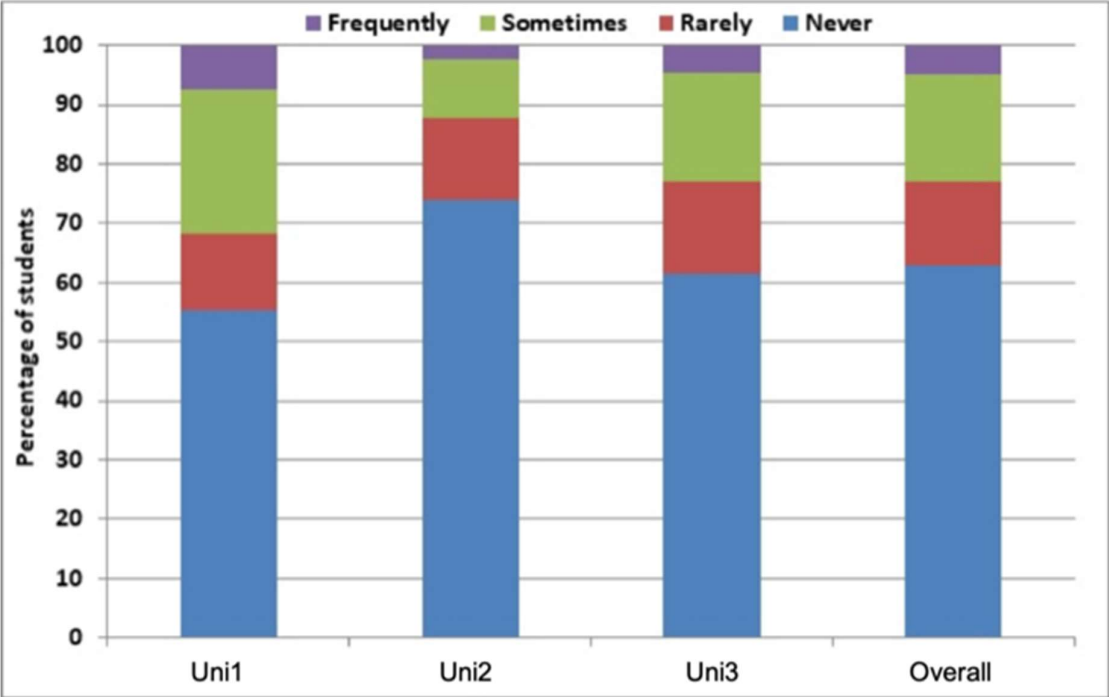


### Aboriginal and Torres Strait Islander students

Although the overall sample of students who identified as Aboriginal or Torres Strait Islander was small, the overall representation is higher than the national student population proportion of 1.8%. This is largely due to the inclusion of University 3 in the sample. Broken down by institution, the Aboriginal and Torres Strait Islander sample at University 3 is lower than might be expected at that university (6.1%), the sample at University 2 was higher than would be expected at that university (0.8%), and the University 1 sample was slightly lower than expected (1.9%) (Department of Education and Training, 2018). The LSAY sample by comparison showed only 1.4% of people undertaking an undergraduate degree identified as indigenous. Unfortunately, even given this representation it is not possible to perform multivariate modelling, such as multiple regression, specifically for this population due to the small sample size.

*Comparison of student demographics related to potential disadvantage at the three universities*

University 1 and University 3 have the highest proportion of students who are the first in their family to attend university. Both of them are well above the percentage at University 2. University 1 stands out as the university with the highest percentage of students admitted via alternative entry, whilst both University 1 and University 3 have a higher percentage of students who are responsible for the care of someone. The differences were smaller for the number of students who are disability registered at the universities, with University 1 and University 2 having slightly higher percentages than University 3. More students at University 1 and University 3 have either had to leave study or leave employment due to the financial pressures of student life, and similarly but from a smaller base, those two universities have a higher percentage of students who have had an out-of-home care experience than students at University 2 (Table 9).

Taken together the statistics below suggest that the two universities that share the most similar demographics are the ones that have the students with the lowest Socio-Economic Index For Areas (SEIFA), University 3 and University 1 who have scores of 977 and 985, respectively, on the Index of Education and Occupation, compared to University 2 where the average SEIFA score had a higher average of 1077[3].

**Table 9:** Percentage of respondents, in demographic categories

| | | Indigenous student (%) | First in family to attend* (%) | Alternative entry pathway (%) | Carer (%) | Disability registered (%) | Left study due to finance stress (%) | Left employment due to finance stress (%) | Experience of out of home care (%) |
|---|---|---|---|---|---|---|---|---|---|
| University 1 | Yes | 1.6 | 43.5 | 37.2 | 25.7 | 11.7 | 15.1 | 44 | 4.7 |
| | No | 98.5 | 54.2 | 62.8 | 74.3 | 88.3 | 84.9 | 56 | 95.3 |
| University 2 | Yes | 1.7 | 23.3 | 15.1 | 13.2 | 10.5 | 8.3 | 41 | 3.7 |
| | No | 98.3 | 75.1 | 84.9 | 86.8 | 89.5 | 91.7 | 59 | 96.3 |
| University 3 | Yes | 5.1 | 39.8 | 19.3 | 21.3 | 8.6 | 13.3 | 46.6 | 4.4 |
| | No | 94.9 | 58.4 | 80.7 | 78.7 | 91.4 | 86.7 | 53.4 | 95.6 |
| Overall | Yes | 2.7 | 36.2 | 24.8 | 20.5 | 10.3 | 12.5 | 43.9 | 4.3 |
| | No | 97.3 | 98.1 | 75.2 | 79.5 | 89.7 | 87.5 | 56.1 | 95.7 |

*Complement percentage is 'not sure' responses.*

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[3] A score for a collection district (CD) is created by adding together the weighted characteristics of that CD. The scores for all CDs are then standardised to a distribution where the average equals 1000 and roughly two-thirds of the scores lie between 900 and 1100. This means that approximately 15% of CDs have a score lower than 900 with the remaining 85% of CDs having a score higher than about 900. Approximately 85% of CDs have a score lower than 1100 with the remaining 15% of CDs having a score higher than about 1100. The scores are used to rank the CDs, so care should be taken when comparing scores. For example, an area with a score of 500 is not twice as disadvantaged as an area with a score of 1000; it just had more markers of relative disadvantage.
(https://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/2039.0Main%20Features62006)

In Table 10 it can be seen that there is little difference between students in the three universities on whether they are employed, have a health care card, a Centrelink benefit, have applied for financial assistance or have identified themselves as having chronic health issues.

**Table 10:** Socio-economic and health indicators

|  | Response | Currently employed * (%) | Health Care card (%) | Centrelink benefit (%) | Applied for financial assistance (%) |
|---|---|---|---|---|---|
| **University 1** | Yes | 59.9 | 40.8 | 35.9 | 21.8 |
|  | No | 21.3 | 59.2 | 64.1 | 78.2 |
| **University 2** | Yes | 67.1 | 37.4 | 30.6 | 18.5 |
|  | No | 18.8 | 62.6 | 69.4 | 81.5 |
| **University 3** | Yes | 61.4 | 36.7 | 37.3 | 22.3 |
|  | No | 27.3 | 63.3 | 62.7 | 77.7 |
| **Overall** | Yes | 62.6 | 38.5 | 34.7 | 20.9 |
|  | No | 22.4 | 61.5 | 65.3 | 79.1 |

*complement percentage is 'currently seeking work'*

Table 11 below shows that students at University 1 and University 3 are more likely to contribute support to their family, less likely to be living with their parent or guardian and that students at University 1 are less likely to be covered by private health insurance. Students at each university were approximately equally likely to be studying full time.

**Table 11:** Percentage of participants in socio-economic categories.

|  | Response | Contribute to support of family (%) | Living with Parent/ Guardian (%) | Private Health Insurance* (%) |
|---|---|---|---|---|
| **University 1** | Yes | 54.7 | 58.1 | 38.5 |
|  | No | 45.3 | 41.9 | 54.1 |
| **University 2** | Yes | 30.9 | 67.8 | 55.8 |
|  | No | 69.1 | 32.2 | 36.2 |
| **University 3** | Yes | 43.7 | 26.9 | 49.6 |
|  | No | 56.3 | 73.1 | 45.6 |
| **Overall** | Yes | 44 | 51.3 | 47.2 |
|  | No | 56 | 48.7 | 46 |

*complement percentage is 'not sure'*

However, a clear demographic difference amongst the three universities emerges when the remoteness classification of the students' postcodes according to the Australian Statistical Geography Standard (ASGS) 2016 is taken into account (Table 12). The caveat that must be attached to this table is that the ASGS areas do not map exactly to postcodes, and there is sometimes an overlap of two ASGS areas within a postcode. To ensure confidentiality the current study included only postcode as a residential area identifier. The assignment of ASGS area in the database sometimes related to two postcodes and the authors could find no correspondence file that had been created by the ABS between ASGS and postcode. The result was that the two files to be merged had no unique identifier. Where there were two ASGS areas in one postcode the first remoteness classification was applied to the first postcode in the questionnaire file and the second classification to subsequent instances of the postcode. The bias that resulted from the merge therefore tended to increase the number of more remote classifications. The proportion of affected postcodes is virtually identical in NSW and Queensland postcodes at 24.8% and 24.7% respectively. The absolute numbers within each ASGS classification should not therefore be relied upon, but large and clear differences between institutions should be reliable as the bias is uniform. University 3 students, for example, come almost entirely from outer regional and remote Australia, whereas students from University 1 and University 2 come almost entirely from inner regional and major city areas.

Comparing the remoteness area classification tables for the current postcode and the postcode from the year previous to enrolment, it can be seen that in University 1 and University 2 there was a small movement from regional areas to more urban areas, but the reverse was true for University 3 (Table 12, Table 13). Based on the data from this questionnaire about 11.2% of University 3 students moved to a more regional area than their previous address, whereas the movement for University 1 and University 2 was on the order of a few percent of students moving to a less regional area. The LSAY survey does not use the ASGS standard and instead uses metro or non–metro as the categories. The definition of "metro" in the LSAY is a centre with a population of more than 100,000 people, and "non-metro" is a place with a population of less than 100,000 people. The principal feeder cities for University 3 both have populations greater than 100,000. Furthermore, the determination of whether the person was metro or non-metro for the purposes of LSAY occurs on entering the study. Thus it is difficult, if not impossible, in light of the many differences to make a direct comparison between the samples. Nevertheless, the comparison suggests that there is perhaps an oversample of large conurbations as 18.2% of the LSAY sample of people undertaking undergraduate studies were initially from centres with a population of less than 100,000.

**Table 12:** Percentage of students in remoteness areas in the three participant universities, based on their current postcode

|  | University 1 (%) | University 2 (%) | University 3 (%) | Total (%) |
|---|---|---|---|---|
| **Major Cities of Australia** | 85.5 | 95.8 | 2.0 | 62.6 |
| **Inner Regional Australia** | 12.9 | 4.0 | 1.2 | 6.6 |
| **Outer Regional Australia** | 1.5 | 0.2 | 78.2 | 25.0 |
| **Remote Australia** | 0.1 | 0.0 | 14.8 | 4.6 |

**Table 13:** Percentage of students in remoteness areas in the three participant universities, based on their postcode for the year before enrolment

| | University 1 (%) | University 2 (%) | University 3 (%) | Total (%) |
|---|---|---|---|---|
| **Major Cities of Australia** | 88.5 | 87.2 | 9.1 | 63.3 |
| **Inner Regional Australia** | 9.3 | 9.3 | 5.2 | 8.0 |
| **Outer Regional Australia** | 2.1 | 3.3 | 64.8 | 22.0 |
| **Remote Australia** | 0.1 | 0.1 | 11.9 | 3.8 |

The mobility of the University 3 students compared with those from the two other universities is also quite apparent when the percentage of people who have changed postcodes from the previous year to their commencement is considered (Table 14).

**Table 14:** Percentage of students who changed postcodes from the previous year.

| | University 1 (%) | University 2 (%) | University 3 (%) | Total (%) |
|---|---|---|---|---|
| **Changed postcode** | 25.3 | 30.7 | 48.2 | 34.1 |
| **Same postcode** | 74.7 | 69.3 | 51.8 | 65.9 |

An analysis of variance of the summed indicators of socio-economic stress shows that differences between the universities were found for most questions. Post-hoc comparisons (via homogeneous subsets analysis) were made to determine how the universities differed. For three of the indicators, University 1 and University 3 were homogeneous, and on two indicators University 1 and University 2 were homogeneous (Table 15). Students at University 2 had fewer family or friends to support than students at University 3 who in turn supported fewer people than students at University 1. Families or partners paid for more expenses for University 3 students than they did for University 1 or University 2 students. There were no differences between the universities regarding the amount of study that had been missed due to being a carer. Students at University 1 and University 3 had a lower number of financial commitments than students at University 2, whereas students at University 2 were less likely to feel financial stress than students at University 3 or University 1. However, students at University 3 felt that they had more socio-economic supports and had missed less study due to work commitments than those at University 2 or University 1. The students at University 2, on average, came from a higher socio-economic status level than those at University 1 who came from a slightly higher level than students at University 3.

**Table 15:** Analysis of variance of summed stress indicators

| Question | Institution | N | Overall F | p-value | Mean Indicator of Financial Stress | Homogeneous subset |
|---|---|---|---|---|---|---|
| **Sum of family or friends supported** | University 2 | 319 | 11.62 | < 0.001 | 1.47 | 1 |
| | University 3 | 492 | | | 1.63 | 2 |
| | University 1 | 749 | | | 1.74 | 3 |
| **Sum of expenses that the family/partner pays** | University 1 | 1093 | 6.30 | < 0.001 | 3.49 | 1 |
| | University 2 | 964 | | | 3.67 | 1 |
| | University 3 | 857 | | | 3.95 | 2 |
| **Sum of study missed due to being a carer** | University 2 | 141 | 2.17 | 0.12 | 3.57 | N/A |
| | University 3 | 248 | | | 3.92 | N/A |
| | University 1 | 352 | | | 3.95 | N/A |
| **Sum of financial commitments** | University 1 | 1402 | 139.38 | < 0.001 | 9.78 | 1 |
| | University 3 | 1187 | | | 9.91 | 1 |
| | University 2 | 1118 | | | 11.72 | 2 |
| **Sum of amount of financial stress** | University 2 | 1053 | 152.63 | < 0.001 | 10.83 | 1 |
| | University 3 | 1149 | | | 16.23 | 2 |
| | University 1 | 1333 | | | 16.71 | 2 |
| **Sum of socio-economic supports** | University 1 | 1488 | 15.71 | < 0.001 | 7.69 | 1 |
| | University 2 | 1187 | | | 7.88 | 1 |
| | University 3 | 1225 | | | 8.49 | 2 |
| **Sum of study missed due to employment** | University 3 | 749 | 6.56 | < 0.001 | 3.86 | 1 |
| | University 2 | 798 | | | 4.14 | 2 |
| | University 1 | 889 | | | 4.23 | 2 |
| **SEIFA Index of Education and Occupation** | University 3 | 1275 | 695.87 | <0.001 | 977.35 | 1 |
| | University 1 | 1567 | | | 985.43 | 2 |
| | University 2 | 1257 | | | 1073.04 | 3 |

**Table 15 (cont.):** Analysis of variance of summed stress indicators

| Question | Institution | N | Overall F | p-value | Mean Indicator of Financial Stress | Homogeneous subset |
|---|---|---|---|---|---|---|
| **Sum of family or friends supported** | University 2 | 319 | 11.62 | < 0.001 | 1.47 | 1 |
| | University 3 | 492 | | | 1.63 | 2 |
| | University 1 | 749 | | | 1.74 | 3 |
| **Sum of expenses that the family/partner pays** | University 1 | 1093 | 6.30 | < 0.001 | 3.49 | 1 |
| | University 2 | 964 | | | 3.67 | 1 |
| | University 3 | 857 | | | 3.95 | 2 |
| **Sum of study missed due to being a carer** | University 2 | 141 | 2.17 | 0.12 | 3.57 | N/A |
| | University 3 | 248 | | | 3.92 | N/A |
| | University 1 | 352 | | | 3.95 | N/A |
| **Sum of financial commitments** | University 1 | 1402 | 139.38 | < 0.001 | 9.78 | 1 |
| | University 3 | 1187 | | | 9.91 | 1 |
| | University 2 | 1118 | | | 11.72 | 2 |
| **Sum of amount of financial stress** | University 2 | 1053 | 152.63 | < 0.001 | 10.83 | 1 |
| | University 3 | 1149 | | | 16.23 | 2 |
| | University 1 | 1333 | | | 16.71 | 2 |
| **Sum of socio-economic supports** | University 1 | 1488 | 15.71 | < 0.001 | 7.69 | 1 |
| | University 2 | 1187 | | | 7.88 | 1 |
| | University 3 | 1225 | | | 8.49 | 2 |
| **Sum of study missed due to employment** | University 3 | 749 | 6.56 | < 0.001 | 3.86 | 1 |
| | University 2 | 798 | | | 4.14 | 2 |
| | University 1 | 889 | | | 4.23 | 2 |
| **SEIFA Index of Education and Occupation** | University 3 | 1275 | 695.87 | <0.001 | 977.35 | 1 |
| | University 1 | 1567 | | | 985.43 | 2 |
| | University 2 | 1257 | | | 1073.04 | 3 |

### *Multiple regression models*

Multiple regression models were used to estimate what combination of indicators of socio-economic disadvantage (as measured by the student questionnaire) could significantly predict the SEIFA Index of Education and Occupation. Those indicators that could significantly predict SEIFA (as indicated by a p-value < 0.05), were deemed to be useful in developing an individual based measure of socio-economic disadvantage.

Multiple regression models were also created to see which indicators could significantly predict the number of financial stresses that a student experiences.

As explained in the methods section, cross validation was used in that the models were developed on a training data set and then tested on a validation data set. Multiple imputation was used to account for missing data. The results presented are pooled across multiple imputations.

Initial models were trialled on the training data set using the SEIFA Index of Education and Occupation as the dependent variable with all three universities included, but the resulting model did not provide an accurate prediction of the SEIFA Index. To investigate if the bad prediction performance of the model was due to differences among the universities, models were developed separately for each university. The models for University 2 and University 1 were similar in both their prediction performance and their list of good indicators, whereas the model derived for University 3 was different in both prediction performance and list of indicators. Therefore, it was decided to incorporate the data from University 1 and University 2 into a single analysis and create a separate model for University 3. This resulted in a reasonably strong model for University 2 and University 1 which contained a range of questions that can be used to determine the socio-economic status of undergraduate students (Table 15). When the models were applied to the validation data set to predict SEIFA (by using he β-coefficients of the regression equation developed using the training data set), the correlation between the true SEIFA values and the predicted SEIFA values is quite high ($r_{validation}$=0.470).  This was not significantly less than the correlation between the true SEIFA values in the training data set, compared to the predicted SEIFA values using the training data set ($r_{training}$=0.518) (Test for difference in correlation, *z*=1.37, *p-value*>0.05). This suggests that if the questionnaire was administered to other students from University 1 and 2, the model developed to predict SEIFA for students of University 1 and University 2, would be able to predict SEIFA just as well as the students in this questionnaire.

**Table 16:** Regression model that includes the significant predictors of the SEIFA index, for Universities 1 and 2. See Appendix Table A1 for the full list of predictors

| SEIFA Index Universities 1 and 2 $r_{training}$=0.518 | β coefficient | t statistic | Signif-icance | Interpretation | Direction | |
|---|---|---|---|---|---|---|
| Do you have a university parking permit? | 39.03 | 7.499 | < 0.001 | Yes, higher SEIFA | 1=yes | 0= No |
| How many places have you lived in in the last 5 years? | 8.62 | 5.44 | < 0.001 | More places higher SEIFA | Ordinal: More places higher score | |
| Do you contribute financially to support your family? | -23.14 | -5.182 | < 0.001 | Not contribute higher SEIFA | 1 =yes | 0 = No |
| First of your family to attend uni. | -16.2 | -3.747 | < 0.001 | First to attend, lower SEIFA | 1 =yes | 0= No |
| Where do you live during semester | -23.17 | -4.453 | < 0.001 | Parent lower SEIFA | 1= Parent/Guardian | 0 = all other accommodation options |
| Do you have health Insurance | 25.24 | 5.335 | < 0.001 | Private higher SEIFA | 1= Private | 0= Not sure/not covered |
| Did you come to university through an alternative entry pathway? | -21.57 | -3.826 | 0.001 | Alternative entry lower SEIFA | 1 =yes | 0= No |
| Language spoken at home | 11.22 | 3.608 | 0.001 | English, higher SEIFA | 1 = Other language | 0 = English |
| Do you receive a Centrelink benefit to support you at university? - | -18.81 | -3.42 | 0.001 | No Centrelink, higher SEIFA | 1 =yes | 0 = No |
| Employment | 13.05 | 2.674 | 0.008 | Employed higher SEIFA | 1 =yes | 0 = No |
| ETHNICITY | -11.2 | -2.192 | 0.031 | Aus. Higher SEIFA | 1 = other than Australian | 0 = Identify as Australian |

The model that was derived from the University 3 data had considerably fewer indicators and was considerably weaker at predicting SEIFA. The most significant variable in the University 3 model, namely "How much money is spent travelling to university?", did not significantly predict the SEIFA index in the University 1 and 2 model (Tables 16 and 17). When the regression equation was applied to the data in the validation data set, the resultant correlation between the predicted SEIFA values and the true SEIFA Index was lower than for the model for University 1 and 2 at r=0.215. The model did cross-validate reasonably well in that the correlation did not decrease significantly between the validation data set ($r_{validation}$=0.215) and the training data set ($r_{training}$=0.301) (Test for differences between correlations, $z$=1.31, $p$>0.05).

**Table 17:** Regression model that includes the significant predictors of the SEIFA index, for University 3. See Appendix Table A2 for the full list of predictors

| SEIFA Index University 3 $r_{training}$=0.301 | β coefficient | t statistic | Signif-icance | Interpretation | Direction | |
|---|---|---|---|---|---|---|
| Do you contribute financially to support your family? | -9.91 | 2.872 | 0.005 | No, higher SEIFA | 1 = yes | 0 = No |
| Approximately how much money would you spend a week on travelling to university (including ticket costs, tolls, petrol and parking)? | -3.58 | -3.857 | <0.001 | Less money spent, lower SEIFA | Higher means more money spent | |
| How many places have you lived in in the last 5 years? | 2.27 | 2.281 | 0.023 | Higher number means higher SEIFA | Ordinal, more places lived is higher number | |

When the same analysis was performed using the SEIFA Index based on the student's postcode in the year before enrolment, the model for University 1 and University 2 was weaker than the model using current postcode, r=0.455, whereas the model for University 3 was at least equivalent (*r*=0.31).

A multiple regression model was developed to predict the number of financial stressors that a student is experiencing. This regression model stressors yielded a single model that applied well to students of all three universities. For this model, the correlation between the predicted number of stressors and the true number of stressors was $r_{training}$=0.606 for the training data set (Table 18). This correlation was higher than the corresponding correlation in the model for predicting SEIFA, based on University 1 and University 2 data (table 16) and considerably higher than the correlation based on University 3 data (Table 17). When the regression equation derived from the training data set was used to predict the number of stressors for the validation data set, the correlation between the actual and predicted number of financial stressors was practically identical to the correlation in the training data set ($r_{validation}$=0.616).

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**Table 18:** Regression model that includes the significant predictors of the sum of financial stressors, for all 3 Universities. See Appendix Table A3 for the full list of predictors

| Sum of Stressors, University 1,2 and 3 $r_{training}$=0.606 | β coefficient | *t statistic* | Signif-icance | Interpretation | Direction | |
|---|---|---|---|---|---|---|
| Approximately how much money would you spend a week on travelling to university (including ticket costs, tolls, petrol and parking)? | 0.902 | 8.27 | <0.001 | More money spent more stressed | Higher, more money spent | |
| Are you involved in caring for another person / persons? | 1.266 | -2.743 | 0.009 | No, less stressed | 1 = yes | 0 = No |
| Do you contribute financially to support your family? | 1.637 | -4.826 | <0.001 | If yes, more stressed | 1 = yes | 0 = No |
| Do you have a university parking permit? | 1.862 | -5.144 | <0.001 | If yes more stressed | 1 =yes | 0 = No |
| Gender Female | 1.128 | 3.272 | 0.001 | Females more stressed | 1 = Male | 2 = Female |
| Have you applied for financial assistance from the university? | 1.06 | -2.549 | 0.014 | No, less stressed | 1 = yes | 0 = No |
| Have you ever had to leave paid employment because of your university studies? | 1.293 | -3.945 | <0.001 | No, less stressed | 1 = yes | 0 = No |
| Have you taken any leave from your current course of study due to financial constraints? | 2.753 | -4.787 | <0.001 | If yes, more stressed | 1 = yes | 0 = No |
| How old are you? | 1.968 | 6.808 | <0.001 | Older more stressed | Ordinal, high score older | |
| How satisfied are you with your university experience? | -0.644 | -4.16 | <0.001 | Less satisfied more stressed | Ordinal, high score better | |
| Students often find it difficult to balance university study, working and being able to pay their mortgage / rent. Since being enrolled at university, have you ever missed or been late in making a mortgage / rental payment? | 4.12 | 10.308 | <0.001 | More difficulty more stressed | Ordinal, higher score more difficulty | |
| Where do you live during semester | -3.187 | -6.619 | <0.001 | With parent, less stressed | 1= Parent/ Guardian | 0 = all other accommodation options |

For all the models in the study the Variance Inflation Factor and Cook's D were well within acceptable limits and there were no individuals with a markedly higher Cook's D when inspected using a scree slope chart of the values.

To summarise the regression analyses, the only variable that significantly predicted lower SES as measured both by the SEIFA and number of financial stressors at all three universities, was whether the study participants answered "*yes*" to "*Do you contribute financially to support your family?*".

A lower SEIFA index was associated with:
1. being first in family to attend university,
2. not having health insurance,
3. coming through an alternative entry pathway,
4. speaking a language other than English at home,
5. receiving Centrelink benefits,
6. not being employed and,
7. identifying as an ethnicity other than Australian

for study participants at University 1 and University 2.

The lower the number of places lived in the last 5 years was associated with a lower SEIFA index in all three universities. These associations were statistically significant, however none of these indicators were significantly associated with having a higher number of financial stressors.

The indicators that were associated with having a higher number of financial stressors were:
1. caring of another person/persons,
2. identifying as female,
3. applying for financial assistance from the university,
4. having to leave paid employment because of university studies,
5. having taken leave from study due to financial constraints,
6. being older,
7. being less satisfied with the university experience and,
8. missing or being late on a mortgage/rental payment.

