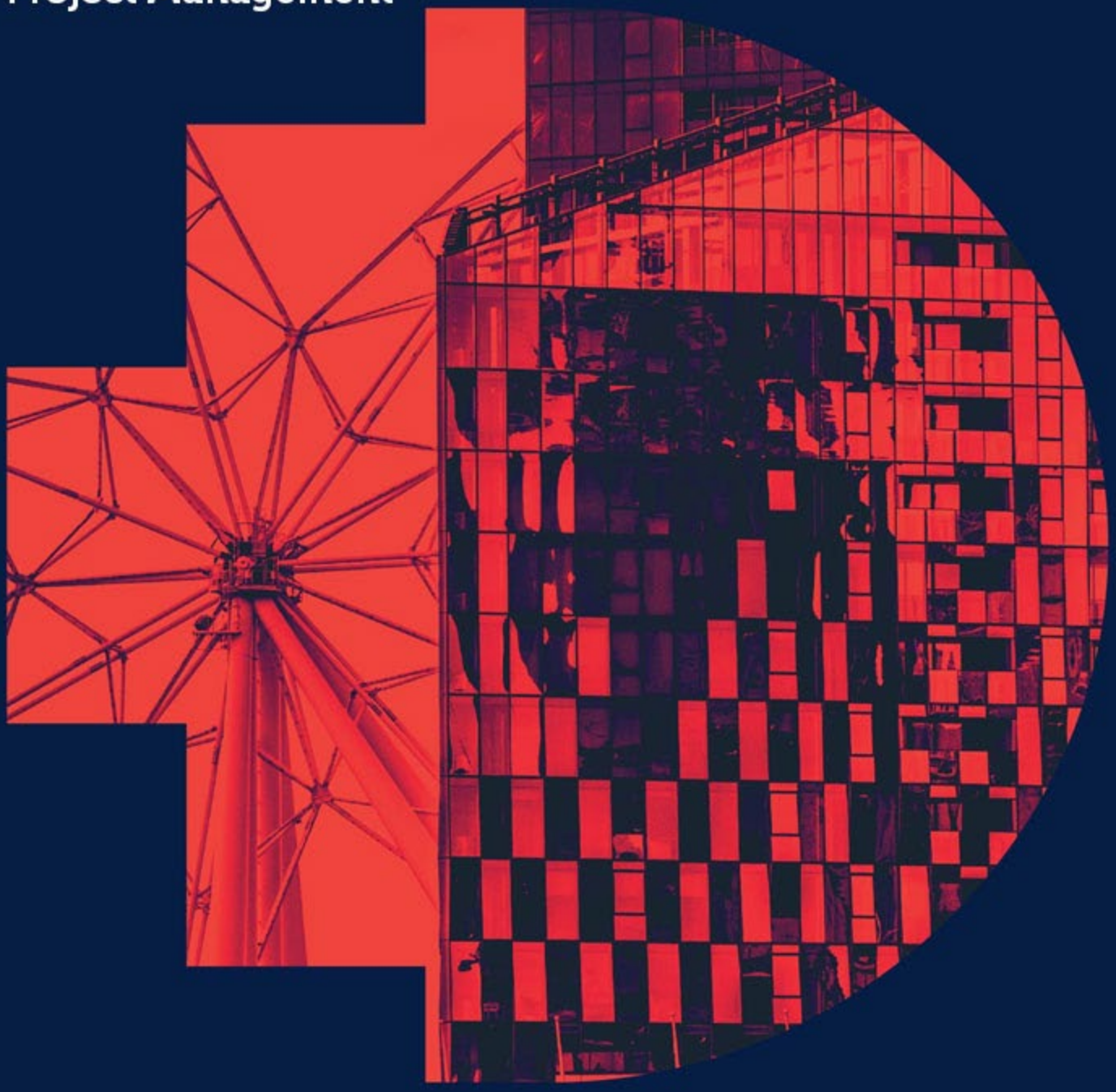
School of Property, Construction and Project Management

RMIT UNIVERSITY



Intention to Pursue a Career in Construction/Infrastructure: Examining the Perceptions of NSW Trainees

Report 2: 30 August 2022

Published by RMIT University

Authors

Helen Lingard, Michelle Turner, Payam Pirzadeh & James Harley.

Suggested citation

Lingard, H., Turner, M., Pirzadeh, P. & Harley, J. (2022). Intention to Pursue a Career in Construction/Infrastructure: Examining the Perceptions of NSW Trainees. Report 2. RMIT University, Melbourne.

Acknowledgements

This research was funded by the Australian Constructors Association.

Contents

Tables

Figures

Part 1: Executive Summary

Culture in Construction is an initiative of the Construction Industry Culture Taskforce (CICT) — a collective initiated by the Australian Constructors Association and representing the nation's largest construction firms, the Governments of New South Wales and Victoria and Australia's leading workplace researchers.

Since August 2018, CICT members have been working to develop a new Culture Standard to address three major issues impacting the construction industry's performance and sustainability: excessive work hours and fatigue, poor mental health, and failure to attract a diverse workforce.

The CICT has funded a program of research which seeks to establish an evidence base on the impacts of the Culture Standard through the study of six pilot projects. This report outlines the findings from the first pilot project which explores the experiences and perceptions of trainees participating in a two-year Infrastructure Traineeship Program, an initiative of the New South Wales Government.

Trainees undertake three eight-month rotations during the program, which involve periods of work experience in private and public sector infrastructure construction organisations.

This report presents the results of interviews conducted in March-April 2022 with 15 members of the 2021-2022 cohort of trainees. This report also presents the results from the second wave of a survey conducted in June 2022 with trainees in the 2021-2022 and 2022-2023 cohorts.

The survey explored trainees' perceptions about what a career in infrastructure construction would offer them. The survey also explored trainees' job rotation experiences and intentions regarding pursuing a career in the infrastructure construction sector upon completion of the traineeship program.

At the time of the interviews, participants had completed their first job rotation and were part way through their second job rotation. Six participants (40%) were female and nine (60%) were male. The participants identified positive aspects of a career in infrastructure construction as being:

- enjoying and engaging work tasks and activities
- satisfaction derived from seeing projects progress
- working with co-workers towards a common goal, and
- learning about the interdependencies and complex nature of infrastructure construction projects.

One participant also identified the opportunity to work a five-day week as being a positive feature of working in infrastructure construction, possibly reflecting the type of organisation they were placed with during their rotations.

Conversely, participants observed deterrents associated with a career in infrastructure construction as being:

- long working hours
- work overload
- lack of work-life balance
- lack of flexible work arrangements
- an unsupportive/unfriendly work team or workplace social context, and
- stress associated with job demands or the work context.

Work hours, work overload and work-life balance were frequently mentioned themes among the interview participants. However, there were mixed understandings of the need to work long hours; some

interviewees firmly believed long hours to be a requirement of work in infrastructure construction, and others believed that long hours would not be required. Given that trainees and their host organisations are discouraged from working more than 37.5 hours each week, it is likely that trainees learn vicariously about work hour expectations through observing colleagues and co-workers. Some participants indicated that they would be willing to work long hours in infrastructure construction because they enjoyed the work, while others were concerned about the need to work overtime and expressed that having a job which allows adequate 'time for life' is fundamental to a fair and attractive workplace. Participants also identified the workplace social environment as being important to their experiences. In particular, participants identified feeling welcome and comfortable, feeling a sense of community belonging and being treated with respect as positive features of their job rotation experiences. Some participants commented that the culture in construction organisations differs to other types of organisations in that it can be more challenging and 'rough.' However, this was not a universally shared experience and other participants indicated they were surprised by the supportive social context they experienced in construction organisations.

In the June 2022 survey, usable responses were received from 67 participants of the 2022-23 cohort (a response rate of 64%) and 59 participants from the 2021-22 cohort (a response rate of 74%).

In order to produce a larger dataset to undertake multivariate statistical analysis, the responses from the 2022-23 cohort (n=67) were combined with the first wave responses from the 2021-2022 cohort (n=69). This pooling of data enabled a more comprehensive analysis of the factors that predict career attitudes and decision-making among trainees after one job placement rotation.

More than half of this group (n=84, 61.8%) indicated that they had not yet made a decision about whether they would like to pursue a career in infrastructure construction. 44 (32.4%) indicated that they would definitely like to pursue a career in infrastructure construction. Three participants (2.2%) indicated that they definitely did not want to pursue a career in infrastructure construction on completion of the traineeship program.

Participants who had already decided to pursue a career in infrastructure construction had significantly more positive beliefs about what a career in infrastructure construction would offer them for 18 out of 24 favourable job characteristics.

Multivariate statistical modelling indicated that trainees' experiences during their first job rotation, including their satisfaction with career opportunities and the perception of being in an inclusive work environment, were positive predictors of their self-reported commitment to pursuing a career in infrastructure construction. Trainees' perceived gap between job characteristics that are important to them and what a career in infrastructure construction can offer them was also a predictor of career commitment. The relationship between the perceived importance-availability gap and commitment to pursuing a career in infrastructure construction was negative: the greater the gap, the lower the level of commitment. Career commitment was also a direct predictor of trainees' self-reported decidedness about whether to pursue a career in infrastructure construction or not. Together these factors explained 67% of variance in career decidedness, indicating that the experiences that trainees have during their job rotation, and the expectations that they form about what a career in infrastructure construction would be like, are important determinants of trainees' career decision-making.

The 2021 trainees (those who had completed two survey waves in December 2021 and June 2022) were asked to directly compare their experiences during the first and second rotations. When comparing changes in organisation type between job rotations, few clear patterns could be found in the survey data. 60% of trainees who moved from a construction to a government organisation reported their second job rotation to be better than the first, and 54% of trainees who moved from a government to a construction organisation reported the same. Trainees explained that working in an inclusive environment, and in an

environment in which they felt supported by supervisors and co-workers, were important factors in shaping their preferences. The trainees also commented that their preferred rotation involved:

- performing work activities which were aligned with their career choice goals
- providing more opportunities for learning
- providing opportunities for ‘hands on’ experiences
- requiring less time commuting between home and work, and
- providing more time for life outside work.

In contrast, trainees identified the characteristics of ‘worse’ job rotation experiences as:

- having fewer opportunities for learning
- being asked to perform tasks which are less relevant to their TAFE course or are not aligned with trainees’ career goals, and
- feeling isolated in the workplace and/or not being part of the team.

Part 2: Introduction and literature review

2.1 The infrastructure skills shortage

The delivery of public infrastructure, which includes buildings (hospitals, schools, etc), roads, bridges, railways, harbours, water facilities, electrical generation and transmission, pipelines, telecommunications and heavy industry, relies on the availability of workers with a wide variety of skills. A 2021 report developed by Infrastructure Australia estimates that by early 2023 one in three jobs required to deliver public infrastructure will be unfilled and demand for suitably skilled workers will exceed supply by 48%. At its peak, the shortfall is estimated to be 19,000 project management professionals, 70,000 engineers, scientists and architects, 15,000 structural and civil tradespersons and labourers and 14,000 finishing tradespersons and labourers (Infrastructure Australia, 2021). The problem is compounded by an ageing workforce, with over 40% of the total infrastructure workforce expected to retire within the next 15 years.

In this context, there is an urgent need for infrastructure construction to encourage new entrants to the sector. Given that only 12.7% of the construction workforce and 2% of workers in construction trades is female, the attraction of more female workers into the infrastructure construction sector presents a significant opportunity to meet the skills shortage.

However, the Infrastructure Australia report argues that potential new entrants are discouraged by negative perceptions about what jobs and careers in the infrastructure construction sector are like. In particular, perceptions that the work environment is harsh and unhealthy, work hours are long and irregular, work is inconsistent and a lot of travel is required are all identified as factors impeding the ability to attract suitable entry level workers (Infrastructure Australia, 2021).

2.2 The Culture in Construction initiative

The Construction Industry Culture Taskforce (CICT) - comprising the Australian Constructors Association and the Governments of New South Wales (NSW) and Victoria - has developed a Culture Standard intended to address the following three major issues impacting the construction industry's performance and sustainability:

- Long working hours
- Lack of diversity, and
- Wellbeing (Culture in Construction, 2021, p.8).

More information on the development and content of the Culture Standard is available at this website: https://cultureinconstruction.com.au/culture-standard/.

One objective of the CICT is to improve the Australian construction industry's ability to attract suitable entry-level workers.

2.3 Aim and objectives

This report describes research that was undertaken to:

- explore young workers' perceptions about working in in infrastructure construction; and
- examine the factors that are likely to influence the career choices of potential new entrants to the sector.

Data were collected from two different cohorts of trainees enrolled in the NSW Government Infrastructure Traineeship Program (the Program). The Program comprises a two-year paid traineeship for school leavers, providing them with the opportunity to work in the infrastructure construction industry and engage in vocational education. During the course of the Program, trainees participate in three work placements, rotating between different types of organisation operating in the infrastructure construction sector, i.e., government agencies (clients), construction contracting organisations (constructors) and consulting organisations (e.g. design firms). Each rotation is undertaken for eight months. The traineeship is an office-based role during which participants also study towards a nationally accredited vocational education qualification in one of the following areas: Business; Project Management Practice; Procurement and Contracting; or Surveying.

Specifically, the research sought to explore the factors that influence trainees' career choices and, in particular, the decision of whether or not to pursue a career in infrastructure construction on completion of the Program. Research objectives were to:

- identify the factors that the trainees consider to be important in selecting a job/career,
- understand the extent to which trainees believe that job characteristics important to them would be available if they pursued a career in the construction industry,
- compare and contrast the job-related factors that are important to male and female trainees,
- explore the career choice intentions of trainees following their work placement, i.e., upon completion of the first and/or second job rotations in the trainee program, and
- identify the extent to which experiences of trainees during their first or second periods of work placement shaped their stated career choice intention.

Studying the experiences of trainees is important because engaging in work experience allows young people – with little or no experiential knowledge - to try a job out and determine whether they like it or not (Taylor, 2005). Further, the quality of workplace internships/placements has been linked to young workers' career decision-making (Gamboa et al. 2013). The research findings will be used to inform the refinement of the construction industry Culture Standard to ensure it addresses the key issues likely to influence young workers' career choices in relation to infrastructure construction.

The literature relating to the determinants of career choice decision-making, particularly in relation to young workers, is summarised below.

2.4 Young workers' attitudes towards work

It is increasingly recognised that career trajectories are non-linear, dynamic and heavily influenced by contextual possibilities and unique personal patterns (Savickas et al. 2009). In this context, career competencies and adaptability can help individuals to cope with the requirement to self-manage their careers (Akkermans et al. 2015). The school-to-work transition is challenging for young workers who may not have well developed career self-management competencies (Akkermans et al. 2015). The career decision-making of adolescents and emerging adults has also been described as fluid (Taylor, 2005) and quixotic (Lichtenstein et al. 2009). The unpredictability of career decision-making is indicated by the fact that, even after engaging in the study of engineering as major subjects at university, many young people report being undecided as to whether to pursue a career in engineering or not. Similarly, Taylor (2005) describes how Australian school-leavers' career exploration behaviour and decision-making is often based on pragmatic considerations and contextual circumstances rather than on a linear and rational planning process.

Research suggests the quality of work experienced by young workers can inform their career decision-making in the school-to-work transition (Akkermans et al. 2015). For example, the presence or absence of role-related stress factors is reported to shape the extent to which young workers form positive

attitudes towards their jobs (Loughlin & Barling, 1998). The quality of work experienced during a work-based placement has also been linked to career decidedness in a longitudinal study of university students (Earl & Bright, 2004). Importantly, Earl and Bright (2004) found the quality, but not the quantity of work, contributed to stronger career choice decidedness in student trainees.

However, research also suggests that jobs in the construction industry may not be attractive to young workers (Ling et al. 2016; Ling & Ho, 2013; Forde & MacKenzie, 2007). Ling et al. (2016) report that 48% of university students who are studying in construction-related degree programs indicate that they have either not decided to or are unlikely to enter jobs in the construction industry. The reluctance of young workers to enter jobs in construction is attributed to the industry's 'image problem' and an expectation of poor job conditions in the sector. The industry is perceived to be dangerous, demanding and characterised by an unhealthy culture of long hours, stressful work conditions and a lack of life balance (Ling et al. 2016). However, not all young people are put off by the prospect of working in construction. For example, Australian research indicates that site-based construction work is perceived to be attractive to some school leavers who perceive this work (particularly in skilled trades) to be characterised by freedom, autonomy and work that is not office- or computer-based (Taylor, 2005).

It is therefore useful to further explore and understand the perceptions of infrastructure construction as a career option among adolescents and emerging adults.

2.5 Theoretical perspectives on career choice decision-making

The factors that shape job seekers' decision-making have been explored using different (complementary) theoretical perspectives, including social-cognitive career theory (SCCT) and person-environment (P-E) fit theory (Ng et al. 2012). These are briefly described in the following sections and provide a theoretical underpinning to the work presented in this report.

SCCT focuses on explaining the formation of career relevant interests, selection of academic and career options and persistence/performance in academic and occupational pursuits of people in late adolescence and early adulthood (Lent et al. 1994; Lent et al. 2010). SCCT was originally developed as three interconnected models explaining interest, choice and persistence/performance (depicted in Figure 2.1). However, the model has subsequently been extended and applied to explain career satisfaction and self-management (Lent & Brown, 2006; Brown & Lent, 2019), wellbeing (Kent & Brown, 2008), turnover intentions (Singh et al. 2013), and the extent to which emerging adults anticipate that they will be able to manage the demands of multiple roles, including work, family, leisure, maintaining friendships etc in a given career (Roche et al. 2017).

According to SCCT, self-efficacy and outcome expectations are direct antecedents of individuals' interest in a particular career. Self-efficacy describes an individual's belief that they have the capability to successfully engage in a particular career activity, while outcome expectations describe their beliefs about the consequences of pursuing a particular career (Lent et al. 1994). These outcome expectations could include: (i) physical or financial rewards; (ii) social rewards, e.g. approval from others; or (iii) self-evaluative rewards, e.g. personal satisfaction (Burga et al. 2020).

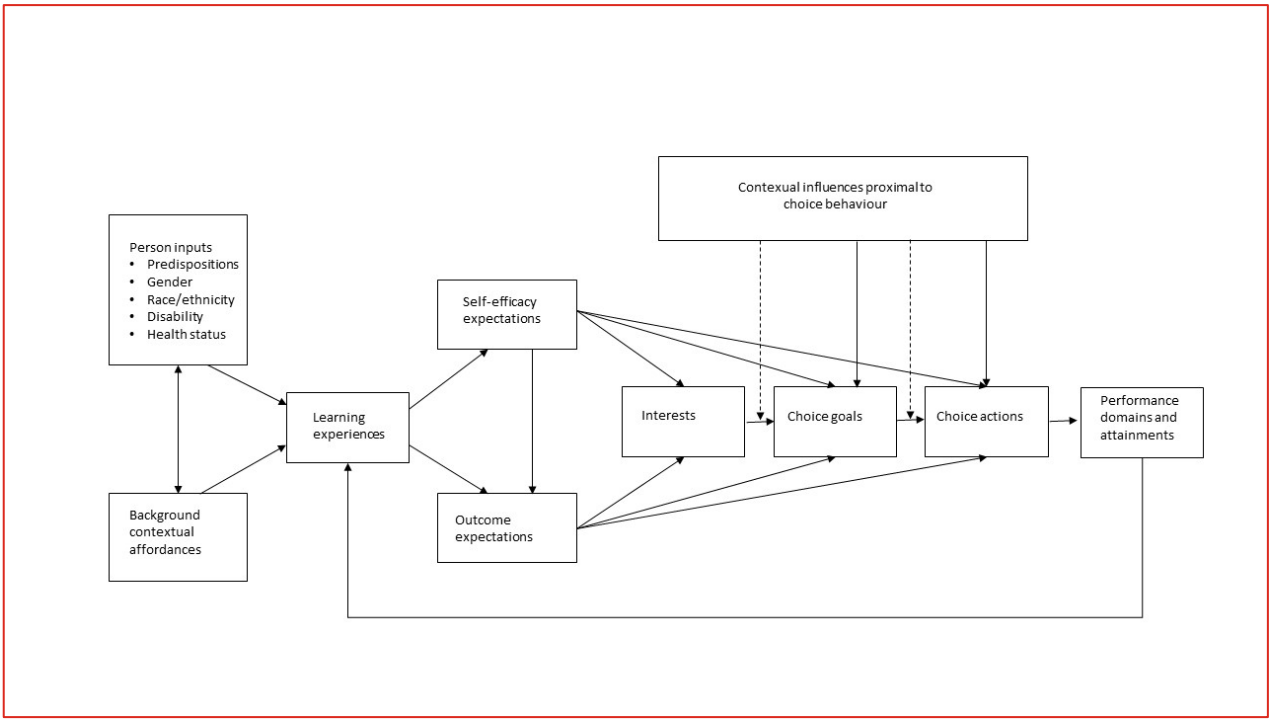
SCCT posits that people form career interests based upon their self-efficacy and expected outcome beliefs, and these interests then lead to the formation of specific career choice goals and actions (e.g. active job seeking behaviours) (See Figure 2.1). Importantly, SCCT also suggests that contextual career supports and barriers also directly affect career choice and actions. An indirect relationship is also suggested whereby the relationship between career interests and goals, and between career goals and actions is moderated or changes by contextual career supports or barriers (Lent & Brown, 2019).

