The Social and Vocational Value and Outcomes of the New South Wales School Infrastructure Traineeship Program (ITP) for Trainees

Evidence from the Infrastructure Traineeship Program and its social benefits

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Acknowledgements

Executive Summary

This Report presents the findings of research conducted to measure the social and vocational value and outcomes of the Infrastructure Traineeship Program (ITP) for trainees and to provide evidence that can be used:

- to advocate for the future directions for the program considered within a broader context of the contribution this program may make to delivering on New South Wales (NSW) Government's 10 Point Commitment to the construction sector, providing better employment outcomes for young people, women, and young people from regional areas to work near home.
- to demonstrate the challenges and opportunities that the ITP affords in providing a pathway to young people, including First Nations young people, into a career in infrastructure referencing the NSW Treasury's framework and outcomes to support First Nations economic wellbeing and prosperity.

Literature Review

The report provides a comprehensive review of the research literature on the challenges facing the construction industry, summed up in the Construction Industry Culture Task Force's (CICT 2021) *The Cost of Doing Nothing* Report, which focused on *Wellbeing*, *Time for Life*, and *Diversity.* The review concludes with a series of suggestions for consideration in relation to the future of the ITP.

Evidence

The report also provides quantitative and qualitative evidence of the ITP and its social benefits, particularly:

- for participants that entered the program and remain in the program
- for participants that have left the program to gain full employment or study
- predicted/potential benefits for NSW school leavers going forward.

The report indicates the range of mostly positive experiences and outcomes (benefits and barriers) for trainees:

- across the three areas of their rotation (across government and private industry)
- in regional and metropolitan locations
- in relation experiences and opportunities young women and young men (allowing for people identifying as non-binary)

The research includes analysis of the total participants that have entered the program which include:

- Cohort 1 – 2021 trainees
- Cohort 2 – 2022 trainees

Surveys of Young Trainees

A survey was conducted with trainees across both cohorts during October and November 2022. The key results from this survey include:

1) 62% of participants either agreed or strongly agreed that participating in this traineeship has had a positive impact on their mental health and wellbeing.
2) 66% of participants either agreed or strongly agreed that participating in this traineeship has had a positive impact on their sense of belonging.
3) 84% of participants either agreed or strongly agreed that participating in this traineeship has had a positive impact on their impact on my feelings about doing something worthwhile.
4) 75% of participants either agreed or strongly agreed that participating in this traineeship has had a positive impact on their feelings about life.
5) 85% of participants either agreed or strongly agreed that participating in this traineeship had a positive impact on what they thought they could achieve.
6) No statistically significant differences in beliefs were reported between groups, including those identified as vulnerable or at-risk in the infrastructure industry such as females, CALD and rural trainees.
7) 93% participants responded favourably to a question probing participants' perceptions of employment stability. Concurrently, 83% of participants responded favourably to a question probing a perception of financial stability because of the traineeship.
8) 93% of participants reported that the number of rotations in the traineeship was the right amount.
9) 51% stated that their participation in the traineeship made them want to continue working in the infrastructure industry, while 27% said it made trainees want to engage in further study to develop the skills they have learned.

In summary, the results point to the efficacy of the traineeship in positively impacting trainees' beliefs about their sense of belonging, wellbeing, feelings about life, and perceptions about what they can achieve, even as members of vulnerable or at-risk groups.

Interviews with Government, Education, Training, and Industry Stakeholders

Semi-structured interviews were conducted with key representatives from government, technical and further education (TAFE) and group training organisation (GTO) partners as members of the School Infrastructure New South Wales (SINSW) Traineeship Working Group. The key themes to emerge from the interviews include:
● **The biggest enablers for the trainees** in the traineeship include opportunities for paid experience working across government and industry sectors, further study in either TVET or university, and the potential for permanent employment in the industry.
● **The main barriers trainees experienced** in acquiring skills during the traineeship included: the need for more support and time to adjust to the culture of their workplace and to develop their communication, interpersonal, and literacy and numeracy skills.
● **The main social and vocational outcomes** for ITP trainees were that they accessed additional pathways beyond school for obtaining new skills, developing networks, and gaining links into employment opportunities.

- **Critical success factors for the ITP** include the importance of successfully recruiting trainees who are passionate about the infrastructure industry, the diversity of roles trainees experienced on placement, and emphasis on values such as equality and equity and pride in the culture of the workplaces.
- **Key learnings about how to improve the ITP** included the need for more communication and information about the program given to key stakeholders to assist them in connecting the trainee's work with the educational aspects of the program, and the experiences, goals, and capabilities that trainees bring to the placement.

By working with young trainees to help them to learn about skills, values and behaviours appropriate to infrastructure sector workplaces, industry and government stakeholders achieved a sense of contributing to reshaping the infrastructure sector so that its workforce is agile, inclusive, and aligned with the cultural standards at the heart of industry reform.

Co-designing the supports needed by supervisors/hosts and trainees could help to ensure that all parties (supervisors/ hosts and trainees) have the capabilities and assistance they require to maximise learning benefits obtained from participating in the program.

Counterfactual analysis of ITP outcomes

In evaluating the ITP's effectiveness, we have incorporated a counterfactual approach, to identify 'the outcomes that would have been achieved by the beneficiaries of a program in the absence of program participation' (Deloitte Access Economics 2021, p.100).

To facilitate this, we asked ITP trainees: *'If you had not enrolled in the traineeship, what do you think you would have been doing now?'* In response, 65% (n=46) of trainees thought they would be employed in another job if they were not enrolled in the traineeship, 22% (n=16) stated they would be studying full-time, 8.5% (n=6) reported that they would be in another program while about 4.5% (n=3) said they would likely be unemployed.

At one level, this finding might suggest that public investment in the ITP is unnecessary for orienting young people into employment and training pathways. However, the data overwhelmingly support a conclusion that the ITP is attractive to young people who are positively oriented towards employment and training. The program therefore represents good value for money because ITP trainees are likely to yield a positive return on investment aimed at improving their employability and skills levels in the construction sector.

Overall evaluation of the program

Where it has worked, and why

Taking into account the issues and themes arising from the findings from our surveys and interviews, a number of social and vocational outcomes are clear:

Outcomes for participants

In summary, the ITP has helped participants to achieve skills and career development goals.
- The ITP has given trainees a sense of confidence about their occupational prospects for entering a quality job in the construction sector.

- The ITP helped participants to develop a sense of belonging among work peers, in business-based teams and within the construction/infrastructure industry community.

- The ITP provided a short-term 'stepping stone' outcome (skills development and industry linkages) to position trainees for a medium-term outcome - securing quality employment and career progression in the construction sector.

Outcomes for industry and government stakeholders

- Industry participants in ITP, especially host companies, gained skills dividends from trainees being retained in their business as employees attuned to current industry realities.

- Industry stakeholders worked effectively in collaboration with the NSW Government to advance skills development in NSW.

- To the extent that not all trainees continued to work with organisations that hosted their training, industry and government stakeholders may not have realised a direct benefit. Nevertheless, stakeholder organisations helped trainees to develop skills and qualifications for a career more broadly in the construction sector.

Areas where the ITP might be further improved

- Some ITP participants raised issues about incentives to stimulate participation and completion - for instance the need for rental assistance for trainees living away from home.

- Some stakeholders referred to the need for the system to prepare and support industry supervisors/hosts to identify early on when trainees are experiencing difficulties and to be given the tools to support the trainees.

- Some stakeholders felt the ITP allowed insufficient time during each rotation for trainees to build their skills and appreciation for the industry.

- Trainees were sometimes seen by stakeholders as lacking the core business skills for working in industry and government businesses. As a result, some trainees spent the first three months catching up with this sort of skills acquisition before they were 'training-ready' in the workplace.

Recommendations

1. Continue public investment in the ITP, because the program has yielded benefits to trainees as well as stakeholders in developing skills that will benefit them as future workers and the future businesses that employ them.
2. Increase the intake of First Nations trainees in future rollouts of the ITP, to facilitate evaluation of the effectiveness of the program in enabling First Nations young people to gain access to, and employment in, the construction industry, and to tailor the program to meet the cultural and learning needs of First Nations young people and communities.
3. Increase the intake of trainees living with a disability in future rollouts of the ITP, to facilitate evaluation of the effectiveness of the program in enabling young people living with a disability to gain access to, and employment in, the construction industry, and to tailor the program to meet the learning needs of people with a disability.
4. Offer a supplementary allowance to ITP trainees who live independently (at a rate to be determined each year by an expert panel).
5. Provide future ITP supervisors/hosts with guidelines, tools and training for early identification and response to potential difficulties for trainees. Consider using co-design principles in developing these.
6. Review either the length of time for each rotation (3 x 8 months) or how to allocate more time within each rotation, specifically for building trainees' skills, relationships with supervisors and peers, and industry appreciation.
7. Offer a basic business skills pre-Traineeship Summer Term program for prospective Trainees, resulting in a Certificate of Attainment in Core Business Skills, so that Trainees hit the ground running when they start their first rotation in February/March. As an alternative to this, use the first rotation as one which includes completion of the Certificate of Attainment in Core Business Skills with the opportunity to practise those skills onsite during the first rotation setting.
8. Review what data needs to be gathered regarding future ITP cohorts as they enter and exit the program, so that the counterfactual dimension of evaluation planning is built in from the start.
9. Review what has been learned about data gathering and analysis that could be done differently in future iterations of the program to provide stronger evidence on 'impact'.

Chapter 1. Introduction

The Infrastructure Traineeship Program (ITP)

The ITP was launched in New South Wales (NSW) in February 2021 with over 130 traineeships offered to 300 Year 12 leavers in 2021 and another 100 traineeships offered in 2022, with many of the trainees coming from economically, socially, and educationally vulnerable populations. A further 141 traineeships are being offered to school leavers for 2023.

The program offers Certificate IV courses relevant to the infrastructure and construction industry drawn from VET programs such as project management, business, and procurement and contracting. The program is managed through Group Training Organisations (GTOs), and programs are delivered through Registered Training Organisations (RTOs). Over two years students are rotated through eight-month placements in government and industry organisations. Students receive in-house support from a GTO supervisor and a workplace buddy (NSW Department of Education, 2021).

In addition to job skills education and training, the program places an emphasis on the role of diversity in the participating VET institutions and allocated workplaces, with particular emphasis placed on the participation of young women and First Nations students.

Key performance indicators for program success include a 15% participation by First Nations students, in addition to 50% of participants being female.

Structure of the report

Chapter 2 positions the evaluation of the NSW Department of Education (DoE) School ITP in a review of the research literature related to the broader context of Australia's infrastructure industry. The literature review identifies the significant challenges that threaten the future viability of the industry. The chapter locates these challenges in relation to three elements:
- an industry-recognised need for broad cultural change and reform,
- the contextualisation of the efficacy of the ITP, along with other traineeships in the Vocational Education and Training (VET) sector
- bringing together of the conclusions and evidence of the review within the existing ITP and providing possibilities for future development.

Chapter 3 presents the findings of the survey with ITP trainees and outlines the research method including sample, survey instrument and piloting of the survey instrument.

Chapter 4 presents the findings of SINSW working group member responses and outlines the research method including sample and interview instrument.

Chapter 5 conceptualises a model for evaluating the social impact and vocational outcomes of the ITP with a focus on participants, industry partners, and government investors. The model has a counterfactual analysis built into it. The chapter provides valuable insights

regarding the return on investment into the ITP which will help guide decisions about future public investments.

Chapter 2. Literature Review

Introduction

Australia's construction industry accounts for one in ten Australian jobs, about 1.1 million workers, ranging from professional to unskilled positions. The sector is ranked third in terms of total employment numbers behind Retail Trade and Health Care and Social Assistance. The construction industry accounts for 16.6% (394,575) of all Australian businesses. Apart from economic benefits, the industry also contributes to mitigating social inequality through targeted training programs, the direct employment of disadvantaged people, and the engagement of workers from social and indigenous enterprises. In this context, the continued health, sustainability and productivity of the industry is fundamental in realising its commercial and social objectives (Australia Constructors Association, 2020).

Any review and evaluation of the New South Wales Department of Education School ITP must be located within this broader context.

In recent times significant challenges have arisen that threaten the industry's future viability, based particularly on the effects of an industry-wide boom and bust building cycle causing long term unsustainable financial outcomes and consequent business failures. The COVID-19 pandemic has added additional uncertainty in the short and medium term.

The continuation of the historical male predominance in the industry workforce has additionally acted as a constraint on attracting women to the sector, further threatening its social diversity objectives. In 2020 women made up 12% of the construction industry workforce, compared to wider industry workforce averages of 47% women and 53% men.

Finally, sections of the industry acknowledge that excessive working hours and ongoing dangerous working conditions, together with such factors as the stress of unreliable non-permanent work, contribute to an above average incidence of mental health issues across all sections of the construction workforce (Australia Constructors Association, 2020).

This literature review recognises these challenges and locates the following discussion in relation to three elements.

1)   First, it outlines the industry-recognised need for broad cultural change to address historical and contemporary workplace conditions that threaten ongoing business success and overall worker productivity and job fulfilment. Solutions to these challenges focus on the creation of industry-based cultural standards addressing workplace wellbeing, creating a satisfactory work-life balance, and developing an inclusive, diverse workforce. In relation to the ITP these issues have particular relevance as all young people are potential workers within the industry and addressing these challenges will have a pivotal impact on their choice of whether or not to embrace the field as an ongoing career choice.

2)   Second, the review seeks to contextualise the efficacy of traineeships as a relatively recent innovation in the Vocational Education and Training (VET) sector. In particular it will outline traineeships' place within the Australian Apprenticeships and Traineeships Program

(AAITP) and how they were initially designed to cater for the educational needs of young school leavers, with a focus on 'at risk' students and the economically disadvantaged. The AAITP is now a mature educational program suite across most of the industrial landscape, and has been subject to many reviews that offer invaluable suggestions for their continued evolution. Some of these may have relevance to contemplating new trajectories within the ITP. The COVID-19 pandemic is also considered for its impact on current program offerings.

The research into workplace diversity and its encouragement is sampled through the selection of current and past research on women's and First Nations people's participation in the workplace and the AAITP, with emphasis where possible on the construction industry. Women's and First Nations' student participation in the ITP is considered a measurable outcome of the program's success, underlining the importance of this research. Challenges across these areas are considered, with opportunities to be examined in the final section.

3)   Third, we bring together the conclusions and evidence from the first two sections and review these within the existing context and requirements of the ITP. This review offers a range of possibilities for considering and developing the program's future.

In summary, the review locates the ITP within the socio-cultural conditions enabling worker productivity and wellbeing within accepted industrial guidelines. The assumption here is that if these challenges are successfully addressed they will underpin business success and attract potential workers in a highly competitive labour market.

This assumption is important when education and training are considered because the design of VET programs that incorporate job-ready technical skills, and so-called 'soft-skills' (socio-emotional, intrapersonal and interpersonal skills) can promote the success of the stated cultural standards and business productivity.

The construction industry and reform: The cost of doing nothing

As Australia's third largest employer the construction industry is widely considered resistant to change when it comes to addressing a perceived entrenched culture of historic skill protection of predominantly male-dominated trades, the normalisation of long working hours, and its toleration of ongoing workplace stress and other mental health issues (Australia Constructors Association, 2020).

These negative factors, as will be demonstrated, have a direct effect on the development of workplace training programs and the willingness of young people, including women and First Nations peoples, to participate in such programs and work within the industry.

