

Beyond graduation: Long-term socioeconomic outcomes amongst equity students

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More info/full results:

- Report available from NCSEHE:
<https://www.ncsehe.edu.au/publications/long-term-socioeconomic-outcomes-equity-students/>
- Journal article published in Research in Higher Education:
<https://link.springer.com/article/10.1007/s11162-019-09578-4>

Motivation

Well documented benefits of Higher Education, across a range of labour-market and other outcomes (focus: comparing HE graduates vs others)

- employment (e.g. OECD, 2017)
- occupational status and wages (Desjardins & Lee 2016; Card 1999; Hauser et al. 2000; Heckman et al. 2016)
- physical and mental health (Oreopoulos & Salvanes 2011; Heckman et al. 2017; Cutler & Lleras-Muney 2008; Duke & Macmillan 2016)
- subjective wellbeing (e.g. Albert & Davia 2005; Castriota 2006; Cuñado & de Gracia 2012; Easterbrook et al. 2016; Hayo & Seifert 2003; Layard 2005) – although the evidence more mixed here

However, do university graduates from different equity backgrounds benefit from a university degree to the same extent as non-equity graduates?

Theory: 'levelling forces' – predict equal benefits

Labour-market outcomes:

- Productivity enhancing skills; human capital (Becker 1964, Heckman et al. 2016)
- Screening (Arrow 1973; Stiglitz, 1975), signalling (Spence 1973); credentials (Collins 1979)
- Additionally, rational action approach (Goldthorpe, 1996) argues that people from disadvantaged backgrounds who obtained degree are positively selected (more able academically, more motivated, etc)

Health and wellbeing outcomes:

- Direct effects: increased cognitive and non-cognitive endowments (Heckman et al. 2016; Desjardins 2008)
- Indirect channels: better jobs; improved wealth and income (Hartog and Oosterbeek 1998; Oreopoulos & Salvanes, 2011; Cuñado & de Gracia 2012)

Theory: 'stratifying forces' – predict unequal benefits

Social reproduction theories

- Social capital (Coleman 1988) and cultural capital (Bourdieu, 1984): role of information, social networks, cultural 'know-how'

Effectively maintained inequality (Lucas, 2001) and horizontal inequalities

- Cumulative advantage/disadvantage (Blau & Duncan, 1967; DiPrete & Eirich, 2006)

Life-course perspective (e.g. Elder, 1995)

- Disadvantage not static, but rather a cumulative process that unfolds over the life course

Empirical evidence (international)

Internationally, most studies focus on labour market outcomes (and on low SES graduates), and provide somewhat mixed picture :

- No association between SES background & occupational status among US graduates (Hout 1994, 1988)
 - Explained by meritocratic function of the university (Breen and Jonsson 2007) and selection into higher education (Mare, 1980; Shavit & Blossfeld, 1993)
- However, subsequent studies found effects of socio-economic background for particular subgroups (e.g. Torche 2011 – negative effect for low-SES graduate students)
- Negative effects of disadvantaged background on labour market outcomes found in a number of countries outside US (e.g. Hansen 2001, Triventi 2013, Jacob et al. 2015 for several European countries)
- Very few studies explored patterns over time, although there is an indication that the differences between advantaged and disadvantaged graduates decrease over time (Jacob et al. 2015)
- Most studies focus on the absolute differences in outcomes between disadvantaged and non-disadvantaged graduates, rather than on the relative gain
 - Limited evidence suggests that graduates from low-SES backgrounds may benefit more from higher education in terms of relative earnings (i.e. compared to what they had earned before) , even though high-SES graduates earn more in absolute terms (Brand & Xie, 2010)

Lack of evidence on non-labour market related outcomes

Australian context

Remarkable growth in the Australian higher education sector since the early 1990s

- Between 1989 and 2014, the rate of higher education attainment in the Australian population aged 25–34 increased from 12 per cent to 37 per cent (Department of Education and Training, 2015).