Drawing on general social cognitive theory, the SCCT positions learning experiences as a critical determinant of self-efficacy beliefs. Lent and Brown (2019) suggest that learning can be derived from four types of experience: (i) previous personal performance accomplishments; (ii) vicarious learning or modelling; (iii) social persuasion; and (iv) physiological or affective states.

Outcome expectations are also shaped by self-efficacy beliefs because the extent to which an individual expects to experience positive outcomes depends, in part, on whether they feel confident about their capabilities to perform well within a particular job role. In some versions of the SCCT model, contextual supports and barriers are also expressed as factors directly contributing to self-efficacy beliefs and outcome expectations (Sheu et al. 2010). Of particular note, Singh et al. (2013) describe how the provision of targeted learning and development opportunities for female engineers is linked to improved self-efficacy and outcome expectations, more positive job-related attitudes and reduced turnover intention.

The SCCT model has received support in meta-analytic studies (Lent & Brown, 2019) and has been utilised to explain students' perceptions about their readiness to engage in project-based work (Burga et al. 2020) and the extent to which female engineers persist with or depart from careers in engineering (Fouad et al. 2016). Importantly, in the latter study, Fouad et al. (2016) found that women who stayed in engineering careers experience significantly greater tangible advancement support and empathetic support for their work-life roles from their managers than those who left, highlighting the importance of life balance and managerial support for the retention of women.

Figure 2.1: Integrated SCCT model of career-related interest development and choice-making (Lent et al. 1994). note (i) direct relationships indicated by solid lines, (ii) relationships where a given variable strengthens or weakens the relationship between two other variables shown by dotted lines.



Person-environment (P-E) fit is defined as “the similarity, match or congruence between the person and environment” (Guan et al. 2021, p.1). P-E fit research focuses on understanding the match between individuals and their work environment at various levels, including their vocation, job, organisation, workgroup or supervisor (Guan et al. 2021). P-E fit has been used to understand how congruence in vocational interests shapes individual career choices. Good P-E fit is linked to better individual and organisational outcomes, including job satisfaction, task performance and career persistence (Guan et al. 2021).

The research described in this report is most closely informed by the concepts of person-job fit and person-organisation fit. Person-job fit is defined as “the relationship between a person’s characteristics and those of the job or tasks that are performed at work.” (Kristof-Brown et al. 2005, p. 284) and is understood to take two forms:

(i) demands-abilities fit, which describes the extent to which employees’ knowledge, skills and abilities are well-suited to the requirements of a job; and
(ii) needs-supplies or supplies-values fit, which occurs when employees’ needs, desires or preferences are met by the jobs they perform (Edwards, 1991).

Person-organisation fit addresses a broader level of compatibility between employees and the organisations they work for and is particularly related to congruence between individual and organisational values or goals (Kristof-Brown et al., 2005).

Meta-analyses reveal strong links between P-E fit and both pre- and post-employment work-related attitudes and behaviours. Of relevance to our study, P-E fit is linked to attraction to and persistence with a particular job role, as well as job satisfaction and (reduced) intention to quit (Kristof-Brown et al., 2005).

P-E fit has previously been used to understand the preferences of secondary students from the LBGT community in relation to choosing to pursue different types of careers, for example in private vs public and for-profit vs not-for-profit organisations (Ng et al. 2012). Ng et al. (2012) found that the career expectations and choice decisions were informed by the school students’ expectations of inclusivity and value congruence in a particular organisational context. Young and Hurlic (2007) also suggest that workplace norms are problematic for employees whose behaviour is incongruent with collective gendered expectations in a workplace. This is particularly the case in workplaces in which traditional masculine (or feminine) cultures exist. When employees perceive a low level of P-E fit as a result of incongruent gender-role behaviour, they experience stress and diminished self-efficacy which can influence their career decision making (Young & Hurlic, 2007).

Given the potential usefulness of SCCT and P-E fit to understanding career-decision making, the research results will be discussed in light of these theoretical perspectives in Part 7 of this report.

Part 3: Method

3.1 Data presented in this report

This report presents the findings of a survey conducted with trainees participating in the Infrastructure Traineeship Program in the 2021-2022 and 2022-2023 cohorts. Quantitative (survey) data are presented from both cohorts.

The survey data presented in this report combines the experiences of both cohorts in relation to their *first* rotation in order to provide a larger sample size and enable multivariate statistical analysis to be conducted (Part 4 of the report).

Additional analysis of the 2021-2022 cohort members' experiences of their *second* rotation is also presented in Part 5 of the report.

Qualitative (interview) data collected from the 2021-2022 cohort after their first rotation is also presented (Part 6 of the report).

3.2 Sample

All trainees participating in the 2021-2022 and 2022-2023 Infrastructure Traineeship Program cohorts were invited to complete an online survey during June and July 2022. The survey was distributed to trainees by their employer (a Group Training Organisation). Participation was voluntary and anonymous. At the time of survey administration there were 80 trainees in the 2021-2022 cohort and 104 trainees in the 2022-2023 cohort.

3.3 Survey instrument

The survey instrument consisted of three sections.

Section one asked demographic questions such as age and gender.

Section two asked questions about organisation type, area of study, working hours and intention to choose a career in construction/infrastructure at completion of the Infrastructure Traineeship Program.

Section three asked questions about:

- characteristics that are important when choosing a career (Kyriacou and Coulthard, 2000)
- to what extent participants believe these characteristics are likely to be offered in construction/infrastructure (Kyriacou and Coulthard, 2000)
- participants' satisfaction with their career-related experiences during the first rotation (Nauman et al., 2021)
- participants' feeling of commitment towards a career in construction/infrastructure (Blau,1985)
- participants' perceptions of fairness within their host organisation in relation to diversity (Mor Barak et al., 1998)
- participants' perception of inclusiveness within the organisation that supports diversity (Mor Barak et al., 1998), and
- participants' experience of life balance during their first rotation.

Survey scales and items are outlined in Appendix 9.1.

3.4 Interview protocol

During December 2021 and January 2022, all trainees participating in the 2021-2022 Infrastructure Traineeship Program were invited to complete a survey. Survey respondents were asked to participate in a subsequent interview, and 15 interviews were conducted during March and April 2022. At the time of the interview, respondents had completed their first rotation and were part way through their second rotation. The interview explored (i) what was considered important in a work setting: (ii) how the work setting differed between rotation one and two; and (iii) what features of construction were attractive or a deterrent for entry.

Part 4: Findings – analysis of the first rotation data combined

4.1 Sample demographic data and work hours

In the following analysis, responses from two groups of trainees (those who were in their first rotation in 2021* and those in first rotation in 2022) were combined resulting in a sample of 136 responses comprising:

- 69 trainees from the 2021-2022 cohort with a response rate of 71% (N=97)
- 67 trainees rom 2022-2023 cohort with a response rate of 64 % (N=104)

**Note that Report 1 was based on this dataset.*

Gender: 65 (47.8%) respondents are female, 69 (50.7%) are male, and 2 (1.5%) preferred not to indicate their gender.

Age: Respondents' age ranged from 18 years to 22 years. The mean age of respondents was 19.4 years.

Aboriginal and/or Torres Strait Islander: Seven (5.1%) respondents indicated they are Aboriginal and/or Torres Strait Islander, and 129 (94.9%) indicated they are not.

Area of study: 89 (65.4%) respondents are studying project management, 21 (15.4%) are studying business, 15 (11%) are studying procurement and contracting, 2 (1.5%) are studying surveying, and 9 (6.6%) did not specify.

Organisation type: During the first rotation, 60 (44.1%) respondents were hosted by a government organisation, 28 (20.6%) by a consultant organisation, 48 (35.3%) by a construction organisation.

Working hours: Respondents were asked how many hours they worked including paid and unpaid overtime. 15 (11%) respondents worked less than 37 hours, 103 (75.7%) worked 37-40 hours, 7 (5.1%) worked more than 40 hours, and 11 (8.1%) didn't specify.[1]

Preferred working hours: Respondents were asked to nominate the number of hours they preferred to work. 95 (69.9%) respondents indicated preferring to work about the same number of hours they did during their first rotation, 22 (16.2%) preferred to work fewer hours, 8 (5.9%) indicated a preference to work more hours, and 11 (8.1%) did not specify.

---

1 The trainees and their host organisations are discouraged to work more than 37.5 hours each week. Host organisations would be billed for time worked in addition to these hours.

4.2 Job characteristics affecting career choice and perceptions about a career in infrastructure construction

All respondents

Participants were asked to rate 24 job characteristics according to the extent to which they are important to them in making a career choice (labelled 'importance' in subsequent analysis) and the extent to which they believe that a career in infrastructure construction offers these job characteristics (labelled 'availability' in the subsequent analysis).

This data was analysed in order to understand the job characteristics that the trainees are likely to consider when making a choice in relation to pursuing a career in the infrastructure construction sector and whether they believe these job characteristics would be offered by a career in construction/infrastructure.

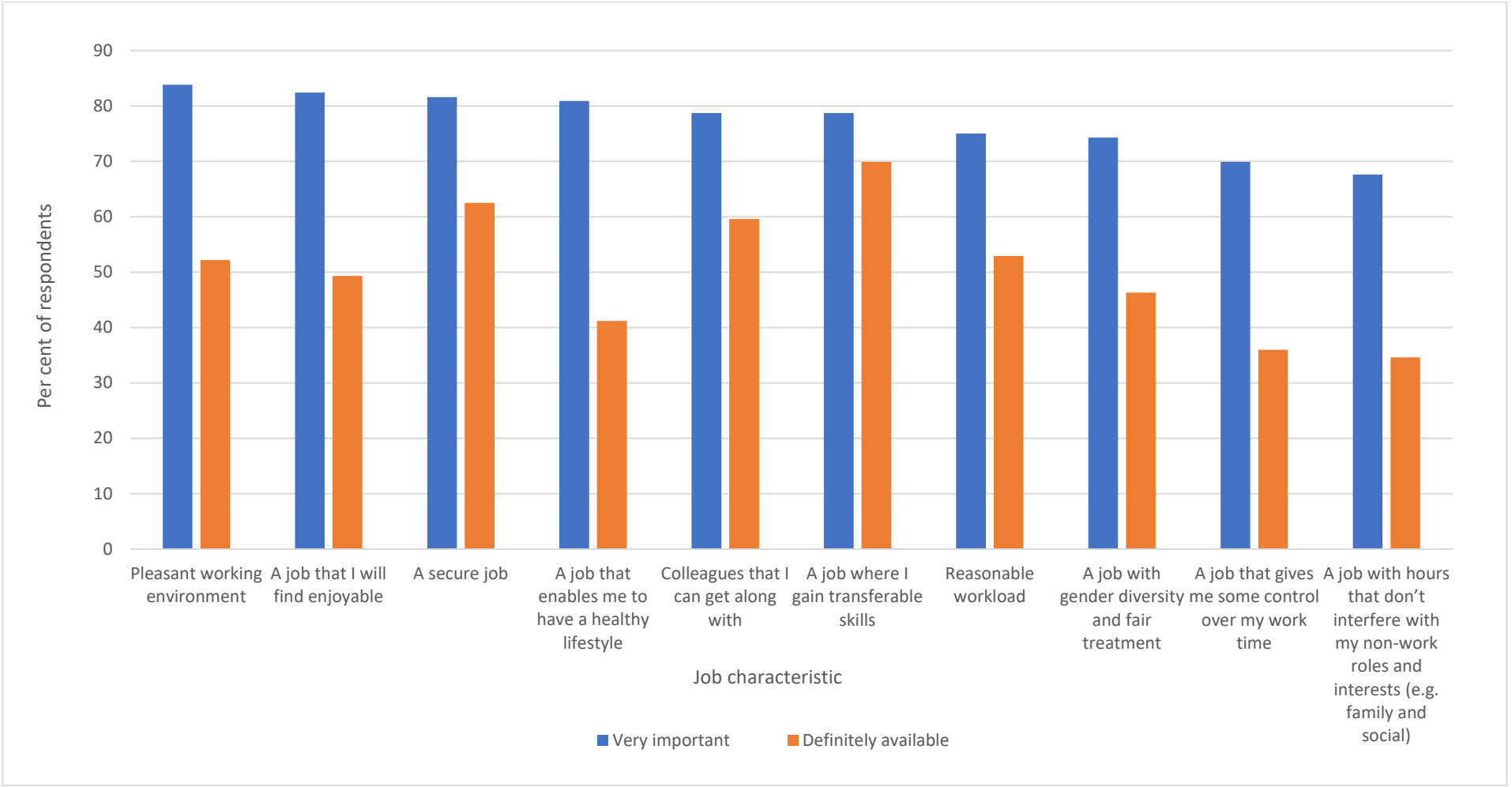
The percentage of respondents who indicated the that importance of each job characteristic is either very, quite or not important, as well as the percentage who indicated that they believe these job characteristics would definitely be, might be or would not be offered by a career in infrastructure construction are provided in Appendix 9.2. The percentage of respondents indicating a belief that these job characteristics would definitely be offered by a career in infrastructure construction was lower than the percentage indicating these characteristics are very important when making a career choice.

Figure 4.1 shows the percentage of respondents who indicated they believe that these favourable job characteristics would be offered by a career in construction.

The job characteristics most frequently identified by the respondents as being very important when choosing a career were: having a pleasant working environment (84%); having a job that is enjoyable (82%); having a secure job (82%); having a job that enables them to have a healthy life style (81%); having colleagues that they can get along with (79%); having a job where they gain transferable skills (79%); having reasonable workload (75%); having a job with gender diversity and fair treatment (74%); having a job that gives them some control over their work time (70%); and a having a job with hours that don't interfere with their non-work roles and interests (e.g. family and social) (68%).

A relatively low percentage of respondents believed that a career in infrastructure construction would definitely offer a job that can be combined with parenthood (34%); a job with hours that don't interfere with their non-work roles and interests (e.g. family and social) (35%); a job that gives them some control over their work time (36%); a job that doesn't take them away from family for long durations (38%); and a job that enables them to have a healthy lifestyle (41%).

Figure 4.1: Percentage of respondents indicating the importance of job characteristics when selecting a career and the expectation that these would be offered in infrastructure construction



Gender

A mean score was calculated for male and female respondents reflecting their ratings of the importance of characteristics when choosing a career and the extent to which they think a career in infrastructure construction offers this characteristic (i.e., perceived availability). This calculation was based on the method recommended by Kyriacou and Coulthard (2000) in which a score of 100, 50 and 0 was assigned to each category, respectively, on the three-point response scale ('very', 'quite' and 'not' for the first question, and 'definitely', 'might' and 'not' for the second question).

The mean 'importance' and 'availability' scores of male and female trainees for each of the 24 job characteristics is shown in Appendix 9.3.

Job characteristics that were most important for female respondents when choosing a career were: having a secure job; a pleasant working environment; a job that they will find enjoyable; a job where they gain transferable skills; a reasonable workload; a job that enables them to have a healthy lifestyle; and a job with gender diversity and fair treatment.

Job characteristics that were most important for male participants in choosing a career were: having a pleasant working environment; a job that they will find enjoyable; a job that enables them to have a healthy lifestyle; and having colleagues that they can get along with.

The mean importance and availability scores for female and male respondents are provided in Figure 4.2 and Figure 4.3 respectively.

The gap between how important a job characteristic is and what female participants believe the infrastructure construction industry offers is greatest for the job characteristics of: having a job that allows them to live a healthy lifestyle; a job that gives them some control over my work time; having an enjoyable job; and gender diversity and fair treatment.

The gap between how important a job characteristic is and what male participants perceive the infrastructure construction industry offers is greatest for the job characteristics of: hours that don't interfere with non-work roles and interests (e.g., family and social); a job that enables them to have a healthy lifestyle; control over their work time; and having a pleasant work environment.

Figure 4.2: Importance-availability 'gap' for female trainees

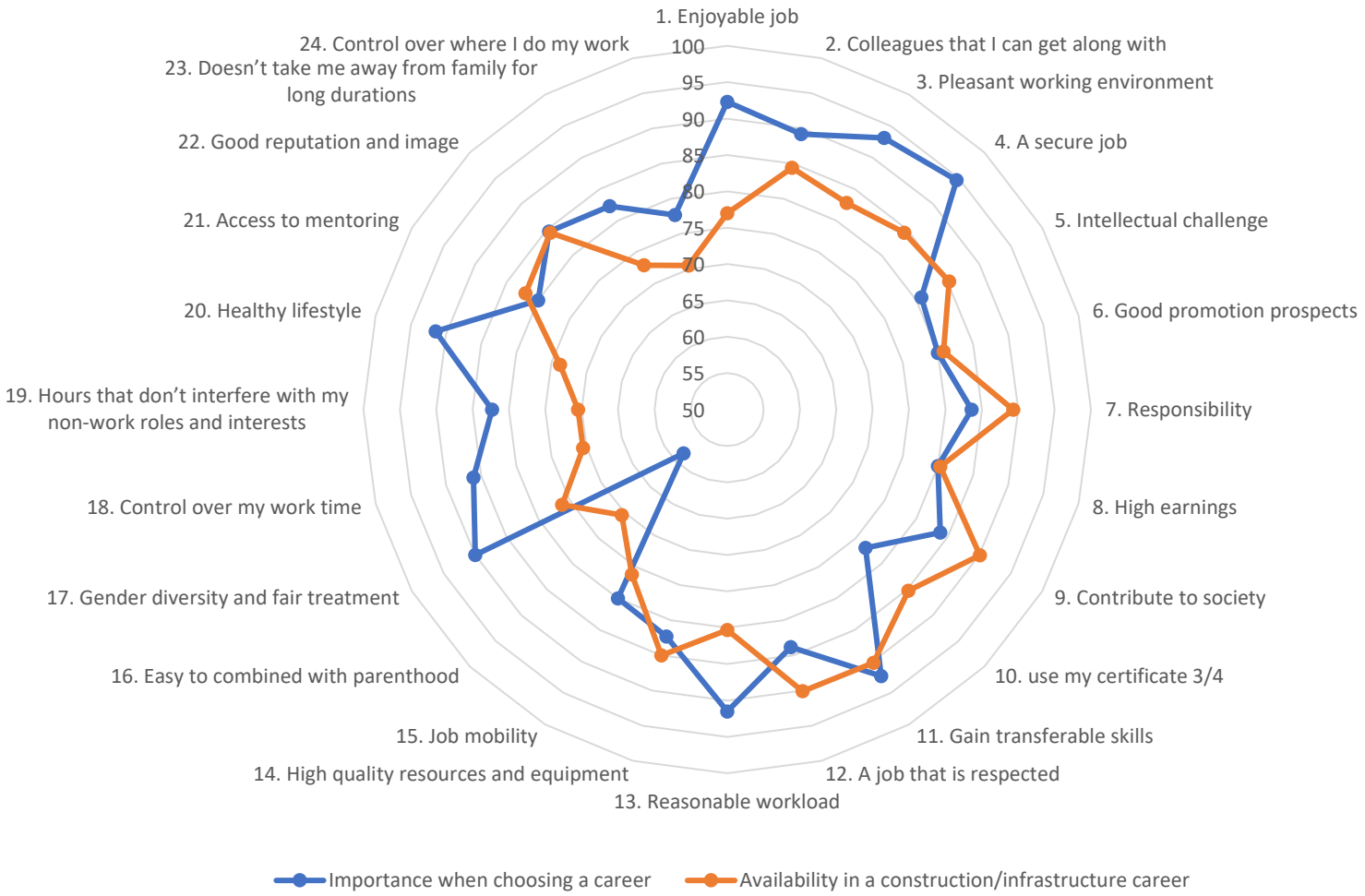
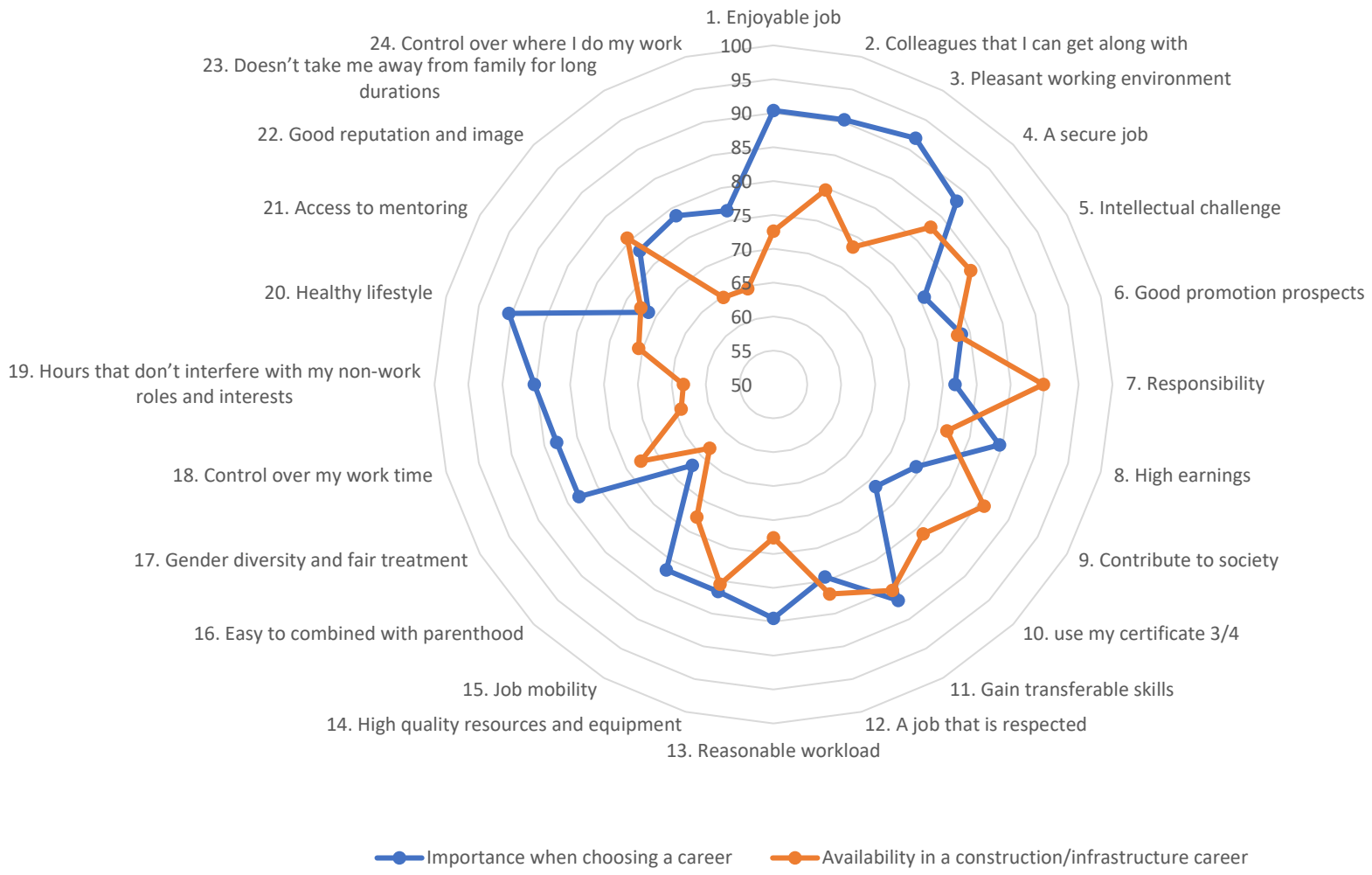


