

CSQ



Apprentice Annual 2018

INCLUDES SPECIAL FEATURE:
Linking Training To Industry

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Welcome

Welcome to the 2018 CSQ Apprentice Annual, our annual health-check of Queensland's construction apprenticeship pipeline.

In this year's Annual we examine the relative benefits for young people of vocational education and training (VET) over alternative pathways. Some claim that a vocational pathway leads to better jobs and better pay. Others say the reality is different. In this report we present new modelling that reveals the return on investment young people can expect to receive from a range of post-secondary school pathways.

In the second part of this year's Annual you will find our usual suite of indicators of the health and character of Queensland's construction apprentice workforce. The importance of apprentices to the future of Queensland's construction industry cannot be underestimated. How well the industry attracts, retains and develops its apprentices will leave a lasting legacy for its future. The apprentice landscape is not a static one, and CSQ is committed to keeping Queensland's construction industry updated on this shifting terrain so that together we can better support our network of apprentices.

A note on data

In this report we use the term 'apprentice' to refer to both apprentice and trainee qualifications. Our focus is on qualifications directly connected with the core business of building and construction. **Appendix A** details the list of qualifications that we associate with 'construction apprenticeships' for the purposes of this report.

While this definition provides a reasonable approximation of apprentices employed in the construction industry, it is important to remember that any given apprentice may be employed in one of several industries, not just construction. The numbers reported throughout this Annual should therefore be interpreted as the pool of talent from which the construction industry can draw, rather than a definitive count of apprentices currently working in construction businesses.

Executive summary

Post-compulsory education and training has increased dramatically in Australia over the last few decades. Participation in vocational education and training (VET) programs increased 500% between 1980 and 2017, while university enrolments grew 250%.

This training boom is the result of a string of national policies that have, in effect, set a VET qualification as the baseline level of education for Australian workers.

VET qualifications have always been an important mechanism for delivering workplace specific skills to young people looking to enter the workplace, those who are unemployed or underemployed in the labour market, as well as those looking to build skills in their current job and pursue future career opportunities. They are also critical for many industries, like construction, where the VET pathway is still the primary entry point to key occupations and is a prerequisite for many occupational licences.

In recent years, VET qualifications have become increasingly important for young people who do not continue on to university after school. At the same time, VET has become dominated by programs that have increasingly been 'institution-based'¹ and we have seen their growth outpace that of traditional, employment-based delivery models such as apprenticeships.

The growth in these 'institution-based' VET programs has taken place with little serious reflection on the value it adds to young people's job prospects. The few rigorous studies that have looked at this issue suggest that young people's chances of employment are generally not improved by completing a VET course, nor does it seem to help their future earnings prospects.

While such studies seem to undermine the value of VET in the school-to-work transition, they tend to ignore the crucial distinction between institution-based VET programs and those that are employment-based and linked to real jobs.

In this year's CSQ Apprentice Annual we tackle this issue in detail. We modelled the labour market outcomes of several post-school pathways across a range of industries, with a specific focus on apprenticeships. We found some striking results, summarised in Box 1.

1 Labour market returns

- Young people who complete an institution-based VET course after school are no more likely to be employed at age 25 than someone who did no post-secondary study. If they do have a job at 25, they are no more likely to earn more.
- However, VET programs combined with employment deliver significant benefits. Young people who complete an apprenticeship or traineeship are more likely to be employed at age 25, and enjoy almost 20% higher earnings than those who complete an institution-based VET program.
- Early labour market outcomes for many apprentices are also better than those for university graduates. Someone who completed a trade apprenticeship earned, on average, \$70,000 compared to \$63,000 for university graduates at age 25, and were 19% more likely to be employed full-time by age 25.
- Of all pathways, construction apprenticeships offer the best labour market outcomes. A person who completes a construction apprenticeship will earn, on average, 45% more than someone who completed an institution-based VET program, and is 24% more likely to be employed full-time by age 25.

Our findings highlight the power of VET when it is embedded in employment and when it is in lock-step with economic activity and business needs.

The return on government spending on VET is maximised where programs are tightly coupled to employers. This is not a simple matter of incentives. Nor is it a matter of turning every job into an apprenticeship. It is about creating the conditions where businesses feel supported in employing young people in a context of learning.

Enterprises must also come to the party. Narrow views of business that cannot see past the logic of employ-produce-profit must give way to a sense of shared responsibility for skilling the current and future workforce.

There are many good examples to follow. A good place to start are the thousands of small construction businesses that employ apprentices and continue to train their workforces. This is not to say the construction approach will work in all industries. It won't. Each industry has its own model of VET success, but the common thread must be a tight coupling with jobs.

As the second half of this report shows, the construction sector leads the way. Our review of the key indicators of the health of the construction apprenticeship system in Queensland reveals a robust trade pipeline that is both well-connected to, and delivering results for, industry. Box 2 summarises the results.

2 Construction apprenticeship trends

- Queensland's construction industry is a major player in the apprenticeship system, outperforming all other industries.
- The number of construction apprentices in-training each year in Queensland has remained stable over the last decade, at around 20,000.
- While the last several years saw a boom in civil sector apprenticeships, the residential sector is once again dominating new apprenticeship commencements.
- Only half of new construction apprentices conform to the 'school leaver' stereotype, but the vast majority are still young adults when they commence.
- Female participation in construction apprenticeships doubled over the past decade, while the Indigenous participation rate rose by 50%, albeit from low bases.
- Regional Queensland is outperforming, with every region taking on more apprentices per hundred workers than the south-east corner.

CSQ'S commitment

The construction apprenticeship system in Queensland is in good shape. At CSQ, we will continue to monitor these trends as we work to ensure the pipeline of construction trades meets the needs of industry into the future.

In 2018-19, we will invest \$1.9 million into attracting talented people into the construction industry as part of our broader \$36 million investment into skilling the construction workforce in Queensland.

We will continue to build on our partnerships with industry, the education and training sectors, and government to:

- promote apprenticeships and the great prospects for a career in construction
- help job seekers test their suitability for a construction career, and
- help prospective apprentices get a head start in construction with training and experiences.

We look forward to continuing to work with our partners to ensure Queensland's construction industry has the skills it needs into the future.

