

Executive summary

25 years of LSAY: Research from the Longitudinal Surveys of Australian Youth

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The Longitudinal Surveys of Australian Youth (LSAY) are a series of nationally representative surveys of young people that follow their transitions from compulsory schooling to post-school education and employment. The program has been conducted since 1995 and comprises six separate cohorts of more than 10 000 young Australians each.

LSAY aims to understand the lives of young people, and as a longitudinal dataset spanning more than 25 years, it provides detailed information relating to the transitions and pathways of young people. Survey items focus on education, employment, and changes in life circumstances as young people leave school and prepare to enter the work force.

The content of the LSAY datasets can be loosely organised into four major areas:

- Demographics, such as gender, country of birth, indigeneity, socioeconomic status, and parents' education and occupation levels
- Education, including school characteristics, subject choice, post-school plans, higher education, and vocational education and training (VET)
- Employment, including hours worked, wages and benefits received, job-seeking methods, and job satisfaction
- 'Social', which broadly includes living arrangements, marital status, financial difficulties, volunteering activities, and life satisfaction.

This is by no means an exhaustive list. A complete record of all LSAY items can be found in the online dictionary and variable listing (<https://www.lsay.edu.au/publications/user-support-and-documentation>).

Table 1 summarises the characteristics of the samples comprising the LSAY program. To date, there have been six LSAY cohorts: the first began in 1995 and is referred to as Y95; further cohorts commenced in 1998, 2003, 2006, 2009, and 2015. These are referred to as Y98, Y03, Y06, Y09, and Y15 respectively. The Y95 and Y98 cohorts were drawn from representative samples of Year 9 students, with an average age of 14.5 years. Since 2003, LSAY participants have commenced the program at age 15 years, when they participate in the Programme for International Student Assessment (PISA) while at school. Respondents are then interviewed once per year for a further 10 years, taking part in their final surveys at age 25.

LSAY is recognised as one of Australia's eight core national longitudinal data sets (Department of Social Services 2016). As one of the few longitudinal surveys in the world with multiple cohorts, LSAY gives researchers, policymakers, and those with an interest in youth issues insight into the diverse pathways taken by young people in Australia. Further detail concerning the history and structure of the LSAY program is provided by Moore and Semo (2019).

Table 1 Cohorts of the LSAY

| Cohort abbreviation | Cohort description | Survey period | Age when first surveyed | Age range during survey period | Sample size in initial year |
|---------------------|----------------------------------|-------------------|-------------------------|--------------------------------|-----------------------------|
| Y95 | Attended Year 9 in 1995 | 1995–2006 | 14.5 years | 14.5–25.5 years (average) | 13 613 |
| Y98 | Attended Year 9 in 1998 | 1998–2009 | 14.5 years | 14.5–25.5 years (average) | 14 117 |
| Y03 | Aged 15 and participated in PISA | 2003–13 | 15 years | 15–25 years | 10 370 |
| Y06 | Aged 15 and participated in PISA | 2006–16 | 15 years | 15–25 years | 14 710 |
| Y09 | Aged 15 and participated in PISA | 2009–19 | 15 years | 15–25 years | 14 251 |
| Y15 | Aged 15 and participated in PISA | 2015–25 (ongoing) | 15 years | 15–25 years | 14 530 |

25 years of LSAY

This publication presents research highlights from the past 25 years of the LSAY program. LSAY data have proven especially valuable to policy-oriented research focusing on youth transitions, from school to further education and the labour force. The six cohorts have also allowed for investigations of changes in youth circumstances over time, providing insight into the social and economic contexts that affect successful transitions into adulthood.

In late 2018, the National Centre for Vocational Education Research (NCVER) identified the previous research that best demonstrated the broad coverage of the LSAY data. The authors of those studies were invited to submit summaries for inclusion in this publication.

A total of 14 submissions have been organised into the following six sections:

- Research using LSAY: reflections from Tom Karmel
- Socioeconomic status and family background
- VET in schools
- School experiences, maths, and expectations of enrolling in university
- Employment and post-school outcomes
- An overview of school-to-work transitions.