The Construction Industry Culture Taskforce's (CICT, 2021) *The Cost of Doing Nothing* Report was commissioned to research these issues and provide recommendations for their remediation. In its findings the report identified three key areas for reform, which eventually became the suggested cultural standards adopted by construction industry stakeholders: *Wellbeing*, *Time for Life* and *Diversity*.

1. *Wellbeing:* the construction industry the construction industry supports the wellbeing of its people; occupational health risks are managed in accordance with leading practice; worker wellbeing is prioritised when setting the project schedule
2. *Time for Life:* the construction industry operates Monday to Friday; all people in the industry have access to flexible work options
3. *Diversity:* the construction industry provides an inclusive work environment; the construction industry is free from offensive material and language; the construction industry provides amenities to support a diverse workforce; women are represented in the construction industry; women hold leadership positions in the construction industry; the construction industry has eliminated gender pay gaps; the construction industry employs people without bias. (CICT, 2021)

The apparent self-evidence of these core industry standards belies their complexity and relevance to most aspects of life in the construction industry.

The report estimated that in 2020 the cost of doing nothing about these areas amounted to $8 billion dollars, including $6 billion for work-related fatalities, injuries and illnesses, $708 million in productivity losses for people working overtime, leading to 60% of construction tradespersons and site administrators expressing dissatisfaction with their work-life balance.

Longer-term work-related stress expressed itself through increasing 'presenteeism' or being physically present in the workplace for out-of-regulation hours without being productive. The cost in mental health from 'presenteeism' was estimated at $643 million. In its most extreme form, mental health was expressed as the highest incidence of male-suicide in any industrial sector (Maheen et. al., 2020; World Health Organization, WHO, 2006).

The construction industry has placed great hope that adoption of these workplace cultural standards will precipitate much-need sectoral reform leading to increased productivity, cost-savings and employee well-being. In addition, the industry also expressed the desire that the low-standing of the industry in the public eye would be improved and consequently attract more suitably qualified workers.

These socio-cultural limitations have profound implications for the construction and sustainability of industry-effective training programs for young people.

The cultural standards echo much of the sentiment and discussion of the Australian Federal Government's recent *Skills + Jobs Summit* (Australian Government The Treasury, 2022). In its agenda the summit flagged consideration of 'Delivering a high-quality labour force through skills training and migration.' In addressing this issue, and the parallel issue of increasing workforce participation, the *Summit* focused on the reduction of workplace participation barriers for women and other under-represented groups, the valuing of workplace diversity and further consideration of the relationship between education sectors and the needs of the modern workplace (Australian Government The Treasury, 2022).

The summit also suggested the creation of a tripartite national construction industry forum to deal with mental health, safety, training, apprenticeships, productivity, culture, gender and diversity (Australian Government The Treasury, 2022).

Apprenticeships and traineeships

Traineeships in the contemporary VET landscape are nestled within the traditional trade apprenticeship system, the oldest form of vocational education in Australia, and only a few minor bureaucratic distinctions are made between the two, including informal separation into 'trade' and 'non-trade'. Both, however, have quite distinct histories, cultures, trajectories and audiences. The longevity of apprenticeships and their centuries-long historical links with male-dominated trades in the powerful metals and construction industries in particular, have led to an innate conservatism, perhaps a reason why in recent decades of rapid VET program reform, the apprenticeship system rarely features as a harbinger of radical innovation.

Though the system now accepts women and mature adults, and over the years a shifting range of financial recruiting incentives has been offered to employers, the fundamentals of the system remain relatively unchanged (Goozee, 2001; Rushbrook, 2001; Rushbrook & Preston, 2009; Smith, 2022).

It was partly through acknowledging the limited capacity of the apprenticeship system to change that a system of traineeships was developed. Traineeships have their origin in *The Report of the Committee of Inquiry into Labour Market Program* (1985), chaired by Peter Kirby. The report sought to address an ongoing national crisis in youth unemployment and under skilling, the challenges for engaging in productive education and training by 'at risk' young men and women and the economically disadvantaged, including First Nations peoples, the disabled, migrants and refugees in industries lacking entry-level formal non-trades qualifications pathways including retail, agriculture, manufacturing, clerical, and logistics (Rushbrook, 1995; Smith, 2022).

In the immediate years following the release of the Kirby Report, the Australian Traineeship System (now merged within the AAITP) borrowed initially from the apprenticeship model of on-the-job and off-the-job training and was further refined to create the system we know today, with nationally recognised and credentialled qualifications ranging in skill levels from Certificate 1 through Certificate IV, with further post-graduation pathways available for higher VET and university study. Many young people have expressed great pride in gaining a traineeship qualification, particularly in family circumstances of intergenerational poverty and unemployment (Smith & Keating, 2003).

Traineeship and construction industry research has particular relevance to the ITP, whether through direct policy and pedagogical issues arising from generic reviews of traineeships within the AAITP or through broader socio-cultural issues raised by the construction industry cultural standards; for example, the effects on workplace culture of women joining occupational areas traditionally dominated by men.

Issues within the contemporary apprenticeship and traineeship system

In a recent review of the apprenticeship and traineeship research literature, Stanwick et al. (2021), identify five enduring issues that define the sector:

1. Harmonisation and congestion;
2. Apprenticeship and traineeship completions and the factors leading to completion/non-completion;
3. Incentives to stimulate participation and completions;
4. The interface between apprenticeships and the training provider;
5. The relevance of the system to the apprenticeship environment.

Harmonisation refers to the degree to which state and federal governments offer a consistent approach to apprenticeship and traineeship programs across the country, with an understanding that the greater the consistency the less confusing the national system will be for employers, particularly those that operate over state and territory borders. However, recent research suggests that funding and regulatory arrangements remain complex, inconsistent and often confusing, in spite of streamlining efforts.

Congestion occurs when sectoral stakeholders each have agendas that when institutionalised create a system architecture that is difficult to navigate for both employers and students. The current system stakeholders include two tiers of government, Registered Training Organisations (RTOs), industry organisations, Group Training Organisations (GTOs), and licensing and regulatory authorities, among others. Efforts at streamlining these complex stakeholder agendas so far are incomplete and the system is perceived as remaining overly difficult to navigate.

Apprenticeship and traineeship completions and non-completions remain a hallmark of the success or failure of the sector to deliver a productive and skilled workforce. Recent statistical collections note a high point in trade and non-trade completions over 2012-2014, after which there has been a steady decline, mainly due to the withdrawal of government incentives for traineeships. Within the peak years it was observed that greater numbers of adult apprentices completed their studies within two years. As would be expected, completers enjoyed better occupational outcomes than non-completers, though the latter did record that partial completion did produce some employment benefits. Overall, completion rates for traditional trades have been shown to be relatively stable, averaging between 44.2% and 46.4%, numbers that have created ongoing concerns for stakeholder groups. It should be noted, however, that completion rates across individual trades vary; for example, 28.1% for textile, clothing and footwear workers, to 63.8% for engineering, ICT and science technicians (Lim, 2022).

Factors impacting completion vary across industries but share a common theme in that the majority of program exits take place within the first contracted year. Identified factors include: changing demographics; the prevalence or lack of government incentives; student perceptions of the value and status of apprenticeships as an occupational choice; the reluctance to engage in an employment choice that initially is poorly paid for the long hours worked, particularly if the work environment is unpleasant; and students who exit if a better

paid job opportunity arises. Apprentices and trainees with a disability and First Nations people are more likely to leave their positions because of these factors (Lim, 2022).[1]

Incentives and other government support have been introduced in an attempt to increase participation and completion rates. These include such initiatives as trade support loans, living away from home allowances, and completion grants for apprentices, trainees, and employers in occupational areas of defined shortages. Evidence, though, suggests that many of these schemes fail to provide adequate compensation to cover the expenses incurred by both employers and students.

The interface between apprentices, trainees and training providers is a time-honoured feature of the broader apprenticeship model, consisting of on-the-job and off-the-job components that emphasise employer-provided workplace training and experience, and RTO-based theoretical and practical skills education and training. Within this model tensions have arisen in relation to the proportion of time allocated to each, with some employers unhappy with apprentices and trainees absent during peak work times or undertaking more pedagogically sound but time-intensive block release teaching sessions. Studies into this issue suggest that greater collaboration between employers and training providers in designing courses that reflect current industry needs would produce better outcomes for all.

Relevance and function refers to the value of traditional forms of apprenticeship training programs to the changing needs of the twenty-first century society and economy. While most agree that apprenticeships and traineeships provide excellent and rewarding career choices for post-secondary students, there remains room for innovation to create a better training and education fit within a digital age of rapid change, including the constant reinvention of job roles and the creation daily of entirely new occupations. There are calls, for example, for the 'time-served' model of apprenticeships to be scrapped in favour of a competency-based approach that recognises shorter time-frames for skill mastery, thus reducing the indentured period for program completion. That this could mean a reduction of an employer's return on investment in an apprentice or trainee raises a further issue of the need for a fundamental shake-up of the nature of workplace learning.

Stanwick et al. (2021) recommend a shift from the traditional 'production' training model that emphasises the trainee offering a monetary return to the employer for the benefit of on-the-job training, to an 'investment' model, similar to that practised in Germany, that emphasises workplace skills acquisition without a commensurate monetary compensation to the employer.

Such a shift would require a considerable increase in government investment to realise such a scheme, which is based on the 'pay-it-forward' principle, where all industries eventually receive the benefit of an employee who has been trained by the same or another organisation.

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[1] It is worth noting that there has been limited research on the impacts of the COVID-19 pandemic on completion and exit rates, the impacts of government support programs for the apprentice and traineeship systems, and the different impacts of the pandemic on different industry sectors (Hall, 2021)

Women in the construction industry

The primary cause underlying the low rate of participation and retention of women in skilled trades and other areas within the construction industry is not related to the capacity of women to perform the roles associated with the educational and vocational training skill sets required, or to the willingness by women to participate. Nor does it relate to peak industry bodies and government efforts to encourage such participation with appropriate policies encouraging workplace diversity. Rather, as has been demonstrated in reviews of the relevant literature, the primary under-researched cause is the failure of the construction industry's masculine culture to change 'on-the-ground' to accommodate diversity.

In one such review of women in the construction industry, Bridges et al. (2020) analysed 26 recent articles written on women's recruitment. Although this research identified the cultural failure of men to adapt to potential change, none theorised the reasons for this reluctance. Bridges et al. (2020) propose that the underlying reasons relate to the intersections between 'gendered bodies' and informal and unregulated practices in the workplace, including, for example:
1. the informal recruitment of apprentices, which favour young males;
2. the downplaying of gender differences in the workplace by pressuring women to 'fit in' and be 'one of the boys';
3. women being sexually harassed or not given work because they may be seen as a 'distraction' to male workers.

Other reasons uncovered pre-empt the areas identified in the CICT's (2021) cultural standards of Wellbeing, Time for Life and Diversity, suggesting, again, that socio-cultural factors play a dominant role in shaping the choices of women seeking employment and employment longevity within the construction industry.

An innovative exploration of these deeper socio-cultural factors theorises issues arising within both the workplace and the VET classroom. Within the workplace the politicisation of women's bodies as sexualised objects, and as being ill-equipped for the performance of 'men's work', whether physical or mental, has discouraged many women from continuing working within the industry.

By understanding socio-cultural barriers and enablers at work as the expressions of forms of *social capital* (such as networking and mentoring), and *cultural capital* (such as positive supervisory training and formal education and training) the ways women are prevented from effective workplace participation or enabled through alternative socio-cultural pathways can be better understood.

Recent research has also proposed alternative responses for women to blending in with dominant male cultures, becoming 'one of the boys', and tolerating rampant sexist humour and body shaming. All of which are counterproductive for women's ongoing mental health, and effecting positive workplace cultural change. These alternatives include the creation of informal women's support networks, the positioning of effective workplace mentors and supervisors and working side-by-side with positive role models, male and female. These practices promise to develop resilience for women, greater understanding from men, and

contribute to a changing workplace culture (Bridges, Bamberry, et al., 2022; Bridges et al., 2020; Galea et al., 2018; Wulff et al., 2022).

It is perhaps unfortunate that gender-discriminating workplaces and their negative cultural practices are on occasion further normalised within the VET classroom. In a recent study of women trainees in male-dominated trades' classrooms, including construction, it was found that women's high visibility, their exclusion from their class peers' social groupings, and in-group discriminatory behaviours accentuated male and female differences, including gender hostility. Women's coping strategies within this hostile environment included: 'becoming one of the boys'; over-achieving; under-achieving; or dropping out altogether. (Bridges, Wulff, et al., 2022).

In some teaching contexts VET teachers encouraged women simply to join the culture and 'toughen up' or get out. Fortunately, in other contexts where these negative behaviours were manifested, researchers have observed educator strategies to encourage 'gender autonomy' or initiatives and strategies to encourage women to embrace resilience while forging pathways into atypical trades. A further, but under-realised strategy, is for women to work with women educators from the trades taught, an approach that has been demonstrated to have a major positive impact on women's long-term career longevity within male-dominated trades. The importance of this issue was recently accentuated through its national exposure in the *Australian Financial Review* (Bridges, 2022).

First Nations students and participation in the VET sector

In some ways the positioning of First Nations peoples in the construction industry has parallels with the treatment of women, though more often than not due to social and cultural silencing than overt gender exclusion. A recent Canadian-based international review (Joncas et al., 2022) of indigenous people's successful participation in VET programs focused on examples that advanced social justice issues as a means to increase graduation rates among discriminated groups, and to provide skilled trades training and subsequent pathways to further study and social mobility.

Of the 24 relevant international research papers reviewed by Joncas et al. (2022), 19 were from Australia, giving the observations a powerful application to the Australian VET context.

Joncas et al. (2022) frame their exploration of social justice issues through four understandings of equality and equity.

Equality of place, or geographical access to training as well as related information to make informed choices in relation to enrolment, travel requirements and parity with the dominant culture's education and training pathways

Equality of opportunity, or interventions recognising individual merit and talent, but taking into account the socio-economic circumstances that shape or prevent such recognition, with the caveat that appropriate integration, language and psychological supports are made available to realise student ambitions

Equity and inclusion, which encompasses the principles of equal access and equal opportunity, ideas that should be reinforced and practised within education organisations and the offered curriculum such that gender, class, race and belief systems are understood and respected by all

Decolonisation or the recognition of First Nations' histories and the role Eurocentric education programs play in systematically devaluing or ignoring different socio-cultural assumptions and practices brought to the classroom by indigenous students. VET programs should be constructed in such a way as to provide First Nations peoples with the agency and power to enable a vehicle for their self-determination in both life and employment.

Joncas et al. (2022) argue that adapting education and training programs to the needs and realities of First Nations students through reaffirming and celebrating identities, culture and histories provides an optimal space for students to develop employability and self-determination skills. Interventions that involved First Nations communities in partnership arrangements with vocational training centres and industry partners were considered vital to successful program and student outcomes. Within this context an emphasis on exemplary social justice outcomes and their ongoing success was shaped on-the-ground through positive relationships between students, educators and workplace supervisors and mentors, particularly if some of these staff members were of First Nations backgrounds (Kemmis et al., 2006).

Finalising their analysis, Joncas et al. (2022) offer readers a cautionary tale that for many decades vocational education was seen by many First Nations peoples as a means of forced assimilation through colonisation. This was particularly the case for indigenous students forcefully removed from their families and placed in residential training homes. Overall, though, the authors conclude that the VET sector, when heeding the outcomes of positive social justice programs, can in the twenty-first century become a positive force for social change and economic uplift while respecting the culture of its First Nations students.