In parallel with the expansion of the higher education sector, there has been a dedicated focus on HE equity. Since the early 1990s six groups have been officially designated equity groups in HE:

1. Aboriginal and Torres Strait Islander peoples (Indigenous)
2. People from low socio-economic status backgrounds (Low SES)
3. People from non-English speaking backgrounds (NESB)
4. People from regional and remote (formerly rural and isolated) areas (Regional/Remote)
5. People with disability (Disability)
6. Women in non-traditional subject areas (WINTA)

Despite equity in higher education being a salient issue in the Australian policy arena, there is surprisingly little research specifically investigating whether graduates from equity groups benefit from university participation to the same extent as non-equity graduates

Australian evidence: data and studies

Surveys	Year	Time after graduation	Administrating institution	Studies
Graduate Pathways Survey (GPS)	2008	1 (2003), 3 (2005) and 5 (2008) years	Australian Council for Educational Research (ACER)	Coates & Edwards (2009) Edwards & Coates (2011)
Australian Graduate Survey (AGS) including: - GDS: the Graduate Destination Survey, CEQ PREQ	1972–2015	4–6 months	Graduate Careers Australia (GCA)	2014 data: Richardson, Bennett, & Roberts (2016, report); Pitman, Roberts, Bennett, & Richardson, (2017, journal article) 2015 data: GCA (2016) 2010–14 data: Li et al. (2016; 2017, note: only include four universities in one state)
Graduate Outcomes Survey (GOS)	2016–	4–6 months	Quality Indicators for Learning and Teaching (QILT)	QILT (2018)
2017 Graduate Outcomes Survey– Longitudinal (GOS-L)	2017 surveyed AGS 2014 participants	3 years	QILT	QILT (2017)

Summary of empirical evidence (Australia)

In summary, Australian empirical evidence shows a mixed picture for the labour market outcomes for most of the equity groups:

- Graduates from **low SES, remote areas and NESB** reported in some studies to have poorer labour market outcomes, including lower employment rate and lower salaries
 - However, other studies report them having similar or even better outcomes compared with their peers from non-equity group
- Evidence more consistent for graduates with **disability** and those of **Indigenous background**, where evidence suggests that the former have worse labour market outcomes whilst the latter have better labour market outcomes than the rest of the graduate population

Studies generally affected by data limitations, definitional issues (lack of comparability across the studies/datasets), have a short time horizon, and predominantly focus on labour market outcomes

Research gaps: summary

Studies predominantly focus on labour market outcomes

- Lack of consideration for other outcomes

Short time horizon and focus on short-term outcomes

- Few studies explore trajectories over time

Focus on absolute outcomes

- Limited consideration given to relative gain

Much evidence limited to SES dimension

- Other equity groups less studies in this context

Research questions:

RQ1. Do equity graduates have post-university outcomes comparable to non-equity graduates over the short and long run?

- Which outcomes? Which groups?

RQ2. What are the patterns over time?

- Is there a convergence of outcomes between equity and non-equity graduates over time?

RQ3. What are the absolute and relative benefits of HE degree for graduates from different equity groups?

- Do the absolute and relative perspectives tells us a different story?

Data

Australian Longitudinal Census Data (ALCD)

- 5% sample of the Australian population who provided information in 2011 and 2016
- Largely focused on labour market outcomes
- Subset of people aged 15-17 in 2011 → outcomes in 2016 (aged 20-22)
 - Outcomes captured up to 2 years after graduation
- Analytic sample ca. 2,500-3,000 cases, depending on the outcome

The Household, Income and Labour Dynamics in Australia (HILDA) Survey

- Large, nationally representative samples; comprehensive survey; annual data collection between 2001 and 2016; all 16 waves used
- Captures both labour market and other outcomes
- Sample of graduates: longitudinal dimension allows to explore how outcomes evolve for up to 15 years after the attainment of a bachelor degree
- Analytic sample size: ca 900 persons
 - Trajectories post-graduation (around 4,500 person-year observations)
 - Before-after full histories (around 11,000 person-year observations)

Key variables

Key stratifying variables:

- Proxies for five population-based equity groups: **low SES; ATSI; remote/regional; NESB and students with disability**
 - also using a combined 'any equity group' indicator in HILDA
 - definitions vary across the datasets

Outcome variables:

- Census: **Employment status; F/T employment; Employee; Sector; Occupation; High income**
- HILDA: Job and finances: **Hourly wages (SES only); Perceived job security; Job satisfaction; Perceived financial prosperity**; Health and wellbeing: **General health; Mental health; Life satisfaction; Social support**