While these indicators were statistically significant for a model that included all 3 universities, they were not associated with the area-based SEIFA measure of SES.

The answer to the question; "Approximately how much money would you spend a week on travelling to university (including ticket costs, tolls, petrol and parking)?", indicated that less money spent significantly predicted lower SES as measured by the SEIFA index at University 3 but not at University 1 and University 2. This same measure significantly predicted the number of stressors at all universities. However, more money spent predicted a higher number of financial stressors. Similarly, if the study participants indicated that they had a university parking permit or did not live with their parents, they tended to have lower SES according to SEIFA but less financial stressors. As a consequence, it would be ill advised to use any of these questions to develop an individual measure of socio-economic status.

There are five equity groups worthy of further analysis with respect to their socio-economic disadvantage: Aboriginal and Torres Strait Islanders, those living with disability, carers, women in non-traditional academic streams (e.g. STEM) and recent migrants. As there were issues with anonymity in collecting school information on the student questionnaire, it was not possible to look at women in non-traditional academic streams. Identifying as having an ethnicity other than Australian was used as proxy for being a migrant. The rationale for this was that those with a longer history in Australia would identify as Australian. This analysis was tangential to the main aims of the project but should still be viewed with some caution. A more direct measure would have been preferable. For the four remaining equity groups, whether the group had a different rate of contributing financially to family (row 1, table 19), a lower SEIFA index (row 2, table 19) and higher financial stress (row 4, table 19) were examined. As it has already been determined that there is an association between contributing financially to family and low SEIFA index/high financial stress, whether these relationships differed for the equity group (rows 3 and 5, Table 19) was also considered.

For equity group 1, those that identified as Aboriginal or Torres Strait Islander (ATSI) were more likely to contribute financially to family (Relative Risk(RR) = 1.15, not significant), have a lower SEIFA index ($\beta$=-6.4, not significant) and more financial stress ($\beta$=3.3, highly significant). The associations between contributing financially to family and the SEIFA index and financial stress, were not different for those students who identified as Aboriginal or Torres Strait Islander, relative to the rest of the student population.

For equity group 2, surprisingly, those students who have or plan to register a disability, were of significantly higher SES as measured by the SEIFA index ($\beta$=11). This may be due to the combined barriers of low SES and disability, preventing students with disability from all but the higher SES background from attending university. There was a strong negative interaction between disability and contributing financially to family ($\beta_{int}$=12.6), suggesting that within the cohort of students who contribute financially to family, students registering for a disability do not have higher SES. Those students who have or plan to register a disability, exhibit significantly higher financial stress ($\beta$=2.7).

For equity group 3, carers were almost two times more likely to contribute financially to family (RR=1.78), suggesting there is a strong overlap between this equity group and contributing financially to family. Not surprisingly then, students who identified as a carer had lower SEIFA index ($\beta$=-10), and more financial stress ($\beta$=5.1). The associations between contributing financially to family and the SEIFA index and financial stress, were not different for carers relative to the rest of the student population.

For equity group 4, those students who identified as having an ethnicity that was not Australian, were significantly more likely to contribute to family (Relative Risk=1.2), had a much lower SEIFA index ($\beta$=-25), but did not have higher financial stress ($\beta$=-0.32). The associations between contributing financially to family and the SEIFA index and financial stress, were not different for those students who identified their ethnicity as something other than Australian relative to those students who did.

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**Table 19:** The relationship between the four underrepresented groups and contributing financially to family, SEIFA index and a financial stress. The effect sizes given are beta coefficients (or odds ratios for row 1) and their corresponding 95% confidence intervals (CI).  Significant effects are shown in boldface

| | Aboriginal or Torres Strait Islander | Having or planning to register a disability | Carer | Ethnicity other than Australian |
|---|---|---|---|---|
| Relative Likelihood (and 95% CI) for Contributing Financially to Family, for the given Equity Group | 1.15 (0.95,1.4) | 1.05 (0.95,1.16) | **1.78 (1.67,1.9)** | **1.22 (1.14,1.31)** |
| Increase/decrease (and 95%CI) in the SEIFA index, for the given Equity Group | -6.44 (-20.52,7.64) | **11.07 (4.39,17.75)** | **-9.93 (-15.73,-4.14)** | **-24.93 (-29.5,-20.35)** |
| Interaction (and 95%CI) between Equity Group and Contributing Financial to Family, on the SEIFA index. | -0.31 (-28.72,28.1) | -12.64 (-25.93,0.64) | 6.66 (-5.72,19.05) | -0.02 (-9.1,9.05) |
| Increase/decrease (and 95%CI) in the sum stressors, for the given Equity Group | **3.25 (1.45,5.06)** | **2.71 (1.87,3.55)** | **5.1 (4.38,5.82)** | -0.32 (-0.93,0.29) |
| Interaction (and 95%CI) between Equity Group and Contributing Financial to Family, on the sum of stressors. | -0.97 (-4.48,2.54) | -1.37 (-3.01,0.28) | 0.3 (-1.23,1.82) | 1 (-0.17,2.16) |

Finally, responses to the opportunity for students to add any comments related to the issues raised in the questionnaire were considered through an analysis using the Leximancer software. The results are displayed graphically in Figure 7 below.

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The qualitative analysis of the question "What else would you like to say" indicated a major theme around work, and connections to days of the week and income, suggesting issues with clashes between work and classes. This was then explored further in the focus groups which formed Phase 2.

*Discussion*

Possibly the most striking feature of the results arising from the quantitative phase is the lack of any clear similarity between the socio-economic variables of University 3 and the two other universities in the study. The models that applied to the SEIFA scores were markedly different. The model to predict SEIFA for University 3 was weak and only contained three variables compared with 11 variables in the University 1/University 2 model. These SEIFA models did cross validate, although the prediction performance was slightly lower in the validation data set than the training data set. The model that was based on the sums of financial stress that the students were feeling, on the other hand, was a stronger model, accounting for just under 40% of the shared variance in perceived financial stress compared with just under 27% of SEIFA for the University 1/University 2 model and just under 10 % for the University 3 model. The cross validation of that model was also stronger, showing a slight increase in the validation data set relative to the training data set, rather than a decrease.

The clearest observed difference between the universities that may account for the SEIFA models being different between University 1, University 2 and University 3 is the regional nature of University 3. Regional and remote students have been found to confront social and cultural changes and stresses that are not shared with other university students and which affect their wellbeing (Cardak, Brett, Bowden, Vecci, Barry, Bahtsevanoglou & McAllister 2017; Karimshah, Wyder, Henman, Dwight, Capelin, & Short, 2013). Further, although other research has shown that the previous postcode measure was a better indicator of SEIFA status (Cardak et al., 2017;Edwards & van der Brugge 2013), the current study found that the model derived from the SEIFA of the previous postcode for University 1 and University 2 was slightly weaker and the model for University 3 was just equivalent to that derived from current postcode which contradicts previous findings. None of the current findings suggest that the SEIFA Index of Occupation and Education can be strongly and reliably predicted from the types of variables that have been investigated in this study. An individual measure thus needs to be used in conjunction with it.

Cardak et al (2017) also found that approximately one third of students from regional areas re-located, many to a metropolitan location, whereas the current study found that 48% of students at University 3 had changed postcodes in the past year and that the main movement was towards regional and remote areas. Why this should be so was not investigated in the current study but may warrant future investigation to determine if it is simply an artefact of the current sample or a change in trend in choice of university location. This finding compares with approximately one quarter to one third of people who had changed postcodes at University 1 and University 2, and mainly towards less regional areas. University 3 is in some ways a unique institution in that it is a relatively large institution that is located in an outer regional area. It has programs that are able to draw people from less remote settings. Yet, the large majority of students at University 3 are from outer regional and remote areas. Cardak et al (2017) also state that "The pattern evident in 2014 suggests that there are only a handful of regions with campuses operating at sufficient scale and the reputation to act as net recruiters of students from a more distant regional geography" (p.viii). This suggests that further study of the demographics and reasons for

relocating to a more regional area so as to study at University 3 would yield useful information for higher education in Australia, particularly for increasing the low participation of regional students.

A number of indicators of SES (such as first in family, Centrelink benefits, etc.) were found to be significantly associated with the area-based SEIFA measure of SES at University 1 and 2, but not University 3. This may be due to the fact that University 3 is not in one of Australia's major cities, and its students are more likely to have postcodes that covered very large areas. Use of SEIFA in such areas is therefore contraindicated and warranting further research. The calculation of the SEIFA index would have been more refined if the questionnaire asked for an address rather than just postcode, so that the index could have been based on Statistical Area 2. However, this was not possible from an ethical point of view. These same indicators were not significantly associated with financial stress. This suggests that these indicators were associated more with where the study participants live than with financial problems they are undergoing.

There was also a number of indicators of SES (such as caring for another person, identifying as female, etc.) that were found to be significantly associated with financial stress, but not with the area-based SEIFA measure. While these may be a good indicator of who is facing financial problems, they may or may not necessarily have experienced socio-economic disadvantage.

The single best indicator of SES was whether the study participants contributed financially to support their family. This indicator was significantly associated with the SEIFA index in all three universities, and with the number of financial stressors. A similar indicator was also shown to be associated with low SES in the 2017 Universities Australia *Student Finances Survey,* which found that low SES students were more likely to be financially supporting dependents, with 16% of low SES students doing so compared with 11% among non-low SES students (see p.51 and 52). In Phase 4, this indicator will be assessed to see if it predicts SES in an independent sample, and whether study participants are willing to divulge this information.

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## Phase 2 – Staff and student focus groups

As indicated in the methodology section, the staff and student focus groups were designed to further explore the findings derived from the questionnaires. Specifically, they aimed to answer research question 3: What do university staff engaged in widening participation and retention see as the indicators of socio-economic disadvantage? and research question 5: What do undergraduate students see as the indicators of socio-economic disadvantage?

In addition, staff were asked to discuss the approaches used by their universities to identify students experiencing socio-economic disadvantage and how effective they thought these to be. Students were encouraged to discuss their experiences of disadvantage, where applicable and issues they saw as arising from the need to either self-identify or be identified as being disadvantaged by their university.

As already noted, 11 universities were represented in the staff focus groups. The student focus groups, on the other hand, comprised participants from the three universities that had been the focus of the quantitative phase. As such, they are effectively case studies of the views and experience of those three student cohorts.

### *Analysis of Focus Groups*

Thematic analysis of the focus group transcripts was conducted by using an interpretive framework. For both the student and staff focus groups two of the investigators developed a thematic analysis spreadsheet for consistency of the analysis of all focus groups. A single transcript was read separately by two of the research group. The transcript was reviewed in detail, documenting emergent themes, sub-themes, and contrasting elements among the participants to enable the identification of different issues in relation to the location of the institution, expertise of focus group members in relation to the area, alongside important divergences with the student questionnaire findings. Thematic analysis was then used to break down, examine and compare material within the themes (Braun & Clarke, 2006). The researchers then met together. Areas of conflict were identified in the thematic coding (on only a single occasion) which was discussed in detail for clarification. This process allowed for agreement on the inter-relationship of the themes. Final adjustments were then made to the thematic template so that it could be consistently applied to each of the focus groups.

As previously noted, the questions asked of the staff and students were very similar. Both cohorts discussed the approaches to the identification of disadvantage taken at their universities and their assessment of the efficacy of these. They were also asked for processes and/or questions which would lead to eligible students being more easily identified. Whilst each cohort viewed the issues through their own lens (the students from their personal experience of disadvantage, the staff from administering schemes and working with students), similar themes emerged. These have then been used to organise the discussion of the groups below.

It should be noted that the responses are attributed to a group and not to an individual. Staff focus groups are named FG1 – FG5 and INT (for the single interview conducted). Student focus groups are named FGA – FGF to distinguish them.

## Analysis of Staff Focus Groups

The analysis of the focus groups data is set out under the themes and sub-themes identified.

### *The impact of government and university policy on the identification of disadvantage*

Staff pointed to the impetus for identification of students experiencing disadvantage coming from Australian Government Policy and the HEPPP guidelines themselves and the impact that this had on the ways in which disadvantage is defined and managed within the university sector. Thus:

> *"I think it's been very much informed by government criteria. So the equity group categories are given to us." FG3*

Similarly, another participant stated:

> *"I think necessity has kind of led to our current practices. So like particularly through HEPPP. In my experience, that's what's kind of brought in a lot of - our need to focus particular programs on particular cohorts, and then in turn report on who we're targeting our programs for. So I think HEPPP was a big driver for us." FG2*

This was not seen by participants as a criticism of the program but rather as a statement of its being, unsurprisingly, a determinant of the focus of supports offered to undergraduate students. One impact that this was seen as having is, however, of interest as it suggests that there is an impact on when disadvantage is identified:

> *"…we have a policy space whereby universities are incentivised based on the number of low SES and indigenous students who are recruited to the institution, rather than retained. So I think in policy, we set up a framework whereby we focus on a transition in." FG1*

As other themes within this analysis attest, student circumstances change and an emphasis on transition into university and even the first year of university life may not achieve the best outcomes for students who experience disadvantage later in their university career. This is also borne out by the findings from both the quantitative phase and the student focus group analysis that follows this section. This is a finding that has implications for when measures of socio-economic disadvantage should be administered.

### *Criteria for identifying socio-economic disadvantage*

#### SEIFA as a method of identification

The nature and use of SEIFA was widely understood by those in the staff focus groups. However, whilst its use and benefit at the policy and university level was acknowledged, using SEIFA to identify individual students experiencing disadvantage was generally viewed as problematic and leading to many experiencing disadvantage potentially not being assisted.

> *"…in terms of the broader higher education policy - we all have identified it, we all know the postcode mechanism doesn't work. So I think that creates also some gaps in terms of how do we capture the students that are really having that kind of financial hardship." FG1*

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Another participant in the same focus group pointed to the lack of understanding that students and some staff have of the use of postcode as an identifier and its potential to identify individual need:

> *"I might think - okay, well I live in (XXXX postcode) - which is a low socioeconomic. I might be living in (social housing). But I've got good family support, I don't go without food. Like I'm travelling okay at the uni. So I might not see myself as disadvantaged - even though I actually tick 2, maybe 3 categories. I might be a recently arrived migrant who lives in (social housing) who lives in XXXX. So I think maybe if students and even staff don't understand what it is that we are measuring -…….Then it probably will be hard for some students to identify, as opposed to somebody might identify if they are having to access food pantry. Maybe they have a disability? And yes they're on a disability support pension, but it's not necessarily covering all the cost of medication, unable to work. Therefore - so I think hopefully through the stuff that you guys are doing, we might be able to create a common language so people can identify a little bit more easier." FG1*

The issue, then, appears not just to be with the use of postcode as an identifier but with the *language of disadvantage* and with there being no operational definition of what constitutes socioeconomic disadvantage that is shared by both university staff and students.

A further complicating factor is what postcode is applied and when. For example, one participant stated:

> *"In my understanding, current post code used to be used more consistently, like everywhere. And it was changed to using past postcode. That was a move that we were really supportive of at (our university). Because we are located in a high SES area, and we have five residential colleges, a lot of students move from regional areas or the outer suburbs even, to study …. So when it was - used to be their current postcode, we were not able to see a whole lot of students' disadvantage based on where they were from - because they were now moved to a high SES area. So they were kind of missed in the system. So we were pleased that it was moved to being changed on their home permanent address." FG2*

Both current and permanent postcode can work against the student's receiving the assistance needed. An area level of identification is therefore not seen as sufficient.

A more nuanced use of postcode was suggested by one participant who suggested that identification should be:

> *"…not just looking at postcode but looking at that relative to the location they need to get to and how they get to that location." FG2*

Time needed to travel to university and the consequent costs incurred were also issues related to disadvantage that emerged in the student focus groups and are further discussed there.

A final consideration against the simple use of postcodes was the size of the geographical areas that could be covered by a single postcode in rural and remote areas. Thus:

> *"I think for us here in XXXXX, one of the issues we have with using postcodes to determine socio-economic status is, in XXXXX, we have like over 100,000 people, but we are all under one postcode. So, and we find throughout Queensland in fact, there's vast geographical areas. Probably because of our low population. But the socioeconomic status in these areas is hugely variable. It's probably as variable as the whole of Melbourne or anywhere else." FG5*

The use of postcode is seen as problematic in these circumstances as it is in smaller geographical areas as a participant in FG1 pointed out above. This is also the case in Canberra, as Goldie et al. (2014) have demonstrated. Postcode alone will not enable all those students experiencing socio-economic disadvantage to be identified. The use of such data at individual student level must then occur in a context where there is an understanding of the level of variation in disadvantage that can exist in any given area.

### *Using Centrelink benefits as an indicator of socio-economic disadvantage*

Centrelink benefits were seen as an accepted way of identifying socio-economic disadvantage that was effective for some groups of students but not all.

> *"The system currently is set up, I think in the HEPPP systems - to acknowledge on a community base who might be from a low income. And hence, if you're on Centrelink, you've got the opportunity for - potentially to be seen as a-- As someone from a low income at the entry stage. But that's - very often means that people who are individuals who are not yet on a Centrelink, not on a Centrelink benefit, or not from the right postcode – get missed out. And I think that's where we've got a real issue. I really see it as 2 areas. The HEPPP, which is - was a community based effort to-- Or an effort to get communities who were of low income into university. But that kind of was at the expense of an individual." FG4*

In addition, Centrelink benefits were used by some universities to determine eligibility for student loans and grants, viz.:

> *"Well I know our student loans and welfare team - part of their application form uses-- That to be eligible for student loans or grants, they need to have a Centrelink benefit. They need to give a budget of where their money's going. How much is going to say rent and bills, …. And that determines whether money's given as a grant or whether a loan may be serviceable." FG2*

Similarly, another participant stated:

> *"Well I suppose it prompts the question of what you're using as an individual based assessor, assessment? We do of course - and I think all of you would, be using Centrelink as far as you can and as much as you can. But in the absence of Centrelink, we can rely on our own assessments. And our own assessments require students to divulge what their income is and what - how regular it is, what amount it is, and also what their regular outgoings are. So what commitments they really have. What we do from there, is to make what we think is a*

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*subjective decision. That is based on a sort of a ratio of what their rent is to what their income might be. So where rent is involved, we certainly - that's what we look at. If - for example, the income is 80% of the rent or 70% or 60% or 50% or 40% - we know that there is a great-- A likelihood, a high likelihood of financial stress with that particular student. We do also - at the same time, ask them to confirm what that income is. So we ask them to log into their bank accounts, so we can see the transactions of the last 3 months or so." FG4*

Such an approach demands a lot of personal information from the student and may be seen as intrusive; an issue that emerged from the student questionnaire and focus groups. Whilst proof is needed for the provision of financial support, asking students to log in to their bank accounts seems especially intrusive and potentially embarrassing for them. However, this participant from the same group added that students were largely willing to do this, saying that at their university, they:

*Confirm is Centrelink paying them or not? Are they getting regular income from work, or is there a sponsor behind them? And we haven't had - I've only had one person who's been shy to do that. In other words, not wanted to. And I've had to make the call whether I support them or not under those circumstances. But we find them very willing. They understand that the funds we raise have to be given out responsibly, and for that reason we want to confirm we're giving it in the responsible manner. FG4*

Ensuring that students understand both the process and the rationale for gathering the data would, therefore, seem to be critical to students' engaging with the procedures.

### *Students' current circumstances as an indicator of socio-economic disadvantage*

Staff were also able to point to a number of indicators of disadvantage that related to the personal circumstances of the individual student and which were seen as having an immediate impact on both their study and longer term course outcomes.

One of these was reliable access to the internet:

*"40% of our pathways students don't have the internet on at home, which we would consider a very strong indicator of low SES." FG5*

Given the reliance of universities, for both teaching and learning, on computers and internet access for activities as diverse as accessing online lectures and tutorials, through to engaging with lecturers and fellow students in online fora and submitting assignments, this is a factor that may prove useful in developing an individual measure of socio-economic disadvantage. It may also be that the use of Learning Analytics which are readily available on the subject/unit websites could be used to assist in the identification of those who are experiencing disadvantage. Such data are currently used by lecturers to follow up students who have not accessed the websites consistently (or at all). However, this is generally done to encourage the students to be engaged in the learning. If access were to be given to staff working in widening participation roles, identification of socio-economic disadvantage might be facilitated.

Cost of and time taken in travelling to university was also seen as an indicator of disadvantage, with one participant stating:

> *"…the low SES students we work for, can live really far from campus. And so their travel time to university can be like an hour and a half, 2 hours. So perhaps postcode might not be quite enough. But the way they travel to university, the amount of time it takes them to come to university. Maybe more - a more nuanced way to look at it, rather than a postcode measure. Because I think that's a really big stress. And students are choosing not to come to university because it could be $8 worth of public transport just to get there in the morning, and a really long journey for 1 lecture or 2 lectures or whatever." FG2*

This was an issue which was also raised with respect to the use of postcodes and points strongly to how socio-economic disadvantage may affect students' ability to engage with the university environment and to take advantage of learning opportunities. The number of lectures and tutorials missed may then also be seen as a possible indicator that could be easily gathered.

A related issue was seen as instability of living arrangements:

> *"..around moving, moving costs and having to move. Not having a stable place to live in. Whether it's because they can't afford it, or because they kept being moved around. It's a big stressor." FG4*

Establishing how frequently students move may then also serve as a measure of disadvantage likely to affect their university outcomes.

### *Carer responsibilities and contributing to family*

Staff saw caring for family members and contributing financially to family as indicators of disadvantage which were not always included in assessing need.

> *"..at the moment they don't have a capture for - if you have carer responsibilities. Be that a carer for the child, or a partner with a disability or an ageing family or young children. Whatever the combination might be, that complexity could be collected. That would give you more of a skew versus the professional that might be juggling the challenge of wanting to raise their aspiration and go back to university and juggle the pressure of a full time job." FG3*

The distinction that this would allow is an important one and one that has emerged from the quantitative and qualitative phases of this project as central to the measurement of disadvantage for those in caring roles.

A confounding factor was pointed to where the student was attending a regional university:

> "..challenges faced at regional universities, which have a higher proportion of mature aged students. All the challenges that come along with that, in terms of pre-existing childcare commitments, maybe pre-existing commitments to a certain type of accommodation. Accommodation that's suitable not just for an individual, but for an individual plus other family members. And downgrading accommodation or being flexible about where you live isn't such an easy option for some students. And also in terms of students being unrealistic at the start of university." FG4

Furthermore, for some students, providing financial support to the family is central to their culture and the expectations of their families and communities:

> "We've got lots of students from Pasifika backgrounds and non-English speaking refugee backgrounds. And family is such an important focus. So often they're working a job that not only needs to support them or contribute to their life, but they need to be putting back into their family as well. So that's a great stressor for a lot of students that have that pressure as well." FG4

It is interesting to note that, whilst contributing financially to the family emerged as a powerful indicator of socio-economic disadvantage in the statistical analysis of the student questionnaire data, this was the only comment made on this issue in the staff focus groups. It may be that this was simply a function of the universities who participated in both the quantitative and qualitative phases or it may point to the possibility that universities are just not aware of this as an issue and therefore not taking it into account in their assessments of disadvantage. This is a question that needs further exploration.

### *Support to part-time students*

Participants also pointed to the fact that those studying part-time were often not accorded the same level of support as full-time students, despite the choice of part-time study often being due to socio-economic disadvantage and the need to support oneself and, often, one's family.

> "Sometimes I think in terms of the scholarship space, it's also, "Well part-time, well why should we give money for part-time?" It's like - well, because there is life going on." FG1

And:

> "It's also unemployment. So in Townsville, we have very high rates of youth unemployment. I think it's about 27% at the moment. So students, and this happens to international students a lot. They arrive here thinking they can get a job to support themselves, and then they just can't. And so very quickly, they head into a crisis. It happens in Cairns as well. Perhaps not quite as acutely. But this whole area is - Townsville's in recession and -- So that just drives that issue. And anyway, so many of our students have carer responsibilities and very complex family lives. We have a lot of mature aged students, and so they will be juggling ..." FG5

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For students experiencing disadvantage, part-time study may seem like the only option if they are to pursue higher education yet it not only lengthens the time they will need to study, but places additional stressors on them as they try to balance study, work and family responsibilities.

### *Recognition of changing circumstances*

A persistent theme across the focus groups was the recognition that students' circumstances can change and that just assessing level of socio-economic status in first year may be no indicator of what a student's experience may be in later years. This is encapsulated in the following quote:

> *"(you could be) in a really stable situation - and then literally overnight, that could be tipped upside down. You might have an accident, develop a health issue, your relationship ends. You're forced to make changes, maybe not of your own doing. And I think it's about the university systems allowing those opportunities for people to self-identify if and when they want to." FG2*

However, for self-identification to be possible procedures need to be put in place to both gather such data and alert students to the possibility of support:

> *"I guess if you're wanting to know if circumstances have changed, so things around has-- Have you experienced more challenges this trimester than-- Or semester, than you have previously, and what might those challenges be? Whether we're asking people with an open-ended answer - or you've got a tick box around academic, financial, disability, family, family pressure, problem with employment or lost my job or-- Yeah, different kind of - pregnancy or medical or-- Yeah, just trying to gauge what's gone on for that student to get a bit of a more holistic picture of what kind of support they need as well as identifying that they've had a change in circumstance." FG4*

However, the point was also made that students' circumstances can change for the better and that also needs to be identified:

> *"I guess in a lot of ways, we've been talking about when student circumstances change for the worst. But for many students, they do actually get on their feet and things improve. So being able to capture those sorts of data - I think, would be really important as well." FG4*

Ongoing assessment of socio-economic disadvantage is therefore seen as critical to ensuring that funding and support programs are appropriately and effectively utilised.

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### *Emphasis on disadvantage in first year students*

Related to recognition that student circumstances change across their university careers is the view that emphasis has been given to first year students. This is perhaps best illustrated by a sequence of comments in Focus Group 1 with one participant saying:

> *"I think we do a lot of monitoring for 1st year, and then we just go, 'Oh well, good to go'" FG1*

A view that was immediately supported by:

> *"There's a real culture of, "Get them through the 1st year, then they'll be fine." FG1*

This was further articulated:

> *"…while we might be able to offer an incentive to actually facilitate, for the student to start - it's what happens once they're here. So in terms of the retention, I think we actually do have a gap - when we know that financial distress can happen at any point of the student journey."*
> *FG1*

Another participant agreed stating:

> *"And that 1st year is great. We have the access and you've got stuff that you can apply for 1st year, but 2nd year, 3rd year - we don't seem to have anything that's really-- That's going to sustain them all the way through, unless they're high academic." FG1*

An approach to dealing with this issue was offered by two participants in focus Group 4:

> *"Like a questionnaire or something that's getting sent out to students at different-- At the start of every semester or something, just to-- Like, almost updating your details ….. …… But it definitely suggests to people that the university is wanting to know how you're going and if the rationale's sort of provided as to why you're wanting that information, it could be a way to capture some people that fall off the radar after first year transition and support kind of programs." FG4*

And:

> *"So students are required every semester to provide documentation around that. So which includes things like their Centrelink certificates, evidence of disability support - because that can change semester by semester, it may not be ongoing. Also sole parents, if their percentage of care changes. … we have an assessment matrix." FG4*

Ongoing assessment of eligibility for support is thus needed to maximise retention of students experiencing socio-economic disadvantage at various stages throughout their university career. Asking direct questions to determine the individual's current status with respect to their financial viability may be a way of doing this.