PART I: LINKING TRAINING TO INDUSTRY

Trying times for young workers

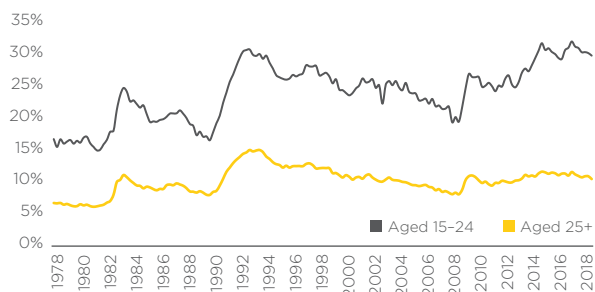
Not since Australia's last recession in the early-1990s has the transition from school-to-work been so difficult for so many young Australians. Australians aged 15 to 24 have endured a substantial and sustained fall in the rate of employment since the Global Financial Crisis (GFC), from a high of 65% in 2008 to as low as 57% in recent years.²

The slow-down in hiring during this period, reflective of a weak post-GFC economy, has disproportionately affected young workers. Compared to adults, a much higher proportion of young Australians are looking for work or want more work than they can get.

This data highlights the difficulties faced by young people trying to make a successful transition from school to work during periods of weak growth and few job opportunities. While poor economic conditions have disproportionately negative effects on young people, the problem has been found to be most acute for those who do not complete a university qualification.³

Australia's young labour problem

Underutilisation rate, Australia



SOURCE: ABS, CSQ

Note: The underutilisation rate is the sum of unemployed and underemployed people as a % of the labour force

² The youth employment rate measures the number of 15-24 year old people who have a job as a percentage of the 15-24 year old population.

³ Hérault, N. et al. (2012) The Effects of Macroeconomic Conditions on the Education and Employment Outcomes of Youth, *Australian Journal of Labour Economics*, 15(1), pp. 17-36.

Australia's training boom

Over the last several decades, policy at all levels of government has emphasised VET programs as a means of increasing productivity by raising the levels of qualification attainment, as well as a solution for young school leavers experiencing problems in the school-to-work transition. A slew of programs and targets have been put in place to increase the uptake of VET programs among young people:

- In 1985, a system of traineeships was adopted for disadvantaged 16- and 17-year-olds as a means of reducing the high rate of youth unemployment at the time.⁴
- In 1991, governments doubled-down, declaring that 60% of all 22-year-olds should either have achieved a level III VET qualification, or be participating in higher education by 2001.⁵
- By 2014, all Australian governments had committed to giving all working-age Australians access to a government subsidised training place at a minimum Certificate III level.⁶

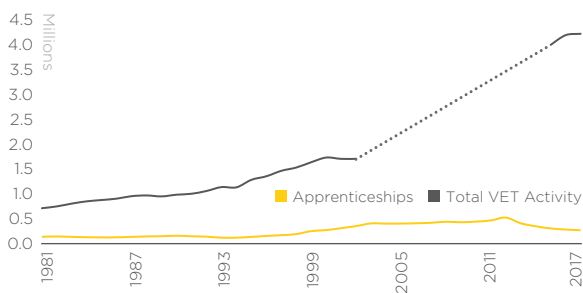
This concerted policy effort has had one major outcome: a much higher proportion of working-age Australians participating in post-compulsory education and training. Despite some data limitations, it is clear that VET enrolments have grown substantially over the last several decades – 500% since 1980.

While apprenticeships continue to form an important part of the VET landscape, enrolments without an employment contract have come to dominate. It is also clear that the traditional trade-related apprenticeships have been joined by a new suite of 'non-trade' programs.

Yet despite the scale and length of this boom in the delivery of VET programs, particularly non-apprenticeship programs, there has been limited examination of the effectiveness of qualifying increasing numbers of young Australians with VET credentials.

Australia's training boom

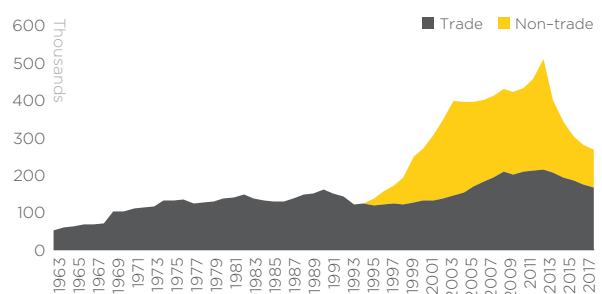
Number of VET enrolments, Australia



Source: NCVER
 Note: there is a data gap between 2003 and 2015 due to privately-funded VET enrolments being excluded from national training statistics. Accurate estimates of total VET activity are unavailable for this period.

Growth in apprenticeships driven by non-trade occupations

Number of apprentices and trainees, Australia



Source: NCVER
 Notes: we follow NCVER's practice of defining 'Trades' apprentices as all apprentices classified in ANZSCO major group 3 occupations (Technicians and trades workers), with all other apprentices classified as 'Non-trades.' Data on non-trade enrolments is unavailable before 1995.

⁴ Kirby, P. (1985) *Report of the Committee of Inquiry into Labour Market Programs* (Kirby Report), <http://hdl.voced.edu.au/10707/126407>

⁵ Finn, B. (1991) *Young people's participation in post-compulsory education and training: report of the Australian Education Council Review Committee* (Finn Review), <http://hdl.voced.edu.au/10707/348565>

⁶ Department of Education and Training (n.d.) *Access - more affordable training*, <https://www.education.gov.au/access-more-affordable-training>

**For centuries,
the apprenticeship
model has
delivered reliable
outcomes for both
participants and
industry.**



The value of VET for young people

Several studies have raised doubts about the value of VET programs to school leavers. Signs of poor returns on VET investment were evident in a 2011 Australian Bureau of Statistics (ABS) report that found more than one-in-four people who complete a Certificate I or II believed they gained no benefit from their qualification.⁷

Several other studies have shown VET participation to yield few labour market advantages over employment without post-school study.⁸ While Bachelor-level qualifications seem to carry clear benefits, VET qualifications generally do little to improve young people's employment and earnings chances. Indeed, early employment experience without any training has been found to deliver superior future labour market outcomes compared to VET programs.

While the literature may seem to cast the VET system in a poor light, an important distinction is often overlooked in these studies – the distinction between VET programs with and without an employment contract or other link to employment (such as structured workplace learning, work experience and mandatory vocational placement).

VET's core value has always been its tight coupling to industry. For centuries, the apprenticeship model has delivered reliable outcomes for both participants and industry. Over recent decades, however, the linkage with industry has been weakened in many VET programs as the emphasis has shifted away from employment-based training toward maximising the number of young people in post-compulsory education.

There is therefore good reason to believe that labour market outcomes may vary significantly between VET programs with and without employment linkages. For this report, we examined the labour market outcomes of VET programs that specifically include an employment component; that is, apprenticeships and traineeships. By following several cohorts of the Longitudinal Survey of Australia Youth (LSAY), we have unpacked the differences in labour market outcomes for several post-school pathways.⁹

Our results unambiguously confirm the findings of earlier research that much of VET alone adds little value to the labour market prospects of young people. We find that completing an institution-based VET program adds no additional benefit in terms of employment or wages outcomes at around age 25, compared to no post-secondary education.