Control variables:

- Census: **gender, metro/rural; area disadvantage**
- HILDA: **age, gender, postgraduate qualification, partnership status (+ employment status when modelling non-labour market outcomes)**

Modelling strategy

CENSUS analysis:

- Logistic regression; outcomes captured 0-2 years after graduation

HILDA analysis of (absolute) outcome trajectories: Growth models (+ polynomial specification of time; up to 15 years post-uni) – example for SES

$$HW_{it} = YSG_{it}\beta_{1i} + SES_i\beta_2 + (YSG_{it} * SES_i)\beta_3 + C_{it}\beta_4 + u_i + e_{it}$$

HILDA analysis of relative returns: Fixed effect model using interaction between equity groups (SES in this example) and degree attainment

$$HW_{it} - \overline{HW}_i = (DLSES_{it} - \overline{DLSES}_i)\beta_1 + (DHSES_{it} - \overline{DHSES}_i)\beta_2 + (C_{it} - \overline{C}_i)\beta_3 + (e_{it} - \overline{e}_i)$$

Results (ACLD analysis): comparing outcomes <2 years after graduation

	Outcomes in 2016					
	Employed [^]	Employed as employee [*]	Employed full-time [*]	Employed in private sector [*]	Employed in managerial/professional occupation [*]	Personal weekly income \geq A\$1,500 ^{^^}
Equity group (2011)						
Low SES	-0.024***	0.010	-0.006	-0.006	-0.073***	-0.072***
Regional/remote	0.004	-0.009*	-0.011	-0.044***	0.001	-0.006
Indigenous	-0.013	0.029	0.051	-0.108***	0.027	0.020
Disability	-0.321***	0.013	-0.112*	0.020	0.040	0.039
NESB	-0.069***	-0.023***	-0.038***	0.065***	-0.095***	-0.120***

Controls: gender; age; study level; cohort; field of study

Key findings (consistent with previous studies):

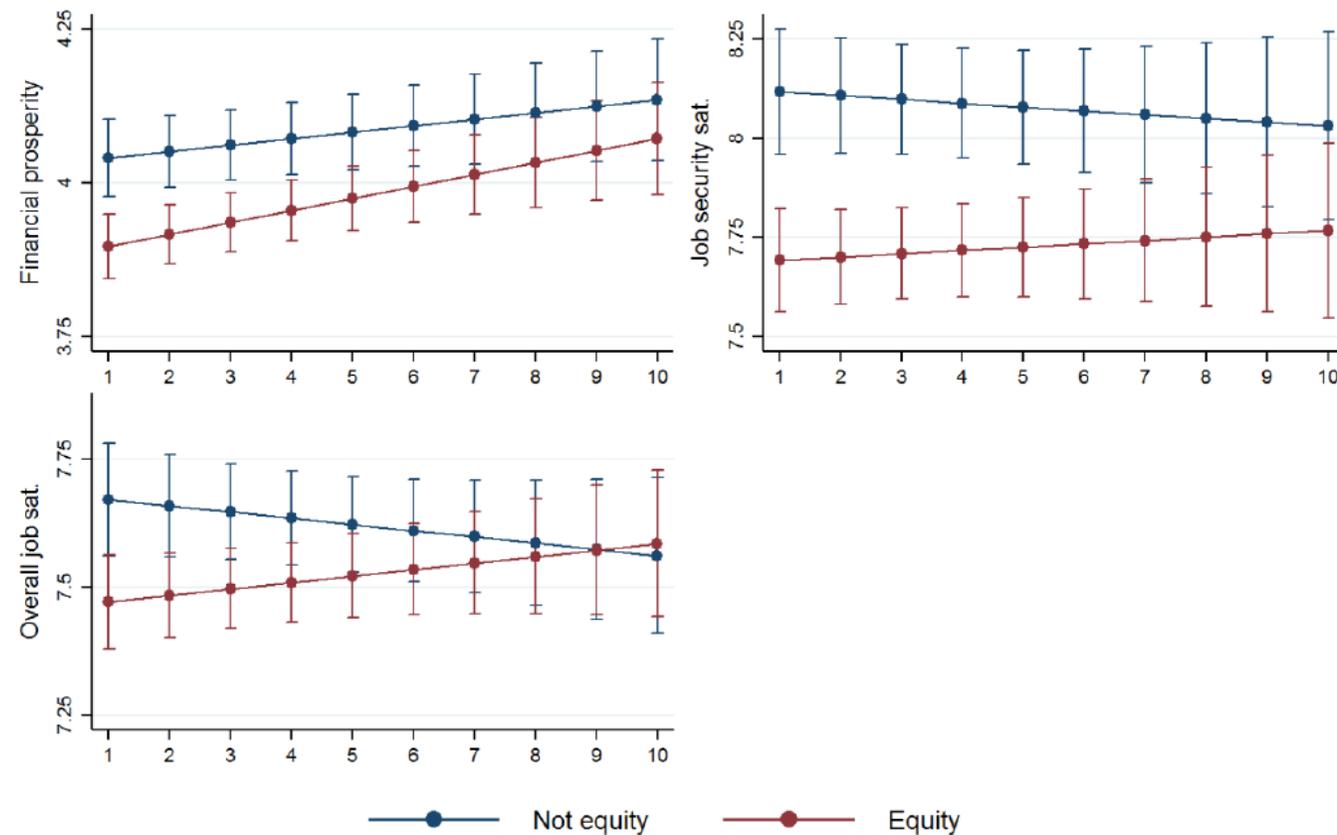
- > **Low SES and NESB** graduates less likely to be in employment, to be employed in a managerial or professional occupation, and to have a high personal income if in FT employment
- > Graduates with **disability** less likely to be employed, and employed FT

