

Equity Frontiers Trial Protocol

“An evaluation of equity initiatives on higher education participation”

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1 Trial overview

Trial title:	An evaluation of equity initiatives on higher education participation		
Trial start date:	July 2025	Trial finish date:	February 2027
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Sponsoring institution name(s)	Australian National University		
Trial summary (<300 words)	<p>This quasi-experimental analysis will evaluate the impact of university-run equity initiatives (that is, programs that aim to increase higher education enrolments from underrepresented groups) on students' higher education participation.</p> <p>These equity programs largely capture university-operated widening participation activities for low socioeconomic students, rural and regional students, and First Nations students, funded via the Higher Education Participation and Partnerships Program (HEPPP).</p> <p>Using longitudinal data from the GENERATION Survey of young people in Australia, this research will provide robust evidence of the impact of equity initiatives on young people's higher education participation.</p>		
Funding (total, and funding sources)	\$149,107 (total) from the Australian Centre for Student Equity and Success 2025 Equity Frontiers Program.		
Ethics approval (grantor, date, reference ID)	Approved by the Australian National University Ethics Board (2022/037, Post-School Destination Survey – Generation) on 28 March 2022.		

2 Background and intervention

2.1 Background

There has been limited systematic evaluation of the long-term impact of university-led equity and outreach initiatives on students' higher education enrolment and retention outcomes. In addition, there have been relatively few large-scale or longitudinal studies able to thoroughly investigate the longer-term impact of participation in equity initiatives. However, evidence suggests generally positive effects, as summarised in Bennett et al. (2024) and others (ACIL Allen Consulting, 2017; KPMG Consulting, 2015; Zacharias, 2018).

2.2 Intervention

Using data from the GENERATION study, a longitudinal study of Australian young people (Edwards et al., 2023), this project evaluates the impact of university-run equity initiatives on students' participation in higher education. University-run equity initiatives (often referred to as equity programs) are designed to increase the higher education access and participation of equity students.

The classification of schools with and without a university-run equity initiative is derived from school survey reports when students were in Year 10. Schools involved in the GENERATION study during Wave 1 were asked: "Does a university operate a program in your school aimed at increasing higher education enrolments from underrepresented groups?". Schools also reported which year levels were involved in the program, as well as groups targeted by the program (for example, low socioeconomic status (low SES) students, students from a regional, rural or remote area, students from an Aboriginal or Torres Strait Islander background, or participation in multiple equity groups), the number of programs, and the goals of the program (that is, increase aspirations for higher education, provide information about applying for / attending university, increase interest in specific higher education courses, and improve students' learning). Schools which reported having an equity initiative in Year 11 or 12 were classified as having a "university-run equity initiative" (the initiative).

In addition, schools could also report the name of the specific program. These programs were then coded by GENERATION researchers to highlight the stage of the student life cycle and type of activities involved in the program, as detailed in Edwards et al. (2024). The programs consisted of many different components and/or activities including university visits, workshops, mentoring, and altered entry requirements (Arnup et al., 2025; Bennett et al., 2024).

2.3 Objectives

As the university-run equity initiatives aim to increase students' awareness and aspirations of attending university, and reduce some barriers to attending, it is expected that students attending a school with an equity initiative will be more likely to attend university compared to students attending a school without an equity intervention.

Specifically, compared to students in a school without an equity initiative, students who are exposed to equity initiatives are hypothesised to have:

- increased probability of enrolling at university post-Year 12
- increased levels of institutional belonging
- increased levels of academic engagement at university

- reduced probability of dropping out between Semester 1 and Semester 2 (in the sample of students who begin university).

As there are likely systematic differences between students who receive an equity intervention compared to students who do not receive an equity intervention (see Arnup et al., 2025), the analysis will attempt to control for these differences using propensity score matching techniques (see Section 3).

3 Trial design

3.1 Outcomes

Outcomes will be measured using Wave 4 of the GENERATION study, which was administered from September to December 2025. The survey items used in the GENERATION survey are reliable and valid measures of students' educational behaviours, having been adapted from other longitudinal surveys (The Longitudinal Study of Australian Youth (LSAY) and The Longitudinal Study of Australian Children (PISA)).