***Impact of placements on those experiencing socio-economic disadvantage***

Placements associated with meeting accreditation requirements for professional degrees were seen to place additional stress on students and this was seen as particularly so if they had low socio-economic status. Of interest in this respect is that students who are first in family to attend university often enter either Nursing or Teaching degrees; both of which have a high practical component. For those having to travel for their placements this was seen as especially onerous:

> *"You obviously might still be paying rent in your usual place of residence, and then have to fork out again. And what we try and do is make sure that students know from day 1. So the placement might not be until 2nd or 3rd year. But you need to budget for that, you need to allow for that." FG2*

And:

> *"We also have students that experience extra financial hardship when they actually have to go on placement. So we have a number of programs where the students are required to go on placement. We do have a focus on rural and remote communities. So a student that might actually then not only have to go and stop working for x number of weeks - but they might also have to relocate to a rural and remote community, pay rent, etc." FG1*

Even where the placement was relatively local to where they were living it was seen as an added impost on their financial situation:

> *"And also the travel to those placements as well can be quite a financial burden." FG2*

As a consequence, staff reported that they tried to ameliorate the problem by working to find placements that suited the needs of the student as much as was possible:

> *"I work with a lot of students trying to negotiate for them to stay local, not having to move out of area. Mainly around because of treatment and being unable to do it because of their health, but I know there's a lot of students who come in and just sort of say it - that because of child care or financial cost, they're just unable to do it and have to withdraw." FG2*

These concerns also extended to students' attending compulsory on-campus intensives:

> *"Having compulsory residential schools, and having no accommodation around the area that students can actually afford - is a really big one that we're sort of dealing with at the moment." FG4*

Students experiencing disadvantage were thus seen as experiencing additional stress when they were required to do placements.

### *Uneven distribution of support amongst equity groups*

The following comment from a staff participant who commented on her own student experience is instructive in pointing to the uneven distribution of support amongst the equity groups:

> *"Just speaking from a student perspective, ….. when I first started my studies. And being indigenous, it was easy for me to access the scholarships - and going to 2nd year, the same thing. But there is really nothing available to students that aren't indigenous. Which is quite unfair."* FG1

A similar view was expressed with respect to disability:

> *"There's sort of like more of a language around it, perhaps of disability. And especially with some of the - I guess kind of proactive things about, thinking about disability differently."* FG2

The view being put was then that equity groups are viewed differently by students who themselves are part of that group. Another salient point made related to the visibility of the disadvantage, namely:

> *"Often the students that come to XXX are school leavers. So they're quite young. And the Aboriginal students I've worked with are really coming to terms with their identity and their Aboriginality. And they're seeing kind of how that fits. And they're developing new kind of pride in their Aboriginality through that context. And so I think - very generalising, that they kind of own that status. Whereas low SES students, I think it would be - there'd be an invisibility to it. And I'm not - I'm sure I haven't had as many direct conversations about low SES status with students, in the same way that we talked about Aboriginality."* FG2

Establishing ownership and acknowledging the struggles inherent in achieving what they have with a level of disadvantage may therefore be instrumental in accessing support.

### *The language of disadvantage*

Many in the focus groups saw the language and jargon of disadvantage and equity as barriers to students seeking access to support.

> *"I absolutely agree with the jargon of equity and eligibility and criteria and educational disadvantages. These are all such strange concepts to an 18 year old who comes from a parental home, and suddenly they don't-- They've met with these concepts, and they don't know what the hell it's about. It's something which I'd be, I'd love to see a change of equity scholarship to something else. And I, more and more in my advertising on LCD screens around the university - I'm leaving out things like equity, grants and things. I'm talking exactly about, "Are you strapped for cash?" Or," Is there a cash flow problem?," or, "Are you tight for money when you go on a prac?" Or something like that. Because we have multiple options. If they are normally stable in their income, they can get a loan from us and repay. If they're not stable in their income, they will get that bursary or grant. So we don't need to try and identify or label before they even come into the office. Or that they feel they've got to put themselves into a certain drawer. It's really, "Listen, there's money available if you need that support."* FG4

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There was also a perception that the language used to describe socio-economic disadvantage was stigmatising and that that worked against students' being willing to ask for support:

> "But if somebody said to me, "Oh you're from a low socioeconomic status," I'd run a mile. I mean in that way you'd have to have some way of framing that terminology and the services that it offers." FG3

And:

> "Sometimes it's a matter of a student being … willing to come forward and say, "Look, I am really struggling. I don't have food covered." And that's difficult, there is a lot of shame around that. So sometimes I think it's about normalising that it's a hand up and not a hand out. And also - as much as we can, assisting people to think about the long term goal. So if I'm studying to get a qualification that is then going to lead to being able to get employment - then being able to do what I can to get through this hardship at the moment, means in a couple of years' time I will be earning." FG2

Focusing on long term goals as a mechanism for accepting help was therefore seen as a way of encouraging students to acknowledge the need for support as was embracing one's status:

> "…there's a colleague who's had a lot of experience in the States. And she said, "Disclosure in United States college system is much higher and seen as less of a threat to identity. Because there's a real benefit that comes from it into entry into some of the best universities." Whereas here, I think that identity - it's really framed from a very negative perspective, and it's a very hard thing at any uni to walk in-- We do a lot of outreach and-- To have that conversation as if this is, "I'm coming to you about your disadvantage, and I need to talk to you about how we can boost or adjust your ATAR scores to be on a level playing field with your colleagues in a higher postcode." FG3

It was generally felt that long term labelling of disadvantage was stigmatising but this participant suggested a solution:

> "I think it is really problematic to label a student as low SES and have some sort of clear marker that we place on them that's attributed to them. Because it's a - it's not a fixed state, right? Like it changes over time. So I was kind of thinking about this, coming into this. In terms of - we've been advocating as well for just a generic student indicator. A student identifier - so that we can follow students from their high school education through to university, or other sectors of education. And have a student number, so we know who that student is and where they've-- What school they've been to, what their journey's been. And perhaps if we had that - then within our university systems, we can build up our data set around that student. But it's a bit more changing a nuance than, "You're a low SES student,"" FG2

Interestingly, this accords with the Australian Government's proposal to introduce the Unique Student Identifier. To this end, the 2019-20 Budget included $15.8 million to extend the Unique Student Identifier (USI) to higher education students. This measure is currently being implemented. From 1 January 2021 new students attending a provider recognised under the Higher Education Support Act 2003 (HESA) will be issued a USI. By 2023 all students enrolled at HESA providers, must have been issued a USI. The USI will replace the existing Commonwealth Higher Education Student Support Number (CHESSN). This will reduce the number of student identifiers across the tertiary system and help Government gain a better understanding of student pathways. In capturing students' entire tertiary education journey, it will provide a more robust evidence base to help inform future policy development and program delivery. It may also assist universities in identifying those experiencing socio-economic disadvantage and needing support. What will need to be determined is how this identifier will be used in a way that does not compromise privacy and confidentiality.

However, essentially, what is being suggested here is a change in culture; where acknowledging one's socio-economic disadvantage leads to students perceiving opportunities for support, as what one participant succinctly named it, as a "hand-up, not a hand-out" (Int Aboriginal).

### *Students' ability to self-identify as disadvantaged*

Given the complexities that universities face in identifying students who are experiencing socio-economic disadvantage, students being not only willing but able to self-identify is a central consideration in the development of individual measures of socio-economic disadvantage as, in this way, students become partners in the process.

That they may not recognise their own level of disadvantage was a comment echoed across the groups:

> *"I think students' perceptions of their status, their situation is wildly varied. And I think that it's also from their own sphere of experience. So they will think of themselves as being already advantaged by coming to the university. So they will actually-- From our experience, because we do ask them about their financial status …where they are and try and cross it - match it with their postcode. But often they will feel that - comparatively speaking, they're not disadvantaged." FG5*

And:

> *"Very few people will come up and say, "Oh yes, I am low socioeconomic status." And in fact, when you come from communities where everyone is the same - you don't differentiate yourself and say, "I'm different." In fact, it's all about what's relative to your sphere of understanding. So it may not be till people actually get to university, that they're able to compare themselves or their own communities. Or, for some of our external students, they're still in their communities and haven't left. So I think it's a really hard concept. Because how you identify depends on what your experience is." FG5*

This was also seen as an issue for refugee students:

> *"(Refugees).. these students don't think of themselves as disadvantaged. They think of themselves as managed. And often they won't, they don't at first instance accept support. Because they believe somebody needs it more than them." FG5*

Assumptions about disadvantage by university staff were also seen as confusing by those targeted who did not see themselves in this way:

> "We tell regional students that they're able to just apply for special consideration on the basis that they're regional. And it's a really weird conversation to have with them. Because they're sitting in this school environment that is all they know, and is - decent school environment, thinking, "Why do I need special consideration? I haven't gone through anything different from like my peers." FG2

An additional perspective related to the terms used by universities to describe potential disadvantage:

> "I know I'd never heard the term (first in family) until I came into higher ed 4 or 5 years ago and found out that I was first in family. And thought, "Ooh, does that make me special in a good way? Or did I overcome some adversity?" And it's - yeah it's, I think it's just a term that we use in higher ed to-- Because sometimes we do just have to label for the sake of capturing numbers and data." FG2

Here, again, the language of disadvantage which universities routinely use in their identification processes may not be familiar to the students and may act against self-identification. What constitutes disadvantage is subjective and understanding the concept of identity may be helpful:

> "I really think you need to actually do identity training, for want of a better word. So students actually understand the concept of identity. I've got, I work with students every year around language. And they all talk about a typical upbringing, regardless of their racial or ethnic backgrounds. And I'm sort of like, "Well, what is a typical Aboriginal upbringing? What is a typical white Australian upbringing?" They don't have the ability to actually identify the core elements that make up their identity. So you can't actually create a survey tool - I don't think, around identity - and expect them to answer it and get solid data, if they don't understand the concept." Int Aboriginal

Of benefit, too, may be the students' having points of comparison:

> "I think those indicators or benchmarks can be useful, because someone's perception of the degree to which they're experiencing financial disadvantage can be so very subjective. Some people are quite comfortable and see that's just normal based on what they've experienced previously. Whereas others would find that an absolutely horrendous way to live. ….so realising the extent to which they may be eligible for help (is difficult). So having some more objective indicators, I think are useful for that."  FG4

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This view was supported by another participant who went on to comment on how this was handled during students' entry to university:

> "When it's one individual applying to an institution, the individual only has their own world view to know whether they're advantaged or disadvantaged. And the institution knows from the person applying - generally from their postcode, that they're underrepresented. And what other information they might provide, might give a scaled view of that individual to say, "You're typically, you're a person who doesn't come to our university." And that's all very interesting, and we track that. But the individual themselves isn't sort of matched up in their interests to what sorts of supports could be, to suit them earlier. And I'm wondering whether the way that we do entry, there could be-- There could be changes in the way that we do the entry process,.." FG3

Not understanding that one was disadvantaged relative to their university peers was also seen as having an impact on their academic outcomes:

> "And also in terms of students being unrealistic at the start of university. Being the first in family can be a really big factor relating to that. If you don't have people in your immediate circle who can give you advice about their own experiences of uni, it can be difficult going in to know what to expect and whether-- Or realised how important it is to identify early on as someone who may need some financial assistance as they go through." FG4

Individual measures of socio-economic disadvantage are only likely to be successful if students are able to engage meaningfully with the process. To do that, they must understand the parameters of socio-economic disadvantage and see identification as non-stigmatising.

### *Multiple disadvantage*

For many students, disadvantage extends across a number of equity groups as indicated by one of the participants:

> "..about 80% of our students who are in one equity group are in more than one." FG1

This can make their identification both potentially easier as they are less likely to be missed and more complex as their various needs must be separately addressed.

> "They could potentially have competing priorities. So if they're working, they've got a family... carer responsibilities. It's usually overlapping things that can build and make - cause stress and then affect retention." FG3

And:

> "In terms of the data, a student can appear in multiple equity groups, but we don't really look at the intersection of whether there's more than one. You just-- We look at the data in each category. But we don't combine that to look at the effects of multiple equity groups. And that is generally how the Department has let, guided us to do the data at this stage." FG3

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The latter comment points to the potential for double (or multiple) counting of students experiencing disadvantage and of the potential for the nature of the complexity of disadvantage which a student is experiencing not to be fully addressed. However, such students were also seen as bringing strength to their studies:

> *"And it's worth noting that students who are working with-- I hate the word, but compounding disadvantage. They bring a whole lot of things to study that are fantastic, like resilience - the ability to manage time. So all these wonderful-- So we come at it from a really strength based approach, "But let's work the best plan for you given your life circumstances, to best support you through your studies." FG1*

Here, too, the benefit of taking a strength-based approach is highlighted as a way of both celebrating the achievements of students experiencing disadvantage. It also points to the importance of couching questions to elicit identification of disadvantage in ways that are sensitive and do not stigmatise.

### *Ways of identifying*

Given the complexities of understanding disadvantage and students' attitudes to it, how best to identify those in need of support was canvassed widely in the groups. It is apparent that most universities use a combination of approaches.

> *"So we have an online ratings assessment …. a chat box technology that asks students those sorts of questions and might refer them to sorts of supports in the university. But it's much better face to face, yeah. They can fill it out online, and they might feel like that sense anonymity. Then when they can sit down and then tell someone what's going on—" FG1*

The use of personal follow-up with students who have self-identified was seen as a way of more effectively targeting specific needs. This was then seen as best done through questions that targeted specific facets of the student's life and allowed them to see what the outcome of their responding might be.

> *"We ask students about any challenging circumstances they might have that would impact on their study. So and then examples like-- The kind of study environment they have at home. The kind of caring responsibilities they might have for their family. So it's - yeah, I kind of think it's the same line that S's talking about in terms of - what, are the external factors? So it's kind of not saying that there's anything wrong with them. But there's some things that might be going on that can be mitigated that are impacting them." FG2*

Others outlined the specific questions they used to elicit information:

> *"Whether it's a disability or finances. "Do you generally, do you have any difficulty doing the things you need to do and want to do in a day? Or do you have any difficulty with the work? Or buying a uniform for placement or textbooks." That can be quite good. Screening or triggers to better let students know about the various supports that we do have." FG2*

These are useful questions as they not only identify the kinds of supports that are available but give students the incentive to be more forthcoming about what they are experiencing.

The importance of making students aware of the point of the questions being asked about their personal circumstances is highlighted by the following comment:

> *"…on enrolment we ask students if they have a disability, and we don't do a great job of telling them what we're doing with what we're collecting." FG2*

Making students aware of the services and supports that may flow from their responding to these questions may do much to enable their identification. This was seen as possible through the university's websites and social media communication to students:

> *"I think getting that awareness out then in those non-public ways. Like our blackboard sites where students can log into their portal. Perhaps they're able to see - not that it's targeted to them, but just everyone can sort of say-- There's a question prompting, "Are you having financial difficulties?" Then they can explore that option. Just more ways that they're able to sort of start thinking about, "Am I able to access help?" Yeah, without being identified as in a category." FG2*

Finally, it was argued that what was needed was an approach to identification that was inclusive and not targeted to specific groups or individuals.

> *"And I guess what I would like to see more is that - almost a universal design process or philosophy, where we see - where academics will say in week 1, "We know life can get in the way, so if you need an extension of 2 or 3 days, I'm not going to insist on a medical certificate or whatever." FG2*

The salient questions that arose from the themes identified were not only *what factors* should be used to measure socio-economic disadvantage but *when*, *how*, *where* and *how often* this should be done. Such questions need to be answered not only in the context of students' sensitivity around their personal circumstances but, it was attested, around their frequently not recognising that they were experiencing disadvantage and entitled to support. These findings support those deriving from the staff questionnaire in the quantitative phase. In so doing, they provide additional insights into the effectiveness of current approaches to identification and possible ways of implementing more targeted, individual measures.

To summarise, whilst a range of indicators was seen as indicative of students needing support, which ones to use and in what combination remains an issue for staff charged with identification:

> *"So our internal dashboards and things like that do have low SES indicators, but we're pretty confident that they're undercounting."* FG5

Furthermore, which indicators are chosen to be collected is likely to be dependent on the context of individual universities and the nature of their student cohort. Rather than there being one measure of individual socio-economic disadvantage, there are likely to be many but with each sharing some common items or indicators.

Issues around individual measures of socio-economic disadvantage are perhaps best characterised by one participant who said: "(Identification) needs to be agile" (FG2). Without an approach to identification that can be easily adjusted to meet the changing needs of students and the changing circumstances of universities the needs of those experiencing disadvantage will not be met.

## Analysis of Student Focus Groups

As with the staff focus groups, the analysis of the focus groups is set out under the themes and sub-themes identified.

### *Identification methods*

<u>Differences among the equity groups</u>

There appeared to be a consensus among students that some types of disadvantage have become normalised and accepted by Universities as worthy of ready identification and support. The students suggested that this was reasonable and fair. Thus, they noted that students identifying as Aboriginal or Torres Strait Islander and students with visible/ recognisable disability can tick boxes on enrolment forms and that this fulfils requirements for initial and ongoing justification of their status. Further, there was a perception that universities seem to be more open and willing to promote this area of support.

> *Unless you're indigenous and you tick that box. And that's not a prejudice, it's just - that's one of the very few catchment tools that they're using, if you tick a box. But they don't really do much for people from low socio-economic backgrounds. It's very good that there's more resources for indigenous people coming. It's very important. … But for other categories, I really don't think there's much being-- Enough being done in that regard. FGA*

> *With the accessibility, I'm completely opposite to these two. That I came in with a disability. So for me, it was like tick the box. And it said what to do, whatever. Whereas if I had come in here like most students do…. FGC*

> *Well I think, I just saw it when I was applying for my first year, before the first year I think I just - there was a thing, "Do you have disability?" And I think I just filled that in and then they got back to me. I can't quite remember, but there was no like promotion, there was no advertising, "If you have a disability--" On the website or the application form, there was no advertising. It was just one question, yeah. FGF*

> *When I was applying for the university, the only time I noticed was when I was applying. I came through XXXX here at the university. And part of your personal essay is to describe how many kind of factors that had led to disadvantage. And that was the only point where I'd noticed them even pick up on it in the application process - from memory, yeah…..… It was mostly just a very basic - write a personal essay on your, any disadvantage you've experienced. Whether it's personal, financial, school related. It was very general, it wasn't very specific. FGD*

However, it was also suggested that, with respect to being Aboriginal or a Torres Strait Islander, there may be harmful effects when universities associate being a member of this group with disadvantage. This was seen as having a negative impact both on those who did not identify as disadvantaged and on the broader societal perceptions of Aboriginal and Torres Strait Islander people.

In contrast, students felt that other types of disadvantage such as mental health conditions and financial hardship are comparatively less promoted as warranting support. Seeking help with these kinds of disadvantage, was seen as more arduous or stressful for the student. Indeed, some students felt that university processes were more difficult for students with less identifiable or recognised disadvantage at all levels of interaction with university staff whether this be with their lecturers, tutors or administrative staff and that this required them to regularly justify and explain their conditions.

One student with a disability enjoyed the support of their secondary school in providing evidence to the university of disability requiring support.

> *Oh, okay. I just wanted to mention that I think I'm in a very fortunate position. Because like yes it's bad having a disability. But like, I feel like - yeah, I mean I'm in quite a good position. Because my disability is quite visual. And so like people can tell that I have a disability, and I don't do-- I have to do a lot to prove it, as much. FGF*

### *Perception that universities poorly promote their support offerings and only students who seek help get it*

Students suggested that for universities to record their disadvantage they had to nominate themselves that they needed assistance. That is, universities rely on students' self-identifying their perceptions of disadvantage and/or their need for support. Students did not report having been offered support proactively by their university and described an imperative to follow up themselves if they were to gain support.

> *Well I think - as far as I'm aware, the only way that it is recorded here is by us actually nominating whether or not we need to have the assistance. FGC*

Students reported that there is little promotion of disability services and these can be difficult to find at first. One student said that the only time they recalled seeing anything about disability was on an application form, it was not included on the university website nor other promotion material from the university.

However, some students had experience of seeking assistance during semester for unforeseen health problems and had a positive experience.

> *There's an access fund if you undergo financial hardship or you experience financial hardship. …… But yeah, you do have to state that you are and apply. And obviously be allowed to then get the scholarship or whatever it is. It's not just disability either. It's if you have an injury or if you have something happen to you during the semester. Like myself - I had to undergo emergency surgery last semester, and they were really willing to step up and give me support in that time of hardship, which was incredible. FGC*

***There are challenges to universities' relying on self-perception of a 'disadvantaged' identity***

Interestingly, students felt that their conceptualisation of normality made it difficult to self-identify as disadvantaged. They spoke of being unsure of the boundaries between doing well and struggling. Many did not know if their circumstances meant society or institutions labelled them as being of 'low socio-economic background'. A number said that they had simply not even thought about it. They reasoned that they had always known others that they perceived to be worse off than they and that this added to feelings of managing their circumstances. Here, then, the notion of the reference group that a student uses to define their less of advantage or disadvantage is particularly salient. Perceptions will be different if the comparison is made to their immediate circle of peers rather than broader society.

> *I think there's no understanding by students as well what that (disadvantage) actually looks like. Like is just normal? Is this just normal student life? Should I be eating a can of baked beans every night? They don't actually understand what it looks like. FGA*
>
> *I was like, "Yeah. Am I from a low socio-economic background? Oh, I never identified myself as such." …… Oh. I never, yeah, I never thought about it before. FGA*
>
> *I'm like, "Why us?" Because we know people who are like way lower than us….… We're fairly well off compared to them. FGA*

That the three quotes above come from the same focus group is instructive in the way that it demonstrates how the students' interactions in the groups affected what was revealed. What these quotes throw into question, however, is students' ability to recognise whether or not they might be regarded as disadvantaged by their university and eligible for support.

Although generally unaware of the use of the SEIFA index, students noted that post codes in themselves have limited utility and relevance for identifying disadvantage due to the variation that can occur within an area. To illustrate this, one student pointed to feeling 'well off ' in a 'poor' post-code and vice versa. Another student, providing a further example, described deliberately projecting an identity through speech patterns that were not typical of someone from a low socio-economic background and added that this did not remove the actual need for financial support.

Many students demonstrated a large tolerance for living with both routine stress and exacerbations of stress before they sought help. The requirement for self-identification of need meant some students endured a period of struggle first. A number of students reported that the encouragement of their friends and peers was the trigger that led them to seek support from their university.

> *It got to a point where like all my friends were like, "You really need to like reach out for support." And I was like, "Okay, yeah." Like, and I knew that I needed support, but I didn't know what was-- Like I didn't know where to go for it, if that makes sense, so--? FGF*

They also spoke about a student's choice to study at University being consciously made and that studying is knowing you will have reduced means. This is the cost of studying that prevents others from doing it.

> I think that's what people expect to come into it [studying]. And that's why a lot of my friends deal with, "So I don't want to be poor, I'm never going back to uni." FGA

The stereotype of the student who struggles financially is a powerful one and one that, it would seem, many of the students who participated in the focus groups accepted.

### Perception that proving disadvantage is/ will be onerous and the decision process not transparent or consistent

One student recalled answering the question on their application, "Have you experienced financial hardship?" and that this triggered requests for documentation to prove this was the case. Students revealed stories about their difficulties proving or justifying their disadvantage to the University. Reports from medical practitioners were required that, for some, meant an annual visit to a willing practitioner, waiting to get an appointment, and retelling of their individual story if the student did not have or could not see a regular practitioner.

> And I called a lot of different representatives in my degree, before I finally found out I could go down this road. …… And then having to tell people over and over again. Yeah. The story is the worst part, yeah. FGC

> And you've got to pay to go and get those forms filled out by the doctors. I had to pay 45 bucks for that form **to be for that**. Yeah, depends if you've got a doctor that charges, or if you do have one that still bulk bills. Oh my God, where? I'm lucky I had one. I have a doctor that bulk bills, but I got charged. Because she said, "This is a non-standard form, so I'm charging you for this." FGF

Another student recalled having to answer questions about their parents' education level and marriage status, questions they believed were irrelevant to their current situation. Some reported that universities require evidence of post codes.

> But it was, "What's your parent's like level of education?" And, "Are your parents still together?" But that has jackshit to do with my socio-economic status. FGA

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Students also spoke of how their university's assessment of disadvantage and need is linked to Centrelink and required successfully linking Centrelink reference numbers to the university. One student noted it took time to apply for Centrelink payments and required time off from work and studies; time that is precious at the beginning of a degree.

> *I had had no time to go to Centrelink and sort out a Centrelink benefit. …..I had no chance at all to organise anything. I went from just this crazy - doing market stall, working 2 jobs, but still not actually making enough money to save money to get me through the semester. And straight into full time study, knowing that I was heading for this like global financial crisis that is my life. …… And so they made me-- I was supposed to be applying for work, I was trying to study full time. They wanted me to go to all these appointments and-- So then I was labelled as non-compliant and all of that kind of stuff. Like it's just a nightmare being on Centrelink if you're not doing a course that they've given their tick of approval FGF*

On the other hand, many students did not know how the University assessed or identified disadvantage. It was noted that different universities provided support to low SES students in different ways that is not consistent. One student reported filling in forms annually as they come from a regional area identified as disadvantaged but had little understanding of the effect of this on the level of support received.

> *I do it because I grew up in - according to the regional classification. So that's why I always submit it. It just - I've got the forms in my bag. I don't know, it's just like-- Just a, "Are you eligible for a financial scheme?" Or like - I don't know whether or not if it just makes it - if you are offered something, then you might get financial help. Or you - or if it means that you're like, it'll-- Like a handicap thing. So you're not-- So you're still able to get offered on a level playing board. I'm not sure if it's like - so you are more likely to get an offer……. Or if, after you get offered - Then I think you might be eligible for something FGA*

An indigenous student who did not have proof of Aboriginal Heritage (usually supported by a letter of confirmation from an Incorporated Aboriginal Organisation such as a Land Council) spent early years of their degree without support.