Results (HILDA): Comparing trajectories up to 15 years after graduation

Equity (any group) vs. other students:

Job & finances:

Some initial differences and then convergence between equity and non-equity students on job-related and financial indicators

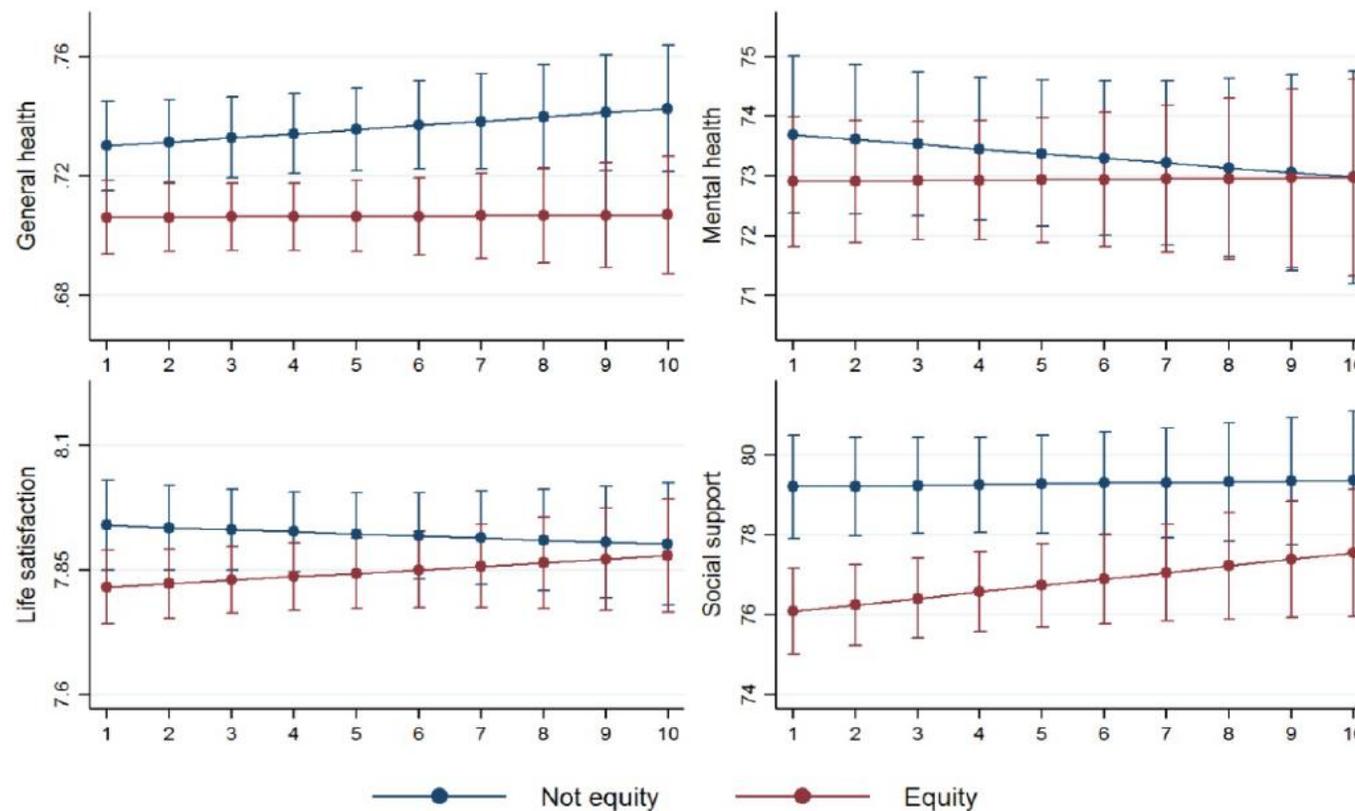