⁷ ABS (2011) cat no. 4235.0 – Learning And Work, Australia, 2010-11

⁸ Marks, G. (2017). University and vocational education, and youth labour market outcomes in Australia, *Journal of Education and Work*, 30(8), pp. 868–80
Lee, W. and Coelli, M. (2010) The Labour Market Effects of Vocational Education and Training in Australia, *Australian Economic Review*, 43(4), pp. 389–408

⁹ The methodology for this analysis is summarised in **Appendix B**.

Significant differences emerge, however, when VET programs are grouped into those with and without employment contracts. The data suggests that coupling VET programs directly to industry by way of an apprenticeship or traineeship or other work-based model such as mandatory vocational placement creates a remarkably fruitful pathway for young people.

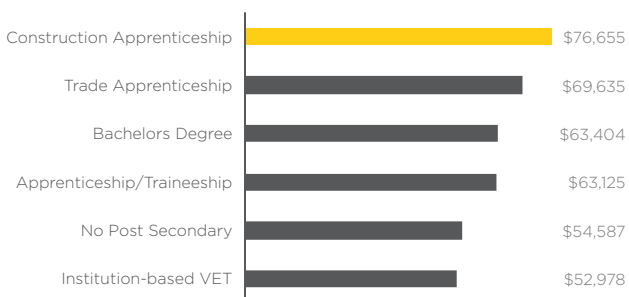
The positive effects of apprenticeships apply to all occupations but are more pronounced for some than others. Construction apprentices tend to achieve significantly better outcomes than any other cohort by age 25.

These findings make it clear that the link to industry and employment is an indispensable element in the VET system. The weight of evidence also warns against relying too heavily on pure education and training as the answer to the school-to-work question.

Greater policy emphasis should be placed on helping young people who do not take the university path to engage with the labour market as soon as possible after leaving school. In this respect, an apprenticeship is an excellent option, particularly a construction apprenticeship. It is also recognised that state-based programs, such as the Queensland Government's *Skilling Queenslanders for Work*, are attempting to address this issue.

Apprentices enjoy highest early career pay outcomes

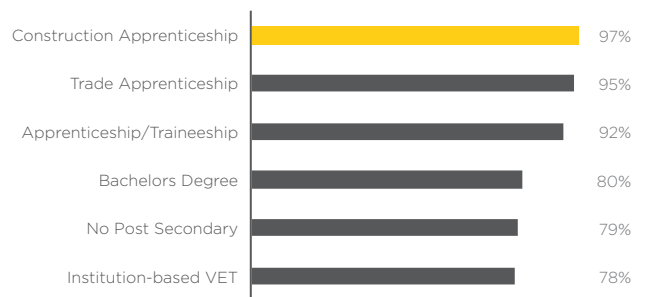
Weekly earnings at age 25 (annualised), Australia



Source: CSQ

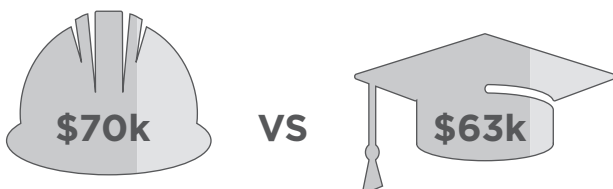
More job certainty for apprentices

Likelihood of being employed full-time at age 25



Source: CSQ

Key finding



AMONGST PEERS:

Someone who completed a trade apprenticeship earned, on average, \$70,000 compared to \$63,000 for university graduates at age 25, and were 19% more likely to be employed full-time by age 25.



The employment component is indispensable to the success of VET programs.

**We must
convince
business that
it is in their
interests to
'make rather
than buy'
their workers.**



Bringing back business

There is a compelling case to refocus policy on the nexus between business and training. If there is a lesson from the success of the apprenticeship model it is that businesses—real firms employing real workers in real markets—are indispensable to any successful training model.

This cannot be achieved by governments and the training sector alone. Programs designed simply to get more people into training are not the answer. More funding for more institution-based VET courses is not the answer.

History teaches us that convincing employers to sponsor employees' participation in VET programs is no easy task. Too often, training is only taken seriously if it carries a compliance imperative, as in the case of apprenticeships for licensed trades and restricted callings.

It is made all the more challenging by the fact that industries with weaker training traditions are a much greater part of the economy than in the past. As well, small businesses with less than five employees now account for over 70% of all employing businesses in Australia. This is difficult territory to seed a training culture. But worthwhile policy options do exist, and they are worth exploring.

One approach is simply to compel businesses to contribute to the training of their workforce. This is reasonably commonplace in the construction industry where many jurisdictions administer training levies that quarantine a portion of project costs for reinvestment into skills development. Licensing and occupational regulation, including Continuing Professional Development schemes, are another way to encourage businesses to support training.

These approaches have their strengths and weaknesses, and specific strategies will be more suitable for some industries than others. But one common theme is that VET programs need to be made more relevant to the specific needs of small businesses.

Finally, we must wage a battle for the hearts and minds of businesses. VET must be made more attractive to employers. Governments and the training sector must do more to sell the value of training to employers, and to champion the leading lights of training across all industries.

For our part, CSQ is engaged in a long-term campaign to encourage both construction companies and their workers to invest in skills. This not only involves industry awareness campaigns, but also targeted engagement and co-investment in companies with a willingness and ability to drive training behaviour among their employees and suppliers.

PART II: CONSTRUCTION APPRENTICESHIP TRENDS IN QUEENSLAND

Construction shows the way

The construction industry in Queensland continues to set a leading example of how the VET sector can work effectively with employers of all shapes and sizes to produce a workforce of the right size and quality to meet the needs of industry.

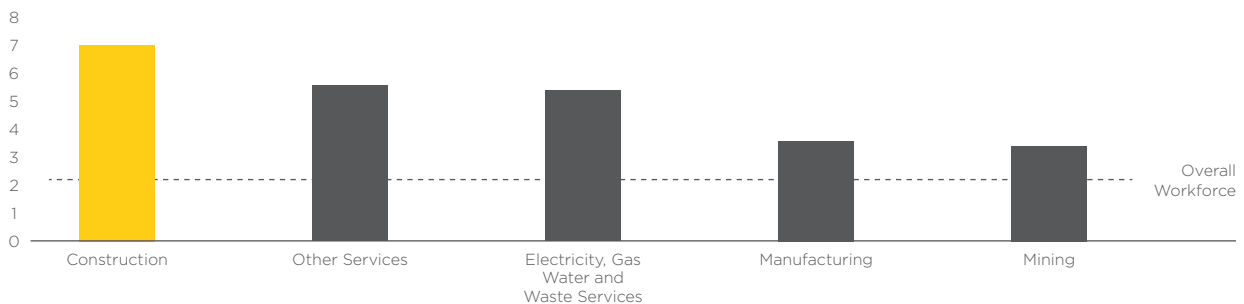
The construction industry is the most significant employer of apprentices in Queensland.