A recent assessment of indigenous VET participation completion and outcomes gives a mixed review of success while remaining optimistic for the future (Windley, 2017). The assessment notes that the long-term federal government 'Closing the Gap' strategy (Department of Prime Minister and Cabinet, 2017), which seeks to create opportunities for

First Nations peoples to reach parity with the health, education, and economic standards of the dominant population, paid little attention to VET as a pathway to further education, increased employment opportunities, and greater economic security. This is despite positive evidence that First Nations people are increasing participation in higher-level Certificate III courses and above.

The review noted that at a time of overall downturn in apprentice and traineeship enrolments, First Nations people enjoyed a higher rate of participation than non-First Nations participants. However, factors related to location and the varying training opportunities at VET providers meant a lower completion rate than non-First Nations participants. These non-completion factors also had the effect of lower comparable employment outcomes. But, for First Nations peoples successfully completing a program of VET study, employment outcomes have been shown to be equal to their Non-First Nation's counterparts. Overall, then, these cautious successes again point to the primacy of framing traineeship programs and sustainability evaluations through the lens of socio-cultural considerations in addition to the 'standard' pedagogical and program assessment matters.

The Infrastructure Traineeship Program (ITP): Implications for the future

The following tables (Table 2.1, 2.2, 2.3, 2.4, 2.5) draw together suggestions of issues for discussion from the literature review that can value-add to the ITP program through consideration of both contextual and course specific ideas. These ideas can either be incorporated within the trainees' VET institution teaching programs and workplace environments or considered in future program reviews. It should be noted that many of the ideas presented are drawn from the myriad socio-cultural issues that provide the context for the success or failure of young women and First Nations trainees to achieve their personal, occupational and career goals from the program.

By creating awareness of these concerns in the classroom and the workplace it is anticipated that trainees will develop personal skills related to greater agency, resilience, and empowerment in dealing with a complex and changing industry, and beyond.

The acquisition of these interpersonal skills can also have the consequential effect of increased successful program outcomes. Program sustainability should additionally be ensured through demonstrated success stories and the creation of a new generation of workplace mentors, peers, and supervisors for future trainees.

Table 2.1: *Policy and research issues for the construction industry in reviewing the Infrastructure Traineeship Program (ITP)*

Sector	Recommendations	Research literature
The construction industry	1) That the ITP adopt the Construction Industry Generic Cultural Standards (*Wellbeing*, *Time for Life* and *Diversity*) as a set of guiding principles or themes for course construction guidelines and workplace practice.	Construction Industry Culture Taskforce (2021)
	2) That the ITP incorporate mental health components within its VET and workplace components: for example, suicide prevention through organisational change and the reduction of job stress; where to seek assistance for mental health issues; creating methods and means of encouraging an environment respectful of individuals regardless of gender, race, physical ability or sexual orientation.	Maheen et al. (2020) World Health Organization (2006)
	3) That ITP trainees be made aware of where the program is located within the broader construction industry and what the graduates' roles may be within the industry's rapidly changing ecosystem.	Australian Constructors Association (2020)

Table 2.2: *Policy and research issues for the apprenticeship and traineeship system in reviewing the Infrastructure Traineeship Program (ITP)*

Sector	Recommendations for consideration	Research literature
Apprenticeships and traineeships	1) That ITP trainees be encouraged to form peer support groups in order to prevent attrition and encourage networking, both in current student environments and in future workplace settings.	Smith (2020)
	2) That ITP stakeholders seek research on 'good practice' examples of national and international workplace supervision and mentorship and include them within the ITP. The examples could also be analysed in terms of their contribution to improved program completion rates.	Stanwick et al. (2021)
	3) That ITP stakeholders and policy makers consider the strengths and weakness of the 'Production' (trainees as workers) and 'Investment' (trainees as workplace students rather than workers) and discuss their place in future ITP reviews.	Stanwick et al. (2021)
	4) That the ITP consider increasing future program access through Year 10 -Year 11 introductory or pre-entry courses supported by sound career advice.	Lim (2022)
	5) That ITP VET institution coordinators make students aware of available student financial support mechanisms.	Hall (2021)

Table 2.3: *Policy and research issues for women in the construction industry in reviewing the Infrastructure Traineeship Program (ITP)*

Sector	Recommendations for consideration	References
Women in the construction industry	1) That ITP program managers consider incorporation of strategies for young women under the themes of 'surviving, thriving and succeeding': mentoring, strategies for a male-dominated culture to encourage self-confidence, self-efficacy and resilience; inclusive recruitment strategies.	Bridges et al. (2020)
	2) That industry stakeholders might consider the following; make recruitment processes and criteria more formalised and transparent; consider how gender might contribute to exclusionary practices; initiate recruitment drives particularly for women; seek senior women tradespeople and managers as examples and role models; demonstrate 'no tolerance' towards workplace sexism.	Galea et al. (2018)
	3) That VET providers and workplaces might consider creating networks of practitioners who are gender sensitive, for example, mixed gender teaching teams. Women educators are great role models to inspire success.	Bridges, Bamberry, et al. (2022) Bridges, Wulf, et al. (2022)
	4) That VET providers create time for women to explore the ideas of social and cultural capital and how networking enhances these to create work opportunities and the development of skills and knowledge to successfully navigate the challenges of male-dominated workplaces	Bridges, Wulf, et al. (2022) Wulf et al. (2021)

Table 2.4: *Policy and research issues for First Nations people in the construction industry in reviewing the Infrastructure Traineeship Program (ITP)*

Sector	Recommendations for consideration	Research literature
First Nations people in the construction industry	1) That VET providers recruit experienced First Nation's educators to future ITP offerings. Research has demonstrated that such educators promote interest and success for trainee students.	Kemmis et al. (2006)
	2) That future ITP offerings examine course content for First Nation's students through the lenses of: equality of place; equality of opportunity; equity and inclusion; and decolonisation.	Joncas, et al. (2022)

Table 2.5: *Policy and research issues for reviewing the Infrastructure Traineeship Program (ITP)*

Sector	Recommendations for consideration	Research literature
Infrastructure Traineeship Program	1) That ITP stakeholders establish a working group to consider the issues raised in this paper.	New South Wales Department of Education (2021)
	2) That ITP educators and workplace supervisors provide opportunities for trainees to engage in entrepreneurial (self-initiated) activities and in particular those conducted by women.	

Conclusion

This literature review has demonstrated a confluence of the reform objectives of key Australian construction industry stakeholders and the outcomes of independent research into the sector. Industry and independent researchers agree that there are significant socio-cultural barriers to overcome before the sector realises its productive and social reform potential. The construction industry's economic success through growth, diversification and prudent management is contingent on it being able to attract a broader range of workers into its employment portfolios, including an increased proportion of appropriately qualified women, First Nations, disabled, migrant and refugee workers.

This influx of 'new' workers will contribute to breaking down the public perception and demographic reality of the dominance of the sector by male workers and, in many instances, an enduring 'on-the-ground' culture of misogyny, sexism and racism. The challenge for the

construction industry is to implement its endorsed cultural standards of wellbeing, time for life and diversity across, up and down the sector in such a manner as to break down a century or more of a recognised toxic culture that has threatened the future of the industry.

The ITP is a bold initiative to realise these socio-cultural objectives through encouraging a diverse range of young workers to enter the industry and, through example, act as change agents of a new era of construction industry reform.

Chapter 3. Surveys with ITP Trainees: Method and Analysis

Method

Total population of participants in the infrastructure traineeship

All trainees participating in the 2021-2022 ITP were invited to complete an online survey. The survey was distributed to trainees by a Group Training Organisation. Participation was voluntary and anonymous. Usable survey responses were received from 78 participants, which is equivalent to a 50% response rate, from a total population of 156.

Survey instrument

The survey instrument consisted of three (3) sections.
- *Section 1* asked **Demographics** including age, suburb, gender, if participants identified as First Nations/migrant refugee background/a culturally and linguistically diverse (CALD) background/a person living with a disability, highest level of secondary education completed and parent's or guardian's highest education levels.
- *Section 2* elicited **Beliefs related to participation in traineeship**, specifically examining mental health/wellbeing, a sense of belonging, feelings about doing something worthwhile, beliefs about life, and achievement, about their beliefs related to financial and employment stability and about their beliefs about the design of the traineeship, including workplace rotations embedded into the design of the experience
- Last, *Section 3* elicited trainees' responses about their **Vocational journey i**ncluding student pathways, alternative and post-traineeship destinations.

The survey instrument is included as Appendix A.
Analysis of the quantitative data collected includes descriptive (e.g. frequencies, valid percentages) and inferential statistics (e.g. Mann-Whitney U tests). Thematic analysis was also collected from the open text responses embedded in the survey instrument.

Survey pilot

As part of the survey validation process, a sub-set of ten trainees was asked to review the draft survey and provide feedback on *ease of completion*, *time to complete*, *wording of instructions and questions*, and any suggestions that could improve the survey instrument. No changes were made as a result of this process.

Findings

Sample demographics

- Analysis proceeded with 78 responses:
- *Gender*: including 41% (n=32) females, 53.8% (n=42) males. 5.2% (n=4) participants either identified as non-binary/third gender or preferred not to say.
- *Age*: Approximately 95% (n=74) of the sample were aged between 18 and 20 years. The mean age of respondents was 19.3 years.
- *First Nations:* 2 (2.6%) of the sample identified as First Nations
- *CALD background: 26% (n=20) identity* with a CALD background, *74% (n=58)* did not identify with this classification
- *Disability:* 1 trainee in the sample identified as living with a disability
- *Metropolitan and rural*: 82% (n=64) of this sample were classified as metropolitan students, while 18% (n=14) were rural. For more information about the classification procedure, please see Appendix B.

Indicators of Socio-Economic Status (SES)- parents' highest level of education
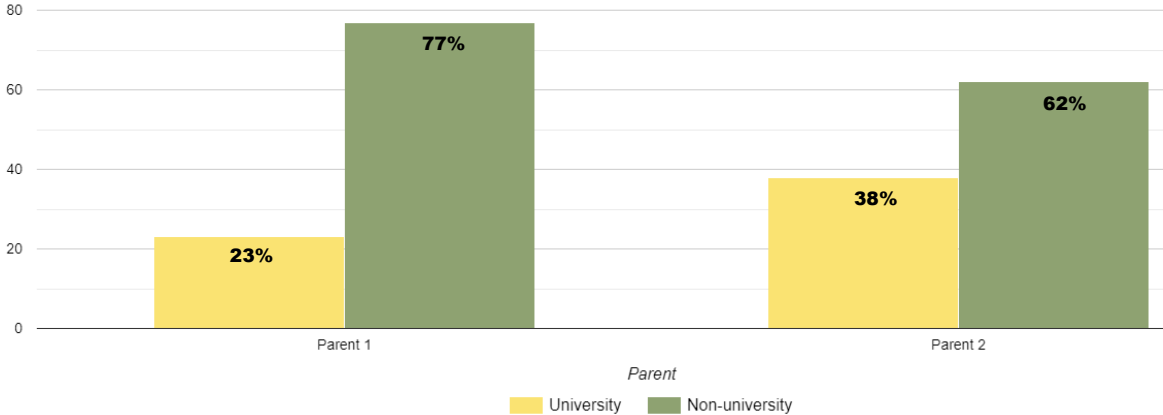
Figure 3.1: *Parents' highest education level*.

As shown in Figure 3.1, nearly 77% (n=60) of the sample reported Parent 1's highest level of formal education was non-university while approximately 62% (n=48) of the sample reported Parent 2's highest level of education was a non-university pathway. 56% (n=44) reported that neither of their parents attended university while 18% (n=14) indicated that both parents attended university.

Over half the sample (53.4% [n=32]) reported that Parent 1's highest level of education involved completing either High School or a vocational education (VET) pathway. Approximately, 39% (n=26) of the sample reported that Parent 2's highest level of education participated in either High School or a VET pathway.

Beliefs related to participation in traineeship

When asked if the traineeship has had a positive impact on their mental health and wellbeing, participants reported the following:
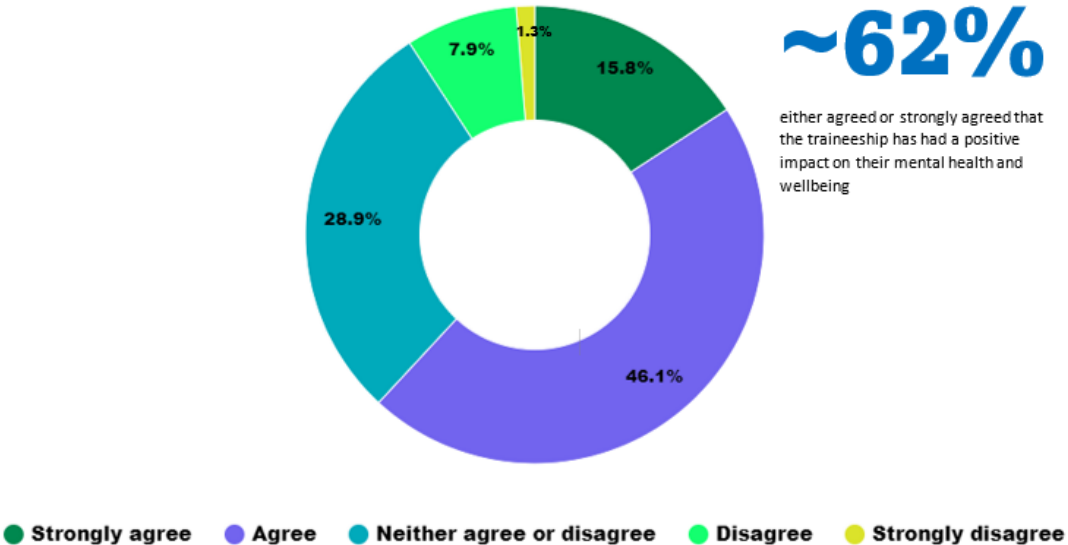
Figure 3.2: *Traineeship participation and beliefs related to mental health and wellbeing*
As shown in Figure 3.2, approximately 62% (n=47) of participants either agreed or strongly agreed that participating in this traineeship has had a positive impact on their mental health and wellbeing, compared to 8% (n=6) who disagreed and ~1.3% (n=1) who strongly disagreed.

Traineeship participation and beliefs related to a sense of belonging

When asked if the traineeship has had a positive impact on their sense of belonging, participants reported the following:
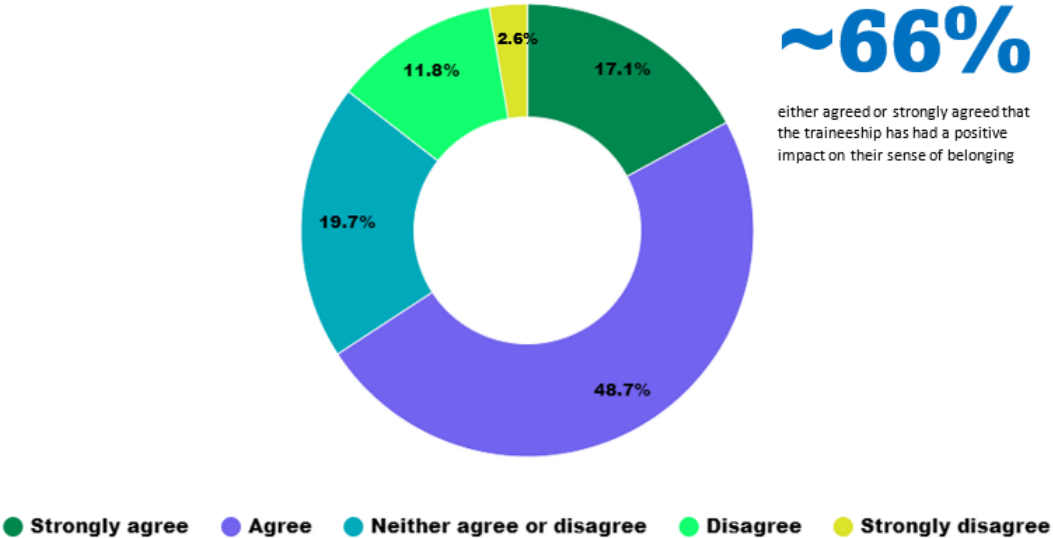
Figure 3.3: *Traineeship participation and beliefs related to a sense of belonging*

As Figure 3.3 highlights, approximately 66% (n=50) of participants either agreed or strongly agreed that participating in this traineeship has had a positive impact on their sense of belonging, compared to about ~11% (n=9) who disagreed and ~2.6% (n=2) who strongly disagreed with this question.