Results (HILDA): Comparing trajectories up to 15 years after graduation

Equity (any group) vs. other students:

Health & Wellbeing:

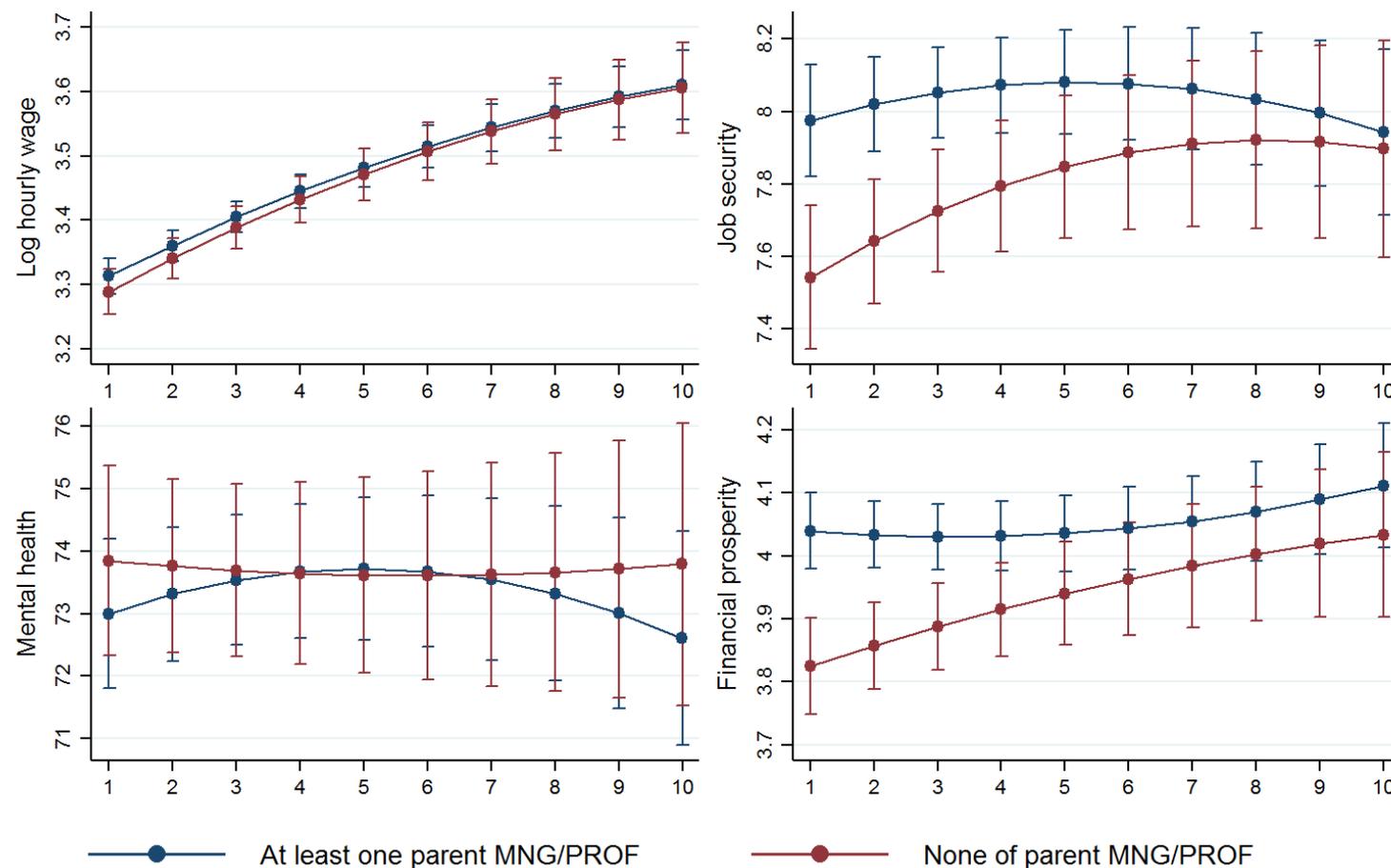
Some differences in terms of general health and social support but, in general, trajectories similar for this overall group comparison