> *So when I was applying to this uni, when it came to the question of, "Are you Aboriginal or Torres Strait Islander?" I clicked "yes." And then it goes, "Oh, can you show us your paperwork…. And at that stage, I didn't have any of that paperwork done. So I had to go, "Oh no I don't have that paperwork." And then nothing more was done. It wasn't until this year, until I got the paperwork finally - which takes a long time….Handed it in, then I started to get more like - engaged, more emails from the Aboriginal department. Stuff like that. So I think that's a bit bad to start with. … It's the only cultural race in the world - in Australia, that you actually have to prove. FGD*

Whilst this student's experience may be seen as indicative of the barriers students face in accessing support, how widespread this issue is cannot be determined from the current study as only three students, identifying as Aboriginal or Torres Strait Islander agreed to participate in the focus groups.

### *Identifying and proving low SES is confronting to individuals*

Students said that the university requirements for justifying disadvantage meant having to articulate in writing their own poverty and disadvantage and the effect this had had on their lives. They felt that it was confronting having to use extensive subjective descriptions of yourself and your disadvantage. In comparison, objective external measures and comparisons with average socio-economic students' circumstances were less confronting.

> *And I know in law we sort of try and focus on the objective, with elements of subjective. It's very rare I use subjective. So for me, when I go to apply for those sorts of things - I struggle as well, because I don't want to be subjective, I want to be objective. Because that's what my degree has taught me to do. But that's what they want from you, so-- FGC*

It was noted that applying for an equity/needs-based scholarship requires an individual to go through this self-reflective process with no guarantee of a positive outcome. One student noted that the requirement for extensive written justification for many scholarships for low SES students feels like 'begging', and a feeling of 'shame', rather than an offering of deserved support.

> *I think other ways that you kind of have to feel a bit of shame and stuff like that is - when it comes to scholarships. Like I know a lot of - almost of XXXX's financial scholarships that XXXX delivers, but are from outside providers mainly - is, they are targeted towards people of like lower social class. But you have - there's so much stuff you need to do to prove that you are, to be able to even be considered for the scholarship. Like sometimes you have to write several thousand words ……about why you deserve the scholarship. And for that reason, I don't even apply for them. Because I don't feel like I really want to write that much about how poor I am…. … And it's not something that I personally like to do. Like, I don't have to beg, I don't want to have to beg to people to have - access financial support, so-- FGC*

Perhaps confirming this viewpoint, one student spoke of how learning to be confident in revealing a mental illness (bipolar disorder) has led to gaining support.

> *And I'm quite upfront about it, because every job I've had I've ended up manic and then just kept trying to work more, more, more. And I'd just keep doing it because I'm getting higher and higher and higher. Then when I crash and burn, there goes the job. So I'm quite upfront about having mental health issues. And then all of a sudden the-- Not the counsellor, the-- Oh. Can't even think what it's called. The welfare officer, she's out there and like, "Oh okay." Takes me under her wing. So I found being open about it has been the best thing. And I've not had really any negatives from it. FGF*

Another student who has used a wheelchair since late high school has learnt to negotiate systemic support yet finds it difficult answering questions about the association between their disability and a negative impact on studies.

Concerns were also expressed for the security of private and sensitive details that are exposed to unknown individuals together with concerns for future job opportunities if what they had revealed was used against them. The tensions between proving disadvantage and confidentiality are apparent.

***Identification of disadvantage throughout the university experience***

The process for reporting disability or financial hardship at initial registration was seen to be easier than if circumstances changed through the course. In contrast to having a tick box on a form, students who found they had a need for support at other times during their studies were under stress and spent time navigating and searching on the university website for sources of support.

> *And so I went to-- I was like looking up the website. Because friends had suggested that I should see if there was anything. So I actually had to go and pursue this on the website and find something and then go and see people about it. So there was like, it was very much self-motivated. FGE*

> *It was really hard for me to find out that there even was services available for things. Like I didn't know. I didn't know where to look. I didn't know how to find out what was available. It was really hard to like access those services. And then once I did, then the people - I had a really good experience with the welfare officers. But it just wasn't - I didn't know what was available or what could, like I could have help with. And like it was - yeah, easy or-- Yeah, I felt like I struggled for a really long time, and I probably didn't have to if I had known about the resources earlier. FGF*

Ensuring that information on support is consistently available to students throughout their course is therefore of importance as is the understanding that they are likely to find searching for such information even more difficult because of the stress they may be experiencing.

***Student stressors and the impact on study***

<u>Financial stress</u>

Students readily identified financial stress as a main stress they faced as a university student. In particular, students spoke of the tension they experienced between doing enough work to financially support themselves and having enough time for their studies. It was noted by many that working, by necessity, gets prioritised and takes up a considerable amount of time, leaving little time for university studies.

> *Just the basic that you're working so much to actually make money to get by, that the time to put into the assignments and everything like that - it's just not there…. You're doing assignments at 2, 3 o'clock in the morning. … Before it's due the next day at 8 am. It's like-- …How can that not be a stressor? That'd probably be the major one. FGA*

> *… with the hours you put into work - even myself with financial support, I still have to work - that's a given. And the hours you put into work, you tend to actually get more stressed about doing the uni when you're not able to. Which is what I experience. … So I go into like this black hole of not doing the uni, and then I - I don't do the uni, because I'm so stressed. And it just makes the situation worse. FGC*

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Students found that the cost of study materials such as texts was an extra expense that they felt they could not meet, some being prohibitively expensive. This affected their studies in a number of ways. One example given was that some courses have open text exams which meant students would be at a disadvantage without the text.

> *I end up not-- Like, textbooks are so expensive at XXXX that I will not-- I just won't bother with the textbook. You have to live without it. Because you could either like buy food and stuff like that, and put money on the printer - or like buy a textbook that you might not use, yeah. Because it can-- Some, one of my friends paid like $380 for a textbook. FGC*

Disruptions to work added to the financial and related stresses experienced by students and added to their sense of precariousness. Students included illnesses and even placements related to their studies as causes. Illnesses can last for a considerable length of time and yet fail to meet university criteria for disability support, leaving the student with few options. They can also leave a student with increased tiredness. Dental expenses were noted to be expensive.

Rural students who are economically disadvantaged reported that extended placements in other towns or cities that are unpaid, place an added strain on financial circumstances. Options such as having placements integrated during the year, for example one day per week instead of a block, were suggested as being easier for these students to do.

> *So I, so one of my biggest stressors has been health. Because I got the flu and I was-- I had 18 months off work. I broke some ribs as well. So I had a really rough trot, and I lost my job. Because I was a casual and I have 2 jobs and I lost one of my jobs because I was sick for 3 months. So that was a real stressor.... And the reason why is just because I had no buffer. Like if something goes wrong, I said, "I don't have anything to fall back on." FGE*

Childcare costs were a financial stress for one participant and also a responsibility felt.

> *Family is really a factor. Everybody have, our family we, like at home with always a family. Well in the case it doesn't fit and when the kids are sick or maybe if we are not on good terms with our family member, it does affect that. FGE*

<u>Limited support</u>
Students identified having limited or no financial support from family as leading to feelings of having no safety net. These students may consider themselves at a disadvantage due to extra stress on study and class time caused by work. Centrelink payments are considered inadequate.

> *Yeah. I'm in that situation where I don't receive financial support from my parents. And while I do get Centrelink support, because I'm lucky in that area, it's definitely not enough to cover, so—FGC*

There was also a perception among some students that universities are more focused on academic support than psychosocial/ financial support. Seeking professional support through the university or through a GP takes times in itself, which is not always available and adds to stress.

> They said, "You have to give us another document." So again, I have to go to a GP, I have to go to a psychiatrist. I have to tell them my life story about how - like how I-- And it's not just ADHD, it's like comorbid-- FGF

<u>Social and psychological stresses</u>

For many students the effects of disadvantage are cumulative and act as multiple barriers to their education. For example, students from low SES backgrounds living in the greater Sydney area had to choose between living at home with a long commute or renting with a necessity to work more. Living in their parents' house, i.e. the cheapest option, can be the cause of further psychosocial stress depending on circumstances and the stability of their family homes. Students who live far from their university identified travel time as a stress that adds to tiredness and builds up through the semester.

> My first year's study, I lived at home in XXXX and I commuted to-- Was doing a Bachelor of Science and commuted five days a week. So I was spending 30+ hours on public transport every week. And so for me, that like destroyed me and I just like I really battled to do, maintain my uni workload. And then when I moved into the city my third year, like rent was just like-- Just difficult. Like, I mean like-- …… Well rental stress is supposed to be like when you're using 30% of your income or something on rent. And like, yeah I used like 50%, 60% - like just to kind of like-- And not living in, I'm not like living like - living in like a fantastic like place……share house living with between 4 or 5 other people. And like yeah it's-- Yeah, so it's kind of like that. A balancing act, like those - that trade-off between like not spending 30 hours a week on a train, and spending many hundreds of dollars on rent and yeah. FGB

Students in shared accommodation described stress from issues involving managing relationships and also with finding quiet time to study. One student said they were sharing a house with 7 couples.

> Yeah, yeah. So in some ways it's a similar impact. Where you actually have to-- Because you have to live in these shared living arrangements, you actually have to manage your studies around the other people. FGB

Also identified were relationships with family members and the uncertain nature of these relationships for some students over the course of studies. This includes families who are unsupportive and abusive relationships. A student reported being estranged from parents and psychologically affected by this as well as the ongoing imperative to support themselves financially.

> I ran away to uni to escape my family. I had no guarantee of success. And the stress in that. Like I can only speak from my own experience the first time around, that the absolute poverty and lack of life skills, isolation - made me take 7 years to do a 4 year degree. And that was based on mental health stuff, from the stress of doing uni on my own with no support. And I've

*got more support now, and I'm-- It's still hard, but I'm getting better grades now, because I know where to get the help from. FGA*

*I started my degree thinking that my living arrangements were stable. Then my partner ended up being abusive, and I got kicked out of home. And I had all of this junk happen in my personal life. And it set me back by like at least a week on my assignments. And then there was no real contingencies or kind of considerations for anything outside of like academic issues. FGE*

<u>Preserving a positive identity</u>

Students spoke of the effort or work required at university to project an appearance that enables them to feel dignity and, equally, previous experiences of being treated poorly due to their outward appearance of poverty through such things as the clothes they wore.

*I would say it is appearance and a matter of dignity. Like you get treated like a second rate citizen by a lot of people because you don't dress as nice. So like I understand what she's saying, like-- That's why I dress the way I do now. That exact reason. FGA*

Participants also suggested that periods of mental illness could lead to noticeable effects on students' ability to write and this could affect large periods of time. The importance of open and supportive relationships with academic staff was seen as crucial to helping students get through these periods. One student reflected on a negative experience with both lecturers and administrative staff who had been critical not just around academic issues but of the student's life skills. The student subsequently was diagnosed with ADHD.

*And was one of those people who - when I first got out, I worked a lot. And then spent overnight here, like almost every night, pretty much. And that was a factor of working, also trying to get away from home. And that is mental health. And I've had like my struggles since I've been here. And that - yeah, that is overall, puts like a stress on everything else. Because-- …You just like-- You don't have a clear head. So you'll attempt to do something, and it can just seem like you've got a big roadblock in front of you because you just can't like-- You can't get it out of your head sometimes. FGC*

Maintaining a positive sense of self in the face of these stressors extends beyond academic achievement to well-being and quality of life.

### *What does disadvantage mean to you?*

The permanency of poverty

Being disadvantaged through financial poverty was spoken of as a long-term condition that is hard to overcome. One example of ongoing disadvantage (after university) mentioned was transitioning into the workforce with a degree yet not having gained experience from unpaid internships and other experience generating opportunities that may be costly and compete for time with necessary paid work.

> *-- XXXX was saying before about oh like eating a can of beans and I'm like - you just have to put up with it. And it's like - well actually for some others, the can of beans isn't a temporary situation in our life. The can of beans every night is a permanent situation in our life, and it's always been that way. And people don't realise how hard it is to overcome that. FGA*
>
> *I was working like relatively like kind of like basic jobs, kind of like make ends meet. You can't really afford to get that kind of like volunteer experience. Which like when-- Which will differentiate you when you're applying for a job out of university. FGB*

Students who are disadvantaged may feel less inclined to ask for help and feel shame among peers at any visible resultant support or special considerations. This student spoke of learnt shame and stigma. Traumatic experiences and family socialisation could result in being fearful of asking for help. Thus, conditions such as mental illness may remain hidden from university staff and be unsupported. Asking for help can also be daunting for individuals with disabilities and the special conditions provided stigmatising as they are very visible to other students (peers).

One student mentioned that they feel being granted special conditions for a visible disability is more easily reconcilable to other students as being fair than other less visible conditions such as mental illness, and thus they feel less social stigma. Special conditions for less visible conditions have a reputation as taking advantage of the system and require ongoing justification.

> *.. like with accessibility and that sort of thing. Especially for me, there was a stigma attached to me accepting that help--… And accepting the extra conditions in exams and that sort of thing. So I didn't want to do it. Because I didn't want to be labelled as having a problem. Needing extra time in the exam, for example and that sort of thing …… Where people see them getting extra time and extra help as an advantage. I know a lot of people who view people as taking advantage of the system. FGC*

Students who have been socialised into feeling disadvantaged spoke of a private and public identity that might be different and the work involved in maintaining these.

> *I dress well, but I don't do anything else well. Like it's like the sacrifice I make for my dignity. I don't want people to know how hard my life is. FGA*

There is a perception that at university some students are 'advantaged' through their access to resources such as financial support and tutoring. This discrepancy, and relative advantage, only became apparent to students after

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high school possibly again because the students' reference group is likely to comprise students attending the same school and having similar life experiences.

> *I thought I was on a fairly kind of even keel in high school and stuff like that, everyone was in the same class. They had the same services available for them. They got handed the same stuff. But at university you see some students, they can afford to have private tutors, and they can afford not to work. It's like, they can put their - all their time. But then you're like - well I - it's no longer kind of even keeling, because I have to work like 30 hours a week. FGC*

Disadvantage resulted from different issues at different life stages. Disadvantage can be from one's socio-economic background or acquired through medical disability later in life:

> *I originally come from the upper middle class, so I'm not financially disadvantaged. Although since I've been on - because of my medical condition, I've fallen down. But my background is not low socio-economic. But now I am, and that's because - yeah, of issues, so disability, yeah. FGA*

Again, changing circumstances and a need to maintain identity and social acceptance are driving forces for these students.

Disadvantage as a rural student

In regional areas, economic forces beyond their control affect university students and their opportunities for employment and lead to socio-economic disadvantage. Disadvantage may also be more likely if the student is from a rural town where there is little opportunity to build a resume that would subsequently benefit employment during or after studies at university.

> *supporting yourself to do those placements aside, it can be actually really difficult to get them. Because you have to put in your resume and if you're from a rural area and you didn't get - have a job when you were 13, you can be just struck off the list. Because I came from an area where there was nowhere to work. Like it was a.. there's no town so there's no actual paid jobs. And you don't have that working history built up. FGC*

A sense of isolation from family support was mentioned by students living away from smaller rural towns and local students who despite being close to family, could not draw on family support. One student thought disadvantage resulted from current or past social housing, migrants and children of migrants and experience of domestic violence.

> *Yeah, yeah. So regarding the individual factors to help you identify students from disadvantage background. I would, I was making a list of what those might look like. … It would include things like anyone who grew up or is currently living in public and social housing. … Migrants and children of migrants. … Because they're likely to have the social capital to draw on. Anyone who has ever experienced DV. …Even if it's not recent… Because that can hang on in the long term. … Impacts, and very severe financial impacts as well. FGF*

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### *How could disadvantage be better identified?*

<u>Issues around self-identification</u>

There were suggestions from students around the use of tick boxes that seemed to contradict those who believe objective measures unfairly exclude them from being assessed as disadvantaged. Nevertheless, one student suggested objective measures may be less stigmatising than self-assessment of hardship and another that having options on a form to tick may normalise a range of issues and save the student the confrontation of having to 'confess' to disadvantage. It was suggested that reducing the anxiety around having to justify disadvantage would be beneficial.

Students also suggested that normalising disadvantage may also be achieved by inclusion of preambles such as: *"Many people feel this financial hardship…"* followed by *"Are you, do you consider yourself as one of these people?"* They further suggested that this could include provided examples or classifications of what disadvantage looked like to reduce the uncertainty of self-classification.

> *I freak out and don't answer it. FGA*
>
> *The hardest part is supplying evidence when you have something happen. FGA*
>
> *Something like that, where you're actually showing the students, "This is what it would look like if you were economically disadvantaged. FGA*
>
> *..being able to say-- Like to say, "I am of like Aboriginal and Torres Strait Islander descent. I think I need help in this area." Because it kind of objectifies it, instead of having to write that, "I personally am poor," you can say that - you can tick a box and say that, "I need financial help in housing," or say, "Communications is like, is what I need help with," and stuff like that. Instead of having to actually write it down like a confession. You can actually just select the areas that you need help with. … If it's a tick box, it seems less personal than you actually writing it down. …… Because it's like - okay, well they've got that tick box there for a reason. I'm not the only person like this. FGC*

It was suggested that discussing or disclosing your personal circumstances around disadvantage to a person rather than a computer form enables you to express more clearly your situation rather than its being taken out of context if what you write does not adequately represent you. Such an interview might also be less a retrospective exercise around justifying past disadvantage and more a prospective exercise on how support can be beneficial.

> *If I had to explain over like what has brought me to the point where I need this - over what opportunities this will give me that will help me get to the end? Would be a lot better if you-- Like if it was more about - yeah, like what opportunities will receiving the support or helping students from low socio-economic backgrounds - what opportunities will help you get to the end of this degree and keep you going past this and doing well and what not? I think that would be a lot more receptive than like, "What is life done that you deserve this?" FGC*

> *I would rather - yeah, talk to-- Have a-- Like talk to someone than write it down. At the same time, writing it doesn't always - yeah, sort of like transcribe that. Like the meaning behind it and like-- They're reading it from a different context to what you can be. Like expressing it in-- Because like yeah, meeting people over reading something changes like perspective. FGC*

A possible approach was seen as having some screening questions that when answered showing risk of disadvantage would lead to identification and if required, an appointment with a support person. An individual measure of socio-economic disadvantage that could be given to students at any point in their undergraduate career was therefore seen as of benefit.

Students also said broad overarching questions would promote students to reflect on and interpret their own circumstances honestly and without stigma. Examples included: asking students more broadly about their ability to live financially and how comfortable they are with their means of earning their income. Also, asking 'What is the family income and number of dependents?' was considered to be a reasonable question. One student suggested a form that shows the balance between a student's income and expenses.

> *And we can identify as disability or sexual orientation or ethnicity or indigenousness - and it's our interpretation of that question. And they create the opportunity for us to have that conversation, if they asked us that in that way. FGA*

> *Feel like a viewpoint is asking the students, "Do you feel as though you can financially live, and do you feel content with the manner in which you make that money?" Because I used-- I lived on college in first year, and there are people with - coming home with a couple of hundred each week, but it's out of drugs or--… escort work etc etc FGA*

> *I think it would be good to have questions, like allow people to come to their own terms of being disadvantaged - as opposed to being told like, "You're disadvantaged," like--… For instance, like something like that. Like I applied for the bursary, they get you to add in like all your expenses for like living. Like rent, transport, all that. I mean they get you to add in like the money that you actually have coming in from like scholarships or income or like family support. And then they like basically show if there's a difference. Like for instance if you had more*

> *money coming out than coming in. … That kind of helps you realise that like oh yeah, like I'm not actually in a great position. FGB*

One student suggested that there is not a social stigma around low socio-economic status in students as this is now normalised in places such as Sydney where there is financial hardship from the high cost of living.

> *"Everyone's poor in Sydney." But like when it's things like, "Oh, you have health problems? Oh you have like this? You have this?" It's like, "Ooh, like--" FGE*

Aboriginal and Torres Strait Islander students suggested that questions could be less about having the correct or official paperwork and more about asking questions such as:

> *"Explain your circumstances. Where are you from? What group are you related to?"  or "What are your connections to the community?" FGD*

Whilst such an approach would not lead to an objective measure that would enable transparent funding and, as a consequence, could not be regarded as possible the response is of interest as it points to the view (expressed across the focus groups) that any questions asked or documentation requested need to be sensitively worded and handled.

Interestingly, it was suggested that one way that universities could overcome the reluctance of students to self-identify is to 'proudly' promote supports for those experiencing disadvantage on university home pages. It was thought that this would benefit students considering studying at that university, enrolling or current students who are experiencing a crisis; noted as a time when stress can make finding support more difficult.

> *I think it should be on the website. You know how you have a moving screen? Well one of the moving screens should be, "Do you have a disability? Are you from a low income group, for? family? Are you a carer, are you--? Just a series of questions on the website. Because no one knows. I mean I, no one knows about these services. But like if that's on the website, people will see it when they're applying. FGF*

> *When you're in crisis it's actually extremely hard to find. … Round and round in circles. On the website going, "Where, where is it?" Like trying to find a needle in a haystack. … I think I emailed 4 or 5 people before I got a response that was actually helpful FGF*

Changing attitudes and the language related to disadvantage is thus seen as central to self-identification.

### *How efficient/suitable is the identification process?*

<u>Limitations of current methods</u>

Students discussed their experiences with the university around its methods (or system) of identifying disadvantage. A common theme was that the parameters used for identifying disadvantage had limitations. Students provided examples where this had an impact on them.

> *Yeah. I think it's just like, when it comes to like - if you have trouble at home. Like if your family doesn't support you. If you have people harassing you in your personal life - it's just kind of, you can't get help for that. You kind of just have to deal with that on your own, and hope that it doesn't impact your studies. … like the things that impact your grades don't get any consideration, because they're not like medical. FGE*

Students reported that some disadvantage can be overlooked when the university relies on a Centrelink assessment for identification. This may occur when Centrelink uses parent income as a measure of disadvantage yet the student is not receiving or cannot receive parental support. Further, students whose parents have incomes or assets marginally over the cut-off have a high risk of disadvantage through having less financial support to access.

> *I think XXXX relies on Centrelink's like-- Determining of your financial status. So basically if XXXX looks and sees that Centrelink isn't - was giving you any benefits, then they - XXXX might decide that you're not in financial hardship. When there's other scenario-- There's other situations that influence Centrelink's decision in that. Like… If your parents earn over a certain amount of money, you cannot receive Centrelink benefits. But you might be like estranged from your parents, and then you won't get support from XXXX. FGC*

Students noted that non-disability issues, although they affected studies, were more difficult for students to justify to the university and thus receive support for. For example, a student identifying as transgender reported that experiencing discrimination does not align with disability and therefore they had no other avenue for getting academic support despite perceiving that they had been disadvantaged. One student spoke of the lack of university support available for carers of people with disabilities

> *I was put in this really difficult position of whether or not I should disclose that I'm trans on my disability plan. Because being trans isn't a disability, but there's no other - there's no room for that in the system. … And so I didn't end up doing that. But that caused a bunch of other problems. So it's like, it does get uncomfortable. Because you kind of have to point out this thing, and it's treated in this way that's pretty not great. FGE*

It was also noted that many issues with the identification of disadvantage are due to disadvantage having different issues for students in different contexts, at different time points and at different institutions.

One student suggested the lack of face-to-face contact when negotiating disability support reduced the empathy that universities and their staff were able to introduce into their assessments and resultant support. Further, not having one person as a contact added to stress and placed the burden of negotiating support with the student:

> *they just don't talk to each other, it's all through emails. And like nobody actually sits down face to face. And so like, a lot of that human empathy just gets lost. FGE*

The students also discussed their perceptions of the universities' application of support and its limitations. One student spoke of how disability support is generic and based on assumptions rather than need. For this student, some support they received was less relevant, while other relevant needs were not supported. It was also perceived that universities have few options for support other than directing students to counselling services, which is not tangible support and perhaps not what the student requires. Students felt uncertainty about what benefit they could gain from disclosing issues to student welfare services, not knowing what would happen and how the university could improve their situation.

> *as great as the disability like services officers are - like it's still focused on disability. Not like how to just help students as a whole. So there's a lot of things that kind of fall through the cracks, because they don't count as disabilities. But they still impact you in a bunch of ways. And the default answer seems to just be, "Go get counselling, deal with it yourself." FGE*
>
> *Because like having a pretty physical disability, it's - having a physical disability means they like - they just assume that like you need help with this and this and this. But then like, but I need help with other stuff as well. FGF*

Students from one university reported around the stigma of identification and noted that having separated exams for those with disabilities can lessen feelings of stigma but not eradicate them.

> *They try and put us in adjusted rooms, because like they can't-- Like it's even more obvious if you're in the actual room. And they're like - okay that person like 2 minutes, like you go to the bathroom and then you get that extra 2 minutes. Like it's more obvious. Like I think they're trying their best to make it-- Like it's definitely alienating a little bit. But like, I'd rather do that than in front of my whole group of like all peers. I don't know? Like I don't know what could be the other option really. …Yeah, and I'm not saying that XXXX's doing a bad job. I think like it's probably the most effective way to deal with that. It's just, with the social stigma—FGC*

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<u>Lack of understanding across different levels and functions of university and privacy concerns</u>

Students discussed their concerns around disclosure of information and the security of the information they provided to Universities about their disabilities. They felt universities could state more clearly how the information gets used and protected.

> *Like when I had to bring all that along from my doctor, I thought, "Who's going to know this? Are the academics going to know it? Is the whole university going to know it?" … And I thought, "Will that impact my employment in years to come?" I mean, you don't know this. They don't say, "Well this is going to be confidential and it's only just the disability services who know." They don't say that, so like— FGF*

> *..because one girl on our campus I've been friends with for years. She needed a medical procedure, and it needed to be done urgently. It was around $2,000. And I'm like, "But it's affecting your study, because you need to have this problem sorted. Go to student welfare." So she eventually went down to student welfare, but most people don't know. And she's a 3rd year. Most people don't know what's available when you go to welfare. They think, "Oh they're going to talk about me and then they're going to da, da, da, da." And it's not like that at all. …So, and it can kind of - like self-disclosure, the whole bit can really intimidate people. FGF*

In contrast, some students reported frustrations when having to identify as disadvantaged multiple times across multiple university areas, units of study and lecturers. There was discussion on finding a balance with privacy issues. One student, rather than having concerns for data privacy, was concerned about the reaction of teachers receiving information and judging without knowing them.

> *XXXX doesn't really have like one central support like department for students. So if you need kind of academic support, you kind of have to speak to your lecturer. But then disability support is another area and counselling is a different area. And like scholarships is a completely different area again. So kind of have to submit like all this information to different groups, and they don't work together, FGC*

An Aboriginal student spoke of fear of 'retribution' from staff if their identity was widely known. Another student however, who had a consistent support person who checked in frequently and had reached out to the student's broader community, had felt supported and safe at university identifying as Indigenous.