Traineeship participation and feelings about doing something worthwhile

When asked if the traineeship has had a positive impact on their feelings about doing something worthwhile, the following emerged:
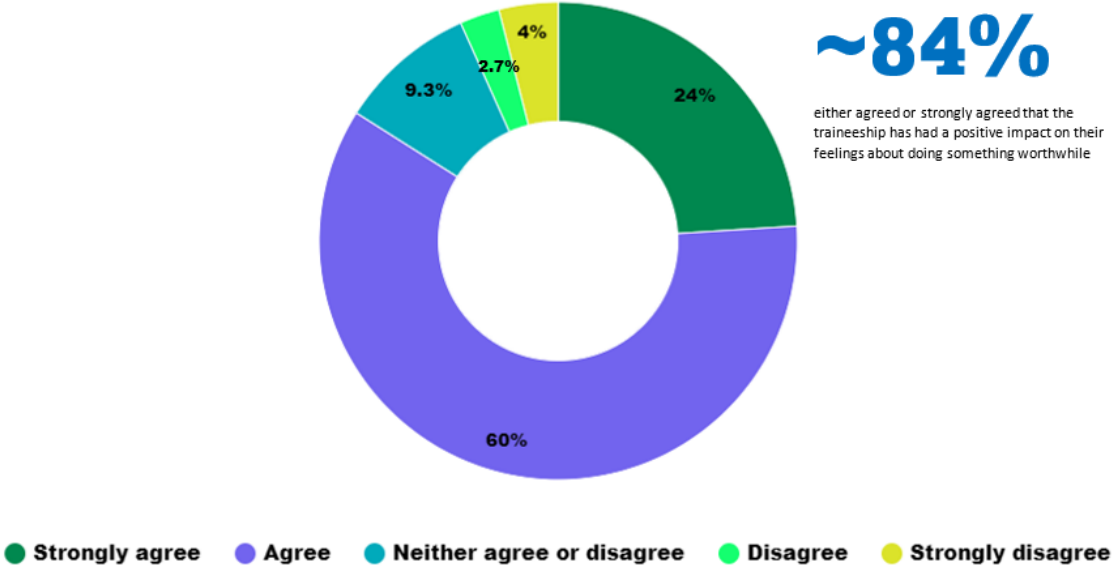
Figure 3.4: *Traineeship participation and beliefs about doing something worthwhile*

As shown in Figure 3.4, approximately 84% (n=63) of participants either agreed or strongly agreed that participating in this traineeship has had a positive impact on their impact on my feelings about doing something worthwhile, compared to approximately 2.7% (n=2) who disagreed and 4% (n=3) who strongly disagreed with this question.

Traineeship participation and feelings about life

When asked if the traineeship has had a positive impact on how they feel about their life, participants reported the following:
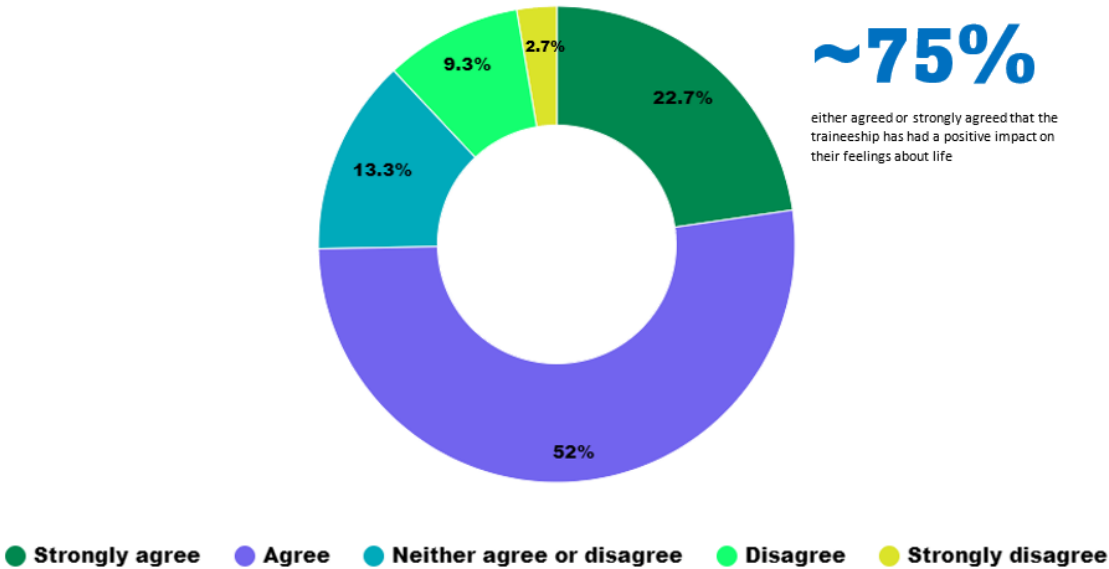
Figure 3.5: *Traineeship participation and beliefs about life*

As shown in Figure 3.5, approximately 75% (n=56) of participants either agreed or strongly agreed that participating in this traineeship has had a positive impact on their feelings about life, compared to ~9% (n=7) who disagreed and 2.7% (n=2) who strongly disagreed with this question.

Traineeship participation and beliefs about achievement

When asked if the traineeship has had a positive impact on what they felt they can achieve, participants reported as follows:
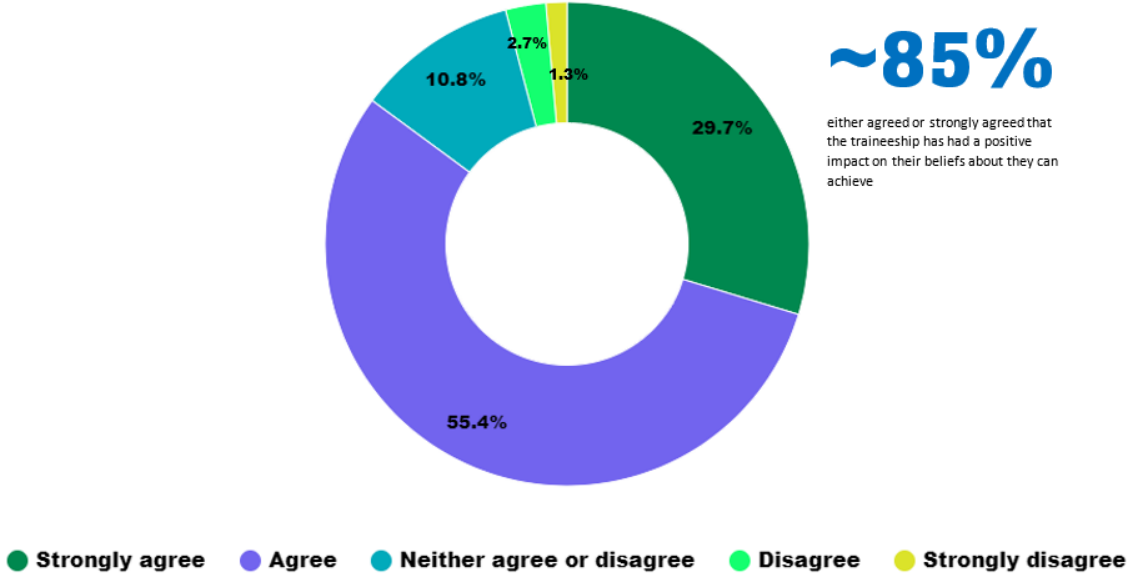
Figure 3.6: *Traineeship participation and beliefs about they can achieve*

Figure 3.6 shows approximately 85% (n=63) of participants either agreed or strongly agreed that participating in this traineeship had a positive impact on what they thought they could achieve, compared to 2.7% (n=2) who disagreed and 1.3% (n=1) who strongly disagreed with this question.

Trainee's beliefs related to employment and financial stability
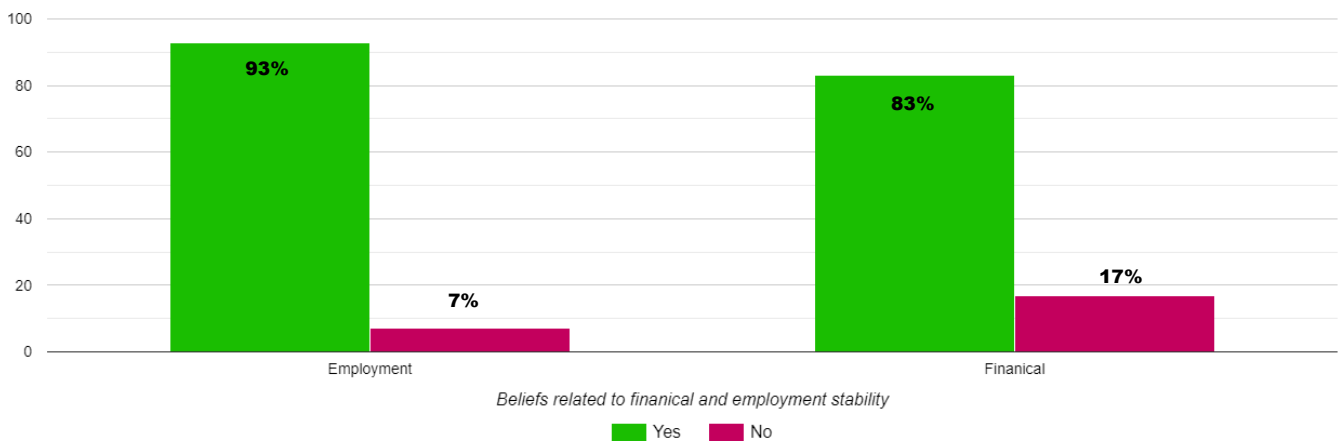
Figure 3.7: *Trainee's beliefs related to employment and stability*

As shown in Figure 3.7, approximately 93% (n=70) participants responded favourably (yes) to a question probing participants' perceptions of employment stability. Concurrently, 83% (n=62) of participants responded favourably (yes) to a question probing a perception of financial stability because of the traineeship.

The text responses largely reinforced the view that most participants felt employment and financial stability because of their participation in the traineeship.

When asked to expand on their response about a **sense of employment stability**, the qualitative evidence supported the quantitative findings.

For instance, "*the stability of having job security and routine, but having diverse work experience across three different companies is something I have found reassuring for future job prospects*" (female, age18, rural).

Likewise, *"I think that the work experience alone will provide me with a really good CV, and the qualification and experience gained during the traineeship will also be very helpful for any future pathway that I chose to go down"* (male, age 19, metro).

Another trainee noted that "*working in the infrastructure industry and being mentored along the way has provided a lot of stability, especially after that period of uncertainty straight out of high school*" (male, age 18, metro).

Others spoke to the **social networks** they were able to develop as part of their traineeship participation: "*I have been working in 3 different companies over the span of the traineeship which has allowed my network to broaden dramatically*" (male, age 19. metro).

Another trainee appreciated the opportunity to… "*make connections with companies*" (female, age 19, metro).

In terms of **financial stability**, participants acknowledged and understood the '*earn-while-you-learn'* design of the traineeship.

For instance, one participant noted that: "t*he traineeship has provided me with the opportunity to earn money while studying to complete a qualification, something that seemed unattainable within other post-school pathways"* (female, age 18, rural).

While another trainee stated, "*It's good that while gaining a certificate and experience in the workforce it's a bonus that we are getting paid on top of it*" (female, age 21, metro).

Those young people living at home with the support of their caregivers tended to make favourable comments about this support:
> "*I'm lucky enough to be living at home, and only have rent and car funds, so vie* (sic) *been able to save a lot*" (female, age 20, rural).
> "*As I do not pay rent currently, the traineeship provides enough income for my other expenses and leisure. However, I can imagine if I were paying rent, I'd be struggling to find the money each week*" (female, age 20, metro, CALD).

Those young people not living with a parent or caregiver, tended to highlight the challenges this presented:
> "*To pursue this traineeship, I had to move out of home on my own and live completely independently from my family. The weekly wage made this a challenge that I had to overcome through strict budgeting. Maybe an allowance for people living independently to assist*[?]" (female, age 20, rural).

The national rental crisis, and high inflation levels were also concerns for some trainees:
> "*Inflation and cost of living is climbing while our wages are effectively going down by 10% this year*" (male, age 19, metro).

One trainee noted that they were "*paid below the Australian minimum wage*" (non-binary, age 18, metro).

Others noted the cost of travel to traineeship locations: "*lots of travel for some of the placements, couldn't cover fuel as COVID drove up the prices*" (male, age 21, metro).

Trainees' beliefs about the design of the traineeship.

Rotations

Approximately 93% (n=70) of participants reported that the number of rotations in the traineeship was the right amount. The text responses probed the traineeship design further. One participant stated that: "*8 months is great to learn how a workplace works and get a great idea of systems and methods before moving onto a new workplace*" (male, age 19, metro).

Another observed that: "*I was able to learn plenty and build relationships with peers and colleagues during the 8 months*" (male, age 19, metro).
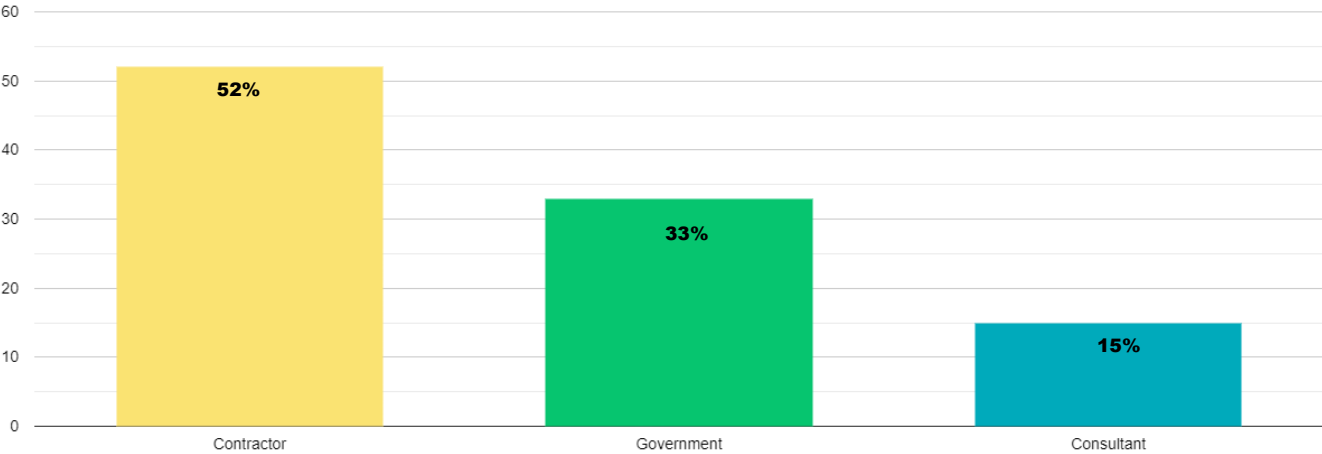
Figure 3.8: *Beliefs related to value of rotations*

As shown in Figure 3.8, out of the 48 participants in the sample who completed more than one rotation, ~52% (n=25) of trainees reported that the Contractor rotation was the experience they gained most from, followed by the Government rotation (33%, n=16) and Consultant experience (15%, n=7).