Results (HILDA): Comparing trajectories up to 15 years after graduation

Low SES vs. high-SES students:

Initial disadvantage on job security and financial prosperity for low-SES graduates, followed by a catch up about 4-5 years after graduation

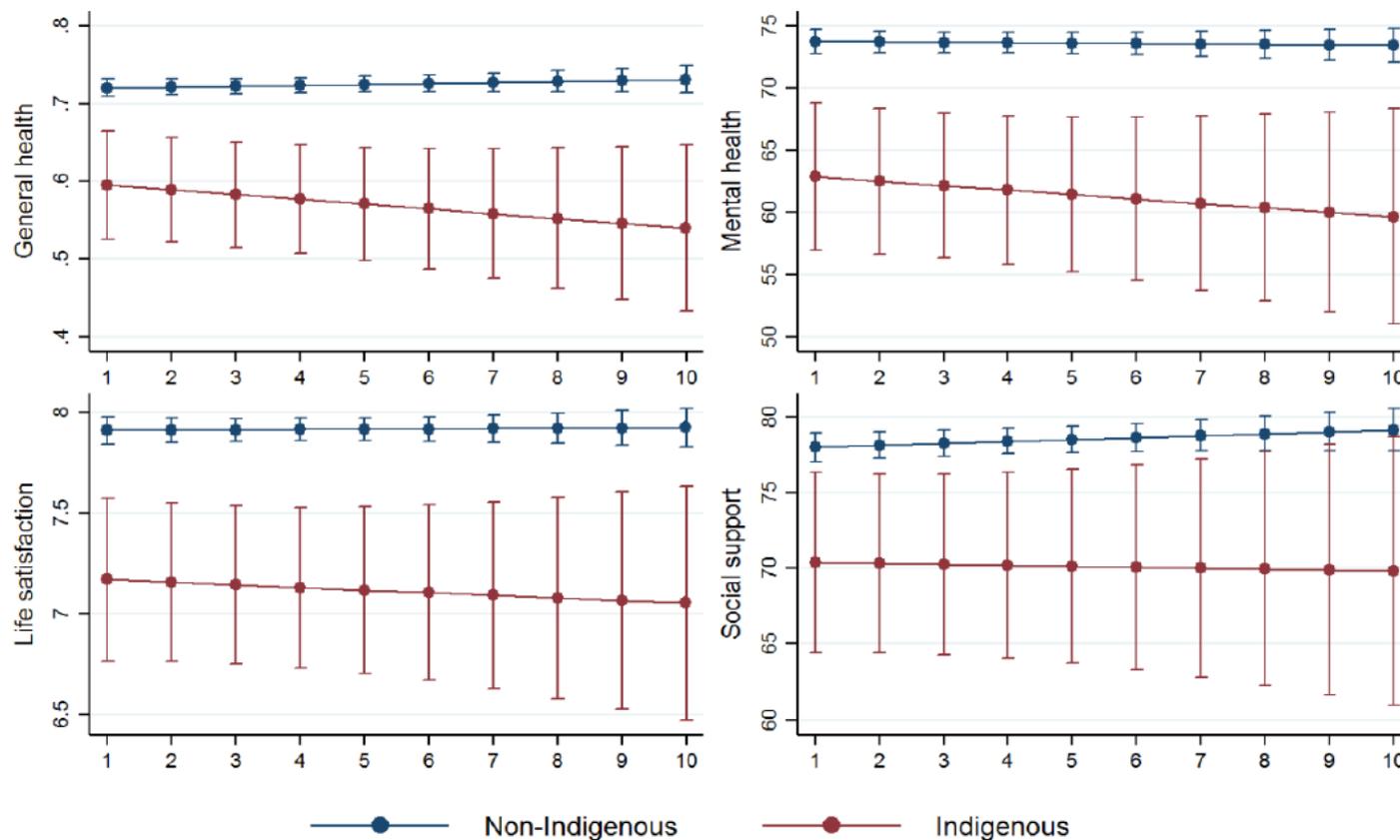