Figure 4.3: Importance-availability 'gap' for male trainees



A statistical comparison of the mean importance and availability scores between female and male trainees was undertaken and the results are presented in the Appendix 9.4.

No significant differences between female and male respondents' ratings of importance were found for the 24 job characteristics. However, female respondents indicated significantly more positive ratings of availability than male respondents for the following job characteristics:

- pleasant working environment
- a job that is respected, and
- a job where I have access to mentoring.

Organisation type

A similar statistical comparison of the mean importance and availability scores for respondents who indicated they had spent the first rotation of the traineeship program working in a government (GOV, n = 60), consultant (CONSULT, n = 28) or construction organisation (CONSTR, n = 48). The results are presented in Appendix 9.5.

Significant differences were found for the following job characteristics:

Importance of having a career that provides intellectual challenge

The mean rating score for the importance of having a career that provides intellectual challenge differed significantly between respondents placed within a government organisation for their first rotation and those placed within a construction organisation. On average, respondents placed in a government organisation rated this job characteristic as being 11.3 points lower in importance than those placed in a construction organisation.

Importance of job mobility—easy to get a job anywhere

The mean rating score for the importance of job mobility differed significantly between respondents placed within a government organisation for their first rotation and those placed within a construction organisation. On average, respondents placed in a government organisation rated this job characteristic as being 13.3 points lower in importance than those placed in a construction organisation.

Importance of having a job that can easily be combined with parenthood

The mean rating score for the importance of having a job that can easily be combined with parenthood differed significantly between respondents placed within a government organisation for their first rotation and those placed within a construction organisation. On average, respondents placed in a government organisation rated this job characteristic as being 16.6 points lower in importance than those placed in a construction organisation.

The extent to which a career in construction/infrastructure offers a job that is respected

The mean rating score for the extent to which the infrastructure construction sector offers a job that is respected differed significantly between respondents placed within a government organisation for their first rotation and those placed within a construction organisation. On average, respondents placed in a government organisation rated this as being 13.7 points higher (i.e. more available) than those placed in a construction organisation.

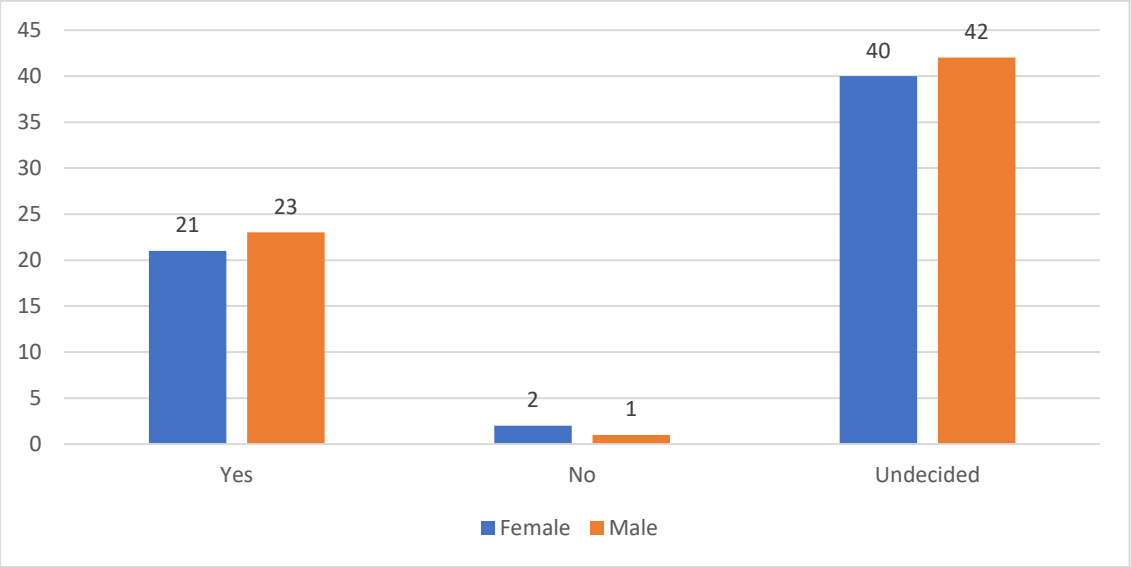
4.3 Intention to pursue a career in construction

Respondents were asked whether they would choose a career in infrastructure construction at the end of their traineeship. More than half (n = 82; 63.6%) of respondents were yet to make up their mind, 44 (34.1%) indicated that they had already decided to work in construction/infrastructure at the end of their traineeship, and three (2.3%) indicated they definitely did not want to work in infrastructure construction at the end of their traineeship. Five (3.9%) did not specify. Of the 44 respondents who indicated their intention to work in in construction/infrastructure at the end of their traineeship, 21 (47.7%) are female and 23 (52.3%) are male.

Appendix 9.6 shows the mean importance and availability scores for of each of these two groups (yes, and no/undecided) for each job characteristic included in the analysis.

Figure 4.4 shows that, at the time of the survey, more males than females intended to stay in the infrastructure construction industry, and more males than females were undecided. 32.3% of female respondents and 33.3% of male respondents indicated they had already decided to pursue a career in infrastructure construction. Two respondents who indicated they definitely did not want to pursue a career in infrastructure construction are female while only one male respondent indicated he definitely did not want to pursue a career in infrastructure construction.

Figure 4.4: Intention to pursue a career in infrastructure construction by gender



Intention to pursue a career in infrastructure construction was also examined according to the type of organisation at which trainees spent their first rotation.

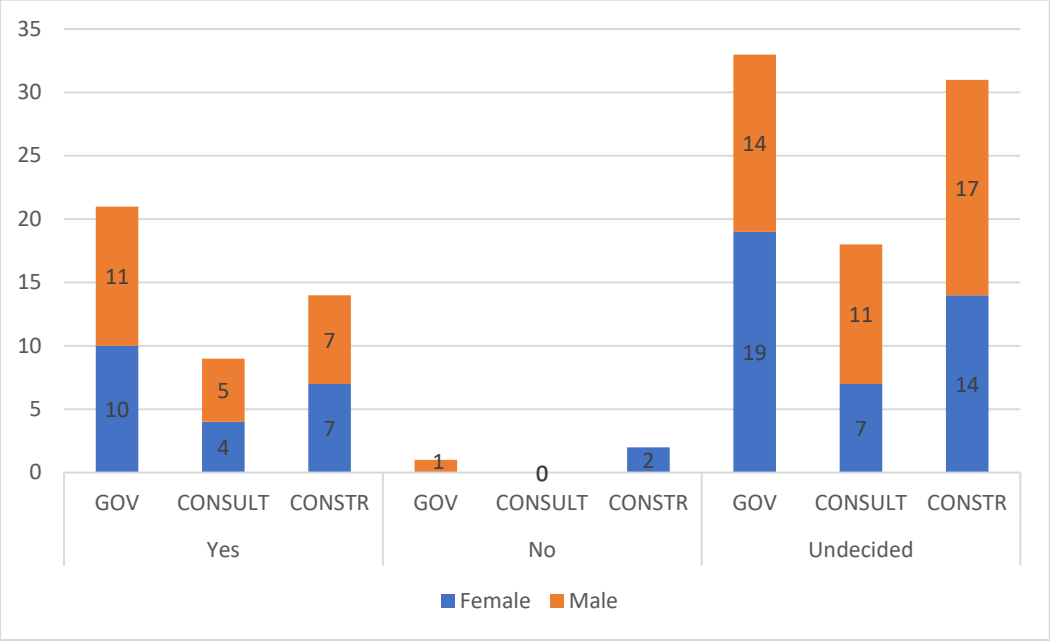
Figure 4.5 shows that, at the time of the survey, a greater proportion of respondents who indicated that they had decided to pursue a career in infrastructure construction were placed with a government organisation.

More than 30% of respondents, who were placed with a government or consultant organisation (38.2% and 33.3% respectively) indicated that they had already decided to pursue a career in infrastructure construction on completion of their traineeship. By comparison, only 29.8% of respondents who were placed with a construction organisation during their first rotation indicated that they had already decided to pursue a career in infrastructure construction on completion of the trainee program.

Among those respondents who indicated they were undecided as to whether they will pursue a career in infrastructure construction on completion of the trainee program, a similar number were placed with government organisations (n=33) and construction organisations (n=31) during their first rotation. Of the three respondents who indicated they definitely did not want to pursue a career in infrastructure construction, two were placed with a construction organisation during their first rotation and both were females, while the other respondent was placed with a government organisation and was male.

Figure 4.5 also indicates that slightly more males than females from government and consultant organisations had decided to pursue a career in infrastructure construction. Among trainees who were undecided as to whether to pursue a career in infrastructure construction, more females than males were placed in government organisations (19 females compared to 14 males), while more males than females were placed in construction organisations (17 males compared to 14 females).

Figure 4.5: Intention to pursue a career in infrastructure construction according to organisation type and gender



- GOV: Government organisation; CONSULT: Consultant organisation; CONSTR: Construction organisation
- Two respondents selected “prefer not to say” to the question related to gender so their responses were excluded

Figure 4.6 shows the difference between importance and availability of each job characteristic for trainees who had already decided to pursue a career in infrastructure construction when they complete their traineeship. The gap between how important a job characteristic is and what trainees in the ‘definitely yes’ group perceive a career in construction will offer them is greatest for the job characteristics of healthy lifestyle and gender diversity and fair treatment. That is, even those trainees who had decided to pursue a career in infrastructure construction perceived that the sector may not offer them the opportunity for a healthy lifestyle or a work environment characterised by gender diversity and fair treatment.

Figure 4.7 shows the difference between importance and availability of each job characteristic for trainees who indicated they were undecided or who had definitely decided not to pursue a career in construction. Figure 4.7 shows that the job characteristics in which the importance-availability gap was greatest were: having a job that is enjoyable, having a job that provides control over work time,

having work hours that don't interfere with non-work roles and interests and having a job that enables a healthy lifestyle.

A statistical comparison of the mean importance and availability scores between survey respondents who indicated they had already decided to pursue a career in infrastructure construction and those who had decided not to pursue a career in construction, or who were undecided, was undertaken. The results are shown in Appendix 9.7.

A statistically significant difference in ratings of importance was found between trainees who indicated they had already decided to pursue a career in infrastructure construction and those who were undecided or who had decided not to pursue a career in infrastructure construction for four job characteristics. These were 'having a job where I will contribute to society', 'a job where I can use my certificate 3/4 which I am studying for now', 'a job where I gain transferable skills', and 'a job in an industry which has a good reputation and image'. These job characteristics were significantly more important to respondents who had already decided they want to pursue a career in infrastructure construction.

A statistically significant difference in ratings of availability was found between trainees who indicated they had already decided to pursue a career in infrastructure construction and those who were undecided or who had decided not to pursue a career in infrastructure construction for the following job characteristics:

- a job that I will find enjoyable
- colleagues that I can get along with
- pleasant working environment
- a secure job
- a career that provides intellectual challenge
- good promotion prospects
- a job which gives me responsibility
- a job where I will contribute to society
- a job where I gain transferable skills
- a job that is respected
- reasonable workload
- a job with high quality resources and equipment
- job mobility—easy to get a job anywhere
- a job that can easily be combined with parenthood
- a job with gender diversity and fair treatment
- a job that gives me some control over my work time
- a job that enables me to have a healthy lifestyle, and
- a job in an industry which has a good reputation and image

For all of these characteristics, trainees who indicated they had already decided to pursue a career in infrastructure construction expressed significantly more positive perceptions of the availability of these characteristics in an infrastructure construction career.

Figure 4.6: Importance-availability 'gap' for trainees who had decided to pursue a career in infrastructure construction

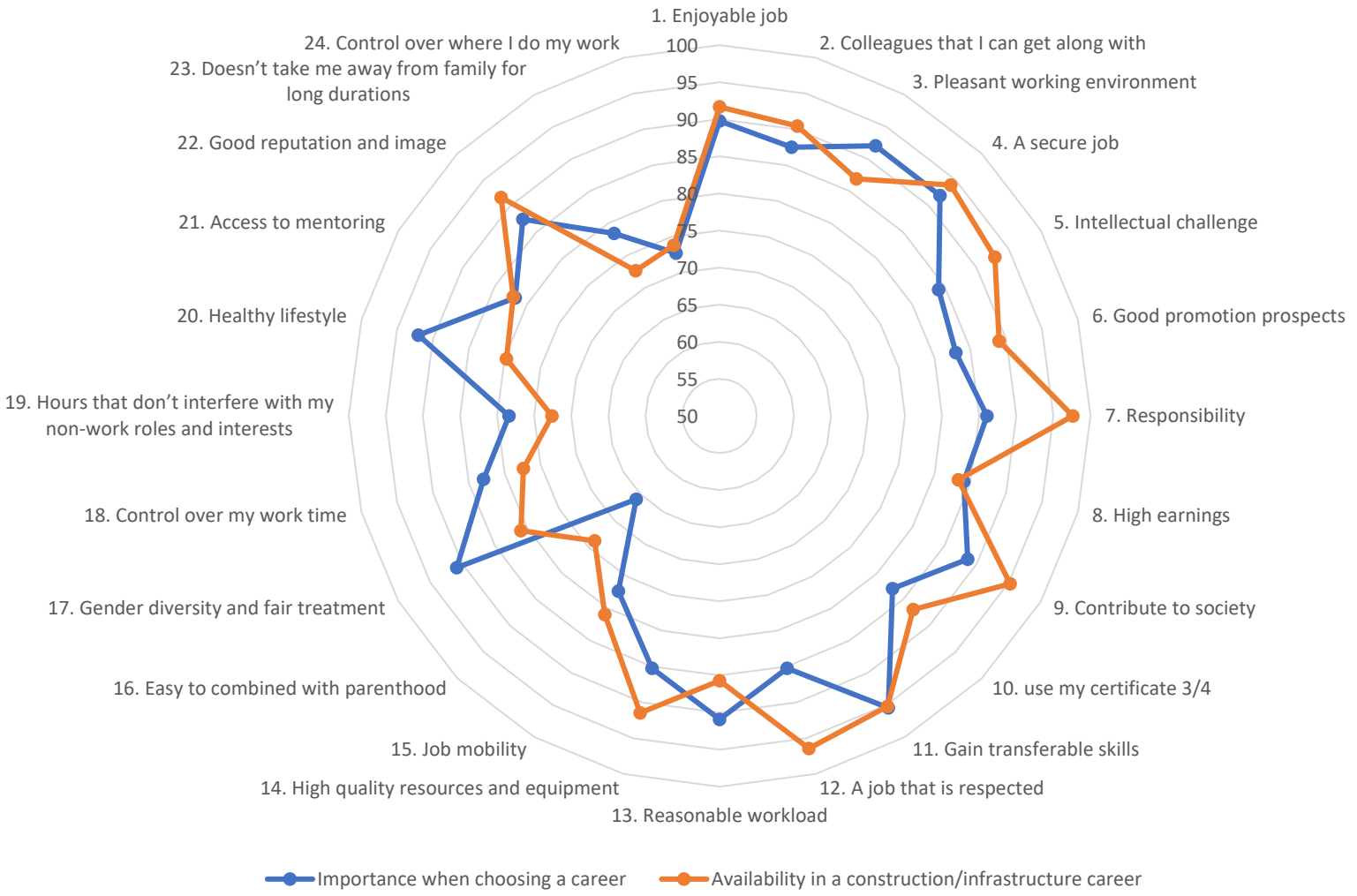
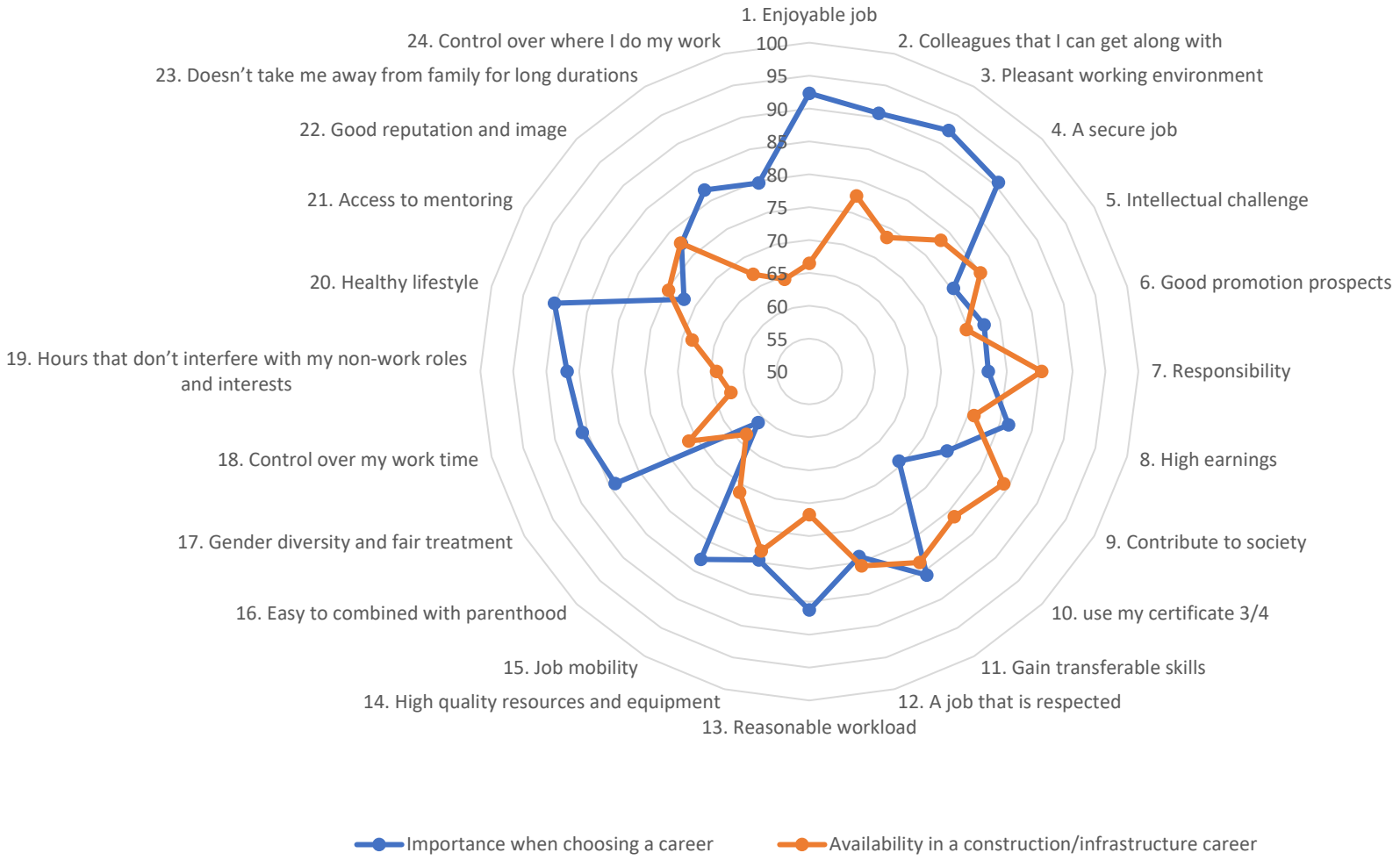


Figure 4.7: Importance-availability 'gap' for trainees who were undecided or had decided not to pursue a career in infrastructure construction



4.4 Perceptions about a career in infrastructure construction

Analysis was undertaken to explore the factors that predict trainees' decision-making in relation to pursuing a career in infrastructure construction.