Trainees' beliefs about pathways, both alternative and post-traineeship destinations

Alternative pathways

When asked if you had not enrolled in traineeship, what do you think you would have been doing now?
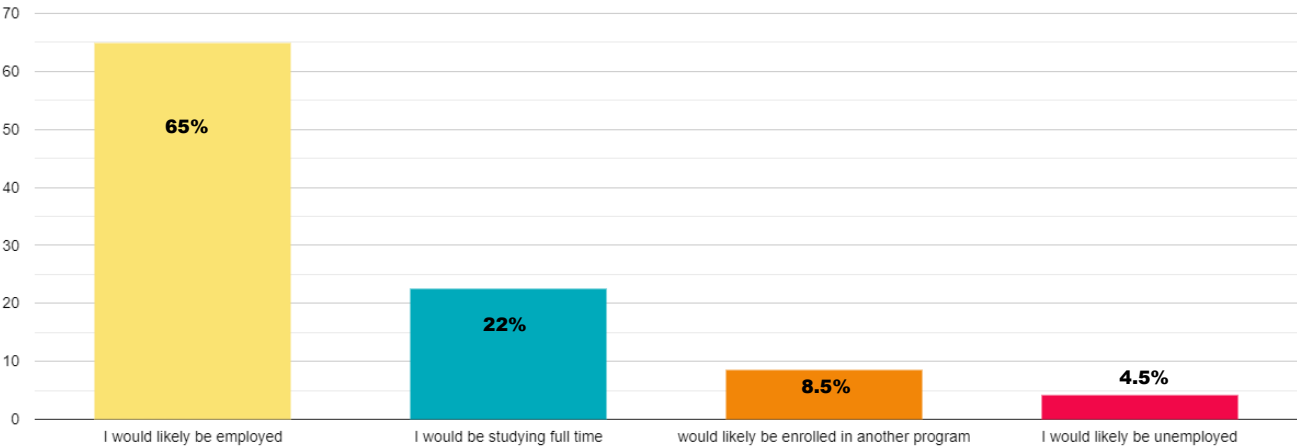
Figure 3.9 *Alternative pathways*

As shown in Figure 3.9, approximately 65% (n=46) of trainees thought they would be employed in another job if they were not enrolled in the traineeship, ~22% (n=16) stated they would be studying full-time, 8.5% (n=6) reported that they would be in another program while about 4.5% (n=3) said they would likely be unemployed.

Desired post-traineeship destinations

When asked what you hope to be doing after you complete the traineeship?
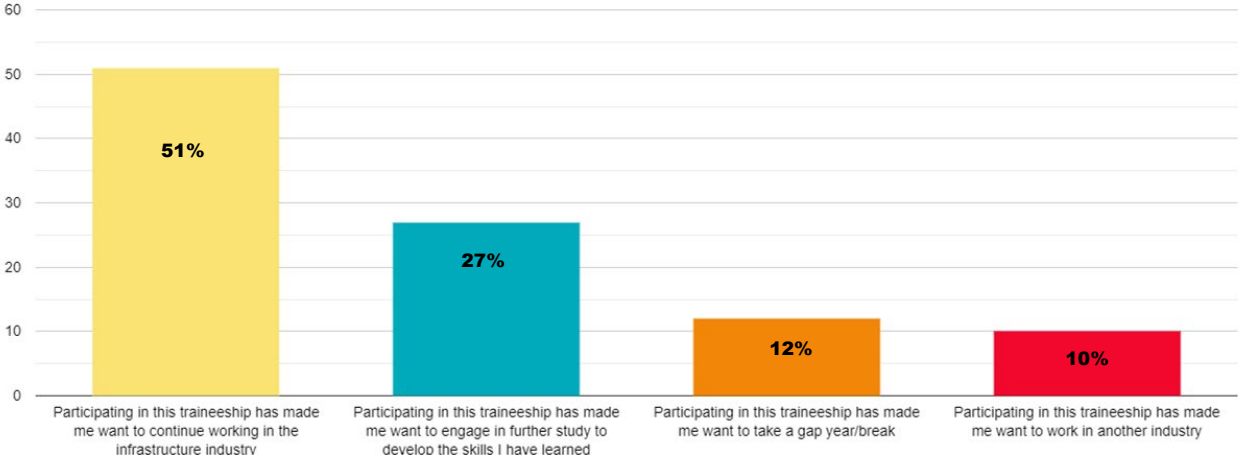
Figure 3.10: *Desired post-traineeship destinations*

As shown in Figure 3.10, approximately 51% (n=36) stated that their participation in the traineeship made them want to continue working in the infrastructure industry, ~27% (n=19) made trainees want to engage in further study to develop the skills they have learned, ~12% (n=9) want to take a gap year and about 10% (n=7) want to work in another industry as a result of their participation in the traineeship.

Differences between males and females and participation beliefs about traineeship

Further analysis was conducted on groups who have been traditionally under-represented in the infrastructure industry. Tests were conducted to determine any significant differences in responses between males/females, CALD/non-CALD trainees, and metropolitan/rural trainees. Unfortunately, analysis of First Nations and disabled trainees was not possible because only two participants identified as First Nations and one trainee as disabled. This is a limitation of these data, more about this point later.

Analysis was conducted on differences between trainees' impact-beliefs regarding their traineeship participation including 1) perceptions of a positive impact on mental health/wellbeing 2) a sense of belonging 3) feelings about doing something worthwhile 4) how participants feel about life and 5) beliefs about what they thought they could achieve. Due to the ordinal data collected in the following Likert scales, Mann-Whitney U tests were conducted, α=.05.[2] The results are shown in Tables 3.1, 3.2 and 3.3.

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[2] The Mann Whitney U test is a widely used 'nonparametric' test used to compare the mean rank between groups in a sample (see, for example, https://sphweb.bumc.bu.edu/otlt/mph-modules/bs/bs704_nonparametric/bs704_nonparametric4.html)

Table 3.1: *Differences in beliefs between male/female trainees*

	Mean rank (males/females)	U	z	p
Mental health/wellbeing	36.49/36.52	639.50	-.006	.995
Sense of belonging	36.19/36.89	627.50	-.153	.879
Doing something worthwhile	35.27/36.89	595.50	-.377	.706
How I feel about life	35.87/36.16	619.00	-.063	.950
What I can achieve	37.17/33.52	544.50	-.838	.402

All results show no significant difference between the average male and female trainee beliefs.

Table 3.2: *Differences in beliefs between CALD/non-CALD trainees*

	Mean rank (CALD/non-CALD)	U	z	p
Mental health/wellbeing	43.86/36.84	425.50	-1.261	.207
Sense of belonging	37.53/38.80	504.50	-.229	.819
Doing something worthwhile	37.09/38.27	477.50	-.224	.823
How I feel about life	38.56/37.84	483.50	-.131	.896
What I can achieve	39.56/36.89	449.50	-.502	.616

All results show no significant difference between the average CALD and non-CALD trainee beliefs.

Table 3.3: *Differences in beliefs between metropolitan and rural students*

	Mean rank (Metro/rural)	U	z	p
Mental health/wellbeing	38.27/39.54	419.50	-.208	.835
Sense of belonging	38.92/36.64	408.00	-373	.709
Doing something worthwhile	38.20/37.14	415.00	-.186	.852
How I feel about life	37.47/40.32	394.50	-.481	.631
What I can achieve	38.23/34.39	376.50	-.670	.503

All results show no significant difference between the average metropolitan and rural trainee beliefs.

These tests indicate no statistically significant differences in beliefs were reported between groups, including those identified as vulnerable or at-risk in the infrastructure industry such as females (compared to males), CALD (compared to non-CALD) and rural trainees (compared to metro).

Significantly, for an evaluation of this scale and scope, the results point to the efficacy of the traineeship in positively impacting trainees' beliefs about their sense of belonging, wellbeing, feelings about life and perceptions about what they can achieve, even as members of vulnerable or at-risk groups.

Chapter 4. Interviews with SINSW Working Group: Method and Analysis

Method

Total population of participants

A total of 23 SINSW Working Group members (6 male and 17 female, age range from 22 to 64) participated in this project from regional New South Wales, to Newcastle, to the inner and outer suburbs of Sydney. Demographically, 1 identified as having a First Nations background, 8 participants identified as having a CALD background, 3 participants identified as having a migrant refugee background, and 2 identified as living with a disability.   The participants' educational backgrounds varied:

- **4** had post-graduate degrees (including 2 at masters level),
- **1** had a graduate diploma
- **11** had bachelor degrees (including 2 with honours),
- **2** had either a trade certificate or diploma
- **4** had completed Year 12 (including 2 with certificates)
- **1** had Year 11 with TAFE.

Interview instrument

The interview instrument consisted of 2 sections. We used VideoAsk, an online platform that allows for pre-recorded videos of the interview questions and asynchronous video conversations where the SINSW key stakeholders could respond to the interview questions on any device, at any time and through different formats such as video, audio, or text.

- *Section 1* elicited key stakeholders' responses about their **Backgrounds and beliefs about the design of the traineeship** including about their workplace and professional role and enablers, barriers, and social and vocational outcomes for the trainees and whether or not these were evenly spread across trainees, and an opportunity to ask us something important that we missed.
- *Section 2* asked **Demographics** including age, suburb, gender, education level, if participants identified as a person from a First Nations, migrant refugee, and/or culturally linguistically diverse (CALD) background and/or as a person living with a disability.

The interview instrument is included as Appendix B.

The thematic analysis we present below was developed from the data collected from the open text responses embedded in the interview instrument.

Findings

Biggest enablers in the traineeship for young people to gain access into the infrastructure industry

Key stakeholders from SINSW indicated that the ITP had multiple enablers for young people to gain skills required for entry into the infrastructure industry, including:

- providing trainees with the necessary skills and education to prepare them for work in the infrastructure industry. One female government member suggested that the traineeship provides:
  "business comms and office skills" education that sets trainees up to enter an office situation" (Female 1, age 32, government sector);

- the chance to make mistakes and become independent and accountable for their own learning. One female government member commented that the traineeship allowed: *"trainees to make mistakes and gave them hands-on demonstration on how to complete tasks"* (Female 7, age 39, government);

- recruiting motivated trainees and heavily resourced hosts that supported the trainees during their placements. A female industry member stated that participant and host selection ensure the success of the program by having:
  "driven and motivated trainees and hosts that are prepared and have adequate resources to support the trainees" (Female 11, age 44, industry);

- opportunities to develop networks with other trainees and infrastructure industry employees and employers. A female government member observed the traineeship provided her trainee with:
  "real life experience of working in an office and understanding what office work can consist of [and] highlights the different roles within the infrastructure' industry. The traineeship further provides opportunities for trainees to develop networks with other trainees, people in the infrastructure industry, and major infrastructure companies" (Female 1, age 32, government).

The rotations through consultants, contractors and government provided trainees with broad experience and connections across the infrastructure industry. For example, a female government member explained that:

> *"the ability to rotate trainees through consultants, contractors, and government gave them insight into all the stakeholders and contributors to the industry"* (Female 4, age 25, government).

The traineeship offered trainees insights into the different stages of an employee's career. A female government member commented that the biggest enabler in the traineeship was the:

> *"access to people who have a range of knowledge, skills, qualifications and backgrounds in the infrastructure sector. The traineeship also gives trainees an opportunity to get to know people who are at different stages of their career and to build their sector network, which will be of value for the future"* (Female 6, age 49, government).

Trainees experienced being a part of a team in seeing the impact of their work and in taking responsibility for their work. One male industry member stated that the traineeship provided opportunities for:

> "some accountability and ownership in delivering outcomes which have a real impact on project deliverables" (Male 3, age 35, industry).

The traineeship offered an opportunity for marginalised groups to learn valuable skills and for those in the infrastructure industry to help foster and develop their talent to provide a skilled workforce for the future. This was observed by one male industry member who explained how:

> *"Getting into any industry, regardless of age can be a daunting experience and the traineeship provides an opportunity for those who may not otherwise be able to participate to have a fair and equal chance to learn valuable skills. The traineeship also allows corporations to gain access to these young individuals with the capacity to achieve and to be able to nurture that talent and provide skilled future workers, both in white-collar and blue-collar positions"* (Male 6, age 64, industry).

The key stakeholders in the industry highlighted their preference for trainees in the traineeship compared to those studying at university because of their highly relevant experience in the infrastructure industry. This was highlighted by a female industry member who stated that the traineeship gives trainees:

> *"a competitive advantage against those who finish university with no industry specific experience, for example the trainees worked in retail at a university unrelated to the infrastructure industry"* (Female 13, age 38, industry).

These observations suggest that the biggest enablers for the trainees in the traineeship are the opportunities for paid experience working across government and industry sectors, further study in either TVET or university, and the potential for permanent employment. The traineeship also enabled key stakeholders to potentially form professional relationships with the trainees and learn how to better support and retain them for the infrastructure industry.

Biggest barriers in the traineeship that prevented young people from gaining skills required for entry into the infrastructure industry

Key stakeholders from SINSW indicated that the ITP had several barriers that prevented young people from gaining skills required for entry into the infrastructure industry. These included:

- the lack of roles such as trainees experience in office and onsite roles. As one female government member commented:
  "if the trainees are assigned to only office roles or only onsite roles, then they may not gain an appreciation for the other side of the industry. The traineeship needs to ensure a good mix of office and onsite opportunities for the trainees" (Female 1, age 32, government).

- the lack of time in the rotations for trainees for industry supervisors to provide guidance and support on the trainees' roles and expectations to complete tasks.A male industry member explained that:

"spreading the trainees too thin across multiple areas prevents the ability for the trainee to develop a real understanding and relationship to their work, not allowing sufficient time to provide guidance and clarity on the roles and expectations or to follow up on progress and delivery of the task. Everyone is always busy, providing suitable time slots to allow review, discussion, and constructive pathways to enable growth is vital" (Male 3, age 35, industry).

A female industry member stated that the *"biggest barrier is the transition from school to workplace that may be quite overwhelming for some young people. There is a need to prepare and support supervisors/hosts to raise awareness, identify and recognise issues and concerns early and provide support mechanisms or tools to assist the young people"* (Female 11, age 44, industry).

- the lack of experience of the trainees to build confidence in their interpersonal skills and to interact with other generations, the lack of trainees' literacy and numeracy skills and knowledge about the opportunities the traineeship offers. One female government member:
  'thought the biggest barrier is the adjustment to a workplace environment, interacting with different generational peers, and building confidence in their interpersonal skills" (Female 7, age 39, government)
  Another female government member described how the trainees have *"a lack of experience, a limited knowledge of what the program can offer and what they can gain from it due to the young age of the trainees, meaning there is a high level of turnover"* (Female 10, age 31, government).

- the lack of literacy and numeracy skills, maturity and professionalism of some trainees to respect diversity and workplace protocols. A female government member suggested that barriers include the need for
  "literacy and numeracy support and a change needed in the culture of the industry where trainees exhibit poor behaviours around diversity and respect" (Female 16, age 42, government).
  A female industry member further explained that *"the trainees picked up bad habits from school and brought these to work. For example, one trainee had missed months of school and was not used to working consistently and consecutively a full week and working 'full time' was a foreign concept"* (Female 15, age 43, industry).