Results (HILDA): Comparing trajectories up to 15 years after graduation

Indigenous vs non-Indigenous graduates:

Health & wellbeing:

Persistent differences across health and wellbeing indicators that do not go away in time



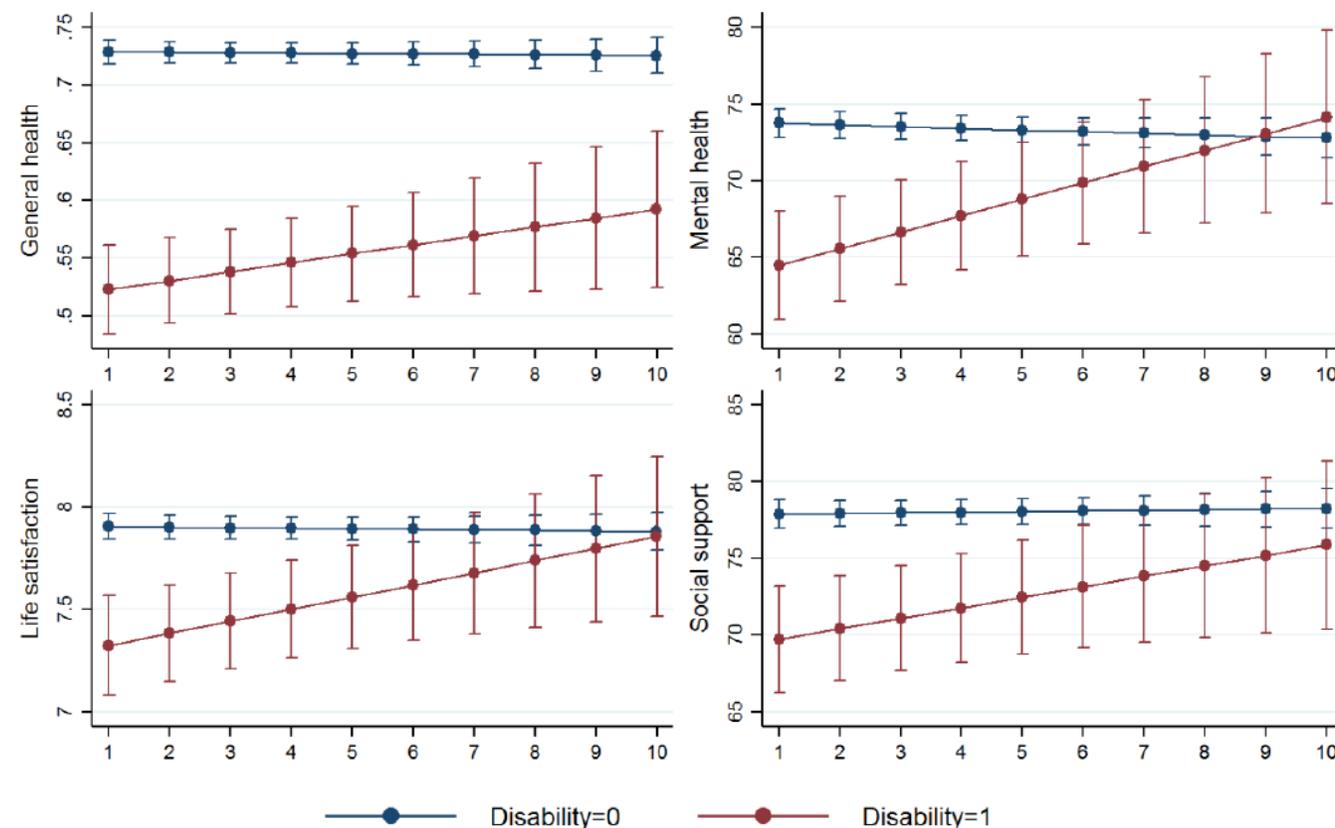
Results (HILDA): Comparing trajectories up to 15 years after graduation