Gender

Statistical analysis was performed to test for a difference in mean scores on key variables of interest between male and female respondents. The results indicate that females had slightly higher mean scores than males for career commitment, career satisfaction and perceptions of organisational fairness and inclusion. However, none of these differences was statistically significant (see Appendix 9.8).

Organisation type

Similar statistical analysis was conducted to test for a difference in mean scores between trainees whose first job rotation was spent in different types of organisations. The results are shown in Appendix 9.9.

Significantly different scores were found for life balance. The mean life balance score for respondents placed in a government organisation was 0.52 points higher (more positive) than the score of those placed with a construction organisation.

Correlation between job rotation experience and career-related variables

Correlation analysis was conducted to determine whether a significant linear relationship could be found between the extent to which participants indicate they feel committed to pursuing a career in infrastructure construction (career commitment) and the experience they had during their first job rotation. Experiences included in this analysis were: trainees' satisfaction with career development opportunities (career satisfaction), perceptions of the diversity climate of the organisation within which they undertook their first work placement rotation (organisational fairness and organisational diversity), their self-reported life balance, and work hour preferences. The results of this analysis are presented in Appendix 9.10.

Significant positive associations were found between commitment to pursuing a career in infrastructure construction and respondents':

- satisfaction with their career development as experienced during the first rotation of their traineeship,
- perception of fairness (as related to diversity),
- perception of inclusion,
- perception of life balance, and
- work hour preferences.

In addition, a significant negative association was found between commitment to pursuing a career in infrastructure construction and respondents' perceived gap between the importance and availability of favourable job characteristics.

These results suggest that stronger perceptions of a workplace diversity climate, greater satisfaction with career opportunities, and more positive perception of life balance (as

experienced during the first rotation) are associated with a stronger commitment to pursuing a career in infrastructure construction. In contrast, the perception of a larger gap between the importance and availability of favourable job characteristics is associated with lower levels of commitment to pursuing a career in infrastructure construction.

4.5 Predictors of the decision to work in infrastructure construction

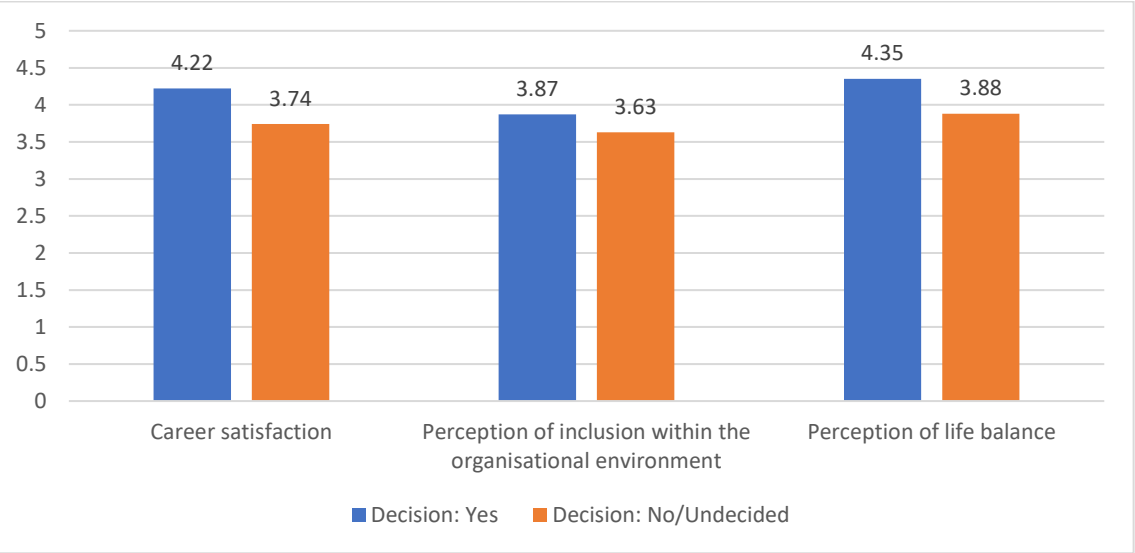
Regression analysis was performed to test the extent to which trainees' career choice/intention (i.e., the decision whether or not to pursue a career in construction/infrastructure following completion of the traineeship program) could be predicted based on their perceptions of the work environment they experienced during their first rotation.

Initially, the mean work experience perception scores of trainees who indicated they had already decided to pursue a career in infrastructure construction were compared with those of trainees who indicated they had decided not to pursue a career in infrastructure construction or who were undecided. This was done to identify which work experience perception scores might predict career decision-making. The results of this analysis are presented in Appendix 9.11.

The mean scores for career satisfaction, inclusion in the work environment, life balance, and the gap between importance and availability of favourable job characteristics were significantly different between the two groups.

Figure 4.8 shows that mean scores for career satisfaction, inclusion in the work environment, and life balance were higher for those respondents who had already decided to pursue a career in infrastructure construction compared to those who had decided not to pursue a career in infrastructure construction or who were undecided.

Figure 4.8: Mean career satisfaction, perception of inclusion in the work environment, and perception of life balance between respondents by decision to pursue a career in construction/infrastructure



The first regression model (which can be found in Appendix 9.12) tested the combined effects of career satisfaction, perception of organisational fairness, inclusion, life balance, and the difference between importance and availability of favourable job characteristics on trainees' indicated intention to pursue a career in infrastructure construction. This regression model also controlled for the effects of age, gender, and the type of organisation in which respondents spent their first work placement rotation. A significant positive effect was found for career satisfaction and a significant negative effect was found for the gap between the importance and availability of favourable job characteristics. This means that trainees are more likely to have made the decision to pursue a career in infrastructure construction if they felt more satisfied with the career experiences they had during their first work placement rotation and are less likely to have made the decision to pursue a career in infrastructure construction when they perceive a larger gap to exist between the importance and availability of favourable job characteristics. This model explained 24.1% of variance in respondents' intention to pursue a career in infrastructure construction.

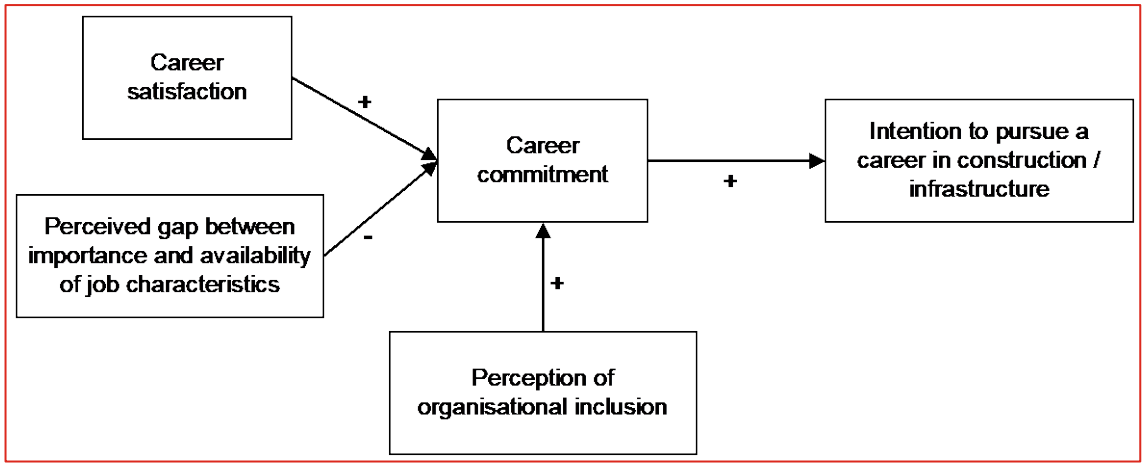
A second regression model tested the extent to which the significant predictors in the first model remained significant when respondents' career commitment was included in the analysis (Appendix 9.13). The results indicate only a positive and significant effect for career commitment, while the effects of career satisfaction and the perceived gap between the importance and availability of favourable job characteristics were insignificant. This suggests that respondents who indicate a stronger commitment to pursue a career in infrastructure construction are more likely to have made the decision to pursue a career in infrastructure construction. The non-significant effects for career satisfaction and the importance-availability gap which, in the previous model, were significant predictors of respondents' intention to pursue a career in infrastructure construction suggests that respondents' experiences of work during their first job rotation are indirectly linked to their career decision-making through the extent to which they form a strong commitment to the pursuit of a career in infrastructure construction. This regression model explained 67.4% of variance in respondents' intention to pursue a career in infrastructure construction.

To confirm the presence of a 'mediation effect' for career commitment, a third regression model tested the extent to which career commitment is predicted by career satisfaction, perception of organisational fairness, inclusion, life balance, and the perceived difference between importance and availability of favourable job characteristics (See Appendix 9.14). The model also controlled for the effects of age, gender, and the type of organisation in which respondents spent their first job placement rotation. The results indicate:

- a positive and significant association between career satisfaction and career commitment,
- a positive and significant association between perceived organisational inclusion and career commitment, and
- a negative and significant association between perceived difference between importance and availability of job characteristics on career commitment.

Together, the three regression models confirm that trainees' evaluative judgements about the quality of the work experiences during their first rotation (in relation to satisfaction with career development opportunities, perceptions of organisational inclusion and the extent to which they believe job characteristics that are important to them are available) result in the development of a commitment to the pursuit of a career in infrastructure construction. Where experiences are positive and the importance-availability gap is perceived to be small, trainees develop strong commitment to pursuing a career in infrastructure construction. But where experiences are not positive and a larger importance-availability gap is perceived to exist, commitment to pursuing a career in construction will be low. This level of career commitment then directly predicts trainees' decision as to whether they will pursue a career in infrastructure construction on completion of their traineeship. Figure 4.9 shows these significant relationships highlighting feelings of career commitment as the linking mechanism between work experiences and career choice intentions.

Figure 4.9: The association between different career aspects and participants' intention to pursue a career in construction/infrastructure



4.6 Improving the attraction to infrastructure construction for new entrants

For those respondents who were either undecided or had chosen not to pursue a career in infrastructure construction at the end of their traineeship, 40 (43.5%) indicated they would enter infrastructure construction if changes were made to the industry.

Twenty-one respondents provided feedback about what would need to change in order for them to make the decision to pursue a career in infrastructure construction. These themes are outlined in Table 4.1. Gender and type of employer organisation are provided for each statement.

Table 4.1: Factors to improve attraction to construction/infrastructure for new entrants

Theme	Respondent quotes
Perceptions of working in construction	Stigma around construction workers being dumb or not as smart because they haven't gone to 4 years of uni (male, construction partner). Greater job appeal, and community appeal. The industry needs to be more open and accessible to young people, instead of years of uni, something like this traineeship is really beneficial for those interested in an infrastructure career (female, construction partner).
Job security	Perhaps a level of programming that allows workers to know where they are headed next, contracts start and end all the time without any security or direction for where they are headed next (female, construction partner).
Safety	More safety inductions to make sure the labour workers know all the risks that can come from laziness around the workplace (male, consultant).
Mentoring	More readily available mentoring (female, government).
Opportunities for females	More opportunities for young female professionals coming into the industry (female, construction partner). Better access to training for young females (female, government). Being female I have already received comments and/or feel not listened to; due to what I believe is my gender (female, consultant).

Life balance	More flexible work-life balance (female, construction partner). If employees had more control of their work hours (male, government). Flexible work-life balance (female, construction partner). Change in workload, working durations, and work environment (male, construction partner). In the current placement I am in the industry is under lots of pressure and there seems to be a big workload placed on the employees. I think there would need to be a better work-life balance, which I believe the industry is moving towards regardless (female, construction partner). Honestly, over the small amount of time I've worked in the industry, I continue to see people working long hours, 10-12hrs a day up to 6 days a week, and even in the small amount of time they do have away from work, they are constantly called, messaged, etc about work. Personally, I just can't see myself spending that much of my life on work, with no time for my personal interests - it just seems too exhausting and at the end of the day a total waste of the small life we do have. So, with regard to what I just said, I would personally like to see less of a workload and less time spent at work. I haven't researched too far into it, but from my understanding, there are already some (peer-reviewed?) studies about allowing for a 3rd day off a week (4 days at work instead of the typical 5) which I think should be something to really look into and something I would be ecstatic to see brought into the industry, if not all work places nationwide (female, consultant).
Respect	Better respect all around (from bosses to workers and workers to bosses) (male, construction partner).

4.7 Reflection on expectations and experiences

At the end of the survey, respondents were invited to leave comments about their expectations or experiences of working in construction/infrastructure. The majority of comments reflected a positive experience. The comments are clustered according to themes in Table 4.2. Gender and type of employer organisation are shown for each statement.

Table 4.2: Expectations and experiences of working in construction/infrastructure

Theme	Respondent quotes
Positive experience	Been a very good experience (male, government). Everything is all good (female, consultant). I enjoyed it (female, government). Overall this has been a new and exciting experience (female, government). Very good so far. Would definitely love to stay in industry post traineeship (male, government). I am really enjoying the traineeship and my work placement (male, construction partner). I didn't think I would enjoy the construction industry and had minimal interest in it. Once I started my rotation and got settled in, I started to love working in the industry. I find it new and exciting and all the people are very down to earth and no one treats me like I am less than them, even the general managers make an effort to make me feel included (male, construction).
Shaping career direction	Having experienced this industry I now know that it's not what I want to do in the future (female, construction partner). This traineeship has actually introduced me to the infrastructure and project management industry, before commencing with the program, I had limited knowledge about the industry. I am definitely looking to further my career opportunities in specifically the construction/project management industry (male, consultant).
Opportunity to learn and develop	I get to meet a lot of people with different skills and knowledge which is so amazing learning from different people (male, government). I loved my first rotation so much, it taught me so much and it gave me a reason to wake up everyday (male, government). It has gone way beyond what I expected in good ways and bad ways. But I have a learnt a LOT (male, construction partner). It's been really positive to see an area of work that I never thought I'd be involved with. To be able to develop my skills and earn a decent income is great in supporting my progress in building a career (female, construction partner). Working from a management perspective is OK. A balance between office work and hands on work adds great value to the construction/infrastructure industry (male, consultant). I am looking forward to rotate into the private sector to explore more about the infrastructure industry. I am currently liking the Government placement but still have an open mind to what the infrastructure industry entails (female, government). So far my experience with construction and infrastructure has been pretty good, I've learnt so many new things and different skills which I can then use to any other jobs, and in these last 4 months I've been excelling in learning and understanding the core fundamentals of why and how construction industry works (female, government).

Theme	Respondent quotes
Rewards	I think financial incentives should be implemented into the traineeship program, for over achieving and large contributions when applicable (male, construction partner).
Flexible work hours	Overtimes [should] be more flexible (male, construction partner).
Diversity and inclusion	I'd like to elaborate on one of my answers, I don't believe I was discriminated against by any means in my first rotation, however I answered 'yes' to 'have I been treated differently due to sex or age' because as a typically 'girly girl' 19 year old, I'm sure my capabilities were underestimated at times. This would not have been deliberate and I do not feel discriminated against in the slightest, I understand that my appearance stands out in an infrastructure role (female, government).
Supportive environment	It is a welcoming environment to all with many young and friendly employees (female, construction partner). I feel like I have something [job] that makes me belong (male, government).
Employer expectations	The expectations are a fair bit lower with the first rotation but once the host understands that you've got your bearings in the office, the work will ramp up dramatically (male, consultant).
Diversity	I expect as a woman there will be challenges working in a male-dominated industry. However, I have grown my resistance and developed my independence with these challenges and experiences I have been through already. This industry has had more women employed than ever these past years. From this, I expect there will be a better-balanced community of men and women and the challenges will begin to reduce. I did expect there would be more parking options available, especially if I finish at a later time, I feel uneasy walking by myself to the car at night. (female, consultant)
Challenging nature of work	The systemic delayed nature of projects is a bit off putting as it infers that there is always significant problems on every project. This raises concerns of a difficult workplace if I was to work in this career path, with many problems that could and probably would impact my daily life even when I'm not at work, causing stress and anguish at the thought of the problems to come and the rings that would have to be jumped through to solve problems as most of the time the simplest solutions isn't allowed, meaning potentially constant overly complicated problems have to be solved. The sheer amount of paperwork at the beginning and end stages of a project also seem like a headache, as I have experienced a portion of the final manual reviews at the end of a project and the lengthy review process (male, construction).
Workload	Going into the traineeship, I didn't really know what to expect - it was an industry which I didn't know a whole not about other than the minimal VET classes throughout my schooling. The main two things which were totally different than what I had thought, were: 1. How much actually goes into the construction industry, from contractors to subcontractors to clients to architects and consultants, each has a massive and fundamental part in the industry, but with all this work also comes a massive workload, to be honest, is something that I liked because it meant that there would always be something to do - I'd not easily become bored from repetitive tasks or the lack of. 2. However, this workload, also meant that there has to be time spent to complete it, to which I saw many working over 50-60hrs a week just to do. It's understandable that construction is a hard job and requires this time and its not uncommon to see these types of hours worked across multiple industries, but at the very least there should be larger amounts of time given to complete these projects so that these astonishing hours aren't necessary (female, consultant)

Part 5: Findings – analysis of second rotation data from the 2021-2022 cohort

5.1 Sample size and demographics

Fifty-nine responses were received from participants who were in their second rotation (74% response rate). Participants' demographics are as follows:

Gender: 30 (50.8%) respondents are female, 28 (47.5%) are male, and 1 (1.7%) preferred not to indicate their gender.

Age: Respondent's age ranged from 19 years to 21 years. The mean age of respondents was 19.8 years.

Aboriginal and/or Torres Strait Islander: One (1.7%) respondent indicated they are Aboriginal and/or Torres Strait Islander, 58 (98.3%) indicated they are not.

Area of study: 47 (79.7%) respondents are studying project management, 6 (10.2%) are studying business, 2 (3.4%) are studying procurement and contracting, and 4 (6.8%) did not specify.

Organisation type: During the second rotation, 16 (27.1%) respondents were hosted by a government organisation, 21 (35.6%) by a consultant organisation, 21 (35.6%) by a construction organisation, and 1 (1.7%) did not specify.

Transitions between organisations: Respondents were asked to identify their organisations for both their first and second rotations. Table 5.1 indicates participant's transitions between different types of organisations. One participant had not specified their organisation for the second rotation.

Fifty-four respondents indicated that they are placed in a different type of organisation during their second rotation compared two their first rotation. One respondent was placed in a government organisation during the first and second rotations, and three respondents stayed in construction organisations during both rotations.