Young people's enrolment in university is measured by the item: "Since the beginning of 2025, which of the following activities have you been doing?" Those who select "studying at university or other higher education provider" will be classified as having enrolled in university. This is the **primary outcome**.

Institutional (school) belonging (**secondary outcome**) reflects the degree to which students feel they belong at university. This is measured by three items assessing school belonging, previously used in LSAY and PISA.

Academic engagement (**secondary outcome**) is a subset of three items from the Active Learning and Academic Challenge scales of the Student Engagement Questionnaire from the Australasian Survey of Student Engagement asked of university students in Australia and New Zealand (Radloff & Coates, 2009).

Retention / drop out of young people at university in 2025 will be measured by asking young people whether they are still undertaking their first university course / degree. Young people who report they are no longer undertaking their first course / degree will be classified as having "dropped out". Young people can list up to three university courses they started in 2025.

3.2 Trial design

The quasi-experimental design will use inverse probability weighted regression adjustment (IPWRA), a doubly robust statistical method that supports stronger causal inference in quasi-experimental studies (Wooldridge, 2010). This analytical approach combines inverse probability weighting (IPW) and regression adjustment (RA) to estimate treatment effects while accounting for potential confounding. IPWRA minimises bias by leveraging a doubly robust approach, whereby consistent estimation of treatment effects is achieved if either the treatment model (propensity score) or the outcome model is correctly specified.

In addition, to control for possible confounders, the model will adjust for student characteristics that may influence the likelihood of receiving an equity intervention or the likelihood of attending university, based on Arnup et al., 2025. Student and school background characteristics will be drawn from Wave 1 of the GENERATION study, when

students were in Year 10. Standard errors will be clustered at the school level as students are nested within schools.

Possible spillovers between schools are unlikely as we will restrict the sample to students who attended the same school in Year 10 and Year 12.

3.3 Detailed trial process

The research will use a quasi-experimental design to conduct an evaluation of already existing initiatives implemented nationally and is not creating a new initiative / intervention. The analysis uses information collected from Wave 1 (surveys completed in 2022) and Wave 4 (surveys completed in 2025) of the GENERATION study. The recruitment of participants is detailed in Edwards et al. (2024) and briefly described in the following section. Balance checks will be performed when Wave 4 data collection has been completed.

3.4 Participants

The research population, via the GENERATION study, consists of an initial sample of more than 15,000 Year 10 students who were recruited via their school. The design followed a stratified random sample of students in Australian schools. Schools were selected to represent all Australian states and territories and school sectors (that is, government, Catholic, and independent schools). Catholic schools, schools in the Northern Territory, and schools in very remote areas were underrepresented. Further information about the survey and sampling method is provided in Edwards et al. (2024). For Wave 1, surveys were completed from late June to early December 2022. More than 6000 young people consented to recontact for follow-up surveys.

In addition to a young person survey, school leaders in participating schools were invited to complete an online school survey during Wave 1. This survey included items pertaining to the school's programs, policies, and procedures. The school coordinator responsible for the school survey was asked to share the survey link with other members of staff who may be better suited to answer any items.

Wave 4 of the GENERATION Survey is currently in field. The sample will be restricted to young people who have completed Wave 1 and Wave 4. We anticipate a minimum of 2000 young people will complete Wave 1 and 4.

A priori power analysis was conducted for a logistic regression analysis examining the association between group membership and university enrolment (binary outcome). Based on recent Australian data, a baseline university enrolment probability of 40% was assumed. To detect a small-to-medium effect (that is, odds ratio = 1.5, ~ 9% difference) with $\alpha = .05$ and 80% power, a sample of approximately 500 participants is required. Given we have an estimated sample of 2000 participants, we are adequately powered to detect a small-to-medium effect.

3.5 Participant withdrawal criteria and procedures

This analysis uses secondary data analysis; more information about the participant criteria can be found in Edwards et al. (2024). Young people were recruited to GENERATION in 2022 while in Year 10. Consent to be recontacted for future surveys was gathered at the end of the survey. Participation in the GENERATION Survey is voluntary; consequently, some young people do not participate in every wave of the survey. Multiple strategies were used to contact young people and ask them to participate in the annual survey (Edwards et al.,

2024). Participants were not replaced if they withdrew from the study. The analysis will be restricted to young people who completed Wave 1 and Wave 4 of the survey.