> *I talk to the faculties. And actually a lot of times their push back on - they don't get the names of Aboriginal and Torres Strait Islander students. So they don't know - unless-- Who, and because-- And it's across a few areas. But it comes back to privacy and like they are not identified because there's a fear of retribution and they'll be highlighted in a class. "Oh you're the aboriginal kid. Tell us - you're the expert on that." And having to speak in an environment, they don't feel safe. FGD*

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It was noted that awareness among academic staff of available support can be limited and this is frustrating for students. Experiences of poor communication between departments and teachers were considered a further stress on students. However, one student spoke of a particularly understanding teacher who 'guided' them through special consideration processes and alerted other teachers to this student's circumstance.

Some students noted that, when they sought help, some university services were unsure of where to direct students, depending on their enrolment and the particular circumstance. This increased their stress due to the time it took to identify the required support. Many students suggested that universities could have more visible information on the range of available financial assistance and the range of applicable circumstances as this could assist those less likely to apply for support.

> *Well they don't even know that they have access to the resources. So some of the staff in the university don't have the knowledge to actually pass onto students FGB*
>
> *So maybe giving out that information and reminding students that that is there FGC*
>
> *And yeah, there was just this whole thing of like constantly being sent to people, and like people passing the buck and not wanting to actually deal with the thing. Or not knowing how to. And then just wasting my time that I don't have….Which then feeds into it being a stressor FGE*

<u>Assumptions around disadvantage</u>

Students felt that financial support prioritises high school leavers. Some felt that being older may reduce students' ability to access support as the University and society have an expectation that older students can support themselves.

> *I actually had to be pretty proactive about it. Because I was like, "Okay, how am I going to support myself? I'm independent." But because I'm also older, I felt like maybe there might be some bias against that, because I'm-- But I'm single and self-sufficient… I think because of my age, most people assume that I'd have security and a backup if something goes wrong. FGE*
>
> *I think that it's definitely kind of like a prejudice towards high school leavers. Like people coming straight out of high school. I think it's a lot easier for people coming straight out of high school to find pathways for financial like benefits to come into uni. Like personally, I've been working with different sectors of the university and like doing outreach programs and stuff to high schools.  FGE*

Thus, whilst HEPPP funded programs are targeted to undergraduates, that should not be equated to school leavers. Care needs to be taken to ensure that mature age students' circumstances are also at the forefront in any identification process.

The Aboriginal students in the focus groups also pointed out that being Aboriginal or a Torres Strait Islander does not mean that you are part of an homogenous group but that that is an assumption that universities often make. From the comments of students from the other equity groups, this applies equally to them. The focus, the students argued, needs to be on the individual and on the specific areas of disadvantage they are experiencing.

***What makes things unequal for Aboriginal and Torres Strait Islander students at university?***

In contrast to some of the negative experiences around support recounted by students, an Aboriginal student suggested that their university Aboriginal support centre was helpful as it is located centrally, staff are accessible to speak to individually and access to expert tutors is readily arranged. The process was non-stigmatising as it had an 'opt-in' with a tick box, that felt normalised. Further, the university Aboriginal support service was pro-active in calling and welcoming students and talking through support options, and organising social events to meet with other peers. Thus, it was made clear that support was available (that is, students' eligibility was clear and no further questioning or justification occurred). Importantly, the choice to access it was with the student. This was seen as in contrast to students who are disadvantaged in less clearly defined ways (including those experiencing socio-economic disadvantage) and who feel the need to continue to explain and justify. Indeed, in some circumstances, they believed that students chose not to do this and thus did not receive the support. It would seem, then, that the ease of identification of the disadvantage has, not surprisingly, an effect on how readily available support is.

> *I am indigenous, where I represent as an indigenous community member. Because you don't want to get put into the category of, "Oh you're just an Aboriginal." Like, or Torres Strait Islander. And there's nothing bad about that. But there is - again, social stigma that surrounds it. …That being said, XXXX definitely with its new indigenous centre, which is actually in the main part of campus - they've got a lot of support. So you can and it does do things properly FGC*

> *I was treated with a phone call from someone from the indigenous centre saying, "Welcome to XXXX, we're so glad that you chose us. I'm from the indigenous learning centre…. It's completely optional. You don't need to feel like you have to come. But you can just pop by." FGC*

This is, however, not without its challenges.

> *Why do we automatically assume that all Aboriginal and Torres Strait Islanders are low SES? Yeah. And so the other is about how we-- How would you frame disadvantage and it's-- And I've worked in the space for a while - is the deficit model, and how we can fix and we can solve this disadvantage. Rather than coming from a strength based. And the Aboriginal and Torres Strait Islanders have an enormous strength to bring to an institution and education, and to provide society. But it's always the, the conversation language is, "How do we solve this disadvantage? Rather than going, "Hey you have an amazing-- Knowledges and traditions and culture that is valuable. We'd really like to tap into that and to merge that, those knowledges into a more institutional FGD*

Indigenous students also spoke of having to prove that they were Indigenous to peers when they provided lived experience opinions during class.

> *I think even when in class, and whether it's health related things like you're talking about as part of your degree. That support on the other side, and going - how, how do you respond? And making sure--… That the mental health and that - that's saying to people, always have to*

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*get done/dumped? to the Aboriginal and Torres Strait Islander issues. Like I've had it in my classroom, and I said-- And how much you go into it, and how much you choose - actually know, and actually push back on that. I'm like, like what - that story you told. I would say, "I am Aboriginal, and I don't need to prove it to you." Or, and like, "Why is it always on Aboriginal and Torres Strait Islander people to educate others?"… And that it's not appropriate to ask what percentage people are. And those, like it's questions. And I think when it comes to cultural competency, especially around indigenous cultures, is - what is appropriate, what's not. And you can go back to, "Would you ask this of someone who was any other cultural heritage other than Aboriginal?" FGD*

Therefore, although identification in this equity group was seen as easier than some others, this could be offset by assumptions around low SES and the attitudes of staff and fellow students.

The students' contributions in the focus groups support the findings of the questionnaire but, in so doing, enable a more nuanced understanding of how disadvantage, in its multiple forms, is experienced. In suggesting ways of better identifying students in need of support they also point to the impact that disadvantage has had and continues to have on them, not only with respect to their studies but to their sense of self and quality of life.

**Phase 3 – Desk audit of university websites**

Access to information is a key consideration when supporting students from low SES backgrounds. This audit, finalised in May, 2019, considered the accessibility of Australian universities' websites and the ease of finding particular student support services and information to enable study. The websites audited here focussed on the services promoted through universities' 'current students', 'student support' and 'study life / student life' pages, which were assumed to be the most obvious places students would look in order to find assistance. Specific areas of support, such as those for rural and remote students and carers, were searched for independently, as often relevant services were not found within the student support pages or were very general in nature. The information reported in this section is publicly available and has not therefore been de-identified. It is acknowledged that websites change overtime and this analysis captures just one point in time.

This audit considers three questions, outlined below, alongside tables for each question, and an analysis of services offered. This audit focuses on how well each university promoted these services within the student support pages described above.

*Question 1: How easy was it to find information on services and resources available for the equity groups?*

The four main support areas that universities promote via their websites to those students experiencing disadvantage were found to be:

- Disability
- Financial support
- Services for Indigenous students
- Scholarships

The ease of access to these four areas on each university website is documented in Table 20.

The Department of Employment, Education and Training's (1990) report, *A Fair Chance for All,* identified the following groups as being under-represented and recommended that equity policy focus on:

- People from socio-economically disadvantaged backgrounds
- Aboriginal and Torres Strait Islander people
- Women, with particular emphasis on non-traditional courses and research and higher degrees
- People from non-English speaking backgrounds
- People with disabilities
- People from rural and isolated areas (ACIL Allen Consulting, 2017, p.25).

In 2014, Koshy and Seymour (p.2) identified similar equity groups in their report, although with different labels:

- Low Socio-Economic Status ('low SES') students;
- Indigenous Students;
- Women in Non-Traditional Areas;
- Non-English Speaking Background (NESB) students (also referred to as 'culturally and linguistically diverse' or 'CALD' students).
- Students with Disability;

- Regional Students; and
- Remote Students.

What is apparent is that the equity groups identified in these reports are consistent with those that universities identified as disadvantaged, as evidenced through the scholarships they offer. Table 22 identifies the specific groups to which each university offers scholarships. In addition, Table 22 documents the pathway to find relevant information about support services on the university website, starting at the home page. The third column identifies the pros and cons of the website and navigating the support services.

Two additional columns were created to document services specifically targeting students from rural and remote areas and students with carer responsibilities. Rural and remote was given a 'Y' (yes) if the university had specific support services already in place for students from these backgrounds, as determined by searching 'rural and remote' in the main search bar on the university home page. A 'N' (no) was allocated where search results spoke only of research projects for rural and / or remote students, rather than actual support services available. Carer was given a 'Y' if this equity group had a specific page describing carers' experiences, and / or support services provided for them at the university. Universities with an 'N' mentioned carers more generally in their disability support pages, but without specific reference to carers' experiences and / or support programs offered to them.

**Ease of access for equity group websites**

The websites were analysed in terms of ease of access and the information provided. A simple colour coding system was used to signify the ease of access.

**Yellow – 2/40 (5%)** Appears innovative for some reason: Centrelink information presented in a certain way; very detailed financial support page + legal documents to assist students.

**Green – 25 / 40 (62.5%)** Information on four sections within 2-3 central pages; of these, 6 (15% of all universities; 24% of this category) have specific elements that were exemplary.

**Orange – 9/40 (22.5%):** Information on the four sections was scattered beyond 2-3 central pages (e.g. student support, welfare, other). Of these, 1 (2.5% of all universities; 11% of this category) had innovative practice.

**Red – 4/10 (10%)** Information was quite scattered, or key element missing (e.g. financial assistance).

**Carers: 15/40 (37.5%)** had a dedicated page for carers; others couched this into disability page.

**Rural and regional: 10/40 (25%),** including regional access schemes.

When the current students / study pages were not easy to navigate / did not display the desired information the following key words were used to find the sources listed in Table 20:
- Financial support
- Low SES
- Centrelink
- Rural and remote [students]
- Carers

It is worth noting that these final two terms, rural and remote students and carers, had to be searched for independently. For rural and remote students especially, information was not forthcoming on many of the university websites. Carers were usually listed within the disability support page in a general sense – listed as one of a number of populations impacted by disability.

Both the University of Technology Sydney (NSW) and Griffith University (QLD) websites are considered effective models of disseminating detailed information to students. The University of the Sunshine Coast (QLD), Deakin, Swinburne and La Trobe Universities (VIC) and The University of Western Australia (WA) also have informative financial assistance pages, that explain student options well before redirecting them to relevant Centrelink webpages.

<u>Use of equity group key words and definitions</u>
The greatest difference in terminology across universities is how Indigenous services and disability services are defined. **Indigenous services: 33/40 (82.5%)** of universities used terms 'Aboriginal and Torres Strait Islander' or 'Indigenous'; **7/40 (17.5%)** used Aboriginal name words as their name for these services; and **Disability services** had the following names and total occurrences.

**Table 20:** Naming of disability services

| Name | Number of Occurences | Percentage |
|---|---|---|
| Disability Support | 11 | 27.5% |
| Disability Services | 5 | 12.5% |
| Accessibility Services | 4 | 10% |
| Disability (/-ies) | 4 | 10% |
| Accessibility | 3 | 7.5% |
| Student access and inclusion | 2 | 5% |
| Students with a disability | 2 | 5% |
| Access and Inclusion | 1 | 2.5% |
| Equity and Disability Support | 1 | 2.5% |
| Diversity and Disability Service | 1 | 2.5% |
| Disability and accessibility service | 1 | 2.5% |
| Disability and Accessibility Guidance | 1 | 2.5% |
| Disability Support Services | 1 | 2.5% |
| Health Conditions and Disabilities | 1 | 2.5% |
| Studying with a disability | 1 | 2.5% |
| UniAccess | 1 | 2.5% |

The other two categories explored in Table 20 (financial assistance / scholarships) did not differ notably, and therefore not considered here.

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**Table 21:** Ease of access for disability, indigenous, finance assistance and scholarship web pages across universities

| University[4] | From home page to… | Pros (+) and cons (-) | Rural and Remote? | Carer? |
|---|---|---|---|---|
| **ACU** | **Current students requires login (like online enrolment page) → different language; student life → student services**<br>Counselling, disability support, international student services, student advocacy (study forms support), ATSI support<br>**Study at ACU:** Find a scholarship; financing your students | (+) Student support<br>(-) Separate link for Australian Government websites financial support<br>(-) regional and remote only specified in scholarships | N | N |
| **Adelaide** | Current students → Student Support: Disability support;<br>Study at Adelaide: Scholarships; Student Finance – financial assistance<br>Home → Indigenous | Most of the financial support links don't redirect to Centrelink; self-contained information. | N | Y – student parents and carers network |
| **ANU** | **Current students**<br>New, international, students with a disability, postgrad, indigenous<br>**Study:** Scholarship<br>**Accommodation → Financial support:** Not much else was clear | (-) Financial support, only for accommodation<br>(-) regional and remote only specified in scholarships | N | N |
| **Bond University** | Current students → disability; indigenous students;<br>Future students → study at Bond → how to apply → scholarships; Future Students → Study at Bond →<br>How to apply → Fees & costs: Financial assistance | (-) No links to Centrelink. Student income support eligibility linked to Bond receiving HELP rather than CGS funding. | N | N |
| **Canberra** | **Future Students (crosslinks with current students, which is a separate tab)**<br>Accommodation, Scholarships, international students, (when you hover over): Indigenous students, student support: academic, financial, inclusion and engagement, transition support | (+) All four categories on one page (current students → student support), good page layout<br>(-) regional and remote only specified in scholarships | N | N |
| **CDU** | Current students → student support: Indigenous support; scholarships; disability support; financial support | (+) most things in one place (-) Financial support redirects to Centrelink | N | N |
| **CQU** | Student life → New Students → Student Support: Accessibility; Indigenous Student Support; Financial Assistance;<br>Student life → New Students → Student Support → Financial Support: Scholarships | (-) One of the financial support redirects to Centrelink | N | Y Online dementia care resource for carers |
| **CSU** | **Future students →** category (school leaver, undergraduate, PG, online, HDR, international)<br>**Access student services and support →** when selected, pop-up appears that gives you | (+) student support offered when selecting<br>(+) offers basic information for financial support before redirecting to Centrelink | Y | Y |

[4] Torrens University and Carnegie Mellon University (both Adelaide, South Australia) are not included in this audit, as the former functions as a network of education providers, and the latter only teaches postgraduate courses.

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| University[4] | From home page to… | Pros (+) and cons (-) | Rural and Remote? | Carer? |
|---|---|---|---|---|
|  | contact information for student support number, alongside categories to choose from:<br>• equity<br>• disability services<br>• Indigenous support<br>Making study affordable for everyone:<br>• Fees, costs and refunds explained<br>• What scholarships or grants can I apply for?<br>• Apply for a short-term student loan<br>• Fee-paying places (FEE-HELP)<br>• Access Government assistance | (+) more information on the realities of regional and remote: https://insight.futurestudents.csu.edu.au/remote-roles-in-regional-communities/<br>(-) Separate link for Australian Government websites financial support |  |  |
| Curtin | **Future students**: scholarships, financial assistance and fees; → aboriginal and Torres Strait Islander people; **current students** → **wellbeing support**: disability and accessibility guidance; | One line describing services followed by redirection URLS | N | Y – separate page |
| Deakin | **Current students** → **health and well-being**: disability support; **enrolment, fees and money**: loan and financial assistance; scholarships; **studying**: institute of koorie education | Centrelink page with information, then other links with Centrelink URLS | Y –Deakin rural health support | N |
| Edith Cowan | **Home**: indigenous students<br>**Most popular**: fees and scholarships; **student intranet – support**: student equity, diversity and disability service (had to search); very hard to find financial assistance (kept going to overseas) | Fees and scholarships takes you to Centrelink page explaining HECS and other deferment fee options, OS help, TFN enquirers etc. | N | N |
| Federation | Current students → Support and Services Financial information and support; disability support; Aboriginal Education Centre. | (+) no links to centrelink, though no information provided for it either. | N | Y |
| Flinders | The Flinders experience: scholarships; health, counselling and disability services; study → apply → apply fir UG degree → financial assistance<br>→ Study: Indigenous Students | Government assistance – sends all to Centrelink without much explanation | Y – rural entry for doctor's program | Y – workshops for parents and carers |
| Griffith | Student services → Welfare and Financial Services: Financial Assistance;<br>→ Scholarships (the one application matches eligibility amongst many scholarships);<br>→ Gumurrii Student Support Unit;<br>→ Student Services → Diversity and Inclusion: disability services | Helpful links and resources<br>Department of Human Services<br>Guide to Social Security Law<br>Basic Rights Queensland<br>Centrelink Payments for students<br>Centrelink Enquiries can be assisted by Welfare and Student Liaison officer<br>(-) Had to search for the categories individually, and couldn't find them from the 'home' page. | Y – rural priority access scheme | Y – carer support network |
| JCU | Future students: scholarships<br>Current students → fees and financial support: financial support;<br>Current students → support → student support: Australian Aboriginal and Torres Strait Islanders; | (+) very clear descriptions of HECS HELP, with a few links to Centrelink<br>(-) Was hard to find the disability services (had to search) | N | N |

| University[4] | From home page to… | Pros (+) and cons (-) | Rural and Remote? | Carer? |
|---|---|---|---|---|
| | Student Equity and wellbeing: accessibility services | | | |
| La Trobe | **La Trobe students:** studying with a disability; **help and support:** financial support → scholarships; **indigenous strategy and education → student services:** (indigenous) student services | Financial assistance page is mostly self contained | N | N |
| Macquarie | **Why study here** → scholarships <br> **Costs and fees → quicklinks → other costs** financial support More assistance: Austudy, youth allowance, disability support pension, fares allowance (all redirects to Centrelink) <br> **Student support** → Indigenous students, accessibility services <br> **Support → financial and legal** (student wellbeing) | (-) Financial support redirects to Centrelink <br><br> (-) different categories are quite separate | N | N (staff only) |
| Monash | **Study:** loans and assistance; scholarships; **student support services:** disability services; **About us → who we are:** Yulendj Indigenous Engagement Unit | Financial info seemed quite self contained; <br><br> Indigenous unit was hard to find (wasn't present alongside mainstream student support pages) | N | Y – separate page |
| Murdoch | **Current students:** fees and financial support (+ scholarships); → **health and wellbeing:** disability support services; Home: Kulbardi | Mostly self-contained for HECS and other information | N | N |
| Notre Dame | **Home:** study: scholarships, disability support; **student support:** Indigenous students; fees: HECS etc. | Fees page didn't contain any financial assistance. | N | N |
| QU | Future students: scholarships; <br> Current students: disability services <br> → Apply: financial assistance (had to search) <br> → Aboriginal and Torres Strait Islander Support Unit (had to search) | (-) Each area of the four were under different headings; not very easy to navigate. | N | Y – workshop on offer to provide support to carers |
| QUT | Study → Fees, costs and scholarships: Scholarships; financial supports; <br> Study → Student Life → Support for students: disability support; <br> About: Oodgeroo unit | Financial support (Centrelink); <br> (-) hard to find Oodgeroo unit (had to search) | N | N |
| RMIT | **Student home → student support services:** Aboriginal and torres strait islander students; Equitable learning services / disability support; money advice and welfare assistance; **student home → life and work opportunities:** scholarships | (+) Most links from the Centrelink page go directly to Centrelink, though couched in information around. <br> (+) 3 of 4 categories on the one page. | N | N |
| SCU | **Study at SCU** → find a scholarship, student support <br> **Current students → Services and support →** student access and inclusion; student loans; → other financial assistance; Indigenous Australian Support Services | (-) Financial support redirects to Centrelink <br> (-) Slightly scattered, though all under current students (still have to look around a bit) | N (apart from online questionn aire) | N |
| Swinburne | **Current students:** Indigenous student support; Accessibility; Financial Support and advice → scholarships | (+) Separate page for Centrelink assistance, not mixed into the others; check out all the entitlements you are entitled to: takes you to a link that | N | N |

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| University[4] | From home page to… | Pros (+) and cons (-) | Rural and Remote? | Carer? |
|---|---|---|---|---|
| | | doesn't discriminate the different kinds of payments. | | |
| **UNE** | **Current students → support → student support:** Oorala Aboriginal Centre, Student access and inclusion, regional study centres<br>**Mycourse → fees and costs →** financial assistance | (-) no domestic references to Centrelink or its services from main financial support page (only for internationals) | **Y (regional study centres)** | **N** |
| **University of Divinity** | **Current students → fees:** financial support.<br>**(Australian Lutheran College – Education → current students → Higher Education student information → Academic fees → payment options:** Government assistance; nothing for others<br>Catholic theological college: Undergraduate students: Student support services: disability<br>**Eva Burrows College: Study:** Scholarships<br>*Morling College:* **student life and support:** disability support → fees: scholarships<br>*St Athanasius College:* **Students:** Sponsorships and Scholarships; → fees: parish sponsorships<br>*Pilgrim Theological College:* **Student Information:** Scholarships<br>*Stirling Theological College:* **students → student services and support:** disability; Fees and FEE-HELP<br>*Trinity college theological school:* **Home → Theological Schools → Theology Scholarships:** scholarships + residential college → scholarship application; → **About Trinity College:** Indigenous Programs; Home → About Trinity College → News and Media → news: The partnership between Yalari and Trinity is flourishing.<br>*Whitley College:* **Specialist Programs:** NAIITS (Indigenous studies); **Study: Current Students: Student Support:** Financial Support<br>*Yarra Theological Union:* **Student Info:** Fees + scholarships (including links to DU), Students with a Disability. | *Lutheran College:* All Government assistance links go straight to Centrelink.<br>*Catholic Theological College:* search bar goes to google school (not uni specific)<br>Most of the scholarship links are specific to each college (e.g. Eva Burrows College), but Yarra have links to DU. | **N** | **N** |
| **University of Melbourne** | **Study → your support services:** equity and disability support; financial aid; → scholarships; **study with us →** programs for indigenous students | Comprehensive explanation of Centrelink benefits available, with redirection links. | **N** | **Y – given separate page** |
| **University of Newcastle** | **Current Students →** scholarships; financial assistance;<br>**Current students → Support →** financial wellbeing; Accessibility; Indigenous Students; | (+) most of the financial support information does not refer to Centrelink website; clear titles given when it does refer out.<br>(-) not all four categories are in the same place; but overall quite easy to use. | **N** | **N** |
| **University of SA** | **Study →** scholarships; fees and finance<br>**→ student support services:** access and inclusion; wirringka student services | One link takes you through to Centrelink, rest is self-contained. | **Y – regional student services as part of student** | **Y – separate page, but still connected to** |

| University[4] | From home page to… | Pros (+) and cons (-) | Rural and Remote? | Carer? |
|---|---|---|---|---|
| | | | support page | disability hub |
| **University of Tasmania** | **Future students:** scholarships; aboriginal and Torres Strait Islander students;<br>**Current students:** Australian government assistance; health conditions and disabilities. | Links straight to government page | **Y – Keeping them: the rural and remote allied health workforce in the centre for rural health** | **N** |
| **University of WA** | **Scholarships; for high school students → student life → student support:** UniAccess; student financial aid service; **UWA home →** school of Indigenous studies | Dedicated page to youth allowance, Austudy and ABSTUDY, with links going to human services website. | **N** | **Y – separate page** |
| **UNSW** | **Student → Support and Development:** Disabilities; Indigenous Students;<br>student loans; financial help; scholarships. | (+) everything found in one place<br><br>(-) Financial support redirects to Centrelink | **N** | **N** |
| **UOW** | Current students → disability; scholarships; ATSI; future students → mature age: financial assistance | (-) Most of the financial assistance pages take you to Centrelink<br>(-) there isn't a clear link for financial assistance from non-mature aged students | Y – rural In2Uni | Y |
| **USC** | Learn: scholarships; → student support: indigenous student support; accessibility services; financial support; | Government assistance pages lead to Centrelink, but well laid out, with each kind of payment given a separate accordion entry (not overwhelming) | Y –regional preference scheme | N |
| **USQ** | Current students: ATSI student support; disability support; → welfare: financial support; scholarships | (+) Dealing with Centrelink PDF | N | N |
| **USYD** | **Current students → money:** scholarships and financial support<br>**Current students → support and services:** ATSI support, disability support | (+) most of the financial support information does not refer to Centrelink website; clear titles given when it does refer out. | **N** | **N** |
| **UTS** | **Current students →** scholarships; accessibility services; financial help;<br>**Future students →** indigenous Australians | (+) gives rates of income from Centrelink on page itself, and gives reference when going to external site. | **Y – Brief but present page about financial aid for remote students** | **Y – Page present specifically for carers (apart from disability)** |
| **Victoria** | **Current students: support services:** disability and accessibility services; financial advice → scholarships;<br>Five links in (home → about VU → university profile → Moondani Balluk → Our Aboriginal and Torres Strait Isladner profile: Aboriginal and Torres Strait Islander students) | Links somewhat explained, followed by Centrelink URLS. | **N** | **N** |

| University[4] | From home page to… | Pros (+) and cons (-) | Rural and Remote? | Carer? |
|---|---|---|---|---|
| WSU | Students → New to Uni: Scholarships; Student Support: disability support; financial assistance; ATSI | (+) provides a reference to Student Welfare Officer alongside referral to Centrelink (external website) | N | Y – Specific page for carers |

### QUESTION 2: What was identified as disadvantage?

Identification of disadvantage was most apparent through the scholarships awarded to each equity group. Some universities differed in their identification criteria, as outlined in Table 22 below. It is important to note that some universities did not provide a link to equity scholarships while others did. These scholarships identify the following areas as disadvantage:

**Educational disadvantages**

- Carer responsibilities
- English language difficulty
- Financial hardship
- Long-term medical condition/disability or ongoing effects of abuse
- Regional or remote disadvantage
- Sole parent responsibilities

**Applicant attributes**

- Indigenous Australian
- Refugee status

In Table 23 categories in green show availability of scholarships at that university; red are absent, and yellow unique to that university.

