

# Wellbeing outcomes for learner cohorts by Workforce Development Councils



**NEW ZEALAND POLICY  
RESEARCH INSTITUTE**  
TE KĀHUI RANGAHAU MANA TAURITE

## Authors

Gail Pacheco, Alexander Plum & Alexandra Turcu

## Acknowledgements

We would like to acknowledge the six WDCs for funding the research and supporting the research process. This includes providing crucial feedback at each of the milestones. Furthermore, we want to thank in particular Nichola Shackleton and Swati Khurana (both Muka Tangata) for collating feedback and helping drive the discussion. Both were also key in working collaboratively towards development of the research aims. We would also like to thank Patricia Delacruz for her work in preparing the report for publication.

## Published

New Zealand Policy Research Institute, Auckland, New Zealand

ISBN (PDF): 978-1-99-101141-1

2024

Suggested citation: Pacheco, G., Plum, A. & Turcu, A. (2024). *Wellbeing outcomes for learner cohorts: by Workforce Development Council*. New Zealand Policy Research Institute, Auckland.



**OHU AHUMAH**  
Workforce  
Development  
Councils



**WAIHANGA ARA RAU**  
Construction and  
Infrastructure  
Workforce Development Council



**TOI MAI**  
Workforce  
Development  
Council



**TOITŪ TE WAIORA**  
Community, Health, Education  
and Social Services  
Workforce Development Council



**HANGA-ARO-RAU**  
Manufacturing, Engineering  
and Logistics  
Workforce Development Council



**MUKA TANGATA**  
People, Food and Fibre  
Workforce Development Council



**RINGA HORA**  
Services  
Workforce Development Council

### **Disclaimer for output produced from the IDI**

These results are not official statistics. They have been created for research purposes from the Integrated Data Infrastructure (IDI) which is carefully managed by Stats NZ. For more information about the IDI please visit <https://www.stats.govt.nz/integrated-data/>. Any person who has had access to the unit-record data has certified that they have been shown, have read, and have understood section 81 of the Tax Administration Act 1994, which relates to secrecy. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

All observation counts have been randomly rounded to base 3 in accordance with Statistics NZ confidentiality rules. Cells marked with '-' have been suppressed for confidentiality reasons.

### **Disclaimer for Inland Revenue tax data**

The results are based in part on tax data supplied by Inland Revenue to Stats NZ under the Tax Administration Act 1994 for statistical purposes. Any discussion of data limitations or weaknesses is in the context of using the IDI for statistical purposes, and is not related to the data's ability to support Inland Revenue's core operational requirements.

### **Disclaimer for Census 2013 data**

Access to the data used in this study was provided by Stats NZ under conditions designed to give effect to the security and confidentiality provisions of the Data and Statistics Act 2022. The results presented in this study are the work of the author, not Stats NZ or individual data suppliers

## Executive Summary

A post-school qualification (PSQ) opens pathways to better labour market outcomes, but the benefits of a PSQ can go beyond employment and earnings and can also affect one's wellbeing. This study aims to quantify the wellbeing impacts of vocational education and training PSQs ranging between level 1 and level 7 (excluding Bachelor's degrees). We use Stats NZ's Integrated Data Infrastructure, a large body of administrative and non-government information, to assess how: (i) physical (accident-related) and mental health; (ii) benefit receipt; and (iii) criminal offending and victimisation, change in the ten years after attaining a PSQ. Our findings are broken down by Workforce Development Council (WDC), sub-groups and qualification level, and further stratified by gender and ethnicity, as well as whether the individual is working in an industry related to their PSQ.

Our key findings are:

1. **Demographic characteristics of learners differ by WDC.** *For example:* The share of male learners is much smaller for Toitū Te Waiora (35.2%) compared to Waihanga Ara Rau (72.8%).
2. **Wellbeing outcomes differ by WDCs.** *For example:* While ACC work-related accident claims are 12% (2014) for Muka Tangata, the respective share for Toi Mai is 4.2%. Differences can also be observed in terms of mental health related treatments: while the share was at 24% for Toitū Te Waiora in 2014, the proportion was much lower for Waihanga Ara Rau (17.4%).
3. **Wellbeing profiles also differ within WDCs.** *For example:* The share of Hanga-Aro-Rau learners who received MSD hardship benefits was 8.3% in 2014 for Engineering, and 14.1% in the same year for Manufacturing.
4. **Wellbeing outcomes change over time – but the directions differ by wellbeing type.** *For example:* The share of ACC work-related claims dropped from 14.3% (2014) to 10.2% (2022) for Agriculture (Muka Tangata); however, the fraction of learners with any mental health related treatment increased in the same period from 17.0% (2014) to 18.8% (2022).
5. **Higher qualification level is associated with better wellbeing outcomes.** *For example:* Toi Ora (Toi Mai) Level 5-7 learners have lower levels of ACC work-related accident claims, lower levels of benefits receipt, and fewer individuals with a criminal record compared to Level 2-4 learners.
6. **Wellbeing outcomes differ by gender.** *For example:* Independent of the qualification level, male Community (Toitū te Waiora) learners have a higher proportion of ACC claims than women. We find the reverse is true when focussing on receipt of mental health related treatment.
7. **Wellbeing outcomes differ by ethnicity.** *For example:* Compared to Europeans, Māori learners in the Construction (Waihanga Ara Rau) sub-group have lower rates of ACC accidents, both in total and work-