Table 5.1: Transition between organisations

Transition between organisations	Number of respondents	% of respondents
Government to government	1	1.7
Government to consultant	12	20.3
Government to construction partner	13	22
Consultant to consultant	0	0

Transition between organisations	Number of respondents	% of respondents
Consultant to government	5	8.5
Consultant to construction partner	5	8.5
Construction partner to Construction partner	3	5.1
Construction partner to government	10	16.9
Construction partner to consultant	9	15.3

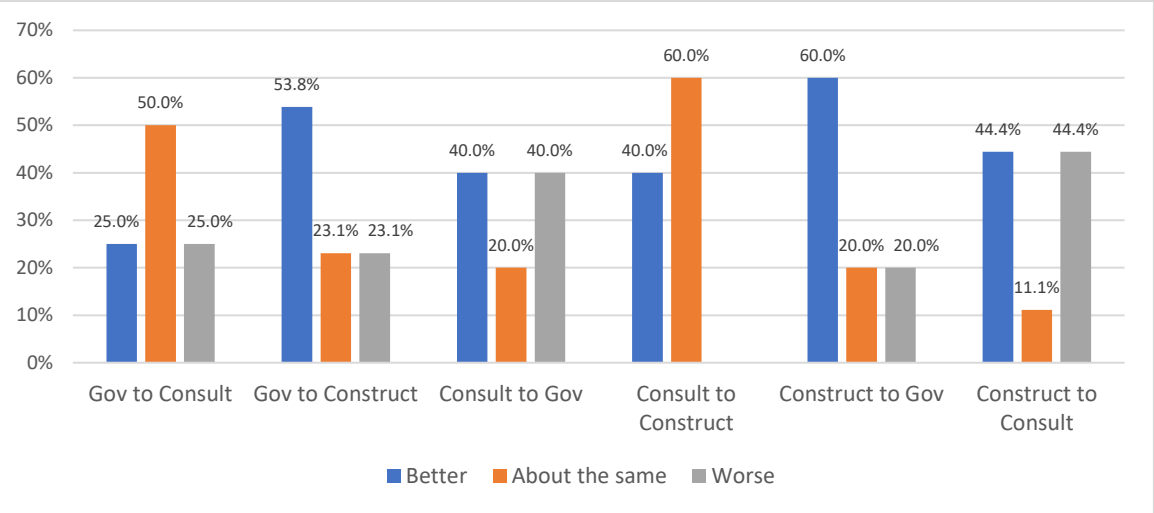
Working hours: Respondents were asked how many hours they worked including paid and unpaid overtime. 2 (3.4%) respondents worked less than 37 hours, 47 (79.7%) worked 37-40 hours, 4 (6.8%) worked more than 40 hours, and 6 (10.2%) didn't specify.[2]

Preferred working hours: Respondents were asked to nominate the number of hours they preferred to work. 38 (64.4%) respondents indicated preferring to work about the same number of hours they did during their first rotation, 11 (18.6%) preferred to work fewer hours, 4 (6.8%) indicated a preference to work more hours, and 6 (10.2%) did not specify.

5.2 Comparison of experiences between first and second rotation for respondents who changed organisation type

Trainees were asked to compare their experience between their first and second rotation and indicate whether their second rotation was better, about the same, or worse that their first rotation. The following figure indicates the responses for the trainees who were in different types of organisations during their first and second rotations.

Figure 5.1: Comparison of respondents' experiences between their first and second rotations for those who changed organisation type



2 The trainees and their host organisations are discouraged to work more than 37.5 hours each week. Host organisations would be billed for time worked in addition to these hours.

Overall, 53% (8 out of 15) of the respondents who transitioned to a government organisation in their second rotation indicated a better experience. In comparison, 39% (7 out of 18) of those who transitioned to a consultant organisation and 43% (9 out of 21) of those who transitioned to a construction organisation indicated having a better experience.

Participants were also asked to state the main differences between their first and second rotations. The comments are clustered according to themes in Table 5.2. Gender and type of employer organisation are shown for each statement.

Table 5.2: Main differences between respondents' first and second rotations

Theme	Respondent quotes
Working time and type of activities	Longer travel time (male, consultant to construction). Flexible working hours. Great workplace, fun job (female, construction to consultant). First rotation was mainly on site, second rotation has a lot to do with meetings and talking with contractor (male, construction to government). On my first rotation I spent all of my time on site in the delivery phase of the project while my second rotation is based in an office on the planning phase of the project (male, construction to consultant). The main differences in my second rotation compared to my first is that my working times have changed due to personal circumstance. My work tasks have also been increased in my second rotation however they mainly revolve around admin and reporting unlike my first rotation. I had a lot more work in the second rotation and a lot more responsibility (female, government to construction). Rotation 2 is different than rotation 1 as it is busier and more first hand on the project. There is a difference is the type of work that I do. As well, the workload in rotation 2 is more than rotation 1 (female, government to construction) The work, in my first rotation the work was very hands on project management, solving problems as they come up, finding creative solutions and planning. Whereas my second one, I feel like more of a delivery driver who gets the occasional different task (male, government to consultant) I have been given little work in my 2nd rotation compared to my 1st rotation. The work I have been given does not have any relation that I could find to do with procurement. The work was extremely simple (e.g., copy and pasting stuff into an excel spreadsheet) and did not assist me in learning my units at TAFE. Whereas my 1st rotation assisted me in understanding the content I learnt in TAFE with hands on experience (male, government to consultant). 2nd rotation expect too much from me and dumped too much work onto me the first day. Rotation 1 was better in all aspects than rotation 2. During rotation 2, I was working too long of hours and had too much work given to me that was expected to be completed too soon (male, consultant to government). My first rotation … was based at a company that didn't actually have any practicing project managers, so I wasn't able to do a lot of project management related tasks, and instead was doing the related tasks of the profession my company did. This meant that I wasn't sure if I was actually doing things that related to my traineeship, but I did learn about aspects of the industry and also professions that a project manager may work with. … The first rotation did have me in periods of time where I didn't have any work to actively do as I had done all the work that I was qualified to do as any further work would be too difficult and their liability probably wouldn't cover it, so I would wait to be moved around. My current government has had seamless transitions from project to project that I have been working on, with a variety of different task that I have done. The free time I had in my 1st rotation would allow me to easily stay up to date with TAFE, but when I did have work, It would normally be very long work that would take a day to several days to complete (male, construction to government).

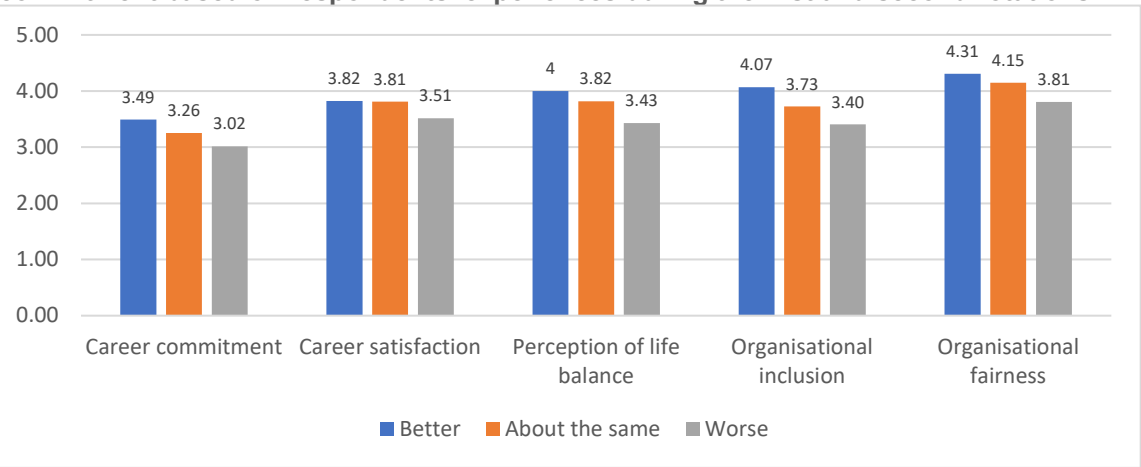
Theme	Respondent quotes
Time for life outside work	I've received more work tasks from my second rotation. It is also closer to home, so I have more time for my other commitments outside of work (female, government to consultant). Better on my life (male, government to consultant) Rotation 1 cared more about me being there and put more effort in to give me work while Rotation 2 gave me a better work-life balance (female, government to consultant). The travel time for the second rotation is worse because it takes a longer period to get there with traffic included, there is barely any time for my life outside of work with the second one compared to the first rotation (male, consultant to construction).
Health and wellbeing	My overall mental health and confidence were better in Rotation 1, I felt as though I could get along with my co-workers more and had tasks that genuinely challenged me and tested my intelligence. Rotation 2 has almost beat that out of me and I am given constant mundane admin tasks in environments I don't feel entirely comfortable in (gender not specified, government to construction).
Inclusion and interaction with others	The main difference is I am receiving work more frequently that is a bit more relevant to my TAFE course. I also work from home most days but am in constant communication with my team and I have gotten to know more trainees whereas i did not know or get to interact with any other trainees in rotation 1 (female, consultant to government). I enjoyed my first rotation more as it was a small team and onsite offices, although it was daunting being the only girl within the team, I was included in everything which made the time a-lot more enjoyable. This rotation has been good as-well and I'm grateful that i have had the opportunity to be able to learn from two different companies (female, consultant to government). During the first rotation I wasn't given much work to do as I was more shy and didn't reach out or take initiative. Working with the people was great and they were all supportive and helpful but I feel like I didn't do much during the first rotation. COVID and lock down made us work from home which made it more difficult to communicate with each other. I didn't get to see how the site was progressing and what works were happening at the time. In rotation two I have created more relationships and have gotten close with my co-workers. I have been able to step out and ask for help or any tasks to do. My supervisor and I talk daily for a catch up whether she would be working from home or in the office. I am based in the office everyday (excluding Tuesday). I get given an adequate amount of work to do and receive all the help and support from my workmates (female, construction to consultant). There are few girls on site at this rotation but it doesn't bother me. People are respectful to me and the other girls on site, see us as equals, and we get involved in banter as much as any of the guys. - My second rotation is a professional yet fun environment (female, government to constructor). I did … have great supervisors in rotation one who made me feel comfortable and supported. Interestingly, it has been harder to form connections at rotation 2 than at rotation 1, everyone already has their cliques at the consultant (female, government to consultant).

Theme	Respondent quotes
Learning opportunities	Receiving more work tasks than my first rotation - More freedom to speak to tailor my learning to my interests - More opportunities to be onsite - Relaxed work environment … More understanding of my learning journey (female, construction to government). My second rotation hasn't had as much work or tasks for me to do. It is a much smaller company so there isn't as much that I can help with, and also working from home has been a slight challenge too (female, construction to consultant). My first rotation, no construction was happening, but with my second rotation I'm able to go on a construction site and get hands on experience almost every day (female, government to construction). Working a better number of hours, despite the stupidly long distance that I have to travel, I am enjoying the work I am involved in and have gained a much broader skill set in terms of managing a project (female, construction to government). On both rotations I moved around from project to project, but on my 2nd rotation I had my projects I would be working on planned out from the start instead of me just moving to fill holes at my 1st rotation. My first rotation also didn't have any project managers in the company, so I was mainly doing some task which I'm not sure if it was project management related or not. My second rotation had me observing and learning about how each project was run and how each team managed the project in their own unique way, assisting in minor ways to get a broad understanding of how it worked (male, construction to consultant). My first rotation was a much larger team and I got to work on a few different projects, my second rotation I am helping out on one project and am currently the only female located in [town name removed] working on this project (female, government to construction). My first rotation was more hands on and I actually learnt a lot about the industry and more, … my second rotation I am not enjoying, I work from home, only interact with my supervisors and haven't learnt all that much about stuff. I have been involved with a few projects but its only via Teams and a handful of site visits. (female, construction to government) Work from home most of the time in my 1st and 2nd rotation. I have not done much project management work the whole traineeship (female, government to consultant). My second rotation is more exciting as I get to see a construction project evolve over time … I have picked up and improved upon many skills during my second rotation compared to my first and I feel a lot more appreciated. I get a lot of compliments and I have heard people talking about wanting to hire me full time. - Because the people in my second rotation are more like minded than in my first, my social skills have improved quite a bit, which is what I wanted most from this traineeship. I have begun finding it easier to talk to others both at and outside of work (female, government to constructor).

5.3 Career commitment, career satisfaction and perception of life balance

Mean scores for career satisfaction, perception of life balance, and career commitment were compared between groups of respondents who indicated better, same, or worse experiences in their second rotation compared to first rotation (Figure 5.2).

Figure 5.2: Comparison of career satisfaction, perception of life balance and career commitment based on respondents' experiences during the first and second rotations



The mean scores for career commitment, career satisfaction and perception of life balance were slightly higher for respondents who indicated a better experience during their second rotation compared to their first rotation. A statistical comparison of mean scores was performed to determine whether the differences were significant (see Appendix 9.15). During the second rotation, respondents who indicated a worse experience also had significantly lower perceptions of organisational inclusion compared to those who expressed a better experience.

Part 6: Interview results

6.1 Sample

Fifteen interviews were conducted with trainees from the 2021-2022 cohort during March and April 2022. At the time of the interview, respondents had completed their first rotation and were part way through their second rotation. Four respondents had undertaken their first rotation in a consultant organisation, five in a government organisation, and six in a construction organisation. Six respondents were undertaking their second rotation in a construction organisation, four in a consultant organisation, and four in a government organisation. One respondent did not indicate where she was undertaking her second rotation. Of the respondents, six (40%) were female and nine (60%) were male. The age of respondents ranged from 20 – 22 years (mean age=20.7 years).

6.2 Best aspects of construction

The majority of respondents had little to no knowledge of construction prior to commencing the traineeship, and some had developed an interest in construction work during their rotations.

The best aspect of construction for respondents was seeing the building or project progress, working towards a common goal, and understanding how "everything" is connected.

One respondent also believed that the best part of construction was not bringing work home and not having to work on weekends, suggesting a lack of awareness of the norms relating to working hours. Of note is this respondent had yet to undertake the construction rotation.

Table 6.1 summarises the best aspects of construction.

Table 6.1: Best aspects of construction

Theme	Respondent quotes
Construction tasks and activities	I really enjoyed the construction-based project management just for the fact that construction's something that makes sense to me, and how things are built and little things like why you can and can't do things within a building. (participant 2) I do very much like just the practical side of construction at the moment. That's something I really enjoyed, and that really stuck out for me over everything else I've done. (participant 6)
Project progress	Just seeing projects and stuff evolve. It's just everything goes really quickly and it's just cool to see everything change. (participant 10) There's nothing more rewarding than completing a project or meeting a milestone. I think that that's really a rewarding thing and it gives a sense of satisfaction like hard work has paid off. I think that's what sort of stands out to me most. (participant 8)

Common goal	I think it has that sense of [having] accomplished something. It's a sense of accomplishment that you're part of a team. You work towards a common goal of wanting to succeed and complete this project. (participant 8)
Interdependent nature of projects	How everything is connected and how everyone is working together to create this project. (participant 5)
Five day work week	I think compared to other industries like teaching and things like that it's still pretty good. You don't have to work on weekends ever. You know, maybe once in a blue moon. (participant 13)

6.3 Deterrents to working in construction

Respondents were asked what would deter them from entering construction. Keys factors emerged as:

- Long working hours
- Work overload
- Lack of work-life balance
- Lack of flexible working arrangements
- An unsupportive/unfriendly team and work environment
- Stress associated with work demands and work environment

In addition, one of the female respondents believed that she was not strong enough to work onsite and this was considered as a deterrent for taking on a manual-based role in construction: "I don't ever want to be on the ground. I don't think I would be [physically] strong enough to handle it" (participant 13). It is unclear whether this belief was informed by advice from others or was a personal assessment.

Respondents who had made a decision to enter construction upon completion of the program were not deterred by the challenges of the industry. Instead, their interest in the industry appeared to override any concerns about the imminent challenges in construction. For example, participant 1 commented: "I think if I wasn't interested in it [construction], I definitely wouldn't work in it because I can understand how it could be very stressful and you could easily get psyched out of it if you weren't interested" This was also the case for long work hours. Although many respondents were aware they would be expected to long work hours, this did not deter them from wanting to enter the industry.

In the next section we address each of the deterrents in more detail using illustrative quotes from respondents.

6.4 Working hours, overload, and work-life balance

Working hours, work over-load, and work-life balance emerged as themes in the data. Long work hours can impact on work-life balance, and work-overload can lead to longer working hours and also impact on work-life balance. Flexible working arrangements was also raised by respondents as valued, and which can assist with work-life balance. Given the relationship between these themes, they are grouped together and considered in further detail below.

Working hours

A guiding principle of the program is that trainees' hours are capped at 37.5 hours per week. Any overtime must first be approved by the trainee's employer. It was therefore notable that long working hours on a construction site emerged as a common theme amongst participants, and this was based on observation rather than direct experience. Some respondents were surprised that construction work is associated with such long working hours.

Some respondents observed that long working hours are normalised, and workers can expect to start early, finish late, and work on weekends. There was also a perception that workers had a lack of control over their work hours.

Unlike other respondents, one respondent believed that working on weekends and bringing work home was not required in construction. Of note is that this respondent had yet to undertake her construction rotation.

Some respondents did not perceive long working hours as a deterrent to entering the construction industry and were willing to work long hours in the future. In contrast, other respondents believed that working long hours in construction would be a deterrent due to the impact on their work-life balance, and tiredness and fatigue due to lack of sleep and time for rest.

Table 6.2 outlines the various themes related to working hours on a construction site emerging from the data and the associated respondent quotes.

Table 6.2: Working hours onsite

Theme	Respondent quotes
Lack of control over work hours	But it seems like the general gist of things with construction is they don't usually have much choice over their hours. I think it's just sort of how construction sort of sits. (participant 9)
Long hours are the norm	I guess that's something I've learned that's part of the construction industry. They (workers) always started early and finishing late. (participant 1) My supervisor was very dedicated to his role. He would be on [the construction] site from about seven until six most days. (participant 3) They all work very hard, gruelling hours I think, especially on-site. They really just get roped into staying back until the workers want to stop. (participant 9) The project next to us, their project was just in full swing, so some of them were having 12-13-hour days every single day of the week, and there's a team of 40 or 50 down there. So, that's just ridiculous. (participant 6)
Long hours are not the norm	[The best thing about working in construction is] the whole not bringing work home with you. Maybe if you are higher up you get a couple of calls past 5 or 6pm but I think compared to other industries like teaching and things like that it's [construction] still pretty good. You don't have to work on weekends ever. You know, maybe once in a blue moon. (participant 13)

Hours are variable	Working hours does vary on the project. If there's a lot of setbacks and variations and things in time, then you might have to just sacrifice a little bit to get something done, but I don't think it'd be overly working and burning yourself out at all. (participant 12)
Fatigue and stress	Working in construction would definitely be just a big adaption and probably I'd get a lot less sleep. (participant 6) The project is being handed over so they are working very long hours and they're getting very tired and it's getting to them so I have witnessed that side of it. (participant 14) You don't want to stay out too late because you're trying to get your sleep. I can understand that's a bit upsetting sometimes if you can't catch up with your friends during the week, and you only get one day, Saturday or Sunday as well to rest up and when you've got other commitments, like maybe a family party or something, you don't get to see them. (participant 1) The hours, and I think time would be a big challenge. And maybe there might be a lot of stress in the industry as well for the type of work you're doing. I feel there's some challenges for the construction industry as a whole. (participant 1) At [construction organisation], everyone was working very, very long days, which I was very blown away by. Some people were getting there at 6:30 and going home at 7:00, and that blew my mind, because they're doing that six days a week, and that was a surprise to me. That would absolutely be a struggle if I did end up trying to do those hours. (participant 6)
Willing to work long hours	If I love my job, I wouldn't mind what hours I was doing. (participant 3) I could cope with working long hours. I wouldn't mind if I was in the construction side, I actually wouldn't mind working for 10 hours. (participant 5) I mean, working hours is not that big of a deal for me. I don't mind going over time, just to help out in those small areas to make everyone's lives easier in the team. (participant 15)

Work-life balance

Having work-life balance was considered as very important for respondents now and into the future. Work-life balance was associated with work hours that enabled time for family, friends, leisure, and relaxation. Some respondents associated the capacity to have work-life balance with fair treatment by their employer. There was also a sense that being forced to work long hours was disrespectful and unfair. Employer support was considered important for enabling work-life balance.

Table 6.3 outlines the themes related to work-life balance.

Table 6.3: Work-life balance

Theme	Respondent quotes
Fair treatment	I feel like there's no reason why you should just be working, working, working, when at the end of the day, your life's about you and what you want to do, and being able to balance it out and have that option as well. I think that's going to be an important thing for me, and also not working in an environment where you feel like you're not getting a fair go, and being pushed aside and not treated fairly. (participant 1)
Capacity to participate in activities outside of work	I don't mind putting in long hours or anything, as long as I've got time for my family and my studies and other things that I need to do, take care of myself as well. (participant 7)
Employer support	My own balance of my life is very important and the fact that maybe I'm not working extreme hours and I am protected within, they [the employer] don't force me to work hours I don't want to work, and that's one of the most important things. (participant 6) There is always going to be conflicts with work and personal life. I think it's just how well you can organise it beforehand and how understanding your company is. (participant 9)

Work overload

Work overload was both observed and experienced by some respondents who had undertaken their rotation at a construction organisation. There was a perception that some construction workers were unable to complete their allocated workload during a standard working day and that overtime was a requirement to get all tasks completed. There was also a perception that on a construction site, certain tasks can become urgent and other tasks drop off the priority list which can lead to work "piling up". Some respondents also believed that the more senior you became, the more work you are allocated.