Not only do construction apprentices enjoy the most favourable labour market outcomes (see Part I of this report), but the industry employs more apprentices per worker than any other industry in Queensland.

The trade composition of Queensland's construction apprentice workforce has remained very stable over the last decade.

Top 5 industries for apprentices

Apprentices in-training per hundred workers at March 2018, Queensland



Source: NCVET, ABS, CSQ

Industries are based on the Australian and New Zealand Standard Industrial Classification 2006 catalogue number 1292.0. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/ProductsbyCatalogue/D249EC2A7DC203BACA257B9500133E91?OpenDocument>.

Other Services includes Repair and Maintenance, Personal and Other Services and Private Households Employing Staff and Undifferentiated Goods - and Service - Producing Activities of Households for Own Use.

Two thirds of apprentices belong to the typical construction trades of carpenters, electricians and plumbers.



Construction apprentices, trade by trade

Apprentices in-training expected to enter construction industry, Queensland, as at March 2018

Occupation	Number	% of all Construction Apprentices	Apprentice Ratio*	Change on last year
Carpenters and Joiners	4,396	30%	2.3	1.3%
Electricians	3,292	23%	1.9	1.1%
Plumbers	1,931	13%	2.2	0.9%
Earthmoving Plant Operators	1,295	9%	2.8	-4.8%
Painting Trades Workers	871	6%	1.8	4.6%
Plasterers	530	4%	1.0	5.4%
Air-conditioning and Refrigeration Mechanics	431	3%	1.4	4.1%
Wall and Floor Tilers	421	3%	1.1	4.0%
Bricklayers and Stonemasons	374	3%	1.9	3.3%
Building and Plumbing Labourers	181	1%	0.2	**

* The Apprentice Ratio reflects an occupation's share of apprentices relative to its share of the workforce. A higher ratio indicates the occupation 'punches above its weight' in terms of the number of apprentices it employs. A ratio of 2.0, for example, means the occupation's share of apprentices is twice as large as its share of the workforce.

** Growth in building and plumbing labourers is from too low a base to be meaningfully reported.

Source: NCVER, ABS, CSQ



The apprenticeship pipeline is delivering an ample supply of new trades to meet the future needs of construction in Queensland.

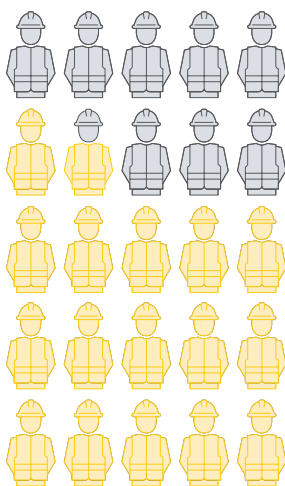


Completion rates

Completion rates among construction apprentices are holding up well. Our latest estimates suggest around 68% of people who begin a construction apprenticeship in Queensland will complete a construction apprenticeship in Queensland.¹⁰ This has been a fairly consistent result over the last decade. Completion rates in Queensland's construction apprenticeship system compare favourably to undergraduate university students, who complete at a rate of around 67% when given a six-year window to complete their studies.¹¹

The data suggests the apprenticeship pipeline is delivering an ample supply of new trades to meet the future needs of construction in Queensland. Media reports of severe trade shortages are unsubstantiated by the data. Indeed, newly-minted tradespeople are likely to find themselves in a relatively competitive labour market in the coming years, while employers will enjoy the luxury of selecting from a deep pool of construction talent, with some variation from time-to-time and place-to-place.

Key finding



COMPLETION RATES:

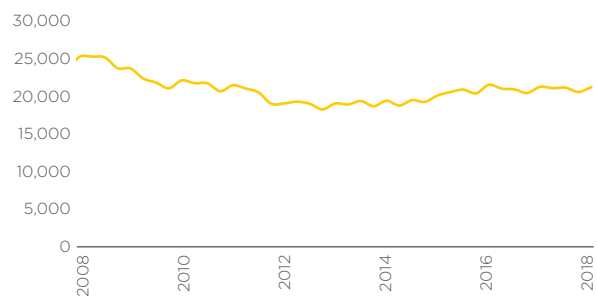
Completion rates in Queensland's construction apprenticeship system compare favourably to undergraduate university students, who complete at a rate of around 67% when given a six-year window to complete their studies.

The return of residential

There are over 20,000 apprentices working towards a construction trade qualification in Queensland. This result represents the latest print in a consistent trend since 2009.

Trade pipeline remains full

Construction apprentices in-training, Queensland



SOURCE: NCVET, CSQ

Yet this overall consistency hides some significant instability within Queensland's construction apprenticeship pipeline.

Generally speaking, apprentice commencements fluctuate with the construction workforce. As the workforce shrinks, usually as a result of decreased construction activity, apprentice commencements also decline. This is generally a one-for-one relationship.

¹⁰ We take a 'whole-of-industry' approach to measuring completion rates. This means an apprentice who switches between employers or construction occupations during their apprenticeship, but ultimately completes a construction apprenticeship, is counted as a 'completion.'

¹¹ DET (2015) *Completion rates of domestic bachelor students 2005-2013: a cohort analysis*, <https://docs.education.gov.au/documents/completion-rates-domestic-bachelor-students-2005-2013-cohort-analysis>

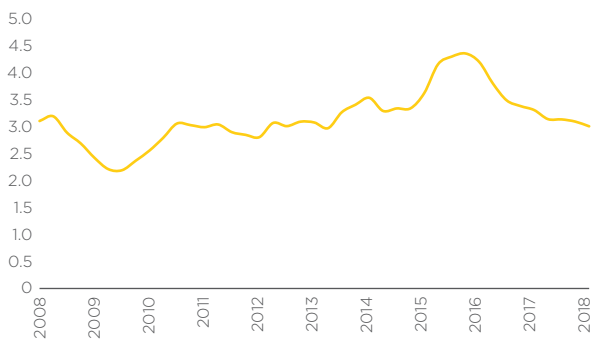
The period since 2013 was an aberration. As the workforce shrank (by as much as 10%), commencements remained elevated, driving the intake rate to unprecedented levels. It looked as though employers were continuing to take-on new apprentices, even as they were laying-off workers.