Color key: G = green, R = red, Y = yellow

| University | Personal Illness / Disability | Financial Hardship Low SES | Gender | Indigenous | Regional, Rural and Remote | Refugee / Humanitarian | Single parent / Sole Parent | English language difficulties / NESB | low SES residential area / specific locality | Carer | First in Family | Ongoing effects of abuse | Long term illness of family member | Disrupted schooling | Missed school due to illness | Crowded living conditions | Work to support family | Personal Chronic Illness | Homelessness | LGBT | Pacific Islander / NZ | OOHC / foster / Kinship arrangement | Separation / divorce of parents | Australian South Sea Islanders | Victim of Crime | Relationship breakdown with significant other | Natural disaster |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACU | G | G | G | G | G | G | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Adelaide | G | G | R | G | G | G | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| ANU | G | G | G | G | G | G | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Bond | R | R | G | R | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Canberra | G | G | G | G | G | G | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| CDU | G | G | G | G | G | G | G | G | R | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| CQU | G | G | R | G | G | R | G | R | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | G | R | R | R |
| CSU | G | G | G | G | G | G | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Curtin | G | G | G | G | G | G | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Deakin | G | G | G | G | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Edith Cowan | G | G | G | G | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | G | R | R | R | R | R | R | R |
| Federation University | R | R | G | G | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | G | R | R | R | R | R |
| Flinders | G | G | G | G | G | G | R | R | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Griffith | R | G | G | G | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| JCU | G | G | G | G | G | R | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | G | R | R | R |
| La Trobe | G | G | G | G | G | G | R | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Macquarie | G | G | G | G | G | G | R | R | R | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Melbourne | R | G | G | G | G | R | R | R | R | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| Monash | G | G | R | G | G | G | G | G | R | G | G | G | R | G | R | G | G | R | R | R | R | R | R | R | Y | Y | Y |
| Murdoch | R | G | G | G | G | G | R | R | R | R | R | R | R | R | R | R | R | R | R | G | R | R | R | G | R | R | R |
| Notre Dame | G | G | G | G | G | G | R | R | R | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R |
| QU | G | G | G | G | G | R | R | R | R | G | R | R | R | R | R | R | R | R | R | G | G | R | R | R | R | R | R |
| QUT | R | G | G | G | G | G | R | G | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | G | R | R | R |

Individual-based measure of socioeconomic disadvantage: Making identification "agile"

RMIT

SCU

Swinburne

UNE

University of Divinity

University of SA

University of Tasmania

UNSW

University of Newcastle

UOW

University of WA

USC

USQ

USYD

UTS

Victoria

WSU

### *Analysis of scholarships offered*

Table 23 lists the range of scholarships offered by universities to support access and retention for a range of student equity groups. There is an acknowledgement that there is a range of circumstances that may create financial barriers and in turn impact university access and retention. By offering scholarships, universities are attempting to ameliorate these barriers.

**Table 23:** Scholarships offered by equity group / circumstances

| Type of Scholarship | Percentage |
|---|---|
| Indigenous | 100% (40/40) |
| Financial Hardship / Low SES / | 95% (38/40) |
| Regional, Rural and Remote | 92.5% (37/40) |
| Gender (mostly Women In Non-Traditional Areas) [5] | 90% (36/40) |
| Personal Illness / Disability | 70% (28/40) |
| Refugee / Humanitarian (one university: migrant) | 70% (28/40) |
| English language difficulties / NESB | 45% (18/40) |
| Single parent /Sole Parent | 37.5% (15/40) |
| Low SES residential area / specific locality | 22.5% (9/40) |
| Carer | 22.5% (9/40) |
| First in Family | 17.5% (7/40) |
| LGBT | 15% (6/40) |
| Australian South Sea Islanders | 12.5% (5/40) |
| Pacific Islander / NZ | 7.5% (3/40) |
| OOHC / foster / Kinship arrangement | 7.5% (3/40) |
| Ongoing effects of abuse | 7.5% (3/40) |
| Long term illness of family member | 5% (2/40) |
| Disrupted schooling | 5% (2/40) |
| Personal Chronic Illness | 5% (2/40) |
| Homelessness | 5% (2/40) |
| Missed school due to illness | 2.5% (1/40) |
| Work to support family | 2.5% (1/40) |
| Crowded living conditions | 2.5% (1/40) |
| Relationship breakdown with significant other | 2.5% (1/40) |
| Separation / divorce of parents | 2.5% (1/40) |
| Victim of Crime | 2.5% (1/40) |
| Natural disaster | 2.5% (1/40) |

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[5] The University of Melbourne offers two scholarships specifically for men, the funding for which was given from a patron whose nephew was killed during WWII.

### *Exemplars of Innovative Practice*

Western Sydney University (NSW) and Monash University (VIC) had specific circumstantial eligibility criteria that accommodated a wide range of potentially life-altering circumstances, which would affect student ability to gain initial access to and / or continue on in their studies. The yellow categories in Table 3 above show these unique criteria. Western Sydney University (NSW), Federation University (VIC, NSW) and Swinburne University (VIC) recognise how out of home care / foster and kinship arrangements can affect student access to higher education. The University of Queensland (QLD), University of Southern Queensland (QLD) and Western Sydney University offer assistance to students from Pacific Island backgrounds and / or those who have New Zealand Citizenship, while Central Queensland University (QLD), James Cook University (QLD), Queensland University of Technology (QLD), The University of the Sunshine Coast (QLD) and Murdoch University (WA) offer assistance to South Sea Islander students.

### *QUESTION 3: What was the nature of the services offered?*

The information presented in this section was gathered from university web pages via the following links:

- Future students
- Current students
- Study
- Learn
- Student Life

Services not appearing in Table 25 does not mean that they do not exist at the university; rather, they may exist in webpages that are not natural 'go to' pages that students may find by following the above links. Exemplars of innovative practice (in this case, unique student services) are provided in Table 25.

### *Analysis of support services offered by universities*

All universities signal the availability of generic services that directly benefit those students experiencing low SES. Table 25 presents a summary of the advertised support services provided by universities to support and enable success. The table presents three key themes and the frequency in which the services are identified on the websites. The three themes are:

- financial services that enable study;
- services enabling study success; and
- services to support students' health and well-being.

A mix of services are provided for students, including Drop-In Sessions (DIS), individualised planned support and mentoring programs. Free access to these services is critical to low SES students who may not otherwise be able to afford to purchase services to support success or engage in supports designed to remove barriers and strengthen capabilities. Engagement with these services offers an opportunity to better understand life-stressors for students and consequently link them into relevant supports such as mental health projects and financial aid. Services that support access to university and perhaps have long term implications are summarised in Table 25. The complete list of universities and support services is presented in Appendix I.

Examples of innovative support services include:

- Financial services offering tax returns (UTS);
- Eight different levels of student emergency loans (SCU);
- Dean of students early intervention (student advocacy, UNE);
- Mindfulness drop-in sessions (SCU); and
- Webpage with a range of LGBT educational resources; E-Mental Health Project Officer (Flinders).

**Table 24:** Summary of support services offered by universities

| Student Service (% of universities) | | | | | |
|---|---|---|---|---|---|
| **Enabling study services** | | **Enabling study success** | | **Health and well-being services** | |
| Financial Advice | 100% (40/40) | Academic / Study Skills | 100% (40/40); 62.5% (25/40) DIS | Medical Services | 100% (40/40) |
| Financial Assistance | 100% (40/40) | Library Services / Enrolment Support | 100% (40/40); 30% (12/40) DIS | Student Advocacy | 100% (40/40) |
| Scholarships | 100% (40/40) | Peer mentoring | 100% (40/40); 7.5% (3/40) DIS | Counselling | 100% (40/40); 7.5% (3/40) DIS |
| Accommodation (+ bursaries) / Housing | 100% (40/40); 2.5% (1/40) DIS | Intensive English / English Language Support | 100% (40/40) | Disability Services | 100% (40/40) |
| Loans | 77.50% (31/40) | Indigenous Education centre | 100% (40/40); 2.5% (1/40) DIS | Mental Health | 100% (40/40); 5% (2/40) DIS |
| Indigenous Internship / Cadetship program | 7.5% (3/40) | Indigenous tutoring program | 97.5% (39/40) | Spiritual Support / Chaplaincy | 100% (40/40); 2.5% (1/40) DIS |
| Refugee Support (bursaries, specific tutors) | 5% (2/40) | Regional study centres | 10% (4/40) | Careers | 97.50% (39/40); 20.5% (8/40) DIS |
| | | Mature Age Support[6] | 5% (2/40) | Diversity and Inclusion (including Ally training) / Equity | 97.5% (39/40) |
| | | | | Clubs and Societies (including sports groups and SRC) | 97.5% (39/40) |
| | | | | Violence and Sexual Assault Support | 97.5% (39/40) |
| | | | | LGBT | 90% (36/40) |
| | | | | Legal Aid / Legal Services | 52.50% (21/40) |
| | | | | Childcare / parenting rooms | 30% (12/40) |
| | | | | Student Guild | 12.5% (5/40) |
| | | | | Community Resources / Crisis Support (including food relief) | 5% (2/40) |
| | | | | Bullying / Cyberbullying | 2.5% (1/40) |

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[6] Specific page / support program for mature age, and not combined with other student services

## Phase 4 – Student questionnaire to evaluate approach

As discussed in the methods section, undergraduate students from University 1 and University 2 were approached to answer 28 questions using an online questionnaire in Qualtrics during Orientation week (See Appendix H for a list of the questions). These questions were chosen as they represented the best predictors of socio-economic status (as established in the student survey in Phase 2). Student postcode and the number of SES stressors experienced were also included. Students' willingness to respond to the questions (as indicated by missing data) was also considered as a way of determining effective approaches to identifying socio-economic disadvantage.

**Figure 8:** Box plots showing the association between a number of indicators of low SES and the SEIFA index in the phase 4 data. The bold line indicates the median of the data and the box shows where the first and third quartile extend.
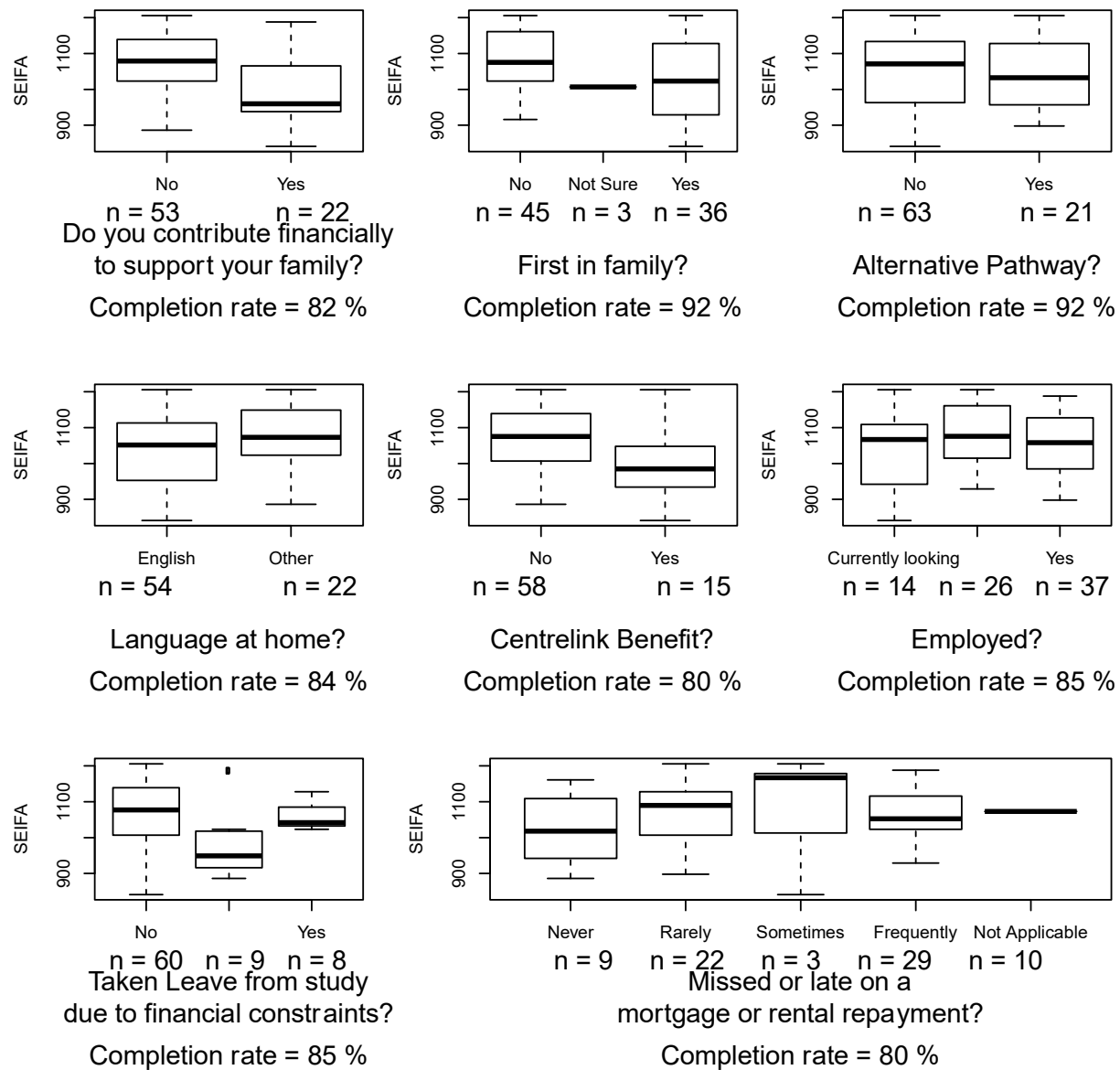
The data in Phase 4 confirmed that, of the indicators of SES that were measured, whether someone contributes financially to support their family was the best predictor of a low SEIFA index (Figure 8). Whether someone was on Centrelink benefit was also a good predictor of a low SEIFA index. These two questions had relatively low completion rates at 82% and 80% respectively. It should be noted, however, that the completion rate may be less of a concern as whether a student is on Centrelink benefits could be obtained independently of a student questionnaire.

Whether someone was first in family to attend university was also reasonably associated with low SEIFA index, and had a high completion rate at 92%. In conclusion, an individual-based measure of SES could be obtained by using the indicators "Financially supporting family", "Centrelink Benefits" and "First in Family" as well as the SEIFA index.

# DISCUSSION AND CONCLUSION

The best single predictor of low SES (as measured by the SEIFA index of education and occupation) was whether a student contributes financially to family. This was a good predictor in the universities in both regional centres and large cities. The question suffered from less of a stigma than other predictors of SES such as parents' income or Centrelink benefits. Although parents' income has been shown to be a good predictor of SES, the student questionnaire did not include this question due to the stigma of the question (and, indeed, whether students would necessarily be able to answer this question accurately). When the student questionnaire was repeated for an independent sample of students, 82% of students were willing to answer the question on contributing financially to their family while 80% of students were willing to answer the question on Centrelink benefits.

The focus groups indicated the importance of multiple stressors. *An individual based measure should incorporate a number of predictors, including an area-based measure of SES (preferably using the smallest area, Statistical Area 1, rather than just postcode) and the equity groups such as identifying as Aboriginal or Torres Strait Islander, being a carer or a recent migrant*. These underrepresented groups exhibited lower SES as well as generating other barriers to education. For those students who have or plan to register a disability, it was found that they were not of a lower SES (and actually had a significantly higher SES in the student questionnaire). This indicates that disability should not be used to contribute to an individual measure of SES.

Feedback from the focus groups has indicated that the first year of an undergraduate degree is when services are most needed if student retention is to be achieved across these underrepresented groups.

However, the data, especially from the focus groups, also show that student circumstances can change and that it is therefore essential that universities put processes in place that give students the understanding that services are available to assist them across their undergraduate course. To do this, easily accessible information is needed that sets out not only eligibility criteria but the ways of applying for support. Many of the students spoke about their frustration when trying to access services and find the process for doing so. These comments are supported by the desk audit of university websites.

From data gathered from the focus groups, it would seem that it is the recent migrants that are least aware of services provided, whilst those students who identify as Aboriginal or Torres Strait Islander are most aware of services. This suggests that of the equity groups, recent migrants are most in need to be informed about these services.

Other factors that would be useful contributions to an individual-based measure are being first in family to attend university, not having health insurance, coming through an alternative entry pathway and receiving Centrelink benefits. These measures show significant association with the SEIFA index at the universities in major cities.

The qualitative analysis of the student questionnaire and the focus groups indicated that many students are concerned about the time pressure that employment exerts on their ability to attend lectures, study and attend placements where these are part of their degrees. This is an issue that can be exacerbated by financial stress and is one which, in turn, increases the need for employment. However, it is not clear from the current study how services can help with these time pressures.

The language used to describe disadvantage also emerged as a critical factor in students' willingness to ask for assistance and identify as a member of one of the equity groups. Identifying as Aboriginal or Torres Strait Islander or as having a disability was generally viewed as leading to clear avenues for support, although there was some concern expressed that identifying as Aboriginal or Torres strait Islander was, at times, confounded with socio-economic disadvantage. Identifying as coming from a low SES background was seen as much more problematic, stigmatising and even shameful. Interestingly, some of the students in the focus groups commented that they did not know that they were seen as part of this equity group as their experience had been that there were others less advantaged than they. Changing the language to describe this group could lead to increased engagement with support services by those students experiencing socio-economic disadvantage. Seeing the services as a right, as "a hand-up, rather than a hand-out" as one participant described it would do much to change student perceptions.

Finally, although this project was unable to use Learning Analytics (LA) data, pursuing its potential for ascertaining SES disadvantage at an individual level is indicated from the literature review. This was noted in the literature review. Projects such as Yasmin (2013) suggest a potential for university management systems mining data from content managements systems (CMS) and learning management systems (LMS) to change their focus slightly in order to specifically ascertain SES disadvantage. This could involve interpreting student engagement data in light of SES as well as possible attrition. Engagement data can be considered an indicator of SES since some low SES students have reported more difficulty in content comprehension, as well as adjusting to university teaching styles (Krause, Hartley, James & McInnis, 2005, p. 69).

Similarly, a change of focus in LA away from concerns with retention might also involve following Jasmin (2013) and gathering data to hypothesize antecedent factors in students' lives, but not solely in terms of their likeliness to drop out—also, in light of what these data can be interpreted to mean about their SES. And, since some students from low SES backgrounds "may not feel confident in their interactions with academics" due to a perceived lack of particular kinds of cultural capital, which can inhibit their development and performance (Small & Attree, 2016, 2091), further LA metrics for identifying SES disadvantage might be rates of online engagement between teacher and student. Given it is the case that some students feel stigma about their socio-economic background, the importance of legal and ethical considerations when using data mining techniques for identifying SES at an individual level is paramount. Moreover, many students are unaware of their "data traces" in university management systems, and so care would need to be taken when using insights developed from such data as the basis for approaching students. The preferable approach would be to make students aware of what the data will be used for and, in terms of service provision, to adopt a universal design for learning model.

The students and staff who participated in this study were unanimous in their support for services targeted to those experiencing disadvantage and the positive impact they can have on student outcomes. The results of the project suggest that the identification of socio-economic disadvantage is best achieved through a combination of community level and individual data; a view that was shared by the university stakeholders who participated in the project.

Furthermore, active screening of students on a regular basis (for example at the time they choose their subjects/units for the coming semester or year) may prove helpful provided its aim was clear and the questions were formed in such a way that they identified the supports needed without the need to divulge sensitive, personal information. Ways of doing this might include gathering data on internet access, costs and time to travel to campus, instability of living arrangement and carer responsibilities. These are all factual questions that students may be willing to answer and which could lead to students experiencing disadvantage receiving the supports they need to succeed.

# RECOMMENDATIONS

The following recommendations are made with respect to the development of individual measures of socio-economic disadvantage that would enable the identification of undergraduate students experiencing socio-economic disadvantage and eligible for support.

***What could individual universities do immediately?***

1. Use a combination of measures to identify socio-economic disadvantage, viz.:
   a. Continue to use the SEIFA-Index of Occupation and Education to enable identification of undergraduate students experiencing socio-economic disadvantage. When calculating the SEIFA index of Occupation and Education, it is best to use the finest measure of area available, i.e. Statistical Area 1. This could be done by targeting students that fall within the lowest quartile of SEIFA. (NOTE: This is most applicable for universities in Australia's major cities although, even in these locations, considerable variation may exist within SA1 potentially giving false data).
   b. Develop an individual measure of socio-economic disadvantage that derives from the factors identified in this project and which takes account of the specific context and student cohort of the university.

2. Individual measures of socio-economic disadvantages should comprise a pool of questions chosen from items asking:
   a. whether they provide financially for their family;
   b. are the first in family to attend university;
   c. experiencing financial hardship; and/or
   d. are in receipt of Youth Allowance, Austudy or ABSTUDY during Years 11 and/or 12 (or another Centrelink income and asset-tested entitlement) for a period of at least three months during Years 11 and/or 12 or equivalent.

3. Where ethical clearance is given, use data linkage to collect data for undergraduate students on whether they receive Centrelink benefits, have Private Health Insurance or have entered university by an Alternative Pathway.

4. Count the number of indicators of low SES (or subset that is feasible) as given in Table 25, for each undergraduate student, to develop an individual based measure of disadvantage. Choose the students with the highest number of indicators to offer access to higher education equity programs targeting low SES students.

5. Set up a reference group of students and staff to evaluate individual questions to be used to identify disadvantage to determine whether they are acceptable or deemed too sensitive.

6. Ensure that information on the services and supports available to those experiencing disadvantage is easily found on universities' websites with clear instructions on how they may be accessed.

***What could individual universities do in the long term?***

1.  Set up opportunities for students to identify as being in need of support throughout their university career as their circumstances may change.
2.  Set up processes to monitor both the currency and accessibility of information on the services and supports available to those experiencing disadvantage on universities' websites with clear instructions on how they may be accessed.
3.  Pursue the potential for Learning Analytics metrics for identifying SES disadvantage at an individual level. This would involve identifying the data available via a university's CMS and LMS, deciding on appropriate metrics, and developing a process of analysis.

***How could the Commonwealth facilitate this process?***

1.  Facilitate data linkage using the Unique Student Identifier(USI) and ATO/ABS data.
2.  Provide clarity on the relationship among low socio-economic status, socio-economic disadvantage and financial hardship with respect to widening participation and support

These are questions that could be explored by the National Centre for Student Equity in Higher Education.

***Where is future work needed?***

1.  The models arising from this project could be further developed and refined by collecting data from students at a larger sample of universities, especially those in regional settings. Such data collection should include SEIFA collected at the finest level of Statistical Area 1.
2.  When calculating the individual based measure of disadvantage, weight the indicators (as listed in table 25) by their beta coefficients in the regression analysis.
3.  Pursue the potential of Learning Analytics (LA) for ascertaining SES disadvantage at an individual level.
4.  Change the language of disadvantage used in higher education equity programs targeting low SES students so that applying for support is not seen as shameful or stigmatising.

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The factors set out in the table below have emerged as those most likely to lead to an effective, individual measure of socio-economic disadvantage. As suggested in the recommendations above, what combination of factors is used and how they are worded as questions to be addressed to students should be the subject of discussion with stakeholders at each university to ensure their relevance to the specific student cohort.

**Table 25:** Indicators of low SES that could be used to develop an individual based measure of disadvantage

| Indicator of SES | Predictive ability of SES in city-based universities | Predictive ability of SES in regional-based universities | Burden of Data Collection | Data sensitivity |
|---|---|---|---|---|
| LSES according to the SEIFA Index | High | Medium to High | Low | Low |
| Financially contribute to Family | High | High | High | Medium |
| Being first in family to attend university | Medium | Low | High | Low |
| Not having health insurance | Medium | Low | Medium to High | Medium |
| Coming through an alternative entry pathway | Medium | Low | Low to medium | Low |
| Speaking a language other than English at home | Medium | Low | Medium | Medium |
| Receiving Centrelink benefits | Medium | Low | High | High |
| Not being employed | Low | Low | High | High |

Predictive ability was based on regression models from student questionnaire data (Tables 16 and 17). Burden of data collection was allocated as (low=already available to universities, medium=could be obtained through data linkage, high=data needs be collected at enrolment).

**NOTE:**
1. Low/Medium/High levels of data sensitivity were allocated according to the study participants' willingness to answer the survey question in phase 4.
2. Burden of collecting data on health insurance is assessed as medium to high as, although data linkage could be used, health cover may be under parents' policy and therefore requiring a specific question at enrolment.
3. "Coming through an alternative pathway" is assessed as having a low to medium burden of data collection. Low because the university would already have this information, but medium because data linkage would be needed within the university to collect it.

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# APPENDICES

## Appendix A: Research team

*Dr Russell Thomson* is a statistical consultant at Western Sydney University.

*Associate Professor Christine Johnston* is a researcher in the School of Education at Western Sydney University.

*Professor Lorraine Smith* is a research psychologist in the Faculty of Pharmacy at the University of Sydney.

*Associate Professor Karen Soldatic* is a researcher in the Institute of Culture and Society at Western Sydney University.

*Ms Kerry Staples* is a First Year Advisor, lecturer and researcher in the School of Education, Western Sydney University.

*Dr Roger Dawkins* is a Lecturer in Digital and Social Media in the School of Humanities and Communication at Western Sydney University with an interest in big data and learning analytics.

*Associate Professor Jioji Ravulo* is a social work academic in the Faculty of Social Sciences, University of Wollongong.

*Professor Valerie Harwood* is a Professor of Sociology and Anthropology and in the Sydney School of Education and Social Work, The University of Sydney.

*Mr Jim Micsko* is an experienced practitioner in the field of Widening Participation at Western Sydney University.

*Ms Mary Teague* was the Head of Widening Participation and Outreach at the University of Sydney, now University of New South Wales.

*Dr Shannon Said* is a qualitative researcher and was the project officer for this study.

*Dr Grenville Rose* is a research psychologist who contributed to the statistical analysis of the staff and student questionnaires.

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# Appendix B: Reference Group Membership

A reference group was formed to oversee and provide critical advice on the progress of the project as it moved through its four phases. The reference group comprised stakeholders with experience and a keen interest in meeting the needs of students experiencing socio-economic disadvantage. Unfortunately, despite a number of approaches, we were unable to attract a group member with an Aboriginal or Torres Strait Islander background to the committee. However, the reference group members and the research group had significant experience in working with students from an Aboriginal and Torres Strait Islander background. This was particularly so for the two school principals whose schools had high percentages of Aboriginal and Torres Strait Islander students.

The reference group was invited to quarterly meetings of the project team with specific time devoted to their providing their perspectives on the issues raised and the progress of the study. Their input was a valuable asset and one which has helped shape the approach taken.