Other barriers included the impact of COVID-19 on trainees' motivation, social anxiety, and participation in the traineeship. This suggested a need to prepare and support industry supervisors/hosts to identify early on when trainees are experiencing difficulties and to be given the tools to support the trainees. This was observed by a female industry member who stated:
"the biggest barrier was during COVID-19 when the trainees were not able to get one on one mentorship and collaborative meetings with other team members" (Female 5, age 37, industry),while a female NGO member commented that the biggest barrier was the impact of *"COVID-19 on trainees' motivation, social anxiety and participation in the traineeship" (*Female 17, age 53, NGO).

These reflections suggested that the trainees faced several barriers in acquiring skills for the traineeship that included: struggling with the lockdowns during COVID-19, the need for more

support and time to adjust to the culture of their workplace during their rotations, and the need to develop their communication, interpersonal, and literacy and numeracy skills.

Most significant social and vocational outcomes for young people in the traineeship

Key stakeholders from SINSW indicated that the ITP had several significant social and vocational outcomes for young people in the traineeship. These included providing additional pathways for young people to obtain new skills, develop networks, and additional pathways to employment opportunities. As one male government member stated that the traineeship provided:

> *"additional pathways for young people to enter the workforce, gain new skills and develop improved social connection"* (Male 1, age 38, government).
> A female industry member described how the trainees gain *"confidence and a better understanding of both the workplace and the workplace deliverables. The program is a terrific steppingstone for those students that are fortunate enough to secure a spot"* (Female 9, age 46, industry).
> A female industry member further stated that the *"trainees' experience can lead to a job post traineeship, learning from mentors, and an opportunity to develop professional networks and a diverse experience across public sector, consulting and contracting"* (Female 13, age 38, industry).

Young people also learned transferable skills such as project management and how to communicate across a range of stakeholders using multiple communication platforms. A female government member suggested:

> *"young people learn to communicate across a range of stakeholders using multiple communication platforms and project management which teaches you to prioritise, organise and plan. These skills are transferable across jobs"* (Female 2, age 36, government).

The young people received a certificate, developed friendships, professional maturity, and practical experience to help guide their selection of a vocational or career pathway. A male industry member commented that:

> *"the traineeship offers young people opportunities to meet new friends/colleagues and the possibility of gaining a full time job"* (Male 5, age 42, industry) and a female industry member who explained how the young people *"increased their social skills and maturity and how they gained firsthand real life construction experience which will certainly help with their vocational pathway"* (Female 3, age 55, industry).
> A female industry member further stated that: *"trainees had a better understanding of what they want or do not want to pursue as a potential career path or further study"* (Female 5, age 37, industry) and a female government member explained how the trainees developed *"professional maturity within the workforce and connect with their peers and receive a Certificate with transferable skills"* (Female 10, age 31, government).

The traineeship offered trainees opportunities to gain practical experience and interact with older employees from different parts of the industry. This was observed by one female government member who stated:

"trainees are getting great hands-on work and couple that with meeting people, getting to know people and having role models, that's a really great outcome for this program" (Female 6, age 49, government) and a female government member stated that the traineeship provided young people with *"intergenerational communication skills and pathways and exposure to a variety of different parts of the business in a short amount of time"* (Female 7, age 39, government).

These observations suggested there were several significant social and vocational outcomes of transition pathways to further education or to long-term employment opportunities along with practical experience, social interactions, and learnings from older employees from a variety of different industry roles.

Social and vocational outcomes evenly spread across the traineeship

The SINSW stakeholders indicated that the social and vocational outcomes were spread evenly across the traineeship if the trainees:

- were motivated and passionate about the program and were willing to dedicate time to their study and work placement. A male government member stated:
  "No, it often comes down to a mix of the environment provided to the trainee and the willingness from them to want to genuinely participate in the program both the educational and the work aspects" (Male 1, age 38, government).

- valued equality and diversity and took their role seriously in nurturing the talent of trainees in the infrastructure industry. A male industry member commented:
  "We take the infrastructure program very seriously and do not view it as simply a source of free labour. As an equal opportunity employer, we nurture and encourage and treat all our employees as equals, irrespective of their social background and provide them with the tools and training to make their contribution count. We take both care and pride in being able to be part of this exciting program" (Male 6, age 64, industry) and

- the different rotations provided trainees exposure to multiple interactions with infrastructure professionals. A female government member stated:
  "Yes, if they are allocated to a mix of roles and not just office-based or site-based" (Female 1, age 32, government).
  Another female government member commented *"yes, the trainees rotate across various parts of the business, so they gain exposure to a broad variety of vocational and social outcomes. For example, in my business area, trainees work directly with community stakeholders and in another part of the traineeship they would be exposed to a high level of interaction with construction industry stakeholders"* (Female 7, age 39, government).

These observations highlighted the importance of successfully recruiting trainees who are passionate about the infrastructure industry, the diversity of roles trainees experienced on placement and emphasis on values such as equality and equity and pride in the culture of the workplaces.

Most important for trainees in this program (that wasn't asked)

The SINSW key stakeholders indicated what they thought was really important for trainees in the program that hadn't asked them:

- more connections between the trainees' work and to course content and assessments. One female government member explained the need for:
  "a closer link with course content and exposure to course assessments and work to further develop and guide the trainees through studies" (Female 2, age 36, government).

- more information about the trainees' difficulties that impact their work so organisations can provide them with better support. One female industry member discussed:
  "the need to know if the trainees had any challenges that may affect their working life, so that we can make sure the appropriate support is in place" (Female 3, age 55, industry).

- to know more about the trainees to better support them and to help them settle into their placements as some trainees were missing key capabilities to successfully complete their placements. One female government member stated:
  "We have had challenges in fully utilising and onboarding trainees as non-government employees have limited access to software and programs. We received feedback from the trainees and placement teams that trainees could not be fully utilised while completing their Statement of Attainment. We observed that the trainee's engagement was extremely low during this period and placement teams had to manage disengaged trainees. Placement supervisors provided feedback advising that Trainees spent their first three months unable to be utilised in placement teams as they didn't have the basic business skills, and knowledge to be able to contribute. Our placement supervisors have also recommended that Trainees do not commence with placement teams until they complete their Statement of Attainment, which provides them with core business skills preparing them for the corporate world and setting them up for success. It's also important to frame the benefits of the Statement of Attainment to trainees. Trainee profiles could also be improved. The current trainee profiles do not tell us enough about the trainee, we need to understand their goals, their capabilities, and focus areas to allow us to place the individual with the right placement teams. Also having video recorded interviews/profiles will allow placement teams to understand more and prepare for the individual they have joining their team. We also wanted to raise the impacts of having trainees who live outside of the Sydney Metropolitan area allocated to Sydney based offices, especially as we work in this hybrid environment. We have found that trainees who meet with their teams face to face early on settle into placements quickly, and it allows for better engagement and team fit" (Female 4, age 25, government).

- *to know* why some organisations were not allowed to offer employment opportunities to the trainees after they completed their studies, which did not match the expectations of the trainees. One female government member suggested:
  "Some organisations aren't allowed to offer roles to trainees upon completion of their program. They are given the expectation there may be a job waiting for them" (Female 1, age 32, government) and

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- to know how many trainees found employment after the completion of the traineeship. A male industry member asked if the traineeship *"resulted in high employment upon completion"* (Male 3, age 35, industry)? while a female government member stated that *"I would be interested to know more about the program holistically. For example, will trainees build a network in the sector with the other trainees? Are they going to stay connected? And then what's next for trainees after this program"* (Female 6, age 49, government)?

These comments pointed to several important concerns and questions about the traineeship such as the need for more communication and information about the program given to key stakeholders to assist them in connecting the trainee's work with the educational aspects of the program and the trainees' experiences, goals, and capabilities that they bring to the placement.

Chapter 5: Discussion

Model for evaluating impact of the Infrastructure Traineeship Program (ITP)

In undertaking this research, we conceptualised a model for assessing the social impact and outcomes of the ITP for stakeholders in ways that focus on three sorts of stakeholders:

  a) Participants (x different groups):
  - i) Women
  - ii) Men
  - iii) First Nations
  - iv) Culturally and Linguistically Diverse
  - v) People living with a disability
  b) Industry partners
  c) Government investors

For participants the model had to facilitate evaluating outcomes in terms of the extent to which, among other things, participants:

- Secured a sustainable jobs outcome (either at completion of the traineeship or prior to completion but as a result of participating in the ITP and establishing links to industry opportunities)
- Achieved skills development goals to position them for either obtaining a sustainable job or co-creating a new job as an agile response to new business opportunities within the construction sector.
- Realised a 'pay forward' outcome from the ITP by seeing a positive career trajectory into employment which will yield benefits to not only them as participants but also to their current and future employers through obtaining portable qualifications and skill sets.
- Developed a sense of belonging among work peers, in business-based teams and within the construction/infrastructure industry community
- Realised a sense of recognition as valued employees, potential leaders and co-creators of innovation and value in their business settings

For industry partners the model was focused on evaluating outcomes in terms of the extent to which employers, among other things:

- Gained skills dividends from trainees being retained in their organisation as employees, not only with the technical skills required for the business, but also the cultural standards relevant for building a safe, inclusive, and productive workforce
- Worked effectively in collaboration with the NSW Government to advance skills development in NSW
- Achieved a sense of contributing to reshaping the infrastructure sector so it is fit for the future as an agile, inclusive workforce aligned with the cultural standards at the heart of industry reform.

For Government investors, we cast the model so that it assisted with evaluating outcomes in terms of the extent to which, among other things, government investors:

- Realised a return on their investment in the ITP with respect to desired completion rate targets and counterfactual analytical measures.
- Worked effectively with industry partners to advance skills development in NSW
- Contributed to improving policy coordination within the State of NSW as well as with Federal counterparts for advancing productivity improvements in the construction/infrastructure sector.
- Gained evidence and insights on areas for improvement of management of participants and working relationships with industry partners and other governmental actors
- Developed an evidence-informed strategy to guide future decisions about the design of the program (especially its rotations) and further investment in the ITP

Counterfactual analysis of outcomes

Given that a key utilisation focus for this evaluation is for public finance decision making and budgeting, we built a counterfactual analysis into the evaluation model. This was done by obtaining data on the question of what participants in the traineeship would be doing if they had not participated in the traineeship program. Analysing these data generated valuable insights regarding the return on investment into the ITP which can guide future public investment decisions with regard to continuation or discontinuation of the traineeship program.

The findings reported in Chapters 3 and 4 have shown the extent to which the various stakeholders (young people/trainees, industry partners and government investors) achieved desired outcomes. While it can be seen that the ITP has predominantly achieved its objectives as regards its social wellbeing, learning and employment outcomes, and that it has worked effectively in terms of collaboration with industry partners, implementation of the program has highlighted a number of factors that echo issues and themes identified in our review of the research and policy literature concerning traineeships and apprenticeships (as described in Chapter 2).

We discuss these themes and issues here in relation to our findings as the basis for informing our overall evaluation of the program - where it has worked, and why, as well as those areas where it might be further improved.

How our findings relate to issues and themes emergent from the literature review

Participant issues and themes

Personal satisfaction experienced by young people through obtaining a qualification

Our survey findings accord with a key issue in the research literature - that many young people have gained personal satisfaction from obtaining a traineeship qualification, particularly in family circumstances of intergenerational poverty and unemployment (Smith & Keating, 2003). As noted in Chapter 3, 85% (n=63) of participants reported that the ITP had positively lifted their sense of achievement now and into the future. In addition, 93% (n=70)

reported that they had secured employment and financial stability because of their participation in the ITP traineeship. Indicative of this sense of achievement and enhanced security in relation to the likelihood of low income and unemployment are the remarks of one participant who observed:

> "*I think that the work experience alone will provide me with a really good CV, and the qualification and experience gained during the traineeship will also be very helpful for any future pathway that I chose to go down*" (male, age 19, metro).

This sense of financial security was no less important for rural participants. As one rural trainee observed:

> "*the traineeship has provided me with the opportunity to earn money while studying to complete a qualification, something that seemed unattainable within other post-school pathways*" (female, age 18, rural).

Resonance with wider issues in the research literature on traineeships and apprenticeships

The issues identified by Stanwick et al. (2021) in their recent review of traineeships and apprenticeships resonate with what we have found in relation to the ITP participants we surveyed.

There is, for example, strong evidence to suggest that ITP participants believe that completion of the traineeship is likely to produce better occupational outcomes compared with those who do not complete it (Stanwick et al., 2021). For ITP trainees this was facilitated through, among other things, giving them exposure to a range of companies, mentors and the establishment of professional networks. This positive vocational outlook was well expressed by one participant:

> "*the stability of having job security and routine, but having diverse work experience across three different companies is something I have found reassuring for future job prospects*" (female, age 18, rural).

Furthermore, as Stanwick et al. (2021) observed, some ITP participants raised issues about incentives to stimulate participation and completion, for example, the importance of providing support with living away from home costs such as rental assistance:

> "*As I do not pay rent currently, the traineeship provides enough income for my other expenses and leisure. However, I can imagine if I were paying rent, I'd be struggling to find the money each week*" (female, age 20, metro, CALD).

Socio-cultural context for low rate of participation and retention of women in the industry

Stanwick et al. (2021) note the primary cause of the low rate of participation and retention of women in skilled trades and other areas within the construction industry is the failure of the construction industry's masculine culture to change 'on-the-ground' to accommodate diversity. However, our survey of participants reported no instances of this sort of masculine culture on the ground during ITP rotations. Participants reported favourably on the workplaces and learning settings they experienced as ITP trainees, noting that the placements provided them with a strong sense of belonging [66% (n=50)], a positive impact

on their mental health and wellbeing [62% (n=47)], and an enhanced sense of what they thought they could achieve [62% (n=47)].

Ensuring traineeship programs are inclusive of differences

Our analysis revealed no statistically significant differences in beliefs between groups about the workplaces and learning settings that ITP trainees experienced, including trainees identified as vulnerable or at-risk in the infrastructure industry such as females (compared to males), CALD (compared to non-CALD) and rural trainees (compared to metro).

These findings seem to suggest that the ITP has been largely successful in creating an inclusive vocational learning program with industry partners in a sector previously impacted by the sorts of intersections between 'gendered bodies' and informal and unregulated practices in the workplace (Bridges et al., 2020). Emphasising this more inclusive environment within the industry for trainees will be an important message for future marketing of the ITP.

Involvement of First Nations people in traineeships

Finally, we have highlighted where the literature has pointed to issues concerning the involvement of First Nations participants in traineeships. For example, Joncas et al. (2022) call for adapting education and training programs to the needs and realities of First Nations students by reaffirming and celebrating identities, culture and histories in ways that enable students to develop their employability and self-determination skills.

Furthermore, we noted that Windley (2017), in a recent assessment of indigenous VET participation completion and outcomes, observed that at a time of overall downturn in apprentice and traineeship enrolments, First Nations people enjoyed a higher rate of participation than non-First Nations participants. In this context, Windley found that for First Nations peoples successfully completing a program of VET study, employment outcomes were shown to be equal to their Non-First Nation's counterparts. In light of these findings, we concluded that they point to the primacy of framing traineeship programs and sustainability evaluations through the lens of socio-cultural considerations in addition to the 'standard' pedagogical and program assessment matters.

Unfortunately, we were unable to assess these issues in a statistically useful way for the ITP because only 2.6% (n=2) of participants identified as Indigenous. We also recognise that concepts of cultural inclusivity and intersectionality are relevant to the further development of the ITP, as is the concept of Voice in relation to the codesign of traineeship programs so that they are culturally inclusive of First Nations people - locally, regionally, and nationally.