Graduates with a disability vs other graduates:

Health & wellbeing:

Initially lower mental health, life satisfaction and social support, followed by a catch up about 5-6 years after graduation

Persistent differences in terms of general health



Results (HILDA): Comparing before and after graduation outcomes

	General health	Mental health	Life satisfaction	Social support
Not ATSI	0.00	0.49	-0.03	0.74*
ATSI	-0.06*	-4.93*	-0.40**	-1.45
$\beta_{ATSI} = \beta_{not\ ATSI}$	<.05	<.01	<.05	0.21

Controls: gender; age; study level; relationship status; employment status

Results in the table above show that Indigenous graduates record a decline in terms of general health, mental health and life satisfaction compared to before graduation (including before university)

Other results (not shown here; see the RIHE paper) suggest that low SES graduates may benefit more in relative terms on some indicators (e.g. financial prosperity) compared with high-SES graduates

Summary

The study:

- Leveraged robust large-scale data (ACLD and HILDA)
- Focused on five population-based equity groups (low SES; ATSI; NESB; regional/rural; disability)
- Explored both short-term outcomes (<2 years after graduation) and long-term trajectories over time (up to 15 years beyond graduation)
- Investigated both labour-market and non-labour market outcomes (including health and wellbeing)

Key findings

1. There is an initial disadvantage for equity students (consistent w/previous literature):

- low SES graduates less likely to be employed and have and lower income/salaries
- graduates with disability less likely to be employed and employed full-time
- NESB graduates less likely to be in employment, and have lower income/salary for those in employment

2. Differences (for the outcomes we could capture) generally disappear over time

- This pattern is most pronounced for indicators related to subjective assessment of financial prosperity and job security but also for social support
- However, the pattern is very different for graduates of an Aboriginal or Torres Strait Islander background, and to a lesser extent for students with disability. These graduates report significantly poorer outcomes compared with their non-equity counterparts, particularly in terms of the physical and mental health outcomes, and subjective wellbeing as captured by life satisfaction.

3. Evidence is mixed in terms of the relative gain and depends on the equity group

- Low SES graduates appear to benefit more in relative terms (i.e. benchmarked against pre-graduation results) on indicators such as financial prosperity
- Indigenous students report deterioration on a number of indicators related to health and wellbeing, when comparing their before- and after-graduation outcomes

Conclusions

Despite some initial differences, in case of most equity groups investigated in this report, the trajectories of equity and non-equity graduates appear to converge over a longer run so that any initial differences disappear several years post-graduation.

However, arguably more could be done to prevent this relatively long catch up period to give an equal start to all university graduates, regardless of their background.

- Universities may be able to play a particular role here by focusing on boosting employability among equity students and working to maintain their wellbeing

Furthermore, while arguably reflecting a broader underlying disadvantage for Indigenous graduates and graduates with disability, the findings from HILDA analyses highlight that this underlying disadvantage is not easily alleviated by completing a university degree.

- Tackling these pervasive and persistent inequalities would require a sustained policy effort within and beyond the higher education sector.

Limitations and future research

Small sample sizes for some equity groups prevented us from more detailed explorations, e.g. breakdowns and comparisons by gender, field of study, university group

More research is needed to understand and contextualise the findings for Indigenous graduates, and graduates with disability, including mixed-method and qualitative research

Large-scale administrative data could also be used to better quantify the extent of disadvantage for the smaller equity groups and sub-groups within equity groups. Such data would also allow for more detailed breakdowns, e.g. investigating graduates in specific field of studies, or splitting up the NESB category into specific language/ethnic groups



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Thank you

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