The puzzle is explained by a boom in civil construction apprenticeships that began with the 2011 boom in mining investment. As residential builders' appetites for new apprentices waned in a weak post-GFC environment, civil contractors stepped into the breach, expanding their intake four-fold and capturing more than half of the market for new construction apprentices by 2014.

Being less labour intensive than residential construction, the civil sector tends to employ fewer apprentices, typically accounting for less than 30% of all new construction apprentices. Yet the mining boom offered a unique set of circumstances that drove a higher-than-normal ratio of apprentices to workers in civil construction.

Industry's appetite for new apprentices remains strong

Construction apprentice commencements per hundred workers, Queensland



SOURCE: NCVER, ABS, CSQ

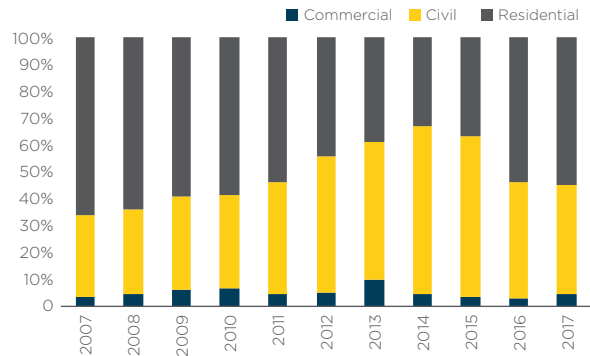
With the mining boom now well-and-truly behind us, these unprecedented levels of civil apprenticeships were unlikely to be maintained. And the data suggests apprenticeship commencements are returning to historical patterns.

As building conditions improved since 2014—thanks largely to a surge in apartment construction in South East Queensland—residential builders began taking on increasing numbers of apprentices once again. At the same time, civil contractors have retreated from apprenticeships in lock-step with investment's retreat from mining.

The end result is that the residential sector has all but resumed its historic role as the nursery for the construction trades. The civil sector, meanwhile, looks to be on a path toward a more normal 30% market share of new commencements.

Residential sector to dominate new apprenticeships

Construction apprentice commencements by sector, Queensland



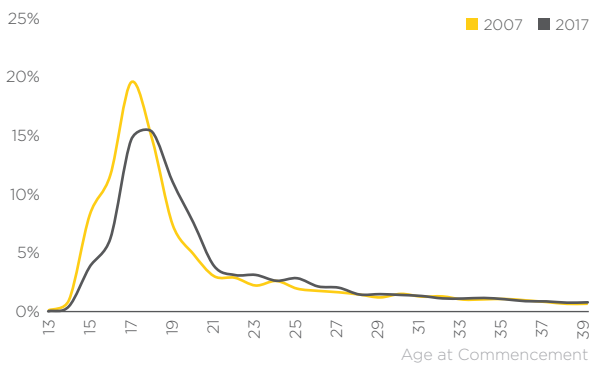
SOURCE: NCVER, CSQ

Construction apprentices 'less young'

The conventional image of a new construction apprentice as a school leaver is giving way to an older archetype. But it is perhaps more accurate to describe today's commencing apprentices as being 'less young,' rather than older than those who commenced a decade ago.

Rise of the gap year

Construction apprentices age at commencement, Queensland



SOURCE: NCVET, CSQ

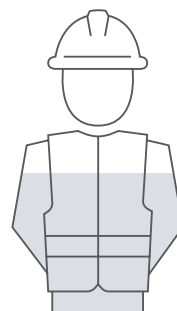
It is true that young people are less likely to leave school at Year 10 to enter a construction apprenticeship, although school-based apprenticeship pathways are now popular. Only 10% of new apprentices were aged under 17 in 2017, half the proportion a decade earlier. In large part, this is testament to the effectiveness of government policies aimed at encouraging school student retention to Year 12.

And while many new apprentices now transition directly from Year 12, even that pathway is becoming less common. Only half of all construction apprentices are now aged under 20 upon commencement, compared to 62% in 2007. So while construction apprentices seem to be pushing out their start dates, they are only delaying things by a year or two. The shift in commencement age has been confined primarily to the 'young adult' age bracket, with the proportion of new apprentices aged over 25 changing little since 2007.

So called 'mature age' apprentices continue to represent a minority of new commencements—around 28% in 2017, only slightly higher than the 22% in 2007.

This trend toward a 'gap year' for construction apprentices runs against the pattern in other industries which, on the whole, are seeing more apprentices commence their training in their teenage years, alongside a declining share of mature-age commencements.

Key finding



LESS YOUNG

NOT JUST A TEEN SCENE:

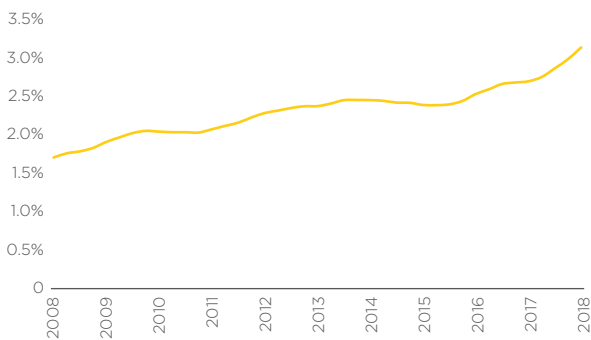
Only half of all construction apprentices are now aged under 20 upon commencement, compared to 62% in 2007.

Apprenticeships lead the charge on diversity

Over the last 12 months, CSQ released separate reports examining the participation of women and Indigenous Australians in Queensland's construction industry. In both reports, a standout finding was the contribution being made by the apprenticeship system to increasing diversity within Queensland's construction industry.

Women increasingly looking to construction

Female participation in construction apprenticeships, Queensland



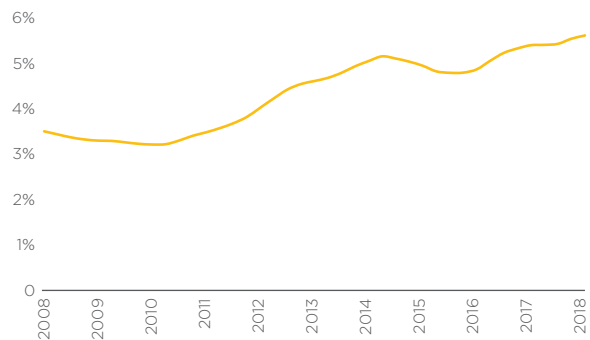
SOURCE: NCVET, CSQ

While women represent a tiny fraction of construction tradespeople in Queensland, their participation in construction apprenticeships doubled over the decade to early 2018. While the numbers are still very low—around 700 women are working towards a construction apprenticeship in Queensland—the trajectory is strongly upward.