Table 6.4 outlines the various themes related to work overload.

Table 6.4: Work overload

Theme	Respondent quotes
Overtime required to complete tasks	Just this week I've just started to work a bit of overtime with the approval of [employer] and [host organisation] because I used to work from 7:00 until 3:00, and I found all my work was piling up and I wasn't really getting much done, so I have to stay back later. (participant 1) At the moment because the project's closing out I've been doing some overtime as well, just to help out the team, get everyone onboard and smash the project but they have been doing very long hours and doing weekend work. The project is being handed over so they are working very long hours and they're getting very tired and it's getting to them. (participant 14)

Urgent tasks create a backlog of work	You're always trying to get something done, and something else will pop up, and you've got to get this done urgently, and you focus on getting that done, then other things you've had pile up and you forget about that. (participant 1)
Workload increases with seniority	I feel like the higher you move up in the construction industry, I feel like the more work you get, and it's like an ongoing assignment, is what I've started to notice. (participant 1)

Flexible working arrangements

Flexibility of working time and location was considered important for respondents now and in future roles. Many respondents were required to work from home during their first rotation due to COVID-19 lockdown requirements. Coming out of lockdown, some respondents were provided with the choice to work from home or the office. Working from home removed the time required to commute to and from work which was considered beneficial in cases where respondents had a long commute. For example, some respondents reporting that commuting time was up to three hours per day on top of working time.

Working from different locations provided some respondents with a more dynamic work experience in contrast to a working from the same location all day every day. Flexibility of working hours was also considered important for respondents. Respondents valued the control they had over their start and finish times as it enabled them to participate in family, social, and sporting activities. In addition to focusing on their current life stage, some participants also considered flexible work arrangements in the context of the future. For example, one of the female respondents highlighted the importance of flexibility to enable the integration of work and parental responsibilities.

Table 6.5 outlines the various themes related to flexible working hours emerging from the data and associated respondent quotes.

Table 6.5: Flexible work hours

Theme	Respondent quotes
Working from home	Because of the one hour commute I'd be coming home at around 6 o'clock. I wouldn't like that, but they did allow me to work from home. So I think two out of the five days I'd go into the office and the other three I'd be working from home. So the fact that I had to work late some days made up for the fact that I could just work from home the other days of the week and that helped quite a lot. (participant 4) I would like the flexibility to be able to work from home one or two days a week kind of on a whim. I know a couple of people at the office have kids and work from home a couple of days a week so they can pick up the kids from school if their partner isn't doing it that day, and they correlate that with their partner and I think that would be really useful, obviously far in the future for me, but I think it's still important to think about that. (participant 13 - female)

Change work locations	I just always was never too keen on an office. I didn't want to be in the office 9:00-5:00 Monday to Friday, and on doing that, it was nice, especially because it's project management where there are days where I'm not in the office at all, or it's easy because I can work from home or I'm on a site. It's just so different. If I can make it different, it'll always be nice. (participant 6) I don't know about the other trainees but having that shift from in the office to at home definitely helps rather than just getting stuck in the same mindset of being in the office. Having that ability to go home and put some music on or an easier way to grab lunch, it really does help personally with my productivity. (participant 4)
Working hours	Obviously having a supportive work environment is great. I've really been spoilt. I've had a lot of flexibility, so I've been able to work from home and work in the office so just rotate between home and the office and I've had a couple of chances to go to site. I also pick my hours which is great. (participant 7) I don't really mind doing overtime and all places really promote flexible hours. (participant 8)

6.5 Work environment

Work as a place for learning and a supportive and inclusive workplace both emerged as themes. Central to both themes was the importance of support, whereby a supportive and inclusive environment can facilitate work as a place for learning. While a supportive work environment was considered very important for trainees and integral for their on-the-job learning, the construction site culture was not always conducive to a supportive environment and thereby could be a deterrent for trainees. These themes are explored in more depth in this section.

Work as a place for learning

Working in an environment that supported trainees' learning and development was considered important by respondents now and into the future. This comprised of having a supervisor and team members who were approachable and had time to explain, answer questions, and give feedback. Some respondents noted that while they generally felt supported, their supervisor was often very busy and not always available for them to ask questions and seek feedback.

Role clarity was another factor which supported learning and development. When respondents were clear about the scope of their role and the tasks associated with the role they could access information and seek feedback that was aligned with role expectations.

Many respondents observed that work onsite in construction is fast-paced and hectic, and there could be less time to understand a task. This was in contrast to government or consultant organisations where the pace was slower, which enabled respondents the time and space to comprehend and practice work tasks.

Table 6.6 outlines the themes related to a learning environment.

Table 6.6: Learning environment

Theme	Respondent quotes
Helpful team members	They [team members] explain the role to you and explain things and if you ask questions, they're very helpful. (participant 1) It's been really healthy and really positive. We all eat lunch together and it's nice and I can ask questions and I don't feel intimidated ever. I think that everyone that I've come into contact with so far, whether it's in the office or out on site, I think have all been polite and ask me questions about why I'm here and then will try and give me a rundown of why they're here, what they do, and their role onsite or their role in the job. It's been really good. (participant 11) No matter how tough the work is if I always have someone I can go up to and ask for help without feeling bad about it, that's sort of the biggest thing. (participant 4) If they (tradespeople) were free they would be really happy to help. If they were busy they might've said I just need to finish this, come back later. (participant 4)
Access to supervisor	There were a few challenges with me needing to ask a few questions and my supervisor was so busy all the time. That was a bit challenging. (participant 3) I feel like I should feel comfortable contacting him (supervisor) and asking him questions but I just kind of feel like I'm a bit of a nuisance because he doesn't usually make contact with me. (participant 13)
Role clarity	They [team members] sit down, they explain your role, they're always there for questions, and you get your own sense of responsibility, and you get assistance along the way. (participant 1) They [the organisation] very much just told me exactly what they wanted me to do and they also said if you want to learn more about it, here's what you can do to do that. (participant 4)
Work pace	It [construction site] was definitely fast paced. (participant 3) It's been hectic because it's fast paced. We're doing a three level fit-out that was 12 weeks long. So everything's got to be pumped through like 100 miles an hour. (participant 14) The [construction organisation] site was a lot more fast paced and a lot more hectic because there was a lot that needed to be done very quickly. So that was quite a step up from [government organisation]. (participant 4) I much preferred the [government organisation]. The slower pace sort of helps me out a lot in terms of making sure I understand all the work. (participant 4)

Supportive and inclusive workplace

Working in a supportive and inclusive environment was important for respondents now and in the future. Feeling welcome and comfortable with colleagues and having a sense of community were important features of the work environment. Respondents also valued working in a team where people were nice, and where they felt respected by colleagues.

Table 6.7 outlines the themes related to a supportive work environment.

Table 6.7: Supportive and inclusive work environment

Theme	Respondent quotes
Welcome and comfortable	A good environment, I feel that's probably something that matters to me, being able to be comfortable in your work environment, and ask questions, and understand what you're working on and achieve your goal. (participant 1) A supportive work team [is very important]. A friendly and happy environment. Colleagues that I have a friendly relationship with. Wouldn't particularly have to be outside of work but that make me happy and comfortable….. making sure that everybody feels welcome and part of that business is a big priority for me. (participant 7) I mean they're all phenomenal environments. [First rotation organisation] is awesome and the team that I was working in was a very small team so everyone was very close knit, but there was a lot of energy and it was very positive. Everyone was very understanding of each other, and it was just a really good environment. You looked forward to going to work every day and that was the same at [second rotation organisation]. (participant 8)
Sense of community	I think having that sense of community feeling is important and I think that construction is probably the best place to find that. I think because everyone is sort of very hard working and the way in which stress and tension sort of manifest, it comes out in a very weird way and I think everyone's very understanding and knows that. I think that definitely you need that sense of community. You need that camaraderie between teams and between each other because you're spending eight hours plus with all these people every day. (participant 8)

Feel respected	Everyone was really respectful of the traineeship even if they didn't understand it or have an idea what it was, but everyone still treated me like an adult, and it was a really nice experience. (participant 6) So it's a bit of a rough environment on construction sites particularly. But over a couple of weeks I managed to gain a bit of respect and they knew I had to do my job and they knew they had to do their job. So I think once I was there for a little bit, the work environment it felt a lot more healthy. (participant 9) I think that everybody is very respectful of one another because we're all there to bring something together. We're all working on the same project. We all have the same goal. So I never see an issue with being inclusive and everyone is brought into the project not based on the way they look or where they come from or anything. It's purely based off their skills and what they're going to bring to the project. I think everything is very progressive and very positive in that aspect. (participant 11)

Construction site culture

Some respondents referred to construction sites as toxic due to the macho work culture. There was also a belief that a construction site can be a rough environment comprising of difficult personalities. Consequently, the construction site culture was considered to be one of the biggest challenges for some respondents. While many respondents expected a challenging and rough environment, some were surprised when they experienced a friendly and supportive work environment. There was also a perception by some respondents that attempts are being made to improve the culture.

Table 6.8 outlines the various themes related to the construction work environment.

Table 6.8: Construction site culture

Theme	Respondent quotes
Rough culture	I'm going to say most of construction companies would be a little bit toxic or could be toxic. I think that would be the biggest challenges for anyone in construction. (participant 9) Construction is just largely different to the other areas in terms of consultancy and government, so it's more raw and rough. (participant 12)

Challenging personalities	The biggest challenge [in construction] is probably the personalities. There's a very interesting mix of people, all very different. I think a lot of people still adopt this old school idea of what construction is and what construction was and what it should be. Very sort of gung-ho, cowboy slinging kind of real old school approach. (participant 8) Lots of construction sites have some pretty rough characters but that was a good challenge and a bit difficult seeing as I'm sort of working for the people who are hiring them. I was given a lot of responsibility around making sure that they're wearing hard hats and safety glasses and stuff when I'd go for a walk around with my supervisor. We'd have to tell people, remind them, to do their job safely. It's a bit hard if you have to tell a 150 kg guy with a face tattoo that he needs to wear his hard hat. So it's a bit of a rough environment on construction sites particularly. (participant 9)
Better than expected	I expected something else. I was trying to be tough when I first started, just in case some people would try to talk you down and everything. But it was completely different, it was completely opposite from what I expected. It's going to be tough, but in general, there's not many, like they don't really disrespect you or anything. (participant 5) I was surprised at the stereotypes on the [construction] industry. Everyone was so friendly and welcoming. Yeah, it was really nice. (participant 6)
Changing the culture	I've been so lucky to be a part of teams and work with people that are really trying to push for the future or change the future of construction and infrastructure. (participant 8)

6.6 Gender diversity

Respondents observed that there was a higher level of gender diversity in government and consultant organisations compared with construction organisations. It was also observed that on construction sites very few females were employed, and one of the female respondents reported being the only female onsite. There was a perception amongst respondents that females employed on construction sites were most often in administrative roles and traffic management roles, and to a lesser extent trades roles.

Some of the male respondents believed that gender balance in construction was nice to have but not important. Other male respondents believed that gender diversity on a construction site should be reflective of the broader population. While some male respondents did not observe gender discrimination onsite, they believed it did happen "behind the scenes". Some female respondents believed that gender diversity is not important if women are being treated fairly and respectfully, and that gender equality in construction is improving.

Some female respondents were unaware of females' participation in construction, with one suggesting that the industry comprised of 40% women and 60% of men. Female respondents believed that women had to be strong-willed to work in construction and required the support of their supervisor to feel safe and respected. Furthermore, there was a perception that women may be "too scared" to take on trade roles in construction due to the male-dominated nature of the industry.

Table 6.9 outlines the themes related to gender diversity.

Table 6.9: Gender diversity

Theme	Respondent quotes
Construction sites are male dominated	Onsite, I'll be honest, I've seen a couple of female workers, but I notice predominantly most of them are male. (participant 1 - male) I would say at [construction organisation] I heard a very interesting comment from a co-worker who was talking to another female. They were both female and she said, "This is the most amount of women that I've ever had on one project." And it was maybe 10 women out of 50 blokes ". (participant 7 - male) Probably like 90% to 10% [ratio of men to women]. I don't see it as a problem. (participant 10 – female)
Women's roles in construction	Maybe the traffic controllers, they were predominantly women. (participant 5 - male) I think women mainly do admin roles in construction companies. There were a couple [of women] onsite. I actually did see there was one tiler who was a female and one electrician, so I did see two other females on-site during the whole rotation. But in saying that I think if females are going to pursue a career in construction then they will mainly go for an admin role. (participant 3 - female) Definitely a lot more men but I'm just noticing between both of the rotations generally a lot more men in the construction side of things but not that that's a bad thing, it might just be more they are interested in that I guess. (participant 7 - female) I think that you need a team and you need a workforce that's sort of almost reflects what you see on the street. (participant 8 – male)
Gender diversity between rotations	There's not a lot of women in construction. But like in my rotation now, there's actually more women than men in the project management consultancy side. (participant 5 - male) Less women in construction, it's definitely more in the government sector and the consultancy (participant 6 - male)
Respect for women onsite	That's probably one of the main things I was worried about going on a construction site, just not being respected and being looked down on because I was a female on a construction site. (participant 3 - female)

6.7 Preference for interacting with colleagues

Being comfortable with the level of interaction with colleagues was a personal preference that influenced the type of work environment respondents preferred. Level and scope of face-to-face interaction differed between type of organisation (government, consultant, construction). For example, respondents experienced a higher level of interaction on a construction site compared with office environments, where more time was spent in front of a computer. Some respondents

preferred being on a construction site where they experienced constant interaction with a wide range of workers, whereas other respondents preferred a quieter work environment. This finding raises an important point. In addition to work-based characteristics, trainees' intention to enter construction may also be based in part by individual differences and how they interact with the broader construction environment. It is therefore important to consider individual differences and how these may contribute to preferences for working in a client, consultant, or construction organisation and their respective tasks and roles.

Table 6.10 outlines the various themes related to level of interaction and work location.

Table 6.10: Preference for interaction

Theme	Respondent quotes
Preference for interaction	I used to interact more in the site than in the office. In the office environment I don't really move around that much, I'm just glued to the computer and my table the whole day…it's a bit boring. (participant 5)
Preference for less interaction	I'm talking to a lot of people in the day because obviously you're on the construction site with the tradies and I'm still very shy, so talking to a lot of people was quite difficult for me. (participant 4) With the construction company it's not as professional in suit and tie, and everyone's a little bit more joking around, and on the other side, at the consultancy, everyone is heads down, getting things down, just super professional, which is a big change. But everyone will still dance around, and it'll still be the same fun sort of office. It's just a lot quieter as well, which is almost nicer. (participant 6)

Part 7: Discussion

7.1 Outcome expectations and Person-Environment fit

Previous research suggests that what young people want in a job is important because their expectations about the outcomes of pursuing a particular career contribute to career decision-making and job pursuit actions (Lent et al. 2010). For example, task variety and flexible work hours are important to students entering the workforce (Burga et al. 2020) and personal satisfaction, remuneration, balancing home and work life, and job security are found to be important to Australian high school leavers (Alloway et al. 2004).

Consistent with the P-E fit and social cognitive career theories (described in Part 2 of this report), NSW-based trainees who perceived that jobs in infrastructure construction will provide the characteristics and experiences that are important to them, were significantly more likely to say they had already decided to pursue a career in infrastructure construction on completion of their traineeship. That is, the trainee believed that infrastructure construction would provide conditions and experiences that met their needs, desires or preferences (Edwards, 1991).

The expected outcomes that the trainees identified as being important to them were of different types but included both (i) social rewards (e.g. having a pleasant working environment, having a job that is enjoyable, having colleagues that they can get along with); and (ii) tangible/material rewards, (e.g. having a secure job that provides transferable skills). Trainees also identified job characteristics associated with having a healthy and balanced life as being high in importance. In particular, having a job that enables them to have a healthy lifestyle, a reasonable workload, control over their work time, and working hours that don't interfere with non-work roles and interests were identified as being important. Having a job characterised by gender diversity and fair treatment was also identified as being of high importance to 74% of respondents.

However, respondents indicated a low level of expectation that some important characteristics would be available in infrastructure construction. In particular, the trainees had low expectations in relation to:

- having a job that can be combined with parenthood
- having a job that will not interfere with non-work roles and interests
- having a job that allows control over work time, and
- having a job that that will not take them away from family for long durations and that will enable a healthy lifestyle.

Moreover, the mis-match between perceived importance and availability was greatest in relation to the job characteristics associated with life balance, health and wellbeing.

Past research shows that feeling exhausted from one's work is significantly correlated with turnover intention (Lingard, 2003) and deciding to change one's career (Blau, 2007). Given that trainees' weekly hours of work are capped at 37.5, the development of expectations that infrastructure construction is a 'long hours' industry that may not offer life balance and healthy lifestyle opportunities, is intriguing. In SCCT, vicarious learning (i.e. expectations of the work environment or job role characteristics formed from observing others) is believed to shape the expectations that individuals form in relation to what it will be like to work in a particular career. For example, harm associated with exposure to hostility towards women can be vicariously

experienced by people who observe this behaviour, whether they are male or female (Miner-Rubino & Cortina, 2007). In the present analysis, it is possible that trainees' observations of the work practices and experiences of others in their 'host' organisations come to shape the outcome expectations they form, in relation to the pursuit of a career in infrastructure construction, through a vicarious learning process (Lent et al. 1994).

It is noteworthy that the comparison of male and female respondents' ratings of the importance and the availability of favourable job characteristics in an infrastructure construction career were similar. Both female and male respondents rated having a pleasant working environment, a job that they will find enjoyable, and a job that enables them to have a healthy lifestyle, as being of high importance. Moreover, there were no statistical differences between female and male respondents' importance ratings for the 24 job characteristics included in the survey. Female respondents had significantly more positive beliefs than male respondents that working in infrastructure construction would offer a pleasant work environment and a job that is respected.

Preference for interacting with colleagues emerged from the interview data as a factor impacting on respondents' career expectations and intentions. This finding raises an important point and can be understood through the person-environment fit framework which focuses on "the similarity, match or congruence between the person and environment" (Guan et al. 2021, p.1). In addition to work-based characteristics, young workers' intentions to enter construction may also be based in part by individual differences. It is therefore important to consider individual differences and how these may contribute to preferences for working in a client, consultant, or construction organisation.

The 2021 trainees (those who had completed two survey waves in December 2021 and June 2022) were asked to directly compare their experiences during the first and second rotations. Trainees who indicated that their experience in their second job rotation was better than their first job rotation had higher mean scores for career commitment, career satisfaction and perception of life balance than trainees who indicated that their experience in the second job rotation was worse than that in their first job rotation. Conversely, trainees who indicated a worse experience in their second rotation had significantly lower perceptions of organisational inclusion compared to those who expressed a better experience.

The importance of inclusion in the workplace was also noted in the qualitative comments provided by trainees when asked about the main differences between their experiences during their first and second job rotations. When comparing experiences between rotations, trainees explained that working in an inclusive environment, and in an environment in which they felt supported by supervisors and co-workers, were important factors in shaping their preferences. The trainees also commented that their preferred rotation provided:

- work activities which were aligned with their career choice goals
- more opportunities for learning
- more opportunities for 'hands on' experiences
- less time commuting between home and work, and
- more time for life outside work.

In contrast, trainees identified the characteristics of 'worse' job rotation experiences as:

- having fewer opportunities for learning
- being asked to perform tasks which are less relevant to their TAFE course or are not aligned with trainees' career goals, and

- feeling isolated in the workplace and/or not being part of the team.

When comparing changes in organisation type between job rotations, few clear patterns could be found in the survey data. A similar percentage of trainees who moved from a construction to a government organisation as those who moved from a government to a construction organisation reported their second job rotation to be better than the first (60% and 54% respectively). This could potentially reflect a growing level of confidence and comfort among the trainees from working in the infrastructure construction environment.