4 Data management and statistical analysis

4.1 Statistical methods

Please see also response to 3.2.

The significance level will be set at .05. Covariates include controls for:

- gender (male, female, non-binary, or another term)
- First Nations
- non-English speaking background
- age and acceleration (completing a Year 11 or 12 subject in Year 10)
- school size (quartiles)
- socioeconomic status of the school (low, medium, or high, based on the Socio-Economic Indexes for Areas (SEIFA)—Index of Education and Occupation, by the Australian Bureau of Statistics (ABS) in 2021)
- geographical area of the school (major cities, regional / remote)
- school state
- school sector (government, Catholic, independent)
- whether there is a university less than 5km from the school
- having 5% or more First Nations students in the school.

4.2 Sample cleaning

Once receiving the data from the Social Research Centre, the Senior Survey Officer at the Australian Data Archive cleans and inspects the quality of the data.

For the analysis, young people with missing school-level data, as collected in the school context survey, will be omitted from the study. School level data is required to control for school characteristics and determines whether the young person was exposed to the treatment (equity initiative).

Young people may have missing data for control variables, such as their gender or language spoken at home. Where possible, information from other waves of data collection will be used to fill in any missing information, such as age and gender. The missing indicator approach (Rajula et al., 2019) will be used to retain observations with incomplete covariate data.

4.3 Sample inclusion/exclusion

Around 3500 students participated in both Wave 1 (2022) and Wave 3 (2024) and have complete school-level information. Approximately 40% of these students belong to an equity group. About 900 students were in a school with a university-run equity program, leaving about 2400 students who did not have a university-run equity intervention at their school. These numbers can be updated once Wave 4 data is finalised.

4.4 Data management

The GENERATION study complies with data security requirements outlined in the Australian Government Protective Security Policy Framework (PSPF) and the Australian Government Information Security Manual (ISM).

The Social Research Centre (SRC) is contracted by the Australian National University (ANU) to administer the GENERATION Survey and collect individual and school data (that is, complete fieldwork). Participant contact information and survey data files are restricted to the project team. Files containing personal information are password-protected. Personal information beyond what is reasonably required to conduct the survey is not collected.

At the completion of fieldwork, de-identified and confidentialised data files are supplied to ANU via a secure link.

The final data sets are lodged with the Australian Data Archives (ADA). ADA ensures confidentiality through a comprehensive approach that prioritises data de-identification, controlled access, and compliance with ethical and legal standards. The central operations of ADA facilities are based at ANU, with IT infrastructure and storage based at the National Computational Infrastructure, both located on ANU's Acton campus. ADA is a national service facilitated by the Australian Government Department of Social Services (DSS) for collecting, preserving, publishing, and accessing digital research data.

Analysis of the data will be conducted by the ANU project team. Scales will be computed by calculating mean scores. All analysis and reporting will be conducted at an aggregate level, with individual results not identifiable.

4.5 Additional analyses

Where sample size allows, the following subgroup analyses are planned:

- **Subgroup analyses 1:** Examine effects by the school-reported goal of the equity programs (that is, increase aspirations for higher education, provide information about applying for / attending university, increase interest in specific higher education courses, improve students' learning).
- **Subgroup analyses 2:** Examine effects by equity groups (for example, low SES students, students from a regional, rural or remote area, students from an Aboriginal or Torres Strait Islander background, participation in multiple equity groups).
- **Subgroup analysis 3:** Examine effects by the presence of multiple equity programs in schools (GENERATION captures information on up to three equity programs in the school).

4.6 Quality control and quality assurance

The GENERATION data will be publicly available for download in July 2026 via the Australian Data Archive (ADA), and the analysis will be able to be replicated. Once the results are finalised, the STATA code can be made available to researchers wanting to replicate or validate the statistical outputs.

5 Publication

5.1 Plans for publication and dissemination of trial results

Dissemination will include a report / peer-reviewed article detailing the findings of the trial and meeting(s) with the Department of Education in Canberra discussing relevant findings.

6 References

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