It is a similar story for Aboriginal and Torres Strait Islanders, whose representation in Queensland's construction apprenticeship system increased by 50% between 2008 and 2018. Indigenous people now account for 5.6% of all construction apprentices in Queensland, well above the Indigenous share in the overall labour force, which is less than 3%.

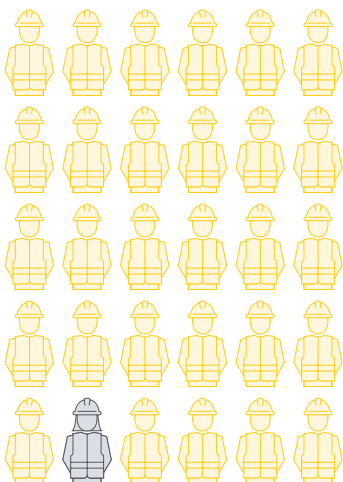
Construction apprenticeships popular among indigenous workers

Indigenous participation in construction apprenticeships, Queensland



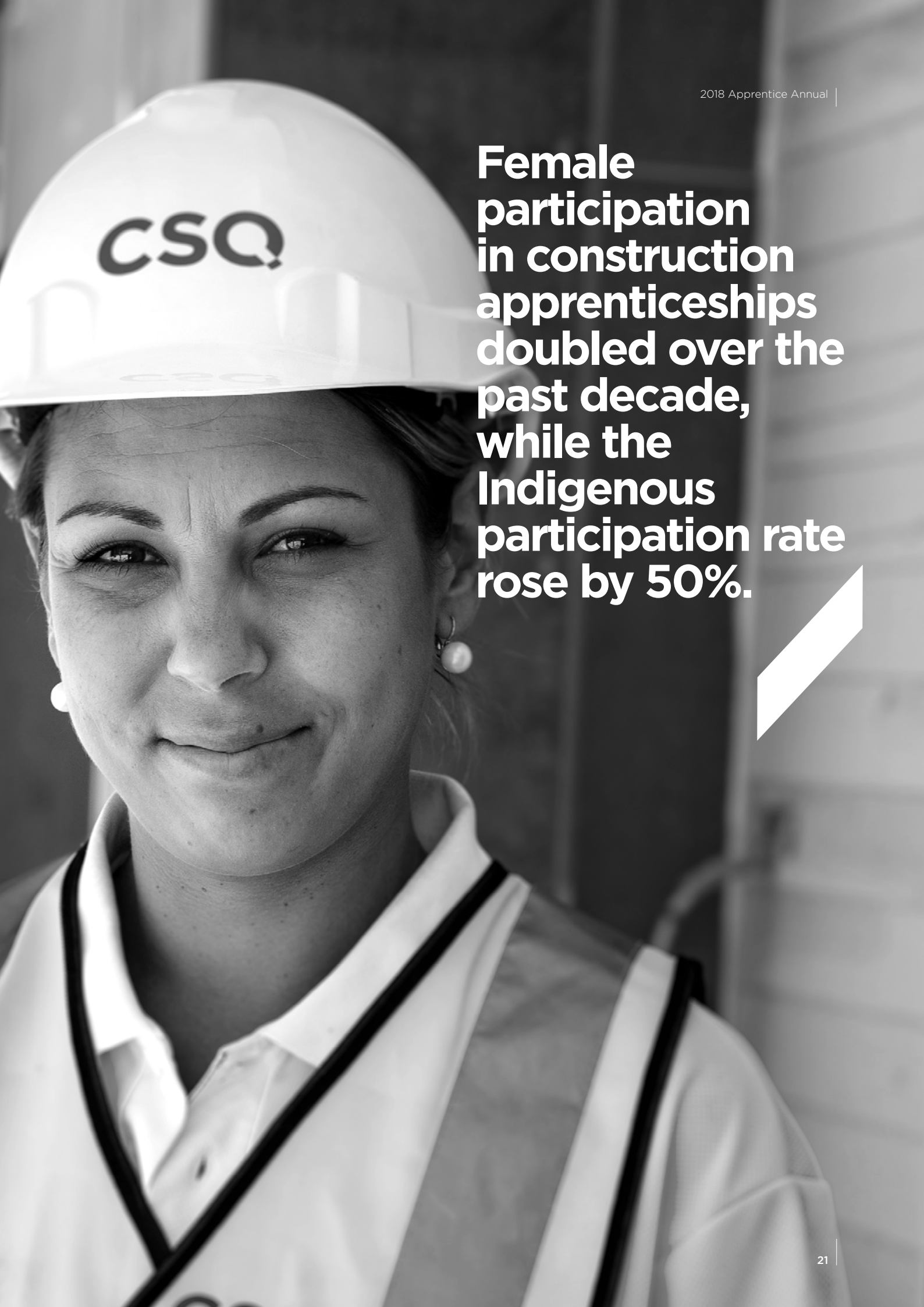
SOURCE: NCVET, CSQ

Key finding



DOUBLE UP:

Female participation in construction apprenticeships, while still low at 3%, has actually doubled over the past decade.



Female participation in construction apprenticeships doubled over the past decade, while the Indigenous participation rate rose by 50%.

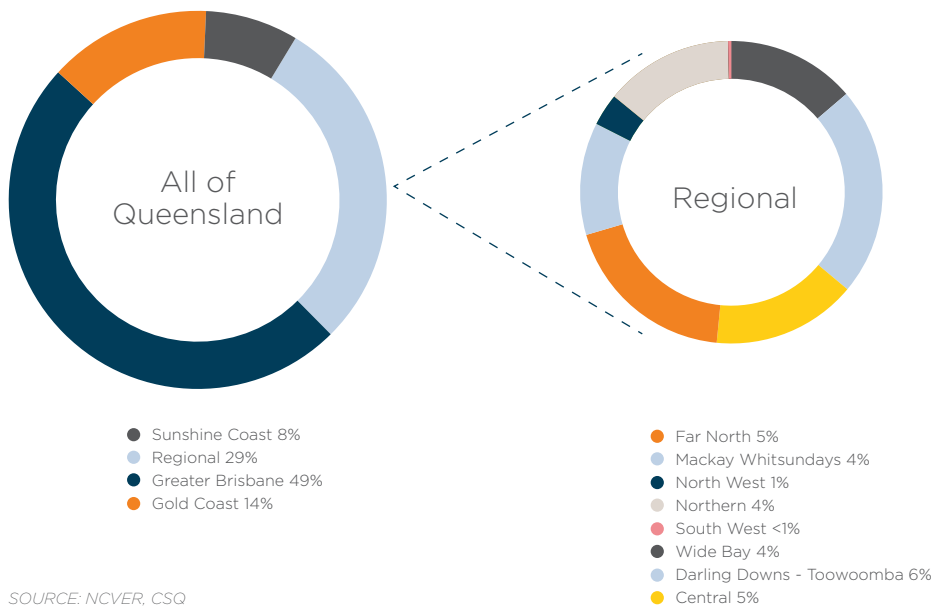


Regions outclass SEQ

Roughly 70% of all construction apprentices in Queensland work in the south-east corner. This figure is a little lower than the South East Queensland (SEQ) share of the overall construction workforce, which sits at 75%.