However, more in-depth interviews with the 2021 cohort of trainees did reveal some differences between organisation types. For example, the trainees observed distinct differences between the three types of organisations as follows:

- there is more gender diversity in client and consultant organisations
- work hours are longer on construction sites
- construction sites are associated with fast-paced work, the work was hectic, and work over-load is common
- construction sites can be challenging due to the macho work culture and difficult personalities
- social interaction is greater on a construction site

Importantly, interviews with the trainees identified that most trainees had no previous experience of infrastructure construction and had very limited knowledge of the sector prior to commencing the program. Given this, trainees' job placement experiences very much influenced their perceptions about what it is like to work in infrastructure construction, which is likely to shape their career intentions. As a result of observations and experiences during their job placements, some trainees had developed a strong interest and were planning on pursuing a career in infrastructure construction, while others were less interested in a pursuing a career in infrastructure construction due to the challenging demands inherent in the industry, which they had either experienced or observed during their job placements.

7.2 Determinants of career decidedness

The findings indicate that perceptions of the availability of favourable job characteristics are a point of difference between those who had decided to pursue a career in infrastructure and those who had not. Comparison of means revealed that respondents who had decided to pursue a career in infrastructure construction had significantly stronger beliefs that an infrastructure construction career would offer 18 of the 24 favourable job characteristics than those who were undecided or who had already decided against pursuing a career in infrastructure construction. Similar tests were run for career satisfaction, diversity climate perceptions and life balance experiences and significant differences were found for life balance, organisational inclusion and career satisfaction. The trainees who had decided that they definitely want to pursue a career in infrastructure construction on completion of their traineeship had significantly more positive perceptions of the inclusiveness of their work environments, career satisfaction and life balance during their first job rotation. Previous research indicates that career satisfaction determines employee retention in the construction industry (Nauman et al. 2021) and the experience of long hours and work interference with non-work life reduces female construction professionals' career commitment (Lingard & Lin, 2003). Importantly, the present analysis suggests that expectations of future job demands (even if these are not experienced during the traineeship period) affect the career decision-making of new entrants to the infrastructure construction sector.

The regression analysis results confirm that, after controlling for age, gender, and the type of organisation in which respondents spent their first work placement rotation, trainees were more likely to have made the decision to pursue a career in infrastructure construction if they felt more satisfied with the career experience they had during their first work placement rotation. Conversely, trainees for whom the gap between importance and perceived availability of favourable job characteristics is large, were significantly less likely to have decided to pursue a career in infrastructure construction. Further, the relationship between expected job-related outcomes and work experiences (inclusion and career satisfaction during the first rotation) and career decidedness was mediated by commitment to pursue a career in construction. This finding is consistent with SCCT theory that positions the formation of career interests and career choice goal formulation as antecedents to career goal actions (Lent et al. 1994). That is, young people develop career interests and form career choice goals based upon the outcomes and experiences that they expect to have in the future. Career choice goals (reflecting a commitment to pursue a particular vocational path) then shapes career choice action.

It is noteworthy that perceptions of organisational inclusion were an important predictor of commitment to pursuing a career in infrastructure construction, even after controlling for gender. This suggests that an inclusive work environment influences the career choice of young workers whether they are male or female. This is important because evidence suggests that construction workplaces are not typically perceived as being inclusive. For example, a Randstad survey conducted in 2021 found that, although women working in the Australian construction industry believe the treatment of women in construction has improved since they joined the industry, 41% still indicate they experience gender discrimination. Research shows that gender discrimination leads women to leave the careers in which they experience it (Fouad et al. 2011) but our results also suggest that young workers (irrespective of gender) are not attracted to work environments that are not inclusive.

The interview data indicated that lack of gender diversity was not considered problematic for some male and female respondents. However, females may change their mind if they enter construction after completion of the program and are faced with a toxic and discriminatory work culture. One of the female respondents highlighted that her male supervisor was very supportive of women in construction and had made a point of creating an environment onsite in which she felt respected and supported during the construction rotation. Her experience may have been different had her supervisor not been actively supportive. While culture change associated with gender inclusion and equality across the construction industry may take some time, supervisors play a critical role in supporting new entrants and creating an inclusive and positive culture.

The interview data was consistent with survey findings showing that work-life balance and flexible working arrangements are considered important factors that inform the career intentions of trainees. Working hours on construction projects are known to be long and rigid and therefore may be an impediment for attraction and retention of trainees into construction. Yet, some interview respondents are willing to work the long hours required in construction because they have an interest in construction. This willingness to work long hours may change if individuals can no longer undertake the activities they value outside of work: time with their friends and family, socialising, and exercising.

Both the survey and interview findings show that a supportive and inclusive work environment is important for trainees, yet construction is known as a difficult work environment which may preclude some trainees from entering construction. A supportive and inclusive work environment also facilitates work as a learning environment in which new entrants feel confident and encouraged to ask for help and seek feedback. For these new entrants, a workplace which offers learning and development in a safe and supportive way was very important. A key implication of these findings is that organisations which employ new entrants must provide a supportive environment to enable both a sense of belonging and ongoing learning opportunities.

Part 8: References

Akkermans, J., Nykänen, M., & Vuori, J. (2015). Practice makes perfect? Antecedents and consequences of an adaptive school-to-work transition. In *Sustainable Working Lives* (pp. 65-86). Springer, Dordrecht.

Alloway, N., Dalley, L., Patterson, A., Walker, K., & Lenoy, M. (2004). School students making education and career decisions: Aspirations, attitudes and influences. *Canberra: DEST*.

Blau, G. J. (1985). The measurement and prediction of career commitment. *Journal of Occupational Psychology*, 58(4), 277-288.

Blau, G. (2007). Does a corresponding set of variables for explaining voluntary organizational turnover transfer to explaining voluntary occupational turnover?. *Journal of Vocational Behavior*, *70*(1), 135-148.

Brown, S. D., & Lent, R. W. (2019). Social cognitive career theory at 25: Progress in studying the domain satisfaction and career self-management models. *Journal of Career Assessment*, *27*(4), 563-578.

Burga, R., Leblanc, J., & Rezania, D. (2020). Exploring student perceptions of their readiness for project work: utilizing social cognitive career theory. *Project Management Journal*, *51*(2), 154-164.

Culture in Construction. (2021). A Culture Standard for the Construction Industry. Consultation Paper: October 2021. Australian Constructors Association. Accessed 16 February 2021 from: https://cultureinconstruction.com.au/wp-content/uploads/2021/10/A-Culture-Standard-for-the-Construction-Industry_Consultation-Paper_October-2021.pdf

Earl, J. K., & Bright, J. E. (2004). The impact of work quality and quantity on the development of career decision status. *Australian Journal of Career Development*, *13*(1), 15-22.

Edwards, J. R. (1991). Person-job fit: A conceptual integration, literature review, and methodological critique. In C. L. Cooper & I. T. Robertson (Eds.), *International Review of Industrial and Organizational Psychology, 1991,* Vol. 6, pp. 283–357). John Wiley & Sons.

Forde, C., & MacKenzie, R. (2007). Concrete solutions? Recruitment difficulties and casualisation in the UK construction industry. In Dainty, A., Green, S., & Bagilhole, B. (Eds.) *People and Culture in Construction: A reader*. Routledge. pp. 44-56.

Fouad, N., Fitzpatrick, M., & Liu, J. P. (2011). Persistence of women in engineering careers: A qualitative study of current and former female engineers. *Journal of Women and Minorities in Science and Engineering*, *17*(1).

Fouad, N. A., Singh, R., Cappaert, K., Chang, W. H., & Wan, M. (2016). Comparison of women engineers who persist in or depart from engineering. *Journal of Vocational Behavior*, *92*, 79-93.

Gamboa, V., Paixao, M. P., & de Jesus, S. N. (2013). Internship quality predicts career exploration of high school students. *Journal of Vocational Behavior*, *83*(1), 78-87.

Guan, Y., Deng, H., Fan, L., & Zhou, X. (2021). Theorizing person-environment fit in a changing career world: Interdisciplinary integration and future directions. *Journal of Vocational Behavior*, *126*, 103557.

Infrastructure Australia (2021), Infrastructure workforce and skills supply A report from Infrastructure Australia's Market Capacity Program, Australian Government.

Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individuals' fit at work: A meta-analysis of person–job, person–organization, person–group, and person–supervisor fit. *Personnel psychology*, *58*(2), 281-342.

Kyriacou, C., & Coulthard, M. (2000). Undergraduates' Views of Teaching as a Career Choice. *Journal of Education for Teaching*, 26(2), 117-126.

Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, *45*(1), 79-122.

Lent, R. W., & Brown, S. D. (2008). Social cognitive career theory and subjective well-being in the context of work. *Journal of Career Assessment*, *16*(1), 6-21.

Lent, R. W., & Brown, S. D. (2019). Social cognitive career theory at 25: Empirical status of the interest, choice, and performance models. *Journal of Vocational Behavior*, *115*, 103316.

Lent, R. W., Paixao, M. P., Da Silva, J. T., & Leitão, L. M. (2010). Predicting occupational interests and choice aspirations in Portuguese high school students: A test of social cognitive career theory. *Journal of Vocational Behavior*, *76*(2), 244-251.

Lichtenstein, G., Loshbaugh, H. G., Claar, B., Chen, H. L., Jackson, K., & Sheppard, S. D. (2009). An engineering major does not (necessarily) an engineer make: Career decision making among undergraduate engineering majors. *Journal of Engineering Education*, *98*(3), 227-234.

Lingard, H., & Lin, J. (2003). Managing Motherhood in the Australian Construction Industry: Work-family Balance, Parental Leave and Part-time Work. *Construction Economics and Building, 3*(2), 15-24.

Lingard, H. (2003). The impact of individual and job characteristics on 'burnout' among civil engineers in Australia and the implications for employee turnover. *Construction Management & Economics, 21*(1), 69-80.

Loughlin, C., & Barling, J. (1998). Teenagers' part-time employment and their work-related attitudes and aspirations. *Journal of Organizational Behavior, 19*(2), 197–207.

Miner-Rubino, K., & Cortina, L. M. (2007). Beyond targets: Consequences of vicarious exposure to misogyny at work. *Journal of Applied psychology*, *92*(5), 1254.

Mor Barak, M. E., Cherin, D. A., & Berkman, S. (1998). Organizational and Personal Dimensions in Diversity Climate: Ethnic and Gender Differences in Employee Perceptions. *The Journal of Applied Behavioral Science*, 34(1), 82-104.

Nauman, S., Zheng, C., & Ahmad, R. (2021). Employee Career Outlook and Turnover: Unleashing the Roles of Career Adaptability and Career Satisfaction in International

Construction Projects. *Journal of Construction Engineering and Management,* 147(11), 04021150.

Ng, E. S., Schweitzer, L., & Lyons, S. T. (2012). Anticipated discrimination and a career choice in nonprofit: A study of early career lesbian, gay, bisexual, transgendered (LGBT) job seekers. *Review of Public Personnel Administration*, *32*(4), 332-352.

Randstad, (2021), How women can solve the Australian construction industry's skills shortage, https://www.randstad.com.au/hr-news/talent-management/how-women-can-solve-australian-construction-industrys-skills-shortage/

Savickas, M. L., Nota, L., Rossier, J., Dauwalder, J. P., Duarte, M. E., Guichard, J., ... & Van Vianen, A. E. (2009). Life designing: A paradigm for career construction in the 21st century. *Journal of Vocational Behavior*, *75*(3), 239-250.

Sheu, H. B., Lent, R. W., Brown, S. D., Miller, M. J., Hennessy, K. D., & Duffy, R. D. (2010). Testing the choice model of social cognitive career theory across Holland themes: A meta-analytic path analysis. *Journal of Vocational Behavior*, *76*(2), 252-264.

Singh, R., Fouad, N. A., Fitzpatrick, M. E., Liu, J. P., Cappaert, K. J., & Figuereido, C. (2013). Stemming the tide: Predicting women engineers' intentions to leave. *Journal of Vocational Behavior*, *83*(3), 281-294.

Taylor, A. (2005). It's for the rest of your life: The pragmatics of youth career decision making. *Youth & Society*, *36*(4), 471-503.

Young, A. M., & Hurlic, D. (2007). Gender enactment at work: The importance of gender and gender-related behavior to person-organizational fit and career decisions. *Journal of Managerial Psychology*. 22 (2), 168-187

Yng Ling, F. Y., Leow, X. X., & Lee, K. C. (2016). Strategies for attracting more construction-trained graduates to take professional jobs in the construction industry. *Journal of Professional Issues in Engineering Education and Practice*, *142*(1), 04015009.

Part 9: Appendices

9.1 Measurement scales and items

Table 9.1: Questions and related answers of item(s) of each variable

Variable	Question (item)	Answer	Reference
Career satisfaction	I am satisfied with the success I have achieved.	1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree	(Greenhaus et al., 1990, in Nauman et al 2021)
	I am satisfied with the progress I have made toward meeting my overall career goals.		
	I am satisfied with the progress I have made toward meeting my goals for income.		
	I am satisfied with the progress I have made toward meeting my goals for advancement.		
	I am satisfied with the progress I have made toward meeting my goals for the development of new skills.		
Career commitment	If I had all the money I needed, I would probably still continue working in construction/infrastructure	1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree	Blau (1985)
	If I could do it all over again, I would not choose to work in construction/infrastructure (Reverse scored)		
	I definitely want a career in construction/infrastructure		
	I like working in construction/infrastructure too much to give it up		
	Working in construction/infrastructure offers the ideal career for me		
Organisational fairness	I feel I have been treated differently here because of my race, sex, religion, or age (reverse scored)	1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree	Mor Barak, Cherin, & Berkman (1998)
	This organisation hires and promotes employees objectively, regardless of their race, sex, religion, or age		
	Employees here are evaluated and given feedback fairly, regardless of their race, sex, religion, or age		

Variable	Question (item)	Answer	Reference
	Layoff decisions are made fairly here, regardless of employees' race, sex, religion, or age		
	This organisation implements human resource policies (such as sick leave) fairly for all employees		
	At this organisation employees are given work tasks based on their skills and abilities		
Organisational inclusion	This organisation encourages the formation of employee network support groups	1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree	Mor Barak, Cherin, & Berkman (1998)
	There is a mentoring program in use here that identifies and prepares all minority and female employees for promotion		
	This organisation spends enough money and time on diversity awareness and related training		
Life balance	At my 1st rotation in the traineeship program, my work schedule left me enough time for my personal/family life?	1 = Strongly disagree 2 = Disagree 3 = Neither agree nor disagree 4 = Agree 5 = Strongly agree	
Work hour preferences	If you could choose the number of hours you normally work, would you prefer to work:	1= fewer hours 2 = about the same 3 = more hours	

A new variable was developed indicating the difference between respondents' mean 'importance' and 'availability' mean ratings in relation to the 24 job characteristics. This new variable was used to examine the effect of respondents' perceived difference between importance and availability of job characteristics on their intention to pursue a career in infrastructure construction.

Internal consistency reliability of multi-item scales used in the survey

When analysing data collected using psychometric scales, the first step of the analysis is to check the internal consistency reliability of those variables. Internal consistency reliability is a measure of the correlations between different items related to a particular variable. It measures whether several items (questions) that are intended to measure the same general construct produce similar scores.

The most common measure of internal consistency reliability is Cronbach's alpha coefficient. A Cronbach alpha coefficient between 0.7 and 0.8 is acceptable, between 0.8 and 0.9 is good and greater than 0.9 is excellent.

The Cronbach alpha coefficients reflect good internal consistency reliability for the constructs of career satisfaction (Cronbach's alpha = 0.891) and career commitment (Cronbach's alpha = 0.852), acceptable internal consistency reliability for the constructs of organisational fairness (Cronbach's alpha = 0.755) and inclusion (Cronbach's alpha=0.680). The assessment of internal consistency reliability was not performed for career choice decision, life balance, and work hour preferences because these were measured using a single item.

9.2 Importance and availability of job characteristics for all respondents

Table 9.2: Participants' rating of importance of job characteristics when choosing a career and their availability in construction/infrastructure

Job characteristic	Importance when choosing a career (% of respondents)			Availability in a construction/infrastructure career (% of respondents)		
	Very	Quite	Not	Definitely	Might	Might not
1. A job that I will find enjoyable	82.4	16.9	0	49.3	41.2	2.9
2. Colleagues that I can get along with	78.7	20.6	0	59.6	33.8	0
3. Pleasant working environment	83.8	15.4	0	52.2	41.2	0
4. A secure job	81.6	17.6	0	62.5	30.9	0
5. A career that provides intellectual challenge	56.6	41.9	0.7	64	29.4	0
6. Good promotion prospects	59.6	38.2	1.5	54.4	38.2	0
7. A job which gives me responsibility	62.5	33.8	2.9	73.5	19.9	0
8. High earnings over length of career	65.4	32.4	1.5	59.2	40.4	0
9. A job where I will contribute to society	61.8	33.1	4.4	71.3	21.3	0.7
10. A job where I can use my certificate 3/4 which I am studying for now	52.9	40.4	5.9	61.8	31.6	0
11. A job where I gain transferable skills	78.7	19.1	1.5	69.9	23.5	0
12. A job that is respected	64.7	31.6	2.9	66.9	26.5	0
13. Reasonable workload	75	24.3	0	60.3	32.4	0
14. A job with high quality resources and equipment	65.4	30.9	2.9	60.3	32.4	0
15. Job mobility—easy to get a job anywhere	64	33.1	2.2	46.3	46.3	0.7
16. A job that can easily be combined with parenthood	38.2	47.8	13.2	33.8	57.4	2.2
17. A job with gender diversity and fair treatment	74.3	22.8	2.2	46.3	46.3	0.7
18. A job that gives me some control over my work time	69.9	28.7	0.7	36	53.7	3.7

Job characteristic	Importance when choosing a career (% of respondents)			Availability in a construction/infrastructure career (% of respondents)		
	Very	Quite	Not	Definitely	Might	Might not
19. A job with hours that don't interfere with my non-work roles and interests (e.g. family and social)	67.6	31.6	0	34.6	55.9	2.9
20. A job that enables me to have a healthy lifestyle	80.9	18.4	0	41.2	51.5	0
21. A job where I have access to mentoring	53.7	41.9	3.7	52.2	39.7	1.5
22. A job in an industry which has a good reputation and image	64.7	30.9	3.7	61	31.6	0.7
23. A job that doesn't take me away from family for long durations	66.2	27.9	5.1	38.2	52.2	2.9
24. A job that gives me some control over where I do my work	57.4	39	2.9	36	55.1	2.9

- Sample size n = 136 (responses in relation to the first rotation, two cohorts combined)
- Job characteristics have been numbered and used throughout the findings section to enable ease of cross-referencing

9.3 Importance and availability of job characteristics by gender (score)

Table 9.3: Male and female participants' rating of importance of job characteristics when choosing a career and their availability in construction/infrastructure

Job characteristic	Importance when choosing a career (score out of 100)		Availability in a construction/infrastructure career (score out of 100)	
	Female	Male	Female	Male
1. A job that I will find enjoyable	92.3	90.4	77	72.6
2. Colleagues that I can get along with	89.2	90.4	84.4	79.7
3. Pleasant working environment	93.1	91.9	82.8	73.4
4. A secure job	94.6	88.2	84.4	82.8
5. A career that provides intellectual challenge	80.8	75.7	85.2	83.6
6. Good promotion prospects	80	78.7	80.8	78.1
7. A job which gives me responsibility	83.6	76.8	89.3	89.8
8. High earnings over length of career	80	84.5	80.3	76.5
9. A job where I will contribute to society	83.8	74.3	90.1	85.9
10. A job where I can use my certificate 3/4 which I am studying for now	76.9	71.3	85.2	81.2
11. A job where I gain transferable skills	92.3	86.8	90.2	85.1
12. A job that is respected	83.8	79.4	90.1	82
13. Reasonable workload	91.5	84.5	80.3	72.6
14. A job with high quality resources and equipment	82.3	81.6	85	80.5
15. Job mobility—easy to get a job anywhere	80	81.6	76.2	72.6
16. A job that can easily be combined with parenthood	58.5	66.9	70.5	63.3
17. A job with gender diversity and fair treatment	90	83.1	76.2	72.6
18. A job that gives me some control over my work time	86.1	83.1	70.5	64.1
19. A job with hours that don't interfere with my non-work roles and interests (e.g. family and social)	82.3	85.3	70.5	63.3
20. A job that enables me to have a healthy lifestyle	91.5	90.4	73.8	70.6
21. A job where I have access to mentoring	80	71.3	82	72.6

Job characteristic	Importance when choosing a career (score out of 100)		Availability in a construction/infrastructure career (score out of 100)	
	Female	Male	Female	Male
22. A job in an industry which has a good reputation and image	84.6	77.9	84.4	80.5
23. A job that doesn't take me away from family for long durations	82.3	78.7	72.9	64.8
24. A job that gives me some control over where I do my work	77.7	76.5	70.5	64.6

- Female trainees n = 65, male trainees n = 68
- For ratings of the importance of job characteristics when choosing a career: very = 100, quite = 50, not = 0; for ratings of extent to which respondents think a career in construction/infrastructure will offer these characteristics: definitely = 100, might = 50, might not = 0