related, but Māori Construction learners have higher rates of mental health treatment, though the European cohort has increasing mental health contacts over time.

Overall, this study shows that wellbeing is a multidimensional concept, where large differences can be observed depending on the socio-demographic characteristics of the pool of Learners, like gender or ethnicity. For future research in this space, the following aspects are likely to be worthy of further exploration:

1. The use of ACC data to estimate the physical health of learners paints a broad picture. Other healthcare information, such as number of hospital admissions, prescriptions and GP visits, could be used in future work to better understand the intensity of healthcare use as a measure of wellbeing.
2. Our measures of wellbeing are based on administrative records, which have the limitation of only capturing aspects in one's life which are of relevance to the government. However, there is a plethora of alternative indicators which provide insight regarding one's wellbeing, like life satisfaction measures. This information is normally collected in wellbeing surveys, and one challenge will be to link this information to the WDC-specific qualification.
3. Attaining a qualification can open new pathways and have spillover effects. For example, having a qualification might impact the likelihood of moving overseas for employment prospects (e.g., Australia). Thus, future research can also investigate migration patterns post qualification, and the role they play with respect to any brain drain from New Zealand.

# Contents

1	Introduction .....	1
2	Data.....	3
2.1	Defining our Population .....	3
2.2	Defining wellbeing outcomes.....	5
	Physical & Mental Health .....	6
	Benefit Receipt.....	7
	Crime & Victimisation .....	7
	Benchmarking against those with no PSQs .....	8
	Subpopulation analysis .....	8
3	Descriptive profile across WDC sectors .....	9
4	Hanga-Aro-Rau.....	13
4.1	Descriptive profile by industry sub-group.....	13
4.2	Wellbeing trajectories by sub-group.....	15
	Engineering .....	17
	Logistics.....	22
	Manufacturing .....	25
5	Muka Tangata .....	31
5.1	Descriptive profile by industry sub-group.....	31
5.2	Wellbeing outcomes by industry sub-groups.....	33
	Agriculture .....	36
	Horticulture.....	41
	Forestry.....	46
	Seafood.....	50
	Veterinary .....	54
6	Ringa Hora .....	58
6.1	Descriptive profile by industry sub-group.....	58

6.2	Wellbeing outcomes by industry sub-groups.....	61
	Business, finance & industry support.....	63
	Hospitality & cleaning .....	68
	Retail & distribution .....	73
	Security & government.....	78
	Travel & aviation .....	81
7	Toi Mai .....	87
7.1	Descriptive profile by industry sub-group.....	87
7.2	Wellbeing outcomes by industry sub-groups.....	89
	Toi Ora .....	91
	Toi Puaki.....	96
	Toi Pāho .....	99
	Toi Whānui.....	102
	Toi-A-Ringa.....	105
8	Toitū te Waiora .....	111
8.1	Descriptive profile by industry sub-group.....	111
8.2	Wellbeing outcomes by industry sub-groups.....	113
	Community .....	115
	Health .....	120
	Social Services.....	125
9	Waihanga Ara Rau.....	130
9.1	Descriptive profile by industry sub-group.....	130
9.2	Wellbeing outcomes by industry sub-groups.....	132
	Construction .....	134
	Infrastructure.....	139
	Services.....	143
10	Conclusion & Next Steps.....	147
	References .....	148

Appendix A.....	149
Appendix B.....	158
Appendix C.....	164
Appendix D.....	171
Appendix E.....	181
Appendix F.....	191
Appendix G.....	197

# 1 Introduction

This research examines the role of post-school education and training (below a bachelor's qualification) on a number of wellbeing outcomes. While tertiary education focuses on providing specialized knowledge and skills, the broader spectrum of post-school qualifications (PSQs) below the level of a bachelor's degree holds considerable power in preparing learners for diverse career trajectories and facilitating their integration into the workforce.