Research using LSAY: reflections from Tom Karmel

The first section is written by Dr Tom Karmel who served as Managing Director of NCVER from 2002 to 2013, during which time he was involved in 10 pieces of research using LSAY data. In describing these studies, the chapter demonstrates the varied uses of the LSAY data and serves as exposition for the chapters that follow.

Findings from selected studies showed:

- Undertaking VET programs in Year 11, but not continuing to Year 12, had a positive effect on post-school outcomes for girls in particular
- Apprenticeships are more likely to be undertaken by young men who are less academically inclined and from lower socioeconomic backgrounds

- Completing Year 12 is not generally sufficient for young people in terms of later employment and wellbeing outcomes, and further study is required for the best paths to success
- Young people with more education, ability, and experience have more opportunities to move to high-skilled jobs, while females and part-time workers are more likely to remain in low-skilled jobs
- Intentions to complete Year 12 are most strongly associated with academic performance, immigration background, and parental expectations
- Students whose parents want them to attend university are 11 times more likely to plan to attend university, and four times more likely to plan to complete Year 12
- After controlling for tertiary entrance ranks (TERs), the school attributes with the strongest influence on later university attendance are sector, socioeconomic make-up, and proportion of students from non-English speaking backgrounds
- Students from low socioeconomic backgrounds benefit more from attending high quality schools than students from high socioeconomic backgrounds.

Socioeconomic status and family background

The second section of this publication consists of three chapters, which collectively demonstrate the utility of LSAY in allowing researchers to assess the effects of student demographics on later academic and labour market success.

The first chapter, *Student insights, trajectories and equity considerations* written by Dr Grant Cooper, summarises a study published in 2018 that used LSAY data to investigate the extent to which demographic factors predict participation in science subjects among students over the age of 16 years. The main findings were:

- Higher socioeconomic status and coming from a foreign or first-generation background had positive effects on participation in science subjects
- Indigenous students were less likely to participate in science subjects
- When controlling for other factors, gender had a non-significant effect on participation in science subjects.

The second chapter, *Inequality in higher education and labour market benefits for young Australians*, is written by Dr Jung-Sook Lee. It summarises a study published in 2014 that used LSAY data to investigate the influence of family background on the likelihood of attaining a university degree, as well as the labour market benefits of tertiary education. The main findings were:

- University degrees result in higher income growth rates, with no effect on weekly pay at age 22 years, but higher weekly pay by age 25
- Compared with Year 12 completion, obtaining a university degree improved mean annual income at age 25 by about \$7 000 for men and \$10 000 for women
- University 'prestige' had a significant effect on occupational prestige, but not income

- Young people who studied health-related disciplines had the highest income and occupational prestige, while the lowest was among those who studied arts, humanities, and social sciences
- Young people whose parents had university degrees and higher occupational prestige were more likely to obtain a university degree themselves.

The third chapter, *Associations between educational attainment and both family and school SES* written by Dr Jenny Chesters, summarises a study published in 2019 that used LSAY data to assess whether resources in the school environment can compensate for a lack of resources in the home environment. The main findings were:

- Both student and school socioeconomic status were positively associated with academic achievement at age 15 years and likelihood of enrolling in a bachelor degree
- Students from low socioeconomic backgrounds had higher levels of academic achievement at age 15 years if they attended high-socioeconomic schools
- Students from high socioeconomic backgrounds were only half as likely to enrol in a bachelor degree if they attended a low-socioeconomic school, as compared with attending a high-socioeconomic school.

VET in schools

The third section of this publication comprises two chapters, which together showcase the capacity for LSAY researchers to explore early involvement in vocational education and training. The first chapter, *Student transfer between VET and higher education*, is written by Dr David Curtis. It summarises a study published in 2006 that used LSAY data to investigate rates of student transfer between the vocational and higher education sectors. It then makes an additional contribution by revisiting those analyses using 2016 LSAY data, to determine whether rates of inter-sectoral transfer have changed over time. The main findings were:

- Most students undertake only one post-school program, but those who undertake a second program are most likely to do so in the same sector as the first
- While participation rates in both VET and higher education increased between 2006 and 2016, rates of transfer between sectors remained similar
- Transfers from VET to higher education typically involve students moving from lower level qualifications to higher level qualifications in the same field.