9.4 Importance and availability of job characteristics by gender (t-test)

Table 9.4: Comparison of mean importance and availability scores in relation to gender

Job characteristic	Importance when choosing a career			Available in a construction/ infrastructure career		
	p-value	MDif	t-value	p-value	MDif	t-value
1. A job that I will find enjoyable	0.573	1.9	0.565	0.385	4.4	0.872
2. Colleagues that I can get along with	0.731	-1.2	-0.344	0.273	4.7	1.102
3. Pleasant working environment	0.71	1.2	0.373	0.035	9.3	2.129
4. A secure job	0.051	6.4	1.972	0.704	1.6	0.381
5. A career that provides intellectual challenge	0.259	5.0	1.133	0.693	1.7	0.396
6. Good promotion prospects	0.772	1.3	0.29	0.544	2.7	0.609
7. A job which gives me responsibility	0.152	6.8	1.441	0.892	-0.5	-0.136
8. High earnings over length of career	0.307	-4.6	-1.026	0.4	3.8	0.845
9. A job where I will contribute to society	0.055	9.6	1.938	0.293	4.2	1.057
10. A job where I can use my certificate 3/4 which I am studying for now	0.282	5.6	1.08	0.348	4.0	0.941
11. A job where I gain transferable skills	0.135	5.5	1.506	0.196	5.0	1.299
12. A job that is respected	0.336	4.4	0.966	0.042	8.1	2.051
13. Reasonable workload	0.059	7.0	1.903	0.137	7.7	1.496
14. A job with high quality resources and equipment	0.881	0.7	0.15	0.292	4.5	1.058
15. Job mobility—easy to get a job anywhere	0.728	-1.6	-0.349	0.443	3.6	0.77
16. A job that can easily be combined with parenthood	0.147	-8.5	-1.46	0.124	7.2	1.55
17. A job with gender diversity and fair treatment	0.106	6.9	1.629	0.443	3.6	0.77
18. A job that gives me some control over my work time	0.463	3.1	0.736	0.197	6.4	1.298

Job characteristic	Importance when choosing a career			Available in a construction/ infrastructure career		
	p-value	MDif	t-value	p-value	MDif	t-value
19. A job with hours that don't interfere with my non-work roles and interests (eg. family and social)	0.465	-3.0	-0.732	0.135	7.2	1.506
20. A job that enables me to have a healthy lifestyle	0.744	1.1	0.327	0.486	3.1	0.698
21. A job where I have access to mentoring	0.073	8.7	1.805	0.05	9.3	1.982
22. A job in an industry which has a good reputation and image	0.159	6.7	1.417	0.375	4.0	0.891
23. A job that doesn't take me away from family for long durations	0.479	3.6	0.71	0.099	8.1	1.663
24. A job that gives me some control over where I do my work	0.802	1.2	0.252	0.225	5.9	1.22

- MDif: mean difference between rating scores of female respondents and male respondents
- A significant difference is denoted by a p value less than 0.05
- Female respondents (N = 65) and male respondents (N = 68)

9.5 Importance and availability of job characteristics by organisation type (score)

Table 9.5: Rating of importance of job characteristics when choosing a career and their availability in construction/infrastructure by organisation type in first rotation

Job characteristic	Importance when choosing a career			Availability in a construction/infrastructure career		
	GOV	CONSULT	CONSTR	GOV	CONSULT	CONSTR
1. A job that I will find enjoyable	90.7	87.5	94.8	78.3	70.4	73.4
2. Colleagues that I can get along with	86.4	89.3	93.8	84.0	81.5	79.8
3. Pleasant working environment	89.0	92.9	95.8	83.0	75.9	73.4
4. A secure job	89.8	91.1	92.7	85.8	79.6	83.0
5. A career that provides intellectual challenge	72.0	82.1	83.3	83.0	79.6	88.3
6. Good promotion prospects	77.1	83.9	79.2	78.8	83.3	77.7
7. A job which gives me responsibility	79.2	75.0	84.0	89.6	90.7	88.3
8. High earnings over length of career	79.7	85.7	83.3	77.4	81.5	77.7
9. A job where I will contribute to society	75.4	85.7	79.2	86.8	90.7	87.2
10. A job where I can use my certificate 3/4 which I am studying for now	73.7	75.0	72.9	87.7	77.8	80.9
11. A job where I gain transferable skills	88.1	85.7	91.7	87.7	85.2	88.3
12. A job that is respected	78.0	78.6	86.5	92.5	85.2	78.7
13. Reasonable workload	83.1	91.1	91.7	80.2	72.2	74.5
14. A job with high quality resources and equipment	78.8	82.1	84.4	80.2	84.6	84.0
15. Job mobility—easy to get a job anywhere	76.3	76.8	89.6	77.4	75.9	70.2
16. A job that can easily be combined with parenthood	54.2	66.1	70.8	71.7	61.1	64.9
17. A job with gender diversity and fair treatment	85.6	82.1	89.6	78.3	72.2	71.3

Job characteristic	Importance when choosing a career			Availability in a construction/infrastructure career		
	GOV	CONSULT	CONSTR	GOV	CONSULT	CONSTR
18. A job that gives me some control over my work time	84.7	83.9	85.4	73.6	63.0	62.8
19. A job with hours that don't interfere with my non-work roles and interests (eg. family and social)	80.5	87.5	86.5	72.6	63.0	62.8
20. A job that enables me to have a healthy lifestyle	89.8	94.6	89.6	75.5	72.2	68.5
21. A job where I have access to mentoring	75.4	73.2	76.0	78.3	75.9	76.6
22. A job in an industry which has a good reputation and image	81.4	73.2	84.4	84.0	83.3	79.8
23. A job that doesn't take me away from family for long durations	78.8	75.0	86.5	73.6	64.8	66.0
24. A job that gives me some control over where I do my work	78.8	75.0	77.1	69.4	64.8	67.0

Government n = 60, consultant organisation n = 28, construction partner n = 48

9.6 Importance and availability of job characteristics by career intention

Table 9.6: Mean importance and availability responses for respondents who had decided to pursue a career in construction/infrastructure and those who were undecided or who had decided definitely not to pursue a career in construction/infrastructure

Job characteristic	Importance when choosing a career		Availability in a construction/infrastructure career	
	Definitely want to pursue a career in C/I industry	*Undecided or definitely do not want to pursue a career in C/I industry*	*Definitely want to pursue a career in C/I industry*	*Undecided or definitely do not want to pursue a career in C/I industry*
1. A job that I will find enjoyable	89.8	92.3	91.7	66.5
2. Colleagues that I can get along with	87.5	90.7	90.5	77.6
3. Pleasant working environment	92.0	92.3	86.9	73.5
4. A secure job	92.0	90.7	94.0	78.2
5. A career that provides intellectual challenge	84.1	75.3	92.9	80.0
6. Good promotion prospects	83.0	77.5	89.0	74.7
7. A job which gives me responsibility	86.0	77.2	97.6	85.3
8. High earnings over length of career	84.1	81.3	83.3	75.9
9. A job where I will contribute to society	88.6	74.2	95.2	84.1
10. A job where I can use my certificate 3/4 which I am studying for now	83.0	69.2	86.9	81.2
11. A job where I gain transferable skills	95.5	85.7	95.2	83.5
12. A job that is respected	85.2	79.1	96.4	80.6
13. Reasonable workload	90.9	86.3	85.7	71.8
14. A job with high quality resources and equipment	85.2	79.7	91.5	78.2
15. Job mobility—easy to get a job anywhere	77.3	83.0	81.0	71.2
16. A job that can easily be combined with parenthood	65.9	61.0	73.8	63.5
17. A job with gender diversity and fair treatment	90.9	84.1	81.0	71.2
18. A job that gives me some control over my work time	83.0	85.7	77.4	62.4

Job characteristic	Importance when choosing a career		Availability in a construction/infrastructure career	
	Definitely want to pursue a career in C/I industry	*Undecided or definitely do not want to pursue a career in C/I industry*	*Definitely want to pursue a career in C/I industry*	*Undecided or definitely do not want to pursue a career in C/I industry*
19. A job with hours that don't interfere with my non-work roles and interests (eg. family and social)	78.4	86.8	72.6	64.1
20. A job that enables me to have a healthy lifestyle	92.0	90.1	79.8	68.5
21. A job where I have access to mentoring	81.8	72.0	82.1	74.7
22. A job in an industry which has a good reputation and image	87.5	77.5	91.7	77.6
23. A job that doesn't take me away from family for long durations	78.4	81.9	72.6	67.1
24. A job that gives me some control over where I do my work	72.7	79.7	73.8	64.5

"Yes": Respondents who had decided to work in construction/infrastructure (n = 44).
"No/Maybe": Respondents who had decided not to work in construction/infrastructure or had not decided yet (n = 92).

9.7 Importance and availability of job characteristics by career intention (t-test)

Table 9.7: Statistical comparison of mean importance and availability scores according to respondents' stated career decision regarding pursuit of a career in construction/infrastructure

Job characteristic	Importance when choosing a career			Availability in a construction/infrastructure career		
	p-value	MDif	t-value	p-value	MDif	t-value
1. A job that I will find enjoyable	0.466	-2.5	-0.73	<.001	25.2	5.965
2. Colleagues that I can get along with	0.4	-3.2	-0.845	0.002	12.8	3.134
3. Pleasant working environment	0.938	-0.3	-0.078	0.003	13.4	3.052
4. A secure job	0.696	1.4	0.392	<.001	15.8	4.27
5. A career that provides intellectual challenge	0.061	8.8	1.891	0.001	12.9	3.364
6. Good promotion prospects	0.256	5.5	1.141	0.001	14.3	3.361
7. A job which gives me responsibility	0.057	8.9	1.928	<.001	12.3	4.121
8. High earnings over length of career	0.556	2.8	0.59	0.107	7.5	1.627
9. A job where I will contribute to society	0.002	14.5	3.17	0.002	11.1	3.157
10. A job where I can use my certificate 3/4 which I am studying for now	0.014	13.7	2.503	0.19	5.7	1.322
11. A job where I gain transferable skills	0.005	9.7	2.848	<.001	11.7	3.404
12. A job that is respected	0.223	6.1	1.224	<.001	15.8	4.752
13. Reasonable workload	0.22	4.6	1.233	0.007	13.9	2.764
14. A job with high quality resources and equipment	0.266	5.6	1.116	0.001	13.2	3.29
15. Job mobility—easy to get a job anywhere	0.244	-5.7	-1.17	0.045	9.8	2.028
16. A job that can easily be combined with parenthood	0.431	4.9	0.79	0.045	10.3	2.04
17. A job with gender diversity and fair treatment	0.095	6.8	1.684	0.045	9.8	2.028

Job characteristic	Importance when choosing a career			Availability in a construction/infrastructure career		
	p-value	MDif	t-value	p-value	MDif	t-value
18. A job that gives me some control over my work time	0.531	-2.8	-0.628	0.004	15.0	2.961
19. A job with hours that don't interfere with my non-work roles and interests (eg. family and social)	0.062	-8.4	-1.895	0.094	8.5	1.689
20. A job that enables me to have a healthy lifestyle	0.591	1.9	0.539	0.016	11.3	2.446
21. A job where I have access to mentoring	0.06	9.8	1.894	0.138	7.4	1.493
22. A job in an industry which has a good reputation and image	0.03	10.0	2.197	<.001	14.0	3.449
23. A job that doesn't take me away from family for long durations	0.522	-3.5	-0.642	0.284	5.6	1.076
24. A job that gives me some control over where I do my work	0.175	-6.9	-1.364	0.068	9.3	1.838

- MDif: mean difference between rating scores of respondents who decided to work in construction/infrastructure and respondents who decided not to work in this sector or were undecided
- A significant difference is denoted by a p value less than 0.05
- Respondents who decided to work in construction/infrastructure (N = 44) and respondents who decided not to work in this sector or were undecided (N = 92)

9.8 Comparison of mean scores of discriminating variables by gender (t-test)

Table 9.8: Comparison of mean scores of variables by gender grouping

Variable	Gender	Mean score	Standard deviation	t-value	p-value
Career commitment	Female (N=61)	3.62	0.87	0.961	0.338
	Male (N=67)	3.48	0.75		
Career satisfaction	Female (N=62)	3.97	0.82	0.774	0.44
	Male (N=67)	3.86	0.72		
Organisational fairness	Female (N=62)	4.19	0.64	0.358	0.721
	Male (N=64)	4.15	0.69		
Organisational inclusion	Female (N=61)	3.78	0.62	1.359	0.177
	Male (N=63)	3.64	0.5		
Life balance	Female (N=61)	4.03	0.86	0.003	0.997
	Male (N=62)	4.03	0.91		
Work hour preferences	Female (N=60)	1.93	0.48	1.058	0.292
	Male (N=63)	1.84	0.48		

* Difference in mean scores between male and female trainees is significant at the 0.05 level (2-tailed)

9.9 Career variables, diversity climate and life balance by organisation type (AVOVA)

Table 9.9: Comparison of mean scores for career variables, diversity climate and life balance by organisation type

Variable	Type of organisation	Mean score	Standard deviation	F-ratio	p-value
Career commitment	GOV (N=56)	3.56	0.76	0.03	0.971
	CONSULT (N=27)	3.51	0.74		
	CONSTR (N=47)	3.53	0.92		
Career satisfaction	GOV (N=57)	3.81	0.77	0.68	0.508
	CONSULT (N=27)	3.97	0.72		
	CONSTR (47)	3.97	0.81		
Organisational fairness	GOV (N=55)	4.22	0.66	0.501	0.607
	CONSULT (N=27)	4.07	0.68		
	CONSTR (N=46)	4.20	0.66		
Organisational inclusion	GOV (N=54)	3.75	0.59	1.516	0.224
	CONSULT (N=27)	3.55	0.48		
	CONSTR (N=45)	3.77	0.56		
Life balance	GOV (N=53)	4.30	0.72	4.78	0.01*
	CONSULT (N=27)	3.96	0.94		
	CONSTR (N=45)	3.78	0.93		

Variable	Type of organisation	Mean score	Standard deviation	F-ratio	p-value
Work hours preference	GOV (N=53)	1.91	0.45	0.4	0.671
	CONSULT (N=27)	1.81	0.48		
	CONSTR (N=45)	1.91	0.51		

* Difference in mean scores is significant at the 0.01 level

+

9.10 Bivariate correlations between variables

Table 9.10: Bivariate correlations between variables

Variable		CS	OF	OI	LB	WHP	CC	PG
Career satisfaction (CS)	Pearson Correlation	1						
	Sig. (2-tailed)							
Organisational fairness (OF)	Pearson Correlation	.300**	1					
	Sig. (2-tailed)	<.001						
Organisational inclusion (OI)	Pearson Correlation	.431**	.513**	1				
	Sig. (2-tailed)	<.001	<.001					
Life balance (LB)	Pearson Correlation	0.144	.221*	.272**	1			
	Sig. (2-tailed)	0.109	0.013	0.002				
Work hour preferences (WHP)	Pearson Correlation	0.176	0.116	.207*	.242**	1		
	Sig. (2-tailed)	0.05	0.197	0.021	0.007			
Career commitment (CC)	Pearson Correlation	.356**	.271**	.372**	.306**	.338**	1	
	Sig. (2-tailed)	<.001	0.002	<.001	<.001	<.001		
Perceived gap between importance and availability of job characteristics (PG)	Pearson Correlation	-0.085	-.202*	-0.02	-.292**	-0.142	-.320**	1
	Sig. (2-tailed)	0.342	0.024	0.828	0.001	0.119	<.001	

* Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed)

9.11 Comparison of mean scores of variables by career intention grouping (t-test)

Table 9.11: Comparison of mean scores of variables by career choice grouping

Variable	Career in construction/infrastructure				t-value	p-value
	Yes (N=44)		No/Undecided (N=92)			
	M	SD	M	SD		
Career satisfaction	4.22	0.70	3.74	0.76	3.453	<0.001**
Organisational fairness	4.31	0.64	4.11	0.67	1.626	0.107
Organisational inclusion	3.87	0.52	3.63	0.56	2.365	0.02*
Life balance	4.35	0.78	3.88	0.88	2.947	0.004**
Perceived gap between importance and availability of job characteristics	-0.02	0.27	0.16	0.33	2.98	0.003**

* Difference in mean scores is significant at the 0.05 level; ** Difference in mean scores is significant at the 0.01 level

9.12 The association between different career aspects and participants' intention to pursue a career in construction/infrastructure

Table 9.12: Testing the effects of different perceived career aspects on participants' intention to pursue a career in construction/infrastructure

Variable	Coefficient (B)	Standard error	Significance	Exp(B)
Age	0.004	0.274	0.989	1.004
Gender (reference group: Male)	Ref			
Female	-0.274	0.438	0.532	0.761
Organisation type (reference group: Government)	Ref			
Consultant organisation	-0.042	0.579	0.943	0.959
Construction organisation	-0.201	0.523	0.701	0.818
Career satisfaction	0.707	0.342	0.039*	2.027
Perception of organisational fairness	-0.146	0.406	0.719	0.864
Perception of organisational inclusion	0.46	0.421	0.275	1.583
Perception of life-balance	0.375	0.293	0.199	1.456
Perceived gap between importance and availability of job characteristics	-1.773	0.845	0.036*	0.17

* The effect is significant at the 0.05 level; ** The effect is significant at the 0.01 level

Dependent variable: participants' intention to pursue a career in construction/infrastructure

9.13 The combined effects of career commitment and different perceived job aspects on participants' intention to pursue a career in construction/infrastructure

Table 9.13: Testing the combined effects of career commitment and different perceived career aspects on participants' intention to pursue a career in construction/infrastructure

Variable	Coefficient (B)	Standard error	Significance	Exp(B)
Age	-0.412	0.42	0.327	0.663
Gender (reference group: Male)	Ref			
Female	-1.074	0.665	0.106	0.342
Organisation type (reference group: Government)	Ref			
Consultant organisation	-0.797	0.829	0.336	0.451
Construction organisation	-1.436	0.799	0.072	0.238
Career satisfaction	0.333	0.389	0.392	1.395
Perception of organisational fairness	-0.893	0.636	0.16	0.409
Perception of organisational inclusion	-0.333	0.632	0.598	0.717
Perception of life-balance	0.233	0.394	0.555	1.262
Perceived gap between importance and availability of job characteristics	-1.445	1.32	0.273	0.236
Career commitment	3.85	0.782	<.001**	46.992

* The effect is significant at the 0.05 level; ** The effect is significant at the 0.01 level

Dependent variable: participants' intention to pursue a career in construction/infrastructure

9.14 Linear regression model testing the effects of career satisfaction, perceptions of organisational fairness, inclusion, and life balance, and perceived difference between importance and availability of job characteristics on participants' career commitment

Table 9.14: Testing the effects of different perceived career aspects on career commitment

Variable	Coefficient (B)	Standard error	Beta	Significance
Age	0.093	0.078	0.093	0.24
Gender (reference group: Male)	Ref			
Female	0.094	0.13	0.058	0.467
Organisation type (reference group: Government)	Ref			
Consultant organisation	0.163	0.176	0.084	0.355
Construction organisation	0.163	0.156	0.097	0.299
Career satisfaction	0.22	0.091	0.212	0.018*
Perception of organisational fairness	-0.001	0.118	-0.001	0.995
Perception of organisational inclusion	0.34	0.152	0.234	0.028*
Perception of life-balance	0.145	0.081	0.157	0.077
Perceived gap between importance and availability of job characteristics	-0.843	0.223	-0.324	<.001**

* The effect on career commitment is significant at the 0.05 level; ** The effect on career commitment is significant at the 0.01 level

9.15 Comparison of different perceived job aspects based on participants' experiences during the first and second rotation

Table 9.15: Comparison of mean scores for career variables and life balance by participants' experiences during the first and second rotation

Variable	Experience in the 2nd rotation compared to the 1st rotation	Mean score	Standard deviation	F-ratio	p-value
Career commitment	Better (N=26)	3.49	0.72	1.428	0.249
	The same (N=18)	3.26	0.97		
	Worse (N=13)	3.02	0.90		
Career satisfaction	Better (N=26)	3.82	0.68	0.811	0.45
	The same (N=18)	3.81	0.66		
	Worse (14)	3.51	1.05		
Organisational fairness	Better (N=25)	4.31	0.74	2.814	0.069
	The same (N=17)	4.15	0.44		
	Worse (N=13)	3.81	0.55		
Organisational inclusion	Better (N=25)	4.07	0.72	3.711	0.031*
	The same (N=17)	3.73	0.80		
	Worse (N=14)	3.40	0.69		
Life balance	Better (N=23)	4.00	1.00	1.405	0.255
	The same (N=17)	3.82	1.02		
	Worse (N=14)	3.43	1.02		

* Difference in mean scores is significant at the 0.05 level