A cornerstone of the New Zealand educational landscape is the Workforce Development Councils (WDCs), which were established during the Reform of Vocational Education (RoVE) in 2020.<sup>1</sup> A key responsibility of the WDCs is the mandate to align vocational education and training (VET) with industry demands while amplifying the voices of Māori businesses and iwi development. Through collaborative endeavours with employers and indigenous business entities, WDCs play a pivotal role in setting industry standards, designing qualifications, and shaping the VET landscape to meet evolving societal needs. There are six WDCs: Hanga-Aro-Rau, Muka Tangata, Ringa Hora, Toi Mai, Toitū Te Waiora, and Waihanga Ara Rau; each tasked with managing, developing and maintaining the VET for a dedicated sector. For the purpose of this report, these sectors are further broken down into sub-groups based on the qualification codes of the learners. VET specialises on the skills, knowledge and attributes needed to perform specific roles or to work in a specific industry. VET qualifications are often specific to each industry and occupation, and are delivered in the workplace, through providers, wānanga and private training establishments.

This report explores the association between PSQs and wellbeing trajectories of learners. This study also complements the report titled "Learner Pathways by Workforce Development Council", which focuses on labour market and educational pathways.

Our research aims for each WDC and their sub-groups are:

- 1) Estimate wellbeing trajectories associated with post-school qualifications relative to no post-school qualifications (two, five and ten years after graduation);
- 2) Quantify wellbeing outcomes associated with working in an industry related to the area of one's study relative to working in a non-related industry;
- 3) Quantify the wellbeing returns of gaining a NZQF level 2-4 qualification relative to a level 5-7 qualification; and
- 4) Compare wellbeing trajectories by gender and ethnicity of learners.

---

<sup>1</sup> See: <https://www2.nzqa.govt.nz/about-us/strategies-projects/vocational-education-system/>

This study utilises the Integrated Data Infrastructure (IDI), the administrative research database hosted by Stats NZ. Using this data we identify a cohort of learners who graduated with a PSQ in 2012 at NZQF level 1 to 7 (excluding Bachelor's degrees) and follow this cohort over the next ten years. We focus on the following three broad dimensions of wellbeing (with specific variables within each domain, and associated data source, detailed in Section 2 of this report):

- 1) Mental and physical health;
- 2) Benefit receipt; and
- 3) Crime and victimisations.

The remainder of the report is structured as follows: Section 2 delves into the data, population of interest and outcomes measured; Section 3 presents the broad findings for the WDCs as a whole, Sections 4-9 present the findings for each WDC and their sub-groups in turn, while Section 10 concludes.

## 2 Data

This study uses Stats NZ's Integrated Data Infrastructure (IDI). The IDI is a research database providing population-level unit record information on individuals and households in New Zealand. Each individual is assigned a unique identifier, which can be used to link them to various administrative data sources and Stats NZ-produced tables. To track the wellbeing pathways of learners, we draw on a large range of microdata related to education, employment, benefit receipt, accidents, health and crime. The data are provided by the Ministry of Education (MoE), Inland Revenue (IR), Ministry of Social Development (MSD), Ministry of Health (MoH), ACC, Ministry of Justice (MoJ), and the Police. Table A 1 in Appendix A holds a list of all datasets used in this project. It is important to note that we use administrative data as an imperfect proxy to measure wellbeing and that there are weaknesses to using this methodology, for example, we can only measure outcomes that are reported, and we can only approximate the severity of any wellbeing event from the information recorded administratively. There are also strengths to using administrative data, such as being able to access a population-wide sample of indicators, and not having to rely on individuals' memories of specific events as is the case with survey and interview data.

### 2.1 Defining our Population

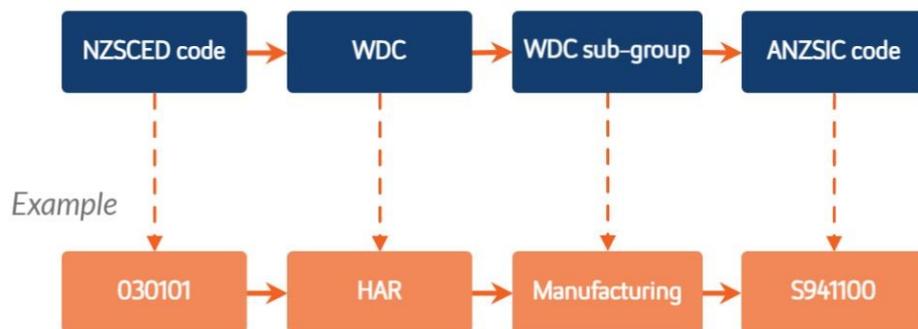
This research studies the relationship between completing a post-school qualification (PSQ) below a Bachelor's degree and subsequent wellbeing outcomes. We follow the study by Pacheco et al. (2023) by examining the cohort of learners who completed a PSQ in 2012. We apply the same criteria to identify our population of interest and track their wellbeing outcomes over the subsequent decade. In the interest of brevity, we include only a broad overview of this identification strategy, with further details available in Section 2.1 of Pacheco et al. (2023).