The second chapter, *Initial outcomes from VET in Schools programs in Australia*, is written by Dr Cain Polidano and Domenico Tabasso. It summarises a study published in 2014 that used LSAY data to estimate the education and employment outcomes for participants in VET in Schools programs, in their first year after leaving school. The main findings were:

- Participation in VET in Schools programs resulted in 14% higher rates of school completion
 - It was also associated with lower rates of enrolment in higher education, and higher rates of participation in VET courses at certificate III level and above, in the first year out from school

- VET in Schools programs with workplace learning components yielded higher rates of full-time employment, being in a job that the participant would like as a career, and higher income (\$25/week) in the first year out from school.

School experiences, maths, and expectations of enrolling in university

The fourth section of this publication comprises three chapters that examine the effects of school experiences and beliefs about one's abilities on later educational pathways. The first chapter, *Schools and career guidance key to widening university participation*, is written by A/Prof Wojtek Tomaszewski, A/Prof Francisco Perales and Dr Ning Xiang. It summarises a study published in 2017 that used LSAY data to investigate the roles of socioeconomic background, school experiences, and career guidance on university enrolment. The main findings were:

- Students from low socioeconomic backgrounds were less likely to enrol in university than students from high socioeconomic backgrounds by age 25 (35% vs. 64%)
- Good student-teacher relationships, a positive learning culture, and some forms of career guidance increase the likelihood of students from all backgrounds enrolling in university
- The effects of student-teacher relationships and talks from career advisors on university enrolment were greater for students from lower socioeconomic backgrounds.

The second chapter, *The underrepresentation of women in maths-intensive fields of study* written by Dr Helen Law, summarises a study published in 2018 that used LSAY data to examine the influence of occupational expectations and self-assessed maths competence at age 15 on subject choice in Year 12 and later participation in maths-intensive bachelor degrees. The main findings were:

- Men were about four times more likely than women to choose a maths-intensive bachelor degree program
- 25% of men expected a maths-intensive career when they were 15 years old, compared with 7% of women
- The gender gap in enrolling in a maths-intensive university course could be reduced by about 28% if women were as likely as men to expect maths-oriented careers, to have the same level of confidence in their maths competence while at school, and to take advanced maths and physical science subjects in Year 12.

The third chapter, *Juxtaposing maths self-efficacy and self-concept as predictors of long-term achievement outcomes*, is written by Dr Philip Parker. It summarises a study published in 2014 that used LSAY data to investigate the roles that mathematics self-efficacy and self-concept have on later academic achievement and course selection. The main findings were:

- Mathematics self-concept and self-efficacy were both predicted by academic achievement
- Even when controlling for prior achievement, both mathematics self-concept and self-efficacy predicted university entrance scores

- Mathematics self-efficacy was a significant predictor of university entry, and mathematics self-concept was a significant predictor of choosing to participate in a university course with a focus in science, technology, engineering or mathematics (STEM).

Employment and post-school outcomes

The fifth section of this publication contains four chapters that have a particular focus on employment and other labour market outcomes. The first chapter, *Adolescent occupational expectations*, is written by Dr Joanna Sikora. It draws on several studies, published between 2011 and 2018, that have used LSAY data to investigate the influences of educational plans, occupational plans, gender, and socioeconomic background on later outcomes. The main findings were:

- 56% of boys and 66% of girls planned to become professionals at age 15 years, both of which are significantly higher than the actual proportions observed in the adult population
- More than one quarter of participants had failed to achieve their occupational expectations at age 15 years by the time they were 25 years old, with similar proportions failing to realise their expectation of completing university
- Students from lower socioeconomic backgrounds were more likely to downwardly adjust their educational and occupational expectations over time
- Occupational uncertainty at age 15 increased the likelihood of occupational uncertainty at age 22 by 45%
- The gender gap in expectations of STEM careers remained relatively stable between 1999 and 2015, with computing, engineering, and mathematics appealing to relatively few young women
- Females were less likely than males to retain career plans concerning computing and engineering (19% vs. 32%).