Government and industry stakeholders' issues and themes

Harmonisation of policies and programs around traineeships

Our review of the research literature highlighted the importance of *harmonisation* - that is, the degree to which state and federal governments have a consistent approach to apprenticeship and traineeship programs across Australia (Stanwick, et al., 2021). The rationale for this is simple: the greater the consistency, the less confusing the national

system will be for employers, particularly those that operate over state and territory borders. We noted how recent research suggests that funding and regulatory arrangements remain complex, inconsistent, and often confusing, in spite of streamlining efforts.

While neither the Government nor Industry stakeholders we interviewed mentioned this issue in relation to the ITP, we nevertheless believe that harmonisation underscores the importance of policy coordination to achieve program consistency *within* the State (especially between metropolitan and rural stakeholders and participants) as well as national consistency. From time to time, for example, interviewees noted difficulties for participants living in a rural location who had to undertake placements in metropolitan settings. What was less clear was the extent to which traineeship outcomes were preparing trainees for employment opportunities state-wide as well as in other parts of Australia. Greater harmonisation of traineeships like the ITP is likely to enhance the portability of qualifications not only throughout NSW (metro and rural) but also across Australia.

Policy coordination is of critical importance globally as well, as the work of the OECD attests and emphasises. Positioning NSW's skills development agenda through programs like the ITP in ways that contribute to national and international productivity and workforce flows will enable NSW and Australia to engage with and capture national, regional and global opportunities for sustainable development and growth more effectively.

Congestion of the traineeship system

Another key issue noted by Stanwick et al. (2021) concerns congestion - the situation where sectoral stakeholders are parties to a system whose architecture is difficult to navigate for both employers and trainees. The current traineeship system's stakeholders include two tiers of government (federal and state), Registered Training Organisations (RTOs), industry organisations, Group Training Organisations (GTOs), and licensing and regulatory authorities, among others. The view put by some researchers is that efforts at streamlining these complex stakeholder elements so far are incomplete and the system is perceived as overly difficult to navigate (Stanwick et al., 2021).

Again, this issue was not commented upon directly by Government and Industry stakeholders we interviewed. However, a number of remarks pointed to some issues of congestion affecting the ITP's implementation. For instance, stakeholders referred to the need for the system to prepare and support industry supervisors/hosts to identify early on when trainees are experiencing difficulties and to be given the tools to support the trainees. One industry stakeholder observed a need to:

> *"prepare and support supervisors/hosts to raise awareness, identify and recognise issues and concerns early and provide support mechanisms or tools to assist the young people"* (female 11, age 44, industry).

Another pointer to insufficient streamlining within the ITP system was the view put by some stakeholders that participating organisations had a lack of knowledge about the program and trainees, and this hindered their ability to adequately support the trainees. Similarly, stakeholders suggested the system was characterised by insufficient time being provided during the rotations for ITP trainees to build their skills and appreciation for the industry. Observations such as these suggest that there are opportunities for improving the ways in

which RTOs, GTOs and host companies involved with the ITP communicate with each other about trainees' support needs in a timely manner prior to and during their workplace rotations.

Factors affecting completion of traineeships

The literature notes a range of factors that influence the likelihood of trainees completing their traineeships. These include, among others, demographic factors, lack of government incentives, or exiting the program if a better paid job is offered. Apprentices and trainees with a disability and First Nations people are more likely to leave their positions because of these factors (Lim, 2022).

Government and industry stakeholders identified several factors that can affect completion of ITP placements. For instance, they remarked on their need to know more about the trainees to better support them and to help them settle into their placements. This was crucial because they felt that some trainees were missing key capabilities to successfully complete their placements. Other barriers to completion of the program, or elements of the program, included a lack of time during trainees' rotations for industry supervisors to provide guidance and support on the trainees' roles and expectations so they could complete tasks. This issue was captured well by one industry stakeholder:

> *"Spreading the trainees too thin across multiple areas prevents the ability for the trainee to develop a real understanding and relationship to their work, not allowing sufficient time to provide guidance and clarity on the roles and expectations or to follow up on progress and delivery of the task. Everyone is always busy. Providing suitable time slots to allow review, discussion, and constructive pathways to enable growth is vital"* (male, age 35, industry).

A changing workplace culture for trainees in the construction industry

Interview responses of government and industry stakeholders associated with the ITP revealed a positive view of the culture of the construction industry increasingly being focused on respecting diversity. Recent literature underlines how this is an important part of the current agenda to improve the socio-cultural context and standards associated with the industry (CICT, 2021).

Key stakeholders noted how they valued equality and diversity, took their role seriously in nurturing the talent of ITP trainees in the infrastructure industry and how the different rotations provided trainees exposure to multiple interactions with infrastructure professionals. One industry stakeholder explained:

> "*We take the infrastructure program very seriously and do not view it as simply a source of free labour. As an equal opportunity employer, we nurture and encourage and treat all our employees as equals, irrespective of their social background and provide them with the tools and training to make their contribution count. We take both care and pride in being able to be part of this exciting program"* (male, age 64, industry).

Others spoke of the lack of maturity and professionalism of some trainees to respect diversity and workplace protocols. There is a sense in which stakeholders see the ITP as having a role in helping trainees to learn new values and protocols associated with an

emerging culture of inclusivity in the construction sector. Nevertheless, some interview responses suggested that the culture of the industry still needs to improve, and that ITP trainees need to learn respect for diversity as part of their program. This was evident in the reflections of a government stakeholder who observed that barriers to effective participation in ITP include the need for "literacy and numeracy support" and a change needed in "the culture of the industry" where trainees exhibit "poor behaviours around diversity and respect" (female, age 42, government).

Improving social and vocational outcomes for women and men in the construction industry

Some of the opportunities which the ITP presents to participants are consistent with the development of alternative strategies reported on for fostering inclusion and empowerment of women in the male-dominated construction sector. Research suggests that these alternatives include the creation of informal women's support networks, the positioning of effective workplace mentors and supervisors and working side-by-side with positive role models, male and female. These practices promise to develop resilience for women, greater understanding from men, and contribute to a changing workplace culture (Bridges, Bamberry, et al., 2022; Bridges et al., 2020; Galea et al., 2018; Wulff et al., 2022).

Key stakeholders indicated that the ITP is providing significant social and vocational outcomes for young people in line with these sorts of emergent strategies, including opportunities to develop networks and to learn how to communicate across a range of stakeholders using multiple communication platforms. Our interviews with industry and government stakeholders revealed no sense in which these positive social and vocational outcomes would be valuable for women only. One government stakeholder, for instance, observed how the ITP traineeship provides opportunities for trainees to develop:

> *"networks with other trainees, people in the infrastructure industry, and major infrastructure companies"* (female, age 32, government).

As a result, the ITP seems to be helping trainees (male and female as well as non-binary) to develop friendships and professional maturity, as well as to gain practical experience and a qualification that will help them advance their vocational pathway.

Benefits of ITP to government and industry participants

The ITP has provided benefits to participating government and industry stakeholders. For instance, host companies gained access to young people keen to learn and grow within the sector. One industry participant noted as much, observing that the ITP enabled them and their business to:

> *"gain access to these young individuals with the capacity to achieve, and to be able to nurture that talent and provide skilled future workers, both in white-collar and blue-collar positions"* (male, age 64, industry).

Others mentioned that the ITP helped them to take seriously their role in nurturing the skills development of future workers in their government or industry area, and that the ITP provided them with the resources and support to do this mentoring.

All the same, there was a sense in which these benefits would have been strengthened if there were clearer connections between the trainees' work and the course content and assessments. Similarly, host organisations would have preferred to have more information about difficulties impacting trainees' work so that host organisations could provide them with better support. And host organisations felt they would have been more effective if they had known more about the trainees so they could better support them and help them settle into their placements. These sorts of improvements, then, could help organisations not only to achieve more benefits from the program but also to be of more benefit to the program and to trainees.

Counterfactual analysis of outcomes

In evaluating the effectiveness of the ITP, we have endeavoured to incorporate a counterfactual approach into our considerations. Counterfactual analysis simply means considering "the outcomes that would have been achieved by the beneficiaries of a program in the absence of program participation" (Deloitte Access Economics, 2021, p. 100). If data concerning a counterfactual scenario are not readily available, then it is difficult to complete a counterfactual analysis for a program cohort in relation to the circumstances of a counterfactual cohort. This difficulty has been acknowledged in other evaluations of labour market programs in Australia (Deloitte Access Economics, 2021).

These complexities notwithstanding, in developing a counterfactual approach, we took account of a similar approach used by researchers elsewhere, notably Cappelini et al. (2019). Cappelini et al. (2019) used a counterfactual approach to contrast trainees with unemployed young people registered with Italy's Public Employment Services. The researchers measured the impact of traineeships on youth careers on the basis of employment probability, and, innovatively, measured the young people's actual placement not simply on the basis of securing a job but also along a "quality" metric with respect to entry in the labour market. They found:

> Traineeships hinder rapid transition to work, but they are effective stepping-stones for young people seeking a quality career. A benefit of 7 percentage points was estimated on the probability of finding a quality job after completing the traineeship and a long-lasting effect on trainees' employment rate is demonstrated by the persistency analysis. (Cappellini et al., 2019, p. 1389)

In other words, without doing a traineeship young people may experience more rapid transition into work after completing school. However, participating in a traineeship (and completing it) provided young people, and by implication the wider society and economy, with higher quality skills and sustainable employment and career pathways. This sort of counterfactual approach to evaluating the cost effectiveness of public investment in traineeships suggests that a program like ITP is likely to yield significant dividends to New South Wales through facilitating not only the entry of young people into quality employment but also an enduring impact on their employment rate.

To facilitate our counterfactual analysis of the ITP, we asked ITP trainees: *'If you had not enrolled in traineeship, what do you think you would have been doing now?'* In response, 65% (n=46) of trainees thought they would be employed in another job if they were not enrolled in the traineeship, ~22% (n=16) stated they would be studying full-time, 8.5% (n=6)

reported that they would be in another program while about 4.5% (n=3) said they would likely be unemployed.

At one level, this sort of finding might suggest that public investment in a traineeship program like the ITP is unnecessary for orienting young people into employment and training pathways. Less than 5% of the cohort saw themselves as likely to have been unemployed. Some 95% revealed a strong orientation towards active engagement in work and post-school learning and training.

However, a key learning from this is that the ITP is attractive to young people who are positively oriented towards employment and training. They are therefore likely to yield a positive return on investment in their participation in a traineeship program designed to improve their employability and skills levels in the construction sector. A traineeship like the ITP, then, provides the sort of 'steppingstone' described by Cappellini et al. (2019) for young people seeking a quality career rather than 'a job'.

Overall evaluation of the program

What worked, and why

The findings from our research strongly show that the ITP overall has helped participants achieve skills and career development outcomes.

Outcomes for participants

- **What worked**: The ITP gave trainees confidence about entering a quality job in the construction sector.
    - **Why it worked**: Through rotations across the sector (government, consultants, and contractors), trainees gained broad knowledge of the sector and links with industry mentors.
- **What worked**: The ITP helped participants to develop a sense of belonging among work peers, in business-based teams and within the construction industry community.
    - **Why it worked**: Through providing learning opportunities for young people in workplace settings, the ITP helped participants feel recognised as employees and learn about workplace standards and protocols in the sector.
- **What worked**: The ITP provided a short-term 'steppingstone' outcome (skills development and industry linkages) to position trainees for a medium-term outcome - securing quality employment and career progression in the construction sector.
    - **Why it worked**: By providing participants with skills and industry connections, the ITP enables participants to pursue quality career opportunities.

Outcomes for industry and government stakeholders

- **What worked**: Industry participants in ITP, especially host companies, gained skills dividends from trainees being developed as employees attuned to current industry realities.
    - **Why it worked**: Stakeholders achieved this by providing ITP trainees with not with technical skills but also understanding of relevant cultural standards in the construction sector.

- **What worked**: Industry stakeholders worked effectively in collaboration with the NSW Government to advance skills development in NSW.
  - **Why it worked**: Industry partners felt supported by government partners in their role as skills development mentors for trainees. Furthermore, industry and government partners shared insights on how support could be improved in future iterations of the program.
- **What worked**: Stakeholder organisations helped the trainees they hosted to develop skills and qualifications for a career more broadly in the construction sector.
  - **Why it worked**: ITP achieved this 'pay forward' outcome by creating positive career trajectories for trainees which will benefit current and future employers.

Areas where the ITP might be further improved

- **What could be improved**: Some ITP participants raised issues about incentives to stimulate participation and completion - for instance the need for rental assistance for trainees living away from home.
  - **How**: Consideration might be given to offering a supplementary allowance to trainees who live independently (at a rate to be determined each year by an expert panel).
- **What could be improved**: Some stakeholders referred to the need for the system to prepare and support industry supervisors/hosts to identify early on when trainees are experiencing difficulties and to be given the tools to support trainees.
  - **How**: Consideration might be given to providing future ITP supervisors/hosts with guidelines, tools, and training for early identification of, and response to, potential difficulties for trainees. This might be done using co-design principles.
- **What could be improved**: Some stakeholders felt the ITP allowed insufficient time during each rotation for trainees to build their skills and appreciation for the industry.
  - **How**: Consideration might be given to reviewing the length of time for each rotation (3 x 8 months) or to allocating more time within each rotation specifically for building trainees' skills, relationships with supervisors and peers, and industry appreciation.
- **What could be improved**: Trainees were seen sometimes by stakeholders as lacking core business skills. As a result, some trainees spent the first three months catching up with this sort of skills acquisition before they were training-ready in the workplace.
  - **How**: Consideration might be given to opportunities for improving the training-readiness of ITP trainees to maximise the yield from public investment in their skills development.
    - An option might be to offer a basic business skills pre-traineeship Summer Term program for prospective trainees, resulting in a Certificate of Attainment in Core Business Skills, so trainees hit the ground running when they start their first rotation in February/March.
    - An alternative could be to use the first rotation as one which includes completion of the Certificate of Attainment in Core Business Skills with the opportunity to practise those skills onsite.

Recommendations

Based on the above issues, themes and outcomes associated with the ITP, we offer the following recommendations:

1. Continue public investment in the ITP, because the program has yielded benefits to trainees as well as stakeholders in developing skills that will benefit them as future workers and the future businesses that employ them.
2. Increase the intake of First Nations trainees in future rollouts of the ITP, to facilitate evaluation of the effectiveness of the program in enabling First Nations young people to gain access to, and employment in, the construction industry, and to tailor the program to meet the cultural and learning needs of First Nations young people and communities.
3. Increase the intake of trainees living with a disability in future rollouts of the ITP, to facilitate evaluation of the effectiveness of the program in enabling young people living with a disability to gain access to, and employment in, the construction industry, and to tailor the program to meet the learning needs of people with a disability.
4. Offer a supplementary allowance to ITP trainees who live independently (at a rate to be determined each year by an expert panel).
5. Provide future ITP supervisors/hosts with guidelines, tools and training for early identification and response to potential difficulties for trainees. Consider using co-design principles in developing these.
6. Review either the length of time for each rotation (3 x 8 months) or how to allocate more time within each rotation, specifically for building trainees' skills, relationships with supervisors and peers, and industry appreciation.
7. Offer a basic business skills pre-Traineeship Summer Term program for prospective Trainees, resulting in a Certificate of Attainment in Core Business Skills, so that Trainees hit the ground running when they start their first rotation in February/March. As an alternative to this, use the first rotation as one which includes completion of the Certificate of Attainment in Core Business Skills with the opportunity to practise those skills onsite during the first rotation setting.
8. Review what data needs to be gathered regarding future ITP cohorts as they enter and exit the program, so that the counterfactual dimension of evaluation planning is built in from the start.
9. Review what has been learned about data gathering and analysis that could be done differently in future iterations of the program to provide stronger evidence on 'impact'.