Seven in ten construction apprentices work in SEQ

Regional shares of Queensland construction apprentices

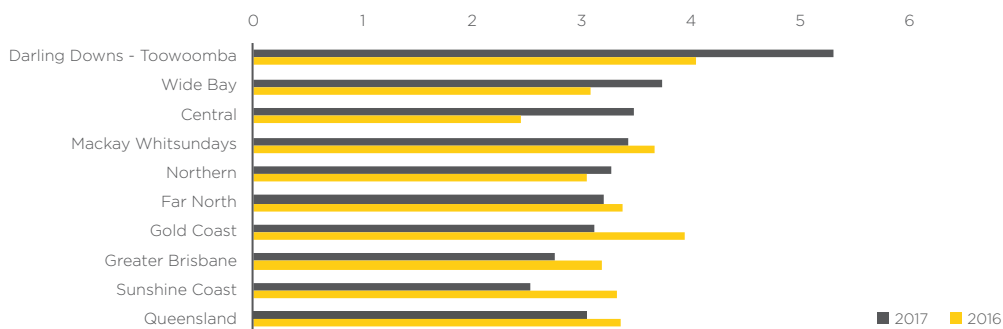


SOURCE: NCV, CSQ

Pound-for-pound, however, the regions show the strongest appetite for construction apprentices in Queensland. The three SEQ regions of Greater Brisbane, the Gold Coast and Sunshine Coast are taking on the fewest new apprentices per hundred workers, while Darling Downs - Toowoomba is the star performer, with an intake rate almost twice that of SEQ.

Regional Queensland outperforming on apprentices

Construction apprentice intake rates by region



Source: ABS, NCV, CSQ

Note: North West and South West regions have been excluded as percentage changes often fluctuate dramatically from one year to the next in lightly-populated regions.

There is also a declining trend in the apprentice intake rate in SEQ, while the regions tend to be taking on more apprentices. This might reflect the changing fortunes of the construction industry across the state, with many regions embarking on a growth path, while SEQ begins to contract after its surge in apartment construction.



APPENDIX A:

Construction industry apprenticeship qualifications

This report is based on the following list of qualifications, derived from the National Apprentice and Trainee Collection hosted by the National Centre for Vocational Education Research

Qualification Name	Applicable Qualification Codes
Certificate I in Construction	CPC10111, CPC10108, BCC10198
Certificate II in Civil Construction	RII20715, RII20713, RII20712, RII20709, BCC20107, BCC20103, BCC20198
Certificate II in Civil Construction (Bituminous Surfacing)*	BCC20207, BCC20203
Certificate III in Air-conditioning and Refrigeration	UEE32211, UEE31307
Certificate III in Bituminous Surfacing*	RII31009
Certificate III in Bricklaying/Blocklaying	CPC30111, CPC30108, BCG30103, BCG30698
Certificate III in Bridge Construction and Maintenance*	RII31109
Certificate III in Cabinet Making	MSF31113, LMF32109, LMF30402
Certificate III in Carpentry	CPC30211, CPC30208, BCG30203
Certificate III in Civil Construction	RII30915, RII30913, RII30912, RII30909
Certificate III in Civil Construction (Bituminous Surfacing)*	BCC30207, BCC30203
Certificate III in Civil Construction (Bridge Construction and Maintenance)*	BCC30307, BCC30303
Certificate III in Civil Construction (Bridge/Marine Construction)*	BCC30498
Certificate III in Civil Construction (Foundation Work - Anchors/Piling)*	BCC30598
Certificate III in Civil Construction (Foundation Work)*	BCC30407, BCC30403
Certificate III in Civil Construction (Tunnel Construction)*	BCC31007, BCC31003
Certificate III in Civil Construction Plant Operations	RII30815, RII30813, RII30809, BCC30607, BCC30603, BCC30198
Certificate III in Civil Foundations	RII31215, RII31213, RII31209
Certificate III in Concreting	CPC30313, CPC30311, CPC30308, BCG30303
Certificate III in Construction Waterproofing	CPC31411, CPC31408

Certificate III in Demolition (General Construction)*	BCG30403
Certificate III in Dogging	CPC30511, CPC30508, BCG30503
Certificate III in Electrotechnology Electrician	UEE30811, UEE30807
Certificate III in Electrotechnology Refrigeration and Air Conditioning*	UTE30999
Certificate III in Electrotechnology Systems Electrician*	UTE31199
Certificate III in Engineering - Electrical/Electronic Trade	MEM30405, MEM30498
Certificate III in Fire Protection	CPC32813, CPC32812, CPC32811, CPC32808, BCP30503
Certificate III in Fire Protection Control	UEE31011, UEE31007
Certificate III in Flooring Technology	MSF30813, LMF31208
Certificate III in Gas Fitting	CPC32713, CPC32711, CPC32708
Certificate III in General Construction (Carpentry -Framework/ Formwork/Finishing)*	BCG30798
Certificate III in Glass and Glazing	MSF30413, LMF30611, LMF30602
Certificate III in Joinery	CPC31912, CPC31911, CPC31908
Certificate III in Landscape Construction	AHC30916, AHC30910, RTF30403
Certificate III in Off-Site Construction (Joinery-Timber/Aluminium/Glass)*	BCF30200
Certificate III in Off-Site Construction (Machining)*	BCF30500
Certificate III in Off-Site Construction (Pre-Fabrication)*	BCF30400
Certificate III in Off-Site Construction (Sign Writing/Computer Operations)*	BCF30700
Certificate III in Off-Site Construction (Stairs)*	BCF30300
Certificate III in Painting and Decorating	CPC30611, CPC30608, BCG30603, BCG30498
Certificate III in Pipe Laying*	RII31309, BCC30507, BCC30503, BCC30798
Certificate III in Plumbing	CPC32413, CPC32412, CPC32411, CPC32408, BCP30103
Certificate III in Plumbing (Mechanical Services)	CPC32513, CPC32512, CPC32511, CPC32508, BCP30203
Certificate III in Rigging	CPC30711, CPC30708, BCG30703
Certificate III in Road Construction and Maintenance*	RII31409, BCC30707, BCC30703, BCC30298
Certificate III in Road Marking*	RII31509, BCC30807, BCC30803
Certificate III in Roof Plumbing	CPC32612, CPC32611, CPC32608, BCP30303
Certificate III in Roof Tiling	CPC30812, CPC30811, CPC30808, BCG30803, BCG30898
Certificate III in Scaffolding	CPC30911, CPC30908, BCG30903