The reference group was Co-chaired by Mr Jim Micsko (Office of Widening Participation, Western Sydney University) and Ms Mary Teague (Office of Widening participation and Outreach, The University of Sydney)

The reference group members were:

1. Dorothy Hoddinott, AO, Former Principal of Holroyd High School, currently Pro-chancellor, The University of Sydney
2. Ted Noon, Principal, Ashcroft High School
3. Gillian Considine, Senior Research and Advocacy Officer, The Smith Family
4. Vicki Winstanley, Student, Western Sydney University
5. Amanda Flowers, Student Welfare Officer, Counselling, Disability and Welfare, Western Sydney University
6. Dr Amani Bell, Senior Lecturer, Education Portfolio, the University of Sydney
7. Felicity Kiernan, Head of Admissions (Development), Admissions Office, Student Administration Services, The University of Sydney

# Appendix C: Full List of Regression Coefficients

**Table A1:** Regression model to predict the SEIFA index of socio-economic disadvantage, for Universities 1 and 2, with all predictors included.

| SEIFA Index Universities 1 and 2 $r_{training}$=0.518 | β coefficient | t statistic | Significance |
|---|---|---|---|
| Do you have a university parking permit? | 39.026 | 7.499 | 0 |
| Health Insurance | -25.243 | -5.335 | 0 |
| Where do you live during semester | -23.169 | -4.453 | 0 |
| Do you contribute financially to support your family? | 23.142 | 5.182 | 0 |
| Language spoken at home | 22.428 | 3.608 | 0.001 |
| Did you come to university through an alternative entry pathway? | 21.572 | 3.826 | 0.001 |
| Do you receive a Centrelink benefit to support you at university? | 18.806 | 3.42 | 0.001 |
| First to attend | 16.2 | 3.747 | 0 |
| Employment | -13.048 | -2.674 | 0.008 |
| Private School | 12.298 | 1.813 | 0.071 |
| Have you taken any leave from your current course of study due to financial constraints? | 11.978 | 1.658 | 0.1 |
| Have you received an equity or access scholarship / bursary from the university? | -11.31 | -1.657 | 0.098 |
| Ethnicity | 11.198 | 2.192 | 0.031 |
| Have you ever had an 'out of home care' experience (foster care, kinship, other)? | -10.7 | -1.025 | 0.306 |
| How many places have you lived in in the last 5 years? | 8.622 | 5.44 | 0 |
| Have you registered for disability services at this university? | -7.773 | -0.9 | 0.373 |
| Have you applied for financial assistance from the university? | 7.3 | 1.307 | 0.195 |
| Chronic condition | 6.748 | 1.171 | 0.244 |
| Difficult to balance study and finance | -6.345 | -1.186 | 0.236 |
| Do you have a Government Health Care Card or Pension Card? | -5.384 | -1.089 | 0.277 |
| Have you ever had to leave paid employment because of your university studies? | -3.259 | -0.729 | 0.467 |
| Gender | -3.11 | -0.673 | 0.501 |
| Are you studying part-time? | -2.909 | -0.426 | 0.671 |
| Are you involved in caring for another person / persons? | 2.654 | 0.486 | 0.627 |
| What year did you start studying your current degree? | 2.376 | 1.635 | 0.104 |
| Approximately how much money would you spend a week on travelling to university (including ticket costs, tolls, petrol and parking)? | -1.959 | -1.526 | 0.128 |

| | | | |
|---|---|---|---|
| How satisfied are you with your university experience? | -0.936 | -0.442 | 0.659 |
| Public School | 0.536 | 0.083 | 0.934 |
| Supports summed general | 0.466 | 0.795 | 0.427 |
| Sum stress amount | -0.38 | -1.288 | 0.2 |

**Table A2:** Regression model to predict the SEIFA index of socio-economic disadvantage, for University 3, with all predictors included.

| SEIFA Index<br>University 3<br>$r_{training}$=0.301 | β<br>coefficient | *t statistic* | Significance |
|---|---|---|---|
| Have you ever had an 'out of home care' experience (foster care, kinship, other)? | -10.32 | -1.46 | 0.145 |
| Do you contribute financially to support your family? | 9.914 | 2.872 | 0.005 |
| Have you registered for disability services at this university? | -9.577 | -1.308 | 0.207 |
| Language spoken at home | -7.688 | -1.14 | 0.258 |
| Where do you live during semester | -5.834 | -1.564 | 0.118 |
| Female Gender | -5.346 | -1.351 | 0.183 |
| Are you involved in caring for another person / persons? | 4.974 | 1.282 | 0.201 |
| First to attend Dichotomous | 4.86 | 1.613 | 0.109 |
| Have you received an equity or access scholarship / bursary from the university? | 4.392 | 0.728 | 0.471 |
| Do you have a university parking permit? | -4.297 | -1.315 | 0.193 |
| Chronic condition dichotomous | 3.642 | 0.816 | 0.423 |
| Approximately how much money would you spend a week on travelling to university (including ticket costs, tolls, petrol and parking)? | -3.579 | -3.857 | 0 |
| Have you applied for financial assistance from the university? | 3.315 | 0.859 | 0.393 |
| Do you receive a Centrelink benefit to support you at university? | -2.959 | -0.671 | 0.506 |
| Health Insurance Dichotomous | 2.864 | 0.826 | 0.413 |
| Employment Dichotomous | -2.347 | -0.753 | 0.452 |
| How many places have you lived in in the last 5 years? | 2.269 | 2.281 | 0.023 |
| Public School | -2.227 | -0.407 | 0.686 |
| Are you studying: | 1.966 | 0.483 | 0.629 |
| ETHNICITY | -1.81 | -0.482 | 0.631 |
| What year did you start studying your current degree? | 1.119 | 1.214 | 0.227 |
| Do you have a Government Health Care Card or Pension Card? | -1.119 | -0.297 | 0.767 |
| How satisfied are you with your university experience? | -1.067 | -0.716 | 0.475 |

| | | | |
|---|---|---|---|
| Private School | -1.019 | -0.191 | 0.849 |
| Difficult to balance study and finance | -0.907 | -0.203 | 0.841 |
| How old are you? | -0.611 | -0.219 | 0.827 |
| Supports summed general | 0.509 | 1.362 | 0.173 |
| Did you come to university through an alternative entry pathway? | 0.432 | 0.109 | 0.913 |
| Sum stress amount | 0.292 | 1.506 | 0.132 |
| Have you ever had to leave paid employment because of your university studies? | 0.278 | 0.09 | 0.929 |

**Table A3:** Regression model to predict the sum of financial stressors, for all 3 Universities, with all predictors included.

| Sum of Stressors, University 1,2 and 3 $r_{training}$=0.606 | β coefficient | t statistic | Significance |
|---|---|---|---|
| Difficult to balance study and finance | 4.12 | 10.308 | 0 |
| Where do you live during semester | -3.187 | -6.619 | 0 |
| Have you taken any leave from your current course of study due to financial constraints? | -2.753 | -4.787 | 0 |
| How old are you? | 1.968 | 6.808 | 0 |
| Do you have a university parking permit? | -1.862 | -5.144 | 0 |
| Do you contribute financially to support your family? | -1.637 | -4.826 | 0 |
| Have you ever had to leave paid employment because of your university studies? | -1.293 | -3.945 | 0 |
| Are you involved in caring for another person / persons? | -1.266 | -2.743 | 0.009 |
| Gender | 1.128 | 3.272 | 0.001 |
| Have you applied for financial assistance from the university? | -1.06 | -2.549 | 0.014 |
| Approximately how much money would you spend a week on travelling to university (including ticket costs, tolls, petrol and parking)? | 0.902 | 8.27 | 0 |
| How satisfied are you with your university experience? | -0.644 | -4.16 | 0 |
| Health Insurance | 0.629 | 1.717 | 0.093 |
| Have you registered for disability services at this university? | 0.612 | 0.972 | 0.336 |
| First to attend | -0.492 | -1.5 | 0.136 |
| Language spoken at home | -0.473 | -1.03 | 0.304 |
| Chronic condition | 0.404 | 0.903 | 0.372 |
| Did you come to university through an alternative entry pathway? | -0.387 | -1.041 | 0.299 |
| Do you receive a Centrelink benefit to support you at university? | -0.282 | -0.728 | 0.467 |
| How many places have you lived in in the last 5 years? | 0.195 | 1.592 | 0.116 |

| | | | |
|---|---|---|---|
| Employment | 0.194 | 0.564 | 0.573 |
| Private School | -0.189 | -0.368 | 0.714 |
| Public School | -0.153 | -0.331 | 0.74 |
| What year did you start studying your current degree? | -0.097 | -0.892 | 0.376 |
| Supports summed general | 0.066 | 1.65 | 0.099 |
| Ethnicity | 0.038 | 0.111 | 0.912 |
| Are you studying part-time? | 0.024 | 0.052 | 0.959 |
| Do you have a Government Health Care Card or Pension Card? | 0.02 | 0.053 | 0.957 |
| Have you received an equity or access scholarship / bursary from the university? | -0.017 | -0.031 | 0.975 |
| Have you ever had an 'out of home care' experience (foster care, kinship, other)? | -0.014 | -0.016 | 0.987 |

# Appendix D: Staff Questionnaire

Qualtrics Survey Software

**WESTERN SYDNEY UNIVERSITY**

**THE UNIVERSITY OF SYDNEY**

**Default Question Block**

.

### *Thank you for taking part in our survey!*

**What is this study about?**

Western Sydney University and The University of Sydney are conducting research into how universities identify students from low socio-economic backgrounds so that they can be better supported. The information you provide will help to develop individual measures that can be used when considering the financial and other barriers to student success. This research will help universities understand their students' needs better, and therefore assist in providing programs that address these needs more accurately.

Funding to do this study has come from the Higher Education Participation and Partnerships Program (HEPPP) through the Australian Government.

• This survey should take you about 15 minutes to complete.
• Your responses are anonymous.
• Completing the survey is taken as your consent to take part.

**Who is doing this study?**

The researchers from Western Sydney University are Associate Professor Christine Johnston, Dr. Russell Thomson, Dr. Roger Dawkins, Dr. Karen Soldatic, Ms. Kerry Staples, Dr. Shannon Said, and Mr. Jim Micsko. Associate Professor Jioji Ravulo was formerly with Western Sydney University, and is now with The University of Wollongong. The researchers from The University of Sydney are Professor Valerie Harwood, Associate Professor Lorraine Smith and Ms. Mary Teague. If you would like more information please contact Christine on c.johnston@westernsydney.edu.au or (02) 4736 0782.

**What if I have a complaint or concern?**

This study has been approved by the Western Sydney University Human Ethics Committee (Protocol Number H12582). If you have any complaints or reservations about the ethical conduct of this research, you may contact the WSU Ethics Committee through the Office of Research Services on Tel (02) 4736 0493 or email humanethics@westernsydney.edu.au.

Thank you for sharing your experiences and ideas.

Kind Regards,

Chris and Russell on behalf of the research team.

*Q1.*

What area do you work in at the university?

○ Enrolments
○ Widening Participation
○ Disability Services
○ Counselling Services
○ Aboriginal and Torres Strait Islander Centres / services
○ Academic support services (literacy / numeracy / mathematics)
○ Academic course advisor
○ First year advisor
○ Student support advisor
○ Student welfare officer
○ Other (Please Specify)

*Q2.* Are you aware of the criteria your university uses to identify students with socio-economic disadvantage?

○ Yes
○ No
○ Not sure

*Q3.* What criteria are used to identify students with possible socio-economic disadvantage at your university? (Tick all that apply):

☐ University alternative access schemes for students

☐ SEIFA (Socio-Economic Indexes For Areas) for current postcode (students' permanent home address - postcode)

☐ Higher Education Information Management System (HEIMS) data

☐ Demographic information provided by student at enrolment

☐ Student self-identification as Aboriginal and/or Torres Strait Islander person

☐ Student self-identification as having a disability

☐ Student self-identification as a carer

☐ Student self-identification as a regional or remote student

☐ UAC Equity application (EAS) pre-enrolment

☐ Self-identification of finanical need

☐ Recipient of emergency grants, loans, bursaries

☐ [                                                  ] Other:

☐ Not applicable


*Q4.*

How useful are these criteria in identifying students with possible socio-economic disadvantage? Rate their efficacy:

If you are unsure about a particular item please leave it blank.


University alternative access schemes for students

SEIFA (Socio-Economic Indexes For Areas) for current postcode (students' permanent home address - postcode)

Higher Education Information Management System (HEIMS) data

Demographic information provided by students at enrolment

Student self-identification as
Aboriginal and/or Torres
Strait Islander person

Student self-identification as
having a disability

Student self-identification as
a carer

Student self-identification as
a regional or remote student

UAC Equity application
(EAS) pre-enrolment

Self-identification of finanical
need

Recipient of emergency
grants, loans, bursaries

Other:

[                              ]

*Q5.* **When** does your university collect data related to student socio-economic status?(Tick all that apply)

- ☐ At time of application to enrol / applying for access / alternative entry
- ☐ At time of enrolment
- ☐ When applying for scholarship / bursary, loan, extra payment
- ☐ When academic support services are requested
- ☐ When student support or wellbeing services are requested
- ☐ When services are allocated
- ☐ When services are designed
- ☐ Other:

[                              ]

- ☐ Don't know

*Q6.* **How** does your university collect data related to student socio-economic status?
(Tick all that apply)

☐ Student address at time of application

☐ Student address at time of enrolment

☐ Specific questions on enrolment forms

☐ Self-identification by students when applying for support services

☐ Student supplied documentation supporting request for support

☐ Pre-enrolment form (e.g. scholarship access pathway)

☐ Alternative Access Entry Pathways

☐ Other: [                                                                          ]

☐ Don't know

*Q7.*

In your experience, to what extent do the criteria used by your university allow for the
accurate identification of students who may experience socio-economic
disadvantage? (Where 0 is 'not at all useful' and 5 is 'extremely useful')

|  | 0 | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Accuracy of identification criteria | | | | | | |

*Q8.* What criteria do you think should be used to identify students experiencing socio-
economic disadvantage? (Tick all that apply)

☐ University alternative access schemes for students

☐ SEIFA (Socio-Economic Indexes For Areas) for current postcode (students'
permanent home address - postcode)

☐ Higher Education Information Management System (HEIMS) data

☐ Demographic information provided by students at enrolment

☐ Student self-identification as Aboriginal and/or Torres Strait Islander person

☐ Student self-identification as having a disability

☐ Student self-identification as a carer

☐ Student self-identification as a regional or remote student

☐ Course Engagement Data

☐ UAC Equity application (EAS) pre-enrolment

☐ Self-identification of financial need

☐ Recipient for emergency grants, loans, bursaries

☐ Other:

*Q9.*

In your experience, is there a need to develop more individual based measures of socio-economic disadvantage to identify students in need of equity services and support?

○ Yes

○ No

○ Not Sure

*Q10.* Why did you answer as you did?

*Q11.* If you could design a measure for identifying students experiencing socio-economic disadvantage, what would it include? Please highlight what you see as the critical factors.

*Q12.* Would this measure operate at the university or course / subject / unit level?

○ University level

○ Course / subject / unit level

*Q13.* What information about the student do you think is **most** important in identifying students experiencing socio-economic disadvantage?

*Q14.* Are there any groups of students currently being overlooked when area-based (geocoding) measures are used to identify socio-economic disadvantage based on students' permanent home address? (Note: this question <u>does not</u> include Aboriginal and Torres Strait Islander students' and students with disabilities' information, as these are collected separately.)

○ Yes (if yes, who are they?)

○ No
○ Not sure

*Q15.* Does your university / faculty / unit have a central depository of data to refer to in order to identify students experiencing socio-economic disadvantage?

○ Yes
○ No
○ Not sure

*Q16.* University location:

○ City
○ Regional
○ City and Regional

*Q17.* In your understanding, what percentage of your degrees are offered fully online?

| | 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage of degrees offered online (as %) | | | | | | | | | | | |

*Q18.* Total student population:

○ <20,000

○ 20,000-50,000

○ 50,000+

.

**Thank you for taking part in our survey!**

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# Appendix E: Student Questionnaire

**WESTERN SYDNEY**
UNIVERSITY

THE UNIVERSITY OF
SYDNEY

## Student Information

.

*Thank you for taking part in our survey!*

## What is this study about?

Western Sydney University and The University of Sydney are conducting research into how universities identify students from low socio-economic backgrounds so that they can be better supported. The information you provide will help to develop individual measures that can be used when considering the financial and other barriers to student success. This research will help universities understand their students' needs better, and therefore assist in providing programs that address these needs more accurately.

Funding to do this study has come from the Higher Education Participation and Partnerships Program (HEPPP) through the Australian Government.

- This survey should take you about 15 minutes to complete.
- Your responses are anonymous.
- Completing the survey is taken as your consent to take part.

## Who is doing this study?

The researchers from Western Sydney University are Associate Professor Christine Johnston, Dr. Russell Thomson, Dr. Roger Dawkins, Dr. Karen Soldatic, Ms. Kerry Staples, Dr. Shannon Said, and Mr. Jim Micsko. Associate Professor Jioji Ravulo was formerly with Western Sydney University, and is now with The University of Wollongong. The researchers from The University of Sydney are Professor Valerie Harwood, Associate Professor Lorraine Smith and Ms. Mary Teague. If you would like more information please contact Christine on c.johnston@westernsydney.edu.au or (02) 4736 0782.

## What if I have a complaint or concern?

This study has been approved by the Western Sydney University Human Ethics Committee (Protocol Number H12582). If you have any complaints or reservations about the ethical conduct of this research, you may contact the WSU Ethics Committee through the Office of Research Services on Tel (02) 4736 0493 or email humanethics@westernsydney.edu.au.

We're confident your answers can help us better identify students who need further support. With your help we can create a tool for identifying such students in the future. Of course your answers are confidential and anonymous, and although it is important that you answer all the questions, we understand if you prefer to leave some out.

Thank you for sharing your experiences and ideas.

Kind Regards,

Chris and Russell on behalf of the research team.

*Q1.* Are you an international student?

○ Yes
○ No

*Q2.* Are you currently enrolled in an undergraduate degree?

○ Yes
○ No

*Q3.* Which institution are you enrolled in?

○ University 1
○ University 2
○ University 3

*Q4.* How satisfied are you with your university experience?

*Q5.* Was the last school you attended:

○  A public high school
○  A Catholic high school
○  An Independent high school
○  A GPS School
○  [                    ] Other (please specify):

## Personal Demographics

*Q6.* How old are you?

○  17-19
○  20-24
○  25+

*Q7.* What is your gender?

○  Male
○  Female
○  Other (please specify): [                    ]

*Q8.* Do you identify as an Aboriginal and / or a Torres Strait Islander person?

○  Yes, as Aboriginal person
○  Yes, as Torres Strait Islander person
○  Yes, as Aboriginal and Torres Strait Islander person

○ No

Q9. What ethnic heritage do you **most** identify with?

○ American (U.S.A.)
○ [                    ] Arabic (please specify):
○ Armenian
○ Assyrian
○ Australian
○ Australian Aboriginal
○ British (English, Welsh, Scottish, Northern Irish)
○ Cambodian
○ Chinese
○ Croatian
○ Fijian
○ Filipino
○ French
○ Greek
○ Indian
○ Indonesian
○ Irish (Republic of Ireland)
○ Italian
○ Japanese
○ Korean
○ Laotian
○ Liberian
○ Macedonian
○ Maltese
○ Maori
○ New Zealander
○ Nigerian
○ Niuean
○ Persian
○ Portuguese
○ Samoan
○ Serbian

○ Spanish

○ Sri Lankan

○ Sudanese

○ South Sudanese

○ Thai

○ Tokelauan

○ Tongan

○ Torres Strait Islander

○ Turkish

○ Vietnamese

○ [                    ] Other (please specify):

*Q10.* What is the main language spoken at home?

○ Arabic

○ Armenian

○ Assyrian

○ Australian Aboriginal language

○ Cambodian

○ Chinese (Cantonese)

○ Chinese (Mandarin)

○ Croatian

○ English

○ Fijian

○ Filipino

○ French

○ Greek

○ Hindi

○ Indonesian

○ Italian

○ Japanese

○ Korean

○ Laotian

○ Liberian

○ Macedonian

○ Maltese

**National Priorities Pool (NPP) HEPPP-funded Grant**                                                                                      149

Individual-based measure of socioeconomic disadvantage: Making identification "agile"

- ○ Maori
- ○ Nigerian
- ○ Niuean
- ○ Persian
- ○ Portuguese
- ○ Samoan
- ○ Serbian
- ○ Spanish (Latin America)
- ○ Spanish (Spain)
- ○ Singhalese
- ○ Sudanese
- ○ Tagalog
- ○ Tamil
- ○ Thai
- ○ Tokelauan
- ○ Tongan
- ○ Torres Strait Islander language
- ○ Turkish
- ○ Urdu
- ○ Vietnamese
- ○ Other (please specify):

*Q11.* Are you the first in your family to attend university either in Australia or overseas?

- ○ Yes
- ○ No
- ○ Not Sure

*Q12.* Did you come to university through an alternative entry pathway?

- ○ Yes
- ○ No

**National Priorities Pool (NPP) HEPPP-funded Grant**       150

Individual-based measure of socioeconomic disadvantage: Making identification "agile"

*Q13.* Select the option that applies most to you:

[                                                    ▾]

*Q14.*

What year did you start studying your current degree?

[      ▾]

*Q15.*

Have you taken any leave from your current course of study due to financial constraints?

○ Yes
○ No

*Q16.* Are you studying:

○ Full-time
○ Part-time

*Q17.* What is your current residential postcode?

[                ]

*Q18.* In the year prior to commencing university, what was your **main** residential postcode?

[                ]

*Q19.* Where do you **mostly** live during semester?

○ In parent's / guardian's / family house / unit
○ In partner's parents' house / unit

○ In your own mortgaged house / unit

○ Privately rented house / unit

○ Shared house / unit

○ Social housing

○ University accommodation

○ Currently 'couch surfing', living in a hostel or non-permanent arrangements

○ [                                    ] Other (please describe):

*Q20.* How many places have you lived in in the last 5 years?

○ 1

○ 2

○ 3

○ 4

○ 5

○ More than 5

*Q21.* With whom do you live?

○ Parents / guardians

○ Other family members (e.g. siblings, grandparents, aunties and uncles)

○ I live on my own

○ Partner

○ Partner and child(ren)

○ Friends

○ Flatmates

○ Owners of property

○ [                                    ] Other (please specify):

*Q22.* Does your family / partner:

○ Charge you rent

○ Contribute to your rent

○ Pay your rent

○ I pay my own rent / mortgage

○ I do not pay rent / mortgage

*Q23.* Have you ever had an 'out of home care' experience (foster care, kinship, other)?

○ Yes

○ No

**Travelling to University**

*Q24.* How do you **usually** travel to university?

☐ My own car

☐ Parent's car

☐ Borrowed car

☐ Car pool

☐ Uber / taxi

☐ Train

☐ Ferry

☐ Light rail

☐ Bus

☐ Motorbike / scooter

☐ Bicycle

☐ Walk

☐ [                    ] Other (please specify)

*Q25.* Approximately how much money would you spend a week on travelling to university (including ticket costs, tolls, petrol and parking)?

○ $0-$10

○ $11-$20

○ $21-$30

○ $31-$40

○ $41-$50

○ $51-$74

○ $75-$99

○ $100-$149

○ More than $150

*Q26.* Do you have a university parking permit?

○ Yes

○ No

**Employment / Benefits**

*Q27.* Are you currently in paid employment?

○ Yes

○ No

○ Currently looking

*Q28.* How many hours per week do you work in paid employment **on average during semester time**?

[                    ]

*Q29.* Having paid employment means I have (tick all that apply):

☐ Missed lectures

☐ Missed tutorials

☐ Spent less time on assignments than I would have preferred

☐ Spent less time preparing for exams than I would have preferred

☐ Reduced my study load / credit points

☐ Taken units that better fit my work commitments

☐ Taken classes that better fit my work commitments

☐ Not participated in on-campus activities

☐ Not experienced these impacts upon my studies

☐ [_____]Other:

*Q30.* How many hours per week do you work **on average during semester breaks**?

[_____]

*Q31.* Have you ever had to leave paid employment because of your university studies?

○ Yes
○ No

*Q32.* Have you received an equity or access scholarship / bursary from the university?

○ Yes
○ No

*Q33.* Do you have sufficient financial/ income (and social) support to enable you to focus on your studies?  (0 being no support, 5 being a great deal of support)

| | 0 | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Extent of support | | | | | | |

*Q34.*
Who are the people who support you at university, and how do they support you?

| | Financially | Emotionally | Academically | Physically | Not Applicable |
|---|---|---|---|---|---|
| Family Partner | ☐ | ☐ | ☐ | ☐ | ☐ |
| My child(ren) | ☐ | ☐ | ☐ | ☐ | ☐ |
| | ☐ | ☐ | ☐ | ☐ | ☐ |

| | Financially | Emotionally | Academically | Physically | Not Applicable |
|---|---|---|---|---|---|
| Friends | ☐ | ☐ | ☐ | ☐ | ☐ |
| | ☐ | ☐ | ☐ | ☐ | ☐ |

| Extended Family | ☐ | ☐ | ☐ | ☐ | ☐ |
| Family friends | ☐ | ☐ | ☐ | ☐ | ☐ |
| Work Colleagues | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pet | ☐ | ☐ | ☐ | ☐ | ☐ |
| Case worker or other social services worker | ☐ | ☐ | ☐ | ☐ | ☐ |
| Counsellor, doctor, health care professional | ☐ | ☐ | ☐ | ☐ | ☐ |
| Academic / university staff | ☐ | ☐ | ☐ | ☐ | ☐ |
| Former high school teachers or staff | ☐ | ☐ | ☐ | ☐ | ☐ |
|  | ☐ | ☐ | ☐ | ☐ | ☐ |

*Q35.* Do these or other people help you in other ways? Please specify who they are, and in what way(s) they help you.

*Q36.* Do you contribute financially to support your family?

○ Yes

○ No

*Q37.* Whom do you support? (tick all that apply)

☐ Child(ren)

☐ Parent

☐ Partner

☐ Family member (siblings / cousins / grandparents etc.)

☐ Extended family member

☐ Friend

☐ Other:

☐ Not Applicable

*Q38.* Are you covered by private health insurance?

○ Yes

○ No

○ Not sure

*Q39.* Do you have a Government Health Care Card or Pension Card?

○ Yes

○ No

*Q40.* Do you receive a Centrelink benefit to support you at university ?

○ [                              ] Yes (if yes, please specify)

○ No

*Q41.* Does your family / partner (tick all that apply):

☐ Pay for your clothes

☐ Provide food

☐ Cover travel costs to and from university

☐ Provide additional course materials (tools, lab equip, PPE [Personal Protective Equipment])

☐ Pay for entertainment

☐ Provide car expenses

☐ Pay / contribute to university fees

☐ Pay for textbooks

☐ Pay for computers / devices

☐ Pay your phone bill

☐ Other

☐ Not applicable

*Q42.* Students often find it difficult to balance university study, working and being able to pay their mortgage / rent. Since being enrolled at university, have you ever missed or been late in making a mortgage / rental payment?