References

Australia Constructors Association. (2020). *Constructing the future: A framework for a more sustainable construction industry*. https://www.constructors.com.au/wp-content/uploads/2020/10/ACA-Constructing-the-Future-09102020.pdf

Australian Government Department of the Prime Minister and Cabinet. (2017). *Closing the gap*. https://www.niaa.gov.au/sites/default/files/reports/closing-the-gap-2017/sites/default/files/ctg-report-2017.pdf

Australian Government Department of Health. (2019). *Modified Monash model*. https://www.health.gov.au/sites/default/files/documents/2020/07/modified-monash-model-fact-sheet.pdf

Australian Government The Treasury. (2022). *Jobs and skills summit - issues paper*. https://treasury.gov.au/publication/2022-302672

Bridges, D. (2022). The real reason why there are so few tradeswomen. *Australian Financial Review*. https://www.afr.com/work-and-careers/education/the-real-reason-why-there-are-so-few-tradeswomen-20220819-p5bb7w#:~:text=Cultural%20conditions,up%20with%20discrimination%20and%20harassment.

Bridges, D., Bamberry, L., Wulff, E., & Krivokapic-Skoko, B. (2022). "A trade of one's own": The role of social and cultural capital in the success of women in male-dominated occupations. *Gender, Work & Organization*, *29*(2), 371-387. https://doi.org/10.1111/gwao.12764

Bridges, D., Wulff, E., Bamberry, L., Krivokapic-Skoko, B., & Jenkins, S. (2020). Negotiating gender in the male-dominated skilled trades: A systematic literature review. *Construction management and economics*, *38*(10), 894-916. https://doi.org/10.1080/01446193.2020.1762906

Bridges, D., Wulff, E., Krivokapic-Skoko, B., & Bamberry, L. (2022). Girls in trades: tokenism and sexual harassment inside the VET classroom. *Journal of Vocational Education & Training*, 1-19. https://doi.org/10.1080/13636820.2022.2084768

Cappellini, E., Maitino, M., Patacchini, V., & Sciclone, N. (2019). Are traineeships stepping-stones for youth working careers in Italy? *International Journal of Manpower*. https://doi.org/10.1108/IJM-03-2018-0099

Construction Industry Culture Taskforce. (2021). *A culture standard for the construction industry*. https://cultureinconstruction.com.au/wp-content/uploads/2021/10/A-Culture-Standard-for-the-Construction-Industry_Consultation-Paper_October-2021.pdf

Crook, D., & Tessler, A. (2021). *The cost of doing nothing report*. https://cultureinconstruction.com.au/wp-content/uploads/2021/09/The-Cost-of-Doing-Nothing-Report.pdf

Deloitte Access Economics (2021) *National Indigenous Australians Agency Indigenous Employment Program Evaluation – Final Report* https://www.niaa.gov.au/sites/default/files/publications/indigenous-employment-program-evaluation-final-report_0.pdf)

Galea, N., Powell, A., Loosemore, M., & Chappell, L. (2018) *Demolishing gender structures*. https://www.humanrights.unsw.edu.au/sites/default/files/documents/Construction_Report_Final.pdf

Goozee, G. (2001). *The development of TAFE in Australia*. https://www.ncver.edu.au/__data/assets/file/0021/9723/development-of-tafe-in-australia-574.pdf

Hall, M. (2021). *Apprentices and trainees 2020: Impacts of COVID-19 on training activity*. https://www.ncver.edu.au/research-and-statistics/publications/all-publications/apprentices-and-trainees-2020-impacts-of-covid-19-on-training-activity

Joncas, J. A., Edward, K., Moisan, S., Grisé, X.-M., & Lepage, J. (2022). Indigenous people in vocational education and training from a social justice perspective: an overview of international literature. *Journal of Vocational Education & Training*, 1-24. https://doi.org/10.1080/13636820.2022.2122539

Kemmis, S., Thurling, M., Kemmis, R. B., Rushbrook, P., & Pickersgill, R. (2006). *Indigenous staffing in vocational education and training: Policies, strategies and performance*. https://www.ncver.edu.au/__data/assets/file/0015/5136/nr3025.pdf

Lim, P. (2022). *VET as re-engagement pathway for early school leavers*. https://www.ncver.edu.au/research-and-statistics/publications/all-publications/vet-as-a-re-engagement-pathway-for-early-school-leavers

Lingard, H., & Turner, M. (2022). *Intention to pursue a career in construction/infrastructure: Examining the perceptions of NSW trainees* (Survey Report 1).

Maheen, H., LaMontagne, A. D., & King, T. (2020). *Suicide in the construction industry: 2001-2018*. https://mates.org.au/media/documents/MATES-Report-2020-Suicide-in-the-Construction-Industry-2001-2018-Vol-IV-July-2020.pdf

New South Wales Department of Education. (2021). *Infrastructure traineeship project management plan*. https://education.nsw.gov.au/content/dam/main-education/public-schools/career-and-study-pathways/infrastructure-traineeships/documents/Infrastructure_Traineeship_Project_Plan_Dec_2021_v14.pdf

Rushbrook, P. (1995). *Straws in the wind: The construction of technical and further education in Victoria 1945-1985*. http://hdl.voced.edu.au/10707/75701

Rushbrook, P. (2001). Australia's first national report on vocational education: The Commonwealth-State Apprenticeship Inquiry (The Wright Report) 1954. *History of Education Review*, *30*(1), 60-64. https://nla.gov.au/nla.obj-2845035995/view?sectionId=nla.obj-2853143781&partId=nla.obj-2845088739

Rushbrook, P., & Preston, L. (2009). Constructing the good worker: policies, practices and assumptions informing Victorian technical schools division reform, 1967-1973. *History of Education Review*. https://doi.org/10.1108/08198691200900014

Smith, E. (2022). *Landmarks in the Australian apprenticeship and traineeship system*. https://www.voced.edu.au/vet-knowledge-bank-landmark-documents-apprenticeships-and-traineeships-historical-overview

Smith, E., & Keating, J. (2003). *From training reform to training packages*. http://hdl.voced.edu.au/10707/156899

Stanwick, J., Ackehurst, M., & Frazer, K. (2021). *Issues in apprenticeships and traineeships—a research synthesis* (1925717828). https://www.ncver.edu.au/__data/assets/pdf_file/0051/9669669/Issues-in-apprenticeships-and-traineeships-a-research-synthesis.pdf

Windley, G. (2017). *Indigenous VET participation, completion and outcomes: Change over the past decade. Research Report*. https://www.ncver.edu.au/research-and-statistics/publications/all-publications/indigenous-vet-participation-completion-and-outcomes-change-over-the-past-decade

World Health Organization. (2006). *Preventing suicide: A resource at work*. https://apps.who.int/iris/bitstream/handle/10665/43502/9241594381_eng.pdf?sequence=1&isAllowed=y

Wulff, E., Bridges, D., Bamberry, L., & Krivokapic-Skoko, B. (2022). Women who 'talk the tools' and 'walk the work': Using capital to do gender differently and re-gender the skilled trades. *Journal of Sociology*, *58*(1), 26-44. https://doi.org/10.1177/144078332199587

Appendices

Appendix A: Infrastructure Trainee Survey

Part 1: About You

Q1 TAFE Student ID number?

_____

Q2 Age?

_____

Q3 Which suburb do you live in?

_____

Q4 Gender?

◯ Male (1)

◯ Female (2)

◯ Non-binary / third gender (3)

◯ Prefer not to say (4)

Q5a Do you identify as Aboriginal or Torres Strait Islander?

◯ Yes, Aboriginal (1)

◯ Yes, Torres Strait Islander (2)

◯ No (3)

Q5b If yes please give us more detail. For example, to which lands, waterways, and seas are you connected?

_____

Q6a Do you identify as having a migrant refugee background?

◯ Yes (1)

○ No (2)

Q6b If, yes please give us more detail. For example, where did you migrate from?

_____

Q7a Do you come from a culturally and linguistically diverse (CALD) background?

○ Yes (1)

○ No (2)

Q7b If, yes please give us more detail. For example, what language is spoken at home?

_____

Q8 Do you identify as a person living with a disability?

○ Yes (1)

○ No (2)

Q9 What is your highest year level of secondary education completed?

○ Year 12 (HSC with ATAR) (1)

○ Year 12 (HSC without ATAR) (2)

○ Year 12 (HSC with alternative pathway) (3)

Q10 What is your father/guardian's highest level of education?

○ University (1)

○ High School (2)

○ Trade without Vocational Education (3)

○ Secondary Technical Education (4)

○ Vocational Education (5)

○ Primary School (6)

○ None (7)

○ Don't know (8)

Q11 What is your mother/guardian's highest level of education?

○ University (1)

○ High School (2)

○ Trade without Vocational Education (3)

○ Secondary Technical Education (4)

○ Vocational Education (5)

○ Primary School (6)

○ None (7)

○ Don't know (8)

Part 2: About Your Participation in the Infrastructure Industry Traineeship

Q12 Evaluate the impact of this traineeship in terms of the following statements:

	Strongly agree (1)	Agree (2)	Neither agree nor disagree (3)	Disagree (4)	Strongly disagree (5)
Participating in this traineeship has had a positive impact on my mental health and well-being. (1)	○	○	○	○	○
Participating in this traineeship has a positive impact on my sense of belonging. (2)	○	○	○	○	○
Participating in this traineeship has had a positive impact on my feelings about doing something worthwhile. (3)	○	○	○	○	○
Participating in this traineeship has had a positive impact on how I feel about my life. (4)	○	○	○	○	○

Participating in this traineeship has had a positive impact on what I can actually achieve. (5)	○	○	○	○	○

Q13a Has the infrastructure traineeship provided you with a sense of financial stability and support since leaving high school?

○ Yes (1)

○ No (2)

Q13b If yes, how and if no, how not?

_____

Q14a Has the infrastructure traineeship provided you with a sense of employment stability and support since leaving high school?

○ Yes (1)

○ No (2)

Q14b If yes, how and if no, how not?

_____

Q15a Thinking of the three rotations, is this the right amount of rotations for the traineeship?

○ More (1)

○ Less (2)

○ Right amount (3)

Q15b If more, why and if less, why?

_____

Q16a Was the amount of time for each rotation long enough for you to gain an understanding of the skills required in each of the sectors?

○ Yes (1)

○ No (2)

Q16b If yes, why and if no, why not?

_____

Q17 Which rotation type did you gain the most from?

○ Government (1)

○ Consultant (2)

○ Contractor (3)

○ I have only completed one rotation (4)

Q18 What are the supports in the traineeship that have helped you work towards your qualification?

_____

Part 3: About Your Vocational Journey

Q19 What were you doing 6-12 months before you enrolled into the infrastructure traineeship?

_____

Q20a If you had not enrolled in this program, what do you think you would have been doing now? Choose the statement from below that best describes your response.

○ I would likely be employed. (1)

○ I would likely be unemployed. (2)

○ I would likely be enrolled in another program (3)

○ I would be studying full-time (4)

Q20b Please feel free to add here any thoughts about what you might have been doing.

_____

Q21a What do you hope to be doing after you complete the traineeship? Choose the statement from below that best describes your response.

○ Participating in this traineeship has made me want to continue working in the infrastructure industry. (1)

○ Participating in this traineeship has made me want to engage in further study to develop the skills I have learned. (2)

○ Participating in this traineeship has made me want to work in another industry. (3)

○ Participating in this traineeship has made me want to take a gap year/break. (4)

Q21b Please feel free to add here any thoughts about what you hope to be doing beyond this traineeship.

_____

Appendix B: Classification of Metropolitan and Rural Sample

The Modified Monash Model ([MMM] Australian Government Department of Health, 2019) is a geographical classification that categorises different areas in Australia into seven remoteness categories. It served as a starting point for designing our own geographical classification for the purposes of this research. See below the classification of levels:

MM1	Metropolitan
MM2	Regional centres
MM3	Large rural towns
MM4	Medium rural towns
MM5	Small rural towns
MM6	Remote communities
MM7	Very remote communities
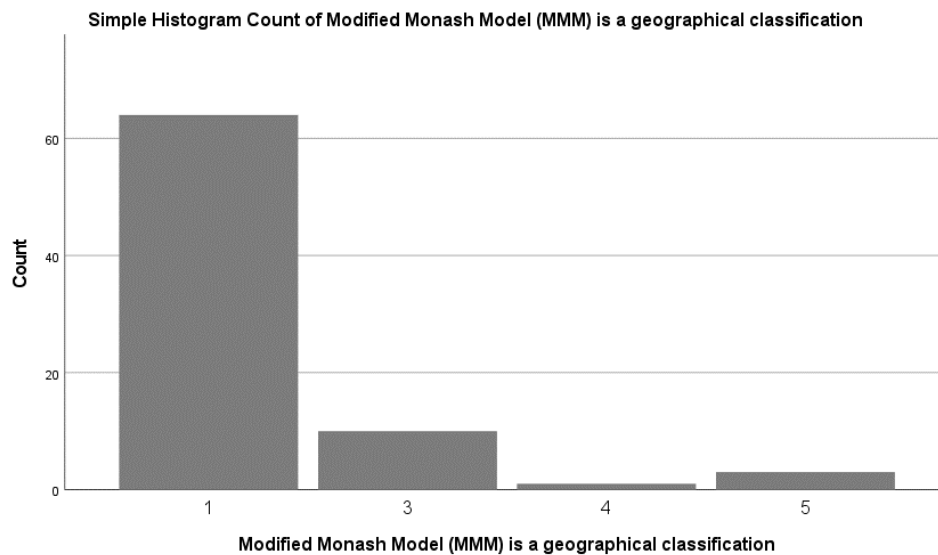
Histogram of sample when classified into MMM areas

The distribution of this data, trainees were classified into two categories: **Metropolitan** (MMM 1 classification) (n=64) and **Rural** (MMM 3, 4, 5 classification) (n=14).

Appendix C: SINSW Working Group Interviews

1. Please tell us a little bit about yourself and your background. For example, where do you work and what do you do?
2. What do you see as the biggest enablers in the traineeship that help young people gain the skills required for entry into the infrastructure industry?
3. What do you see as the biggest barriers in the traineeship that prevent young people gaining the skills required for entry into the infrastructure industry?
4. What do you see as the most significant social and vocational outcomes for young people who participate in the program?
5. Are these social and vocational outcomes for young people who participate in the program evenly spread across trainees? Please explain your answer.
6. What's something we haven't asked you that you think is really important for trainees in this program?

Before we conclude the interview, we would like to collect some basic demographic information.

7. Please tell us your age
8. Which suburb do you live in?
9. Gender - male / female / non-binary?
10. a) Do you identify as an Aboriginal or Torres Strait Islander - Yes, Aboriginal/Yes, Torres Strait Islander/No? b) If yes to identifying as an Aboriginal please give us more detail. For example, to which lands, waterways, and seas are you connected? c) If yes to identifying as a Torres Strait Island please give us more detail. For example, to which lands, waterways, and seas are you connected?
11. a) Do you identify as having a migrant refugee background - Yes/No? b) If yes please give us more detail. For example, what was your country of origin?
12. a) Do you come from a culturally and linguistically diverse background - Yes/No? b) If yes please give us more detail. For example, what language is spoken at home?
13. Do you identify as a person living with a disability - Yes/No?
14. What is the highest level of educational qualification you have completed (for example, Year 12, trade certificate, bachelor's degree, master's degree)?