Certificate III in Shopfitting	CPC30116, CPC31812, CPC31811, CPC31808, BCF30100
Certificate III in Signs and Graphics	CPC30216, CPC32111, CPC32108
Certificate III in Solid Plastering	CPC31011, CPC31008, BCG31003, BCG30398
Certificate III in Steelfixing	CPC31111, CPC31108, BCG31103
Certificate III in Stonemasonry (Monumental/Installation)	CPC32313, CPC32311, CPC32308, BCF30600
Certificate III in Timber Bridge Construction and Maintenance*	RII32109, BCC31107, BCC31105
Certificate III in Trenchless Technology	RII31615, RII31613, RII31609, BCC30907, BCC30903
Certificate III in Wall and Ceiling Lining	CPC31211, CPC31208, BCG31203, BCG30298
Certificate III in Wall and Floor Tiling	CPC31311, CPC31308, BCG31303, BCG30198
Certificate III in Waterproofing (General Construction)*	BCG31403
Certificate IV in Civil Construction Operations	RII40615, RII40613, RII40609
Certificate IV in Civil Construction Supervision	RII40715, RII40713, RII40712, RII40709, RII40206
Diploma of Fire Systems Design	CPC50509

*Qualifications no longer in use.



APPENDIX B:

Methodological note

The purpose of this study was to examine the relationships between alternative post-school pathways and labour market outcomes among young people. Our methodology draws on and extends the work of Marks (2017) in modelling data from the Longitudinal Survey of Australian Youth (LSAY).

LSAY provides a person-year dataset that captures a range of educational and labour market attributes for each year the respondent was interviewed. This produces multiple values for several time-variant variables for each respondent. Data from the 1995, 1998, 2003, 2006 and 2009 LSAY cohorts were analysed, with observations restricted to participants aged between 20 and 26 years. This resulted in 90,321 observations from 26,560 unique participants.

Generalised Estimating Equations (GEE) were used to estimate the effects of a range of predictor variables on the criterion variables (Table B1). GEE is an established method of analysing relationships in data collected over several years rather than a single year, and is well suited to longitudinal studies that suffer from participant attrition.

Table B1: LSAY Model Variables**Criterion Variables**

Hourly:	Logged Hourly Earnings, adjusted for inflation
Weekly:	Logged Weekly Earnings of those in full-time work, adjusted for inflation
Employment:	1=Employed, 0=Unemployed/Not in the labour force
Unemployment:	1=Unemployed, 0=Employed
Fulltime:	1=Employed Full-time, 0=Employed Part-time/working but working time unknown

Predictor Variables

Male:	1=Male, 0=Female
StudentAchievementNorm:	Normalised (within cohort) test scores at age 15, 0=average score, 1=1 standard deviation better than average
Year12:	1=Completed Year 12, 0=Did not complete Year 12
VETNC.XVET:	1=Commenced but did not complete a VET Qualification, 0=did not commence or commenced and completed a VET Qualification
Vet.12.XHEL:	1=Completed a Certification 1 or 2 Level Qualification
Vet.34.XHEL:	1=Completed a Certification 3 or 4 Level Qualification
Vet.Dip.XHEL:	1=Completed a VET Diploma Level Qualification
AppTrain.XATR:	1=Completed an apprenticeship or traineeship, 0=currently undertaking/commenced but did not complete/never commenced
TradeApp.XATR:	1=Completed an apprenticeship or traineeship and worked in a "Trade" profession
ConsApp.XATR :	1=Completed an apprenticeship or traineeship and worked in a "Construction Trade" profession
Bach.XHEL:	1=Completed a bachelors degree
X2PropPT.XFTP:	Proportion of time since Age 15 spent employed Part-Time
X2PropFT.XFTP:	Proportion of time since Age 15 spent employed Full-Time
X2PropUn.XUNE:	Proportion of time since Age 15 spent unemployed
Wave:	(Age-15)=Wave

All of the measures used in this study were derived from the variables already in the LSAY datasets. The apprentice-industry variables ('TradeApp.XATR' and 'ConsApp.XATR') were defined based on a given apprentice's industry of employment. Trades apprentices were defined as those classified in ANZSCO major group 3 occupations (Technicians and trades workers) and construction apprentices were defined as those classified in the four-digit ANZSCO occupations defined in Table B2.

Table B2: Construction Occupations

Code	Occupation
3000	Technicians and Trades Workers, nfd
3223	Structural Steel and Welding Trades Workers
3300	Construction Trades Workers, nfd
3310	Bricklayers, and Carpenters and Joiners, nfd
3311	Bricklayers and Stonemasons
3312	Carpenters and Joiners
3320	Floor Finishers and Painting Trades Workers, nfd
3321	Floor Finishers
3322	Painting Trades Workers
3330	Glaziers, Plasterers and Tilers, nfd
3331	Glaziers
3332	Plasterers
3333	Roof Tilers
3334	Wall and Floor Tilers
3341	Plumbers
3400	Electrotechnology and Telecommunications Trades Workers, nfd
3411	Electricians
3420	Electronics and Telecommunications Trades Workers, nfd
3421	Airconditioning and Refrigeration Mechanics
3422	Electrical Distribution Trades Workers
3424	Telecommunications Trades Workers
3622	Gardeners
3941	Cabinetmakers
7100	Machine and Stationary Plant Operators, nfd
7110	Machine Operators, nfd
7112	Industrial Spraypainters
7121	Crane, Hoist and Lift Operators
7129	Other Stationary Plant Operators

7210	Mobile Plant Operators, nfd
7212	Earthmoving Plant Operators
7219	Other Mobile Plant Operators
8000	Labourers, nfd
8210	Construction and Mining Labourers, nfd
8211	Building and Plumbing Labourers
8212	Concreters
8213	Fencers
8214	Insulation and Home Improvement Installers
8215	Paving and Surfacing Labourers
8216	Railway Track Workers
8217	Structural Steel Construction Workers
8219	Other Construction and Mining Labourers
8990	Miscellaneous Labourers, nfd

A complete model specification and output is available on request from research@csq.org.au.

References


Marks, G. (2017). University and vocational education, and youth labour market outcomes in Australia, *Journal of Education and Work*, 30(8), pp. 868-80

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