○ Never
○ Rarely
○ Sometimes
○ Frequently

*Q43.* Do you have any other financial commitments? If yes, how much stress do they cause you? (0 being no stress, 5 being a lot of stress)

| | Do you have these financial commitments? | | How much stress do they cause you? | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Yes | No | 0 | 1 | 2 | 3 | 4 | 5 |
| Credit Card | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Mortgage / rent | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Fines | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Mobile phone | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Internet | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Car | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Parking / other car related costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Other: | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Not Applicable | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

*Q44.* Have you applied for financial assistance from the university?

○ Yes
○ No

*Q45.* What is your pre-tax annual income from all sources?

○ $0-$5000
○ $5001-$10,000

○ $10,001-$20,000
○ $20,001-$30,000
○ $30,001-$40,000
○ More than $40,000
○ Prefer not to say

**Career Responsibilities and Disability**

*Q46.* Are you involved in caring for another person / persons?

○ Yes
○ No

*Q47.* Is this person / persons your:

☐ Own child(ren)
☐ Parent
☐ Partner
☐ Family member (siblings / cousins / grandparents etc.)
☐ Extended family member
☐ Friend
☐ [                              ] Other:

*Q48.* How many hours per week are you required to provide care **on average**?

[            ]

*Q49.* These carer responsibilities mean that I have:

☐ Missed lectures
☐ Missed tutorials
☐ Spent less time on assignments than I would have preferred
☐ Spent less time preparing for exams than I would have preferred
☐ Reduced my study load / credit points

☐ Taken units that better fit my carer responsibilities

☐ Taken classes that better fit my carer responsibilities

☐ Not participated in on-campus activities

☐ Not experienced these impacts upon my studies

☐ [_____] Other

*Q50.* Have you registered for disability services at this university?

○ Yes

○ No

*Q51.* Do you plan to register?

○ Yes

○ No

*Q52.* Do you have any health issues, such as a long-term health condition or chronic illness or disability?

○ No

○ Not prepared to answer

○ Yes

*Q53.* What sort of long-term health condition, chronic illness or disability do you have?

☐ Physical

☐ Sensory (hearing, visual, other)

☐ Long-term, chronic or reoccuring

☐ Mental health

☐ Developmental

☐ Behavioural

☐ Prefer not to specify

☐ [_____] Other:

*Q54.* Do these health issues impact on your capacity to maintain study commitments?

○ No never
○ Hardly ever
○ Sometimes
○ Often
○ Always
○ Prefer not to say
○ [                                                        ]  Comment:

*Q55.* How likely would you be to approach one of the student **support services** (e.g.counselling, welfare, chaplaincy) if you were experiencing personal difficulties (0 being least likely, 10 being most likely)?

0                                                                    10

Likelihood of service
use

◄ |▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬| ►

*Q56.* How likely would you be to approach one of the **academic** support services if you needed academic help (e.g. academic writing, maths support) (0 being least likely, 10 being most likely)?

0                                                                    10

Likelihood of service
use

◄ |▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬| ►
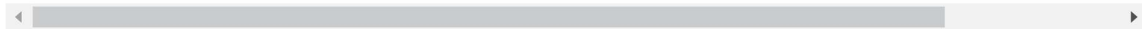
*Q57.* As a university student, to what extent do you see yourself as experiencing socio-economic disadvantage? (0 = not at all, 10 = a lot)

*Q58.* Is there anything else you would like to say that would help us understand the social and economic challenges to studying at university?

.

**_Thank you for completing the survey!_**

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# Appendix F: Student focus group questions

LSES NPP Student Focus Group Questions

Western Sydney University and The University of Sydney are conducting research into how universities identify students that are disadvantaged and / or come from disadvantaged backgrounds, so that they can be better supported. Your perspectives on these questions will help us shape the development of individual measures that can be used when considering barriers to student success. This research will help universities understand students' needs better, and therefore assist in providing programs that address these needs more accurately.

| Statement | Question arising |
|---|---|
| 1. Each university has a different way of identifying students that come from disadvantaged backgrounds and / or currently experience disadvantage. Some approaches include using home postcodes, scholarship data, and high school attended to determine who would benefit from further support. <br><br> We have found that the level of student disadvantage could be estimated using a combination of individual factors like current postcode, past postcode, not having private health insurance, receiving Centrelink benefits, being unemployed, missed opportunity to study because of work, and having a parking permit. | 1. What methods does your university use to identify disadvantaged students? <br> What are the challenges and benefits of these methods? If there was one system for all universities to use when identifying disadvantaged students, how useful would this be? <br><br> Do you think these factors could be used to determine which students are most in need of help? |
| 2. Many students have discussed how expensive attending university can be, mentioning the need to pay rent, travel, and general university costs (e.g textbooks, upkeep of technology and computer other university-specific expenses). <br><br> Students also talked about a number of stressors, like the fact that they don't have enough time to excel at their studies because they have to work and some have to go on placement (which requires full time work hours and no pay and additional childcare costs). <br> Some students have suggested developing a loan system that is added to HECS to make life easier while studying. | 2. What stressors do you face as a university student? How do they impact your ability to keep studying and excel? <br> How can individual based measures take into account individual stresses arising from work commitments? <br> How could these measures be adapted for students from different disadvantaged backgrounds and the challenges they face? |
| 3. Some students do not consider themselves to be low SES, even though they come from disadvantaged areas and / or don't have enough money to cope well at university. <br> Some disadvantaged students are unaware of what being in 'financial need' looks like. | 3. What does disadvantage mean? <br> How do you understand your socio-economic status? Do you think people from different disadvantaged backgrounds consider their socio-economic status differently because they belong to that disadvantaged group? |
| 4. If students identified to the university that they belong to a disadvantaged group, this would help universities develop more personalised ways of identifying these students. Many students from disadvantaged backgrounds don't know about the services they can access, or don't want to identify as belonging to these groups. | 4. We know that identifying as being poor, or low socio-economic class is difficult due to the personal shame one feels when admitting to this. What kinds of questions would you suggest would enable students to feel comfortable to reveal that they are low SES without reinforcing the social stigma and shame? |
| 5. Some universities identify disadvantaged students through being a Centrelink recipient or by the student self-identifying as belonging to a disadvantaged group through specific enrolment forms / questions. <br> Some students belong to more than one disadvantaged group, which may or may not influence their need for additional support. | 5. How efficient/suitable is this identification process for students at your university? When students belong to more than one disadvantaged group how is this managed in the current system? How could this be done better? |

| | |
|---|---|
| **6.** There are groups of students who experience financial stress, which may negatively impact on their university studies, but they are not eligible for Centrelink benefits. This may include children living with parents – not all parents help their children out; mature aged students; those with children and a mortgage, amongst others. These same groups usually can't get scholarships. | **6.** How much should universities support these additional groups experiencing financial stress? What services do universities have for these disadvantaged students who seem to be 'falling through the cracks', and how effective are they? Do you have any other suggestions? |
| **7.** A student's socio-economic status, or level of disadvantage, is currently 'based on a snapshot in time…at the entry to Higher Ed'. Over the course of their studies, students' circumstances change. There is a need to allow students to tell universities that this occurs, so that universities can take account of these changes. | **7.** How can universities take account of changes in students' circumstances to better support them? What factors may influence change in socio-economic status over time?<br><br>(Follow up question): What are some of the challenges of implementing a strategy like this? |
| **8.** Research team question: | **8.** How can universities collect data and respond to issues that affect disadvantaged students in a respectful way, without identifying these students? |
| **9.** Research team question: | **9.** What assumptions do universities make about student disadvantage? Do you think there is a disconnect between students' needs and how universities understand these needs? |
| **10.** Research team question: | **10.** What types of services would benefit from better identification of student disadvantage, and what services would not benefit? |
| **11.** Staff who completed the survey said that there should be a criteria-based system for measuring student disadvantage. If students match the criteria, the university would do certain things to better support these students. They also said there needs to be more efficient Centrelink measures. | **11.** How helpful would a criteria-based system be to help universities support students better? How costly would this be to make happen? |

| | |
|---|---|
| **12.** Being Aboriginal makes you part of a disadvantaged group at university. Survey participants have said that this attitude encourages Aboriginal students to do worse in their studies, fulfil negative stereotypes others have of Aboriginal people, and might weaken aspirations for success amongst Aboriginal students.<br><br>Participants have also said that people from other disadvantaged backgrounds need to have support services in place at university. | **12.** What makes things unequal for Aboriginal students at university? How do universities treat Indigenous ways of being and knowing, and is this helpful in Aboriginal students engaging and succeeding at university?<br><br>How can individual measures of disadvantage help students without stereotyping them? |
| **13.** Students who study off campus have said that placements and assessments should be different for them, especially since placements aren't paid and some have to drive 100s of kilometres to go to class. | **13.** How are off-campus students' circumstances and disadvantage considered? How do universities try to assist these students financially? |

# Appendix: G: Staff focus group questions

**LSES NPP Staff Focus Group Questions**

Western Sydney University and The University of Sydney are conducting research into how universities identify students from low socio-economic backgrounds so that they can be better supported. Your perspectives on the below questions will help to shape the development of individual measures that can be used when considering the financial and other barriers to student success. This research will help universities understand their students' needs better, and therefore assist in providing programs that address these needs more accurately.

| Statement | Question arising |
|---|---|
| **1.** Each university has its own practices regarding when data is collected to identify students who would benefit from additional support through the NPP scheme. Some universities use the receipt of scholarship, TAC data, schools as proxy in outreach work and home address on application to identify students. | **1.** What has informed your university's current practices to identify students? What are the challenges and benefits of these practices? If there was a consistent approach across the sector, would this be useful and what would it look like? |
| We are proposing that an individual-based measure of socio-economic disadvantage could be obtained from a combination of the following factors; current postcode, past postcode, not having private health insurance, receiving Centrelink benefits, being unemployed, missed opportunity to study because of work, and having a parking permit. | Can you discuss the relative merit in using these factors? |
| **2.** Many students have highlighted the unrealistic costs associated with attending university including paying rent, travel costs, general university costs (e.g textbooks, upkeep of technology and computer other university-specific expenses). In addition, students identified a number of stressors, like the fact that their academic performance is deeply compromised by the need to work and going on placement (which requires full time work hours and no pay and additional childcare costs). | **2.** What stressors are likely to negatively influence students experiencing low SES' retention and success? How can individual based measures take into account individual stresses arising from work commitments? |

| | |
|---|---|
| Some students have suggested developing a loan system that is added to HECS to alleviate this difficulty in the short term. | How could these measures be modified for specific equity group and the challenges they face? |
| **3.** Some students do not consider themselves to be low SES, even though SEIFA and their level of income / hardship would say they are. Some low SES students are unaware of what being in 'financial need' looks like. | **3.** What does disadvantage mean? How do students understand their own SES status, and what does their own SES status look like when they belong to different equity groups? |
| **4.** Student self-identification is an issue that would allow for more personalised measures to be adopted, but many low SES students don't know of the services available to them or don't want to identify as belonging to these groups. | **4.** What are the barriers to self identification? How can we better promote the availability of these services in a sensitive and respectful way? (Follow up question): What could be done to a) inform the students of these services and b) encourage them to identify? |
| **5.** Identification of students takes place in some institutions through being a Centrelink recipient or self-identification of an equity group through university-specific enrolment forms / questions. Some students belong to more than one equity group, which may or may not influence their need for additional support. | **5.** How efficient/suitable is this identification process for students at your university? When students belong to more than one equity group how is this managed within the current system? How could be done better? |
| **6.** There are groups of students who experience financial stress, which may adversely influence their university studies, but they are not eligible for Centrelink benefits. This may include children living with parents - assumed that parents help them out, though not always the case; mature aged students; those with | **6.** To what extent should universities support these additional groups experiencing financial stress? What services do universities currently offer these students groups who are seemingly 'falling through the cracks', and how effective are they? Have you any other suggestions? |

| | |
|---|---|
| dependents and a mortgage, amongst others. These same groups are generally ineligible for scholarships. | |
| **7.** SES is currently determined 'based on a snapshot in time…at the entry to Higher Ed'. Over the course of their studies, students circumstances change. There is a need to allow SES status to be reported more regularly, to take account of these change. | **7.** How can universities take account of changes in students circumstances to better align support ? What factors may influence change in SES status over time?<br><br>(Follow up question): What are the challenges of implementing a strategy like this? |
| **8.** Research team question: | **8.** How can we capture and respond to issues of the ethics of identification without risk of identifying low SES students? |
| **9.** Research team question: | **9.** What assumptions are made by university staff and administrators about what comprises SES? Is there a disconnect between students and university staff in their understandings of students' needs? |
| **10.** Research team question: | **10.** What types of services that would benefit from better identification of low SES status, and what services would not benefit? |
| **11.** Staff participants stated the need for a weighted measure, which would prompt particular responses within the university, alongside more efficient Centrelink measures. | **11.** How helpful would weighted measures be to prompt particular university responses to students? How costly would this be to implement? |

| | |
|---|---|
| **12.** The idea of Aboriginality being an equity group fuels stereotype threat, underperformance and a possible lack of aspiration amongst Aboriginal students.<br><br>Participants have highlighted the need to widen other equity groups. | **12.** Where does the creation of inequality lie for Aboriginal students? How do universities as Western institutions situate Indigenous ways of being and knowing, and are these understandings and practices helpful in Aboriginal student engagement and success in tertiary education?<br><br>How can identifiers measure the level of support needed individually without stereotyping? |
| **13.** External students have stated that the nature of placements and assessments should be different for them, especially pertaining to the need to have unpaid placements and coming into class that could be 100s of kms away. | **13.** How are external students' circumstances considered alongside LSES status? How are the experiences of this student group considered through financial assistance initiatives? |

Appendix F: Student Survey 2

# Questions for Student Survey Test of Tool

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**Start of Block: Student Information**

Q1 Thank you for taking part in our survey!

What is this study about?
Western Sydney University and The University of Sydney are doing a research project exploring how universities identify students who come from disadvantaged backgrounds, so that they can be better supported. We want to know more about the factors that impact individual students and how they can prevent students from being able to do their best at uni. This information will help us develop a tool that may lead to better services to help university students. We won't use this information to embarrass you or other students, but instead show universities that there are some realities in students' lives that they need to pay more attention to in order to better help these students succeed. Of course your answers are confidential and anonymous, and although it is important that you answer all the questions, we understand if you prefer to leave some out.
This survey will take about 5 minutes to complete.
Thank you for sharing your experiences and ideas.

Kind Regards,
Chris and Russell on behalf of the research team.

**End of Block: Student Information**

**Start of Block: Personal Demographics**

Q1 How old are you?

○ 17-19  (1)

○ 20-24  (2)

○ 25+  (3)

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Appendix F: Student Survey 2

Q2 What is your gender?

○ Male  (1)

○ Female  (2)

○ Other (please specify):  (3) _____

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q3 Which University do you belong to?

○ Western Sydney University  (1)

○ The University of Sydney  (2)

○ James Cook University  (3)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q4 Are you an international student?

○ Yes  (1)

○ No  (2)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q5 Are you studying full time or part time?

○ Full time  (1)

○ Part time  (2)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

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Appendix F: Student Survey 2

Q6 What year of study are you in?

○ 1st year / commencing  (1)

○ 2nd year or higher  (2)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q7 What was your postcode before coming to university, and your current postcode while at university?

○ Previous postcode  (1) _____

○ Current postcode  (2) _____

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

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Appendix F: Student Survey 2

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Appendix F: Student Survey 2

Q8 What is the main language spoken at home?

○ English  (9)

○ Other (please specify):  (44)

_____

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

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Appendix F: Student Survey 2

Q9 Are you the first in your family to attend university either in Australia or overseas?

○ Yes  (1)

○ No  (2)

○ Not Sure  (3)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q10 Did you come to university through an alternative entry pathway (i.e. other than direct UAC admission)?

○ Yes  (1)

○ No  (2)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q11 Have you taken any leave from your current course of study due to financial constraints?

○ Yes  (1)

○ No  (2)

○ Non applicable  (3)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q12 Where do you **mostly** live during semester?

○ In parent's / guardian's / family house / unit  (1)

○ Other (please describe):  (8)

_____

End of Block: Personal Demographics

Start of Block: Travelling to University

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Appendix F: Student Survey 2

Q13 Approximately how much money would you spend a week on travelling to university (including ticket costs, tolls, petrol and parking)?

○ $0-$10  (1)

○ $11-$20  (2)

○ $21-$30  (3)

○ $31-$40  (4)

○ $41-$50  (5)

○ $51-$74  (6)

○ $75-$99  (7)

○ $100-$149  (8)

○ More than $150  (9)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q14 Do you intend to purchase a university parking permit?

○ Yes  (1)

○ No  (2)

**End of Block: Travelling to University**

**Start of Block: Employment / Benefits**

Q15 Are you currently in paid employment?

○ Yes  (1)

○ No  (2)

○ Currently looking  (3)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

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Appendix F: Student Survey 2

Q16 Do you intend to leave or reduce your hours of employment when you commence university studies?

○ Yes  (1)

○ No  (2)

○ Not sure  (3)

---

Q17 Who are the people who do / who will support you at university, and how do they support you?

|  | Who supports you | | | | How do they support you | | | | |
|---|---|---|---|---|---|---|---|---|---|
|  | A lot (1) | Somewhat (2) | A little (3) | Not at all (4) | Financially (1) | Emotionally (2) | Socially (3) | Academically (4) | Other (5) |
| Parents / family (2) | ☐ | ( | ( | ☐ | ☐ | ☐ | ☐ | ☐ |
| Partner (17) | ☐ | ( | ( | ☐ | ☐ | ☐ | ☐ | ☐ |
| Other (Please specify): (18) | ☐ | ( | ( | ☐ | ☐ | ☐ | ☐ | ☐ |

---

Q19 Do you contribute financially to support your family?

○ Yes  (1)

○ No  (2)

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Appendix F: Student Survey 2

Q20 Do you receive a Centrelink benefit to support you at university ?

○ Yes  (1)

○ No  (2)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q21 Students often find it difficult to balance university study, working and being able to pay their mortgage / rent. Since being enrolled at university, have you ever missed or been late in making a mortgage / rental payment?

○ Never  (1)

○ Rarely  (2)

○ Sometimes  (3)

○ Frequently  (4)

○ Non applicable  (5)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q22 Have you applied for financial assistance from the university?

○ Yes  (1)

○ No  (2)

End of Block: Employment / Benefits

Start of Block: Career Responsibilities and Disability

Q23 Are you involved in caring for another person / persons?

○ Yes  (1)

○ No  (2)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

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Appendix F: Student Survey 2

Q24 How comfortable would you feel seeking help or accessing additional support through the university?(0 = not comfortable at all, 10 = very comfortable)
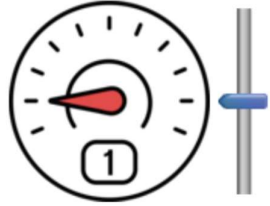


0 (0)
1 (1)
2 (2)
3 (3)
4 (4)
5 (5)
6 (6)
7 (7)
8 (8)
9 (9)
10 (10)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q25 Do you know where to find information about supports to help you succeed at university?  Would you use them?

○ I know where to find the information, and would use them  (1)

○ I know where to find the information, but wouldn't use them  (2)

○ I don't know where to find the information, but would use them  (4)

○ I don't know where to find the information, but wouldn't use them  (5)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q26 Have you experienced a change in circumstances that makes it difficult to study/stay enrolled?

○ Yes (specify if you wish)  (1)
_____

○ No  (2)

○ I'd rather not say  (3)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Appendix F: Student Survey 2

Q27 Do you think you will / would benefit from additional support to be successful at university?

○ Yes  (1)

○ No  (2)

○ Not sure  (3)

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Q28 What sort of support would be most helpful?

_____

_____

_____

_____

_____

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*Thank you for completing the survey!*

End of Block: Career Responsibilities and Disability

# Appendix I: Student support services identified on university websites

**Key to appendix I**

| Term | Explanation |
|---|---|
| DIS | Drop in Sessions |
| MOBS (USYD) | Mentoring our brothers and sisters: Indigenous mentoring program partnering Indigenous first year students with later-year students |
| Lucy (USYD) | Female business students support |
| Study Nights (CSU) | Indigenous student mentoring night session |
| Indigenous Support (UNE) | Indigenous students' online community; youth leadership program, and youth camp |
| Multicultural Macquarie (Macquarie) | Workshops and other initiatives that increase cultural competence |
| BELA (Bond) | Bond English Language [self]-Assessment program |
| MATES (WSU) | Mentoring program partnering first year students with later-year students |
| PSE (CQU) | Mentoring program partnering first year students with later-year students |
| Learning Sessions (JCU) | Online academic resources |
| LGBT Guide (Griffith) | Online guide to working with LGBT students |
| Ask Aunty (USQ) | Online learning platform for Indigenous students |
| SPEERMENT (UTAS) | Peer tutoring specifically for those on the Autism Spectrum |
| Deakin TALENT (Deakin) | Helps graduating students secure employment |
| CCCOC (RMIT) | Cross-Cultural Communication Online Course that can be taken by students |
| Bullying / Cyberbullying (UNSW) | Support information from student support services webpage |

Legend: ✓ = service available (green cell); text entries are as labelled in yellow cells.

| University | Financial Advice | Financial Assistance | Loans | Scholarships | Accommodation (+ bursaries) / Housing | Intensive English / English Language Support | Disability Services | Careers | Mature Age Support | Indigenous Internship / Cadetship programs | Indigenous tutoring program | Indigenous Education centre | Peer mentoring | Academic / Study Skills | Library Services / Enrolment Support | Violence and Sexual Assault Support | LGBT | Diversity and inclusion (including Ally training) / Equity | Counselling | Mental Health | Spiritual Support / Chaplaincy | Medical Services | Community Resources / Crisis Support (including food relief) | Legal Aid / Legal Services | Clubs and Societies (including sports groups and SRC) | Student Advocacy | regional study centres | Bullying / Cyberbullying | Childcare / parenting rooms | Student Guild | Refugee Support (bursaries, specific tutors) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACU | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | |
| Adelaide | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | DIS | DIS | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | ✓ | | |
| ANU | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | DIS | ✓ | | ✓ | | ✓ | DIS | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | ✓ | | |
| Bond | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | BELA | DIS | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |
| Canberra | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | DIS | | | ✓ | | ✓ | MASH (Maths, Stats, IT); DIS | DIS | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |
| CDU | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | External student support; | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | | | |
| CQU | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | DIS | | ✓ | ✓ | | PSE | ✓ | | | ✓ | ✓ | ✓ | DIS | ✓ | ✓ | | | ✓ | ✓ | | | | | |
| CSU | ✓ | ✓ | ✓ | ✓ | PDF tips document | | ✓ | | | | study nights | | ✓ | DIS | | | ✓ | relocation adjustment points | ✓ | ✓ | ✓ | ✓ | | | ✓ | | | | ✓ | | |
| Curtin | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | DIS (Institute of Computation) | DIS | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | ✓ | |
| Deakin | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Deakin TALENT | | | ✓ | | ✓ | DIS | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |
| Edith Cowan | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | DIS | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | ✓ | ✓ | ✓ | |
| Federation University | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |
| Flinders | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | ✓ | | | ✓ | Page full of LGBTIQ educational resources | E-Mental Health Project Officer | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |
| Griffith | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | DIS | | | ✓ | LGBT Guide | DIS | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |
| JCU | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | DIS | DIS | Learning sessions | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |
| La Trobe | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | Course advice drop in | | | ✓ | | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | ✓ |
| Macquarie | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | ✓ | ✓ | | ✓ | DIS | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |
| Monash | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | ✓ | DIS | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |
| Murdoch | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | DIS | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |
| Notre Dame | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |
| QU | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | DIS | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |
| QUT | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | ✓ | |
| RMIT | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | ✓ | | ✓ | DIS; CCCOC | DIS | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | | | |

| Institution | Labeled cells |
|---|---|
| SCU | Different levels of student loans: 1-8, increasing in value.; Academic language self assessment; Multicultural Macquarie |
| Swinburne | DIS; DIS; DIS |
| UNE | Indigenous programs; DIS; External student support |
| University of Divinity | |
| University of Melbourne | DIS; DIS |
| University of SA | DIS |
| University of Tasmania | SPEER MENT; DIS |
| University of WA | DIS (maths and stats); DIS |
| UNSW | DIS; DIS; DIS |
| University of Newcastle | DIS; DIS; DIS; Dean of students early intervention |
| UOW | |
| USC | |
| USQ | ASK Aunty; DIS |
| USYD | MOBS; Lucy; DIS |
| UTS | Tax returns; DIS; DIS |
| Victoria | Tax returns; DIS; DIS; DIS; 7 |
| WSU | MATES; DIS; DIS; DIS; DIS |

[7] Beige boxes indicate that this support service was not accessible via student support.

**National Priorities Pool (NPP) HEPPP-funded Grant**
Individual-based measure of socioeconomic disadvantage: Making identification "agile"

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# Appendix J: Glossary of Statistical Terms

Cook's Distance (Cook's D). A measure of the influence of a data point in a linear regression model. Data points with high Cook's Distance are said to be outliers.

Variance Inflation Factor.  A measure of the severity of the collinearity of a particular independent variable in a multiple regression model.

Multiple Regression. A model of the relationship between a dependent variable and multiple independent (or explanatory) variables. For this report, the dependent variables are measures of socio-economic status.

Multiple Imputation. A method for including participants with some missing data in a regression model.  Missing values are imputed from other variables. The imputation process and regression modelling are repeated a number of times (typically around 10) and the model results are presented as an average of the multiple imputations.

Cross validation. A method to validate the results from a model where the data set is split into a training and a validation set. A multiple regression model is built using the training data set. Evaluation of the model can be made by looking at the correlation between the predicted and actual dependent values in the training data set ($r_{training}$) or between the predicted and actual dependent values in the validation data set ($r_{validation}$). If the correlation is much less in the validation than the training data set, this suggests the model is not applicable widely.

$\beta$-Coefficient. The effect size in linear regression representing the average increase in the dependent variable, for a one unit increase in a given independent variable.

T-statistic. The statistic used to test whether a $\beta$-Coefficient is statistically different from zero in a Wald test and is equal to the $\beta$-Coefficient divided by its standard error.

p-value. A measure of statistical significance in hypothesis test. Conventionally, a p-value below 0.05 suggest a significant result.

**National Priorities Pool (NPP) HEPPP-funded Grant**
Individual-based measure of socioeconomic disadvantage: Making identification "agile"

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