We use the New Zealand Standard Classification of Education (NZSCED) code related to a completed qualification to identify the pool of learners and the corresponding WDC. This information is found in the Ministry of Education data on course enrolment, course completion and tertiary education and industry training. Each WDC also provided a concordance table using the NZSCED codes enabling us to further break down the pool of learners into WDC sub-groups (see Appendix Table A 2 for details on the relationship between NZSCED codes and WDC sub-groups). Furthermore, we follow Pacheco et al. (2023) and use the NZ Qualification Framework (NZQF) levels to understand the wellbeing trajectories of individuals completing different levels of qualification.

Once learners and their corresponding WDC and sub-group are identified, we find the qualification-related industries that these learners have gone on to work in. To identify the related industry, we use the Australian and New Zealand Standard Industrial Classification (ANZSIC) codes present in the IR data. Each WDC has provided a list of industries, and their ANZSIC codes, and which are considered “related” to the area of study in each WDC sub-group. From this information we can therefore map an individual into a WDC and WDC sub-group and identify if they are working in an industry that is “related” to their studies. Note that this is only possible for employed individuals.

Figure 1 gives an example of the mapping described above. Figure 1 tracks a learner who was awarded a qualification with NZSCED code 030101 (Manufacturing Engineering). This NZSCED code is mapped on to a sub-group in the Hanga-Aro-Rau WDC, specifically, the Manufacturing sub-group. The individual’s ANZSIC code is then identified as code S941100 (Automotive Electrical Services), and since this ANZSIC code is associated with the Manufacturing sub-group, they are considered to be working in a “related” industry.

Figure 1. Concordance from qualification to WDC to industry



Source: Figure 1, page 5, in Pacheco, Plum & Turcu (2023).

If an individual completed more than one qualification in 2012 in a WDC sub-group, we assign them to the highest NZQF level qualification completed in 2012. In instances where individuals are working multiple jobs in different industries, we use their “primary” job to discern their industry. We define a job as “primary” based on earnings, assigning the highest-paying job to be their primary role.

Next, we add information on individual characteristics. Stats NZ provides an administrative population census dataset with information (derived from a number of sources) on gender, ethnicity, birth and (if applicable) deceased date, whether born overseas, and year arrived in NZ (if a migrant). We apply the following restrictions:<sup>2</sup>

- We drop individuals below 18- and above 55-years old in 2012.<sup>3</sup> The age threshold increases the likelihood that all individuals are under the same legal framework when graduating and have full access to the labour market. This also ensures that we maintain consistency with the labour market work by Pacheco et al. (2023). Individuals above 55 would be eligible for NZ Super within our study's time window, potentially impacting their labour market participation.
- We remove individuals who are deceased within our study period.
- Individuals born overseas must have arrived in NZ at least five years before graduation. A core part of our study is to understand the wellbeing impacts of post-school qualifications; recent migrants to NZ may experience changes in wellbeing due to migration, making it difficult to disentangle the effects of study from the effects of migration for those who have just arrived in NZ.

## 2.2 Defining wellbeing outcomes

To track the wellbeing trajectories of our learners over time, we use information from a range of datasets to derive 10 indicators. They capture wellbeing outcomes within three overarching domains: (i) physical (accident-related) and mental health; (ii) benefit receipt; and (iii) criminal offending and victimisation. We provide a full list of these indicators alongside definitions and data sources in Table 1.

---

<sup>2</sup> Note that unlike Pacheco et al. (2023), we do not restrict our sample based on location information (within Auckland or Outside Auckland) as this dimension has many missing data fields from which we cannot draw many valuable conclusions. It is important to have complete information on individuals in our sample, thus we also drop any individuals with missing demographic characteristics.

<sup>3</sup> Individuals above 55 would be eligible for NZ Super within our study's time window, potentially impacting their labour market participation.