The second chapter, *Who takes a gap year and why?* written by Dr John Stanwick, summarises a paper published in 2012 that used LSAY data to investigate the incidence, predictors, and outcomes of gap-year taking. The main findings were:

- Incidence of gap-year taking has increased between 1999 and 2009, from 10% of school leavers to 24%
- There was a greater occurrence of gap-year taking among respondents who were employed in Year 12, with little difference between males and females
- About half of gap-year takers worked during their gap year, while as many as 25% reported some form of non-university study
- Gap-year takers appear to still be ‘catching up’ to students who do not take a gap year by age 24 years, with 12% fewer completing their course and 11% more still studying their first university course by then.

The third chapter, *Does combining school and work affect school and post-school outcomes?*, is written by Alison Anlezark. It is based on a report published in 2011 that used

LSAY data to explore the effects of combining school and work on young people, and the extent to which students who work are able to manage competing demands. The main findings were:

- Almost half of all students in Years 9 through to 12 combined part-time work and school, with slightly higher rates for females
- Those students who worked while at school did so for 11 to 12 hours per week on average
- Working for more than 15 to 20 hours per week while at school had a negative impact on school and post-school study outcomes
- Working for around five hours per week while at school had a positive impact on post-school full-time employment.

The fourth chapter, *Young people not in education, employment or training (NEET)* written by Dr Cameron Forrest, is based on a report published in 2017 that used two cohorts of LSAY data to investigate the incidence, predictors, and outcomes of being persistently not in education, employment, or training. The main findings were:

- On average, respondents spent two to four months in the NEET state between ages 15 and 24; this was used as further justification to consider only those periods which were six months or longer to be problematic
- The main demographic factors associated with persistent NEET periods of six months or longer were having children and Year 12 non-completion
- Respondents who were persistently NEET as teenagers were between 3 and 5 times more likely to experience persistently NEET periods in adulthood.

School-to-work transitions

The final section of this publication comprises one chapter, written by Rasika Ranasinghe and Emerick Chew. It uses sequence analysis to identify the different types of pathways young people take in the transition from school to the labour force. The main findings were:

- Young peoples' transitions could be categorised into five main pathways: higher education and work, early entry to full-time work, a mix of higher education and VET, mixed and repeatedly disengaged, and mostly working part-time
- The second pathway, which included those respondents who engaged in VET as an early route to employment, yielded the highest rates of employment by age 25 years (97.4%)
- The fourth pathway, which was characterised by labour market churning and repeated disengagement, was associated with low socioeconomic status and low mathematics achievement.

Summary and the future of LSAY

Since 1995, LSAY has provided a rich data source on the pathways of young Australians. In this collection of papers, we present research highlights spanning two decades of LSAY's history. Although the 'core' LSAY data record academic- and employment-related outcomes,

wider research interest has been facilitated by the inclusion of detailed demographic information, as well as topics such as participation in VET in Schools programs, career advice and aspirations, subject choice, gap years, and NEET periods, among many others.

While the studies summarised in the following 14 chapters highlight these strengths, they represent only a small fraction of the research interest in LSAY during the past two decades. As of November 2019, some 345 studies have been published using LSAY data, while an additional 2458 studies have cited work published under the LSAY research program that ran from 1995 to 2013. It is not an exaggeration to state that research interest in LSAY has never been higher. Consecutive records were set in 2018 and 2019 for requests from prospective researchers to access LSAY data. Multiple users have expressed their desire to see the program extended beyond the age of 25 years to enable even longer-term analyses.

As a retrospective celebration of more than 25 years of LSAY's research history, what is largely missing from these highlights is a discussion of current directions. The latest LSAY cohort, Y15, saw the introduction of several new topics, aimed at measuring soft skills, personality, wellbeing, caring duties, 'gig' work, homelessness, social support, as well as an expanded focus on volunteering and other topics. For the first time, LSAY data will be linked with administrative VET records, with additional linkages planned for the National Assessment Program - Literacy and Numeracy (NAPLAN), senior secondary results, and higher education. A recently completed series of consultations with data users identified several other emerging areas of research interest, and NCVET will continue to consult with data users on future directions for the survey.

The LSAY program has a long and proud research history, but the future promises to be brighter still.

References

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