**Table 1. Definitions and sources of wellbeing indicators**

Indicator name	Definition	Data source(s)
<b>1) Physical &amp; Mental Health</b>		
ACC accident	= 1 if individual had an ACC claim in a given year; 0 otherwise.	ACC
ACC work-related accident	= 1 if individual had a work-related ACC claim in a given year; 0 otherwise.	ACC
Any mental health contact	= 1 if individual received a mental-health-related treatment from a medical source in a given year; 0 otherwise.	MoH
Any mental health contact+	= 1 if individual received a mental-health-related treatment from a medical source or a mental-health-related benefit, in a given year; 0 otherwise.	MoH, MSD
<b>2) Benefit Receipt</b>		
Any benefit receipt	= 1 if individual received any MSD benefit in a given year; 0 otherwise.	MSD
Unemployment benefit receipt	= 1 if individual received an unemployment-related MSD benefit in a given year, and 0 otherwise.	MSD
Hardship benefit receipt	= 1 if individual received a hardship-related MSD benefit in a given year; 0 otherwise.	MSD
<b>3) Crime &amp; Victimization</b>		
Any criminal history	= 1 if individual was convicted of a criminal offence in a given year; 0 otherwise.	MoJ
Serious criminal history	= 1 if individual was convicted of a serious criminal offence in a given year; 0 otherwise.	MoJ
Victimization	= 1 if individual was a victim of a criminal offence in a given year; 0 otherwise.	Police

Notes: All data sources have information for our learner cohort from 2012 onwards, except for victimisation data, which is available from 2014 onwards.

## Physical & Mental Health

As shown in Table 1, we start with information on accidents from ACC data to measure changes in physical health. We link our spine of learners to the ACC claims data and derive an indicator which takes the value of 1 if an individual had at least one ACC claim in a given year, and 0 otherwise. We also derive a separate indicator for work-related claims in a given year. Note that we only include “accepted” ACC claims in both of these indicators, in order to avoid over-counting accidents by including claims filed incorrectly.

Next, we report the mental health outcomes of learners in our cohort through an indicator compiling several sources of medical information. We link our spine of learners to information on public and private hospital data, pharmaceutical data, and Programme for the Integration of Mental Health Data (PRIMHD). We derive an indicator which takes the value of 1 if an individual received at least one mental-health-related treatment from any of the above sources in a given year, and 0 otherwise. To complement this outcome variable, we use MSD data and create a second indicator that includes information on mental-health-related benefit uptake. One limitation of administrative data is that it cannot fully capture an individual’s mental health outcomes, since it only holds information on

individuals who access public healthcare. Sources of information not available through the IDI include accessing therapy or counselling online and/or without a referral,<sup>4</sup> relying on friends and family for mental health support, or for example, relying on self-sourced information.

## Benefit Receipt

The next category of wellbeing outcomes shown in Table 1 fall within the overall domain of individual benefit receipt. We link our spine of learners to benefit information provided by MSD and derive an indicator which takes the value of 1 if an individual received any MSD benefit in a given year, and 0 otherwise. There are many reasons individuals may receive government support; therefore, we derive two additional indicators: unemployment-related and hardship-related benefits. A list of benefits covered by each of the three indicators is provided in Appendix Table A 3. Note that despite some individuals receiving multiple types of benefits in one year, they will only be counted once per year in the “any benefits” indicator, however, they may appear in both the hardship and unemployment-related indicators, separately, in the same year.

## Crime & Victimization

We next look at justice outcomes from MoJ. We create an indicator for criminal offending by first linking our learner spine to the MoJ court charges data and identifying individuals who were convicted of an offence in a given year. Thus, we exclude cases where there was no conviction (e.g., the individual was found not guilty or where the charges were dropped). We derive an indicator which takes the value of 1 if an individual was convicted for at least one criminal offence in a given year, and 0 otherwise. The offences captured by this indicator include anything from a traffic offence leading to a fine, to theft, burglary, and murder. To generate a more granular picture on the seriousness of the crime, we derive a second indicator which takes the value of 1 if the individual was convicted of a serious offence in a given year, and 0 otherwise. The “serious offence” indicator is intended to capture offending which is violent and/or likely to lead to a penalty above a fine. For this purpose, we use MoJ-provided seriousness scores. The seriousness score is a measure derived by the NZ Police, Ministry of Justice, and the Department of Corrections and ranges between 0.19 for Parking in a clearway, to 12,045 for Murder (Sullivan et al., 2017). We provide an illustrative list of offences and their seriousness scores in Appendix Table A 4. We define a “serious offence” as an offence with a seriousness score of over 25, meaning above the level of a Theft valued under \$500.

---

<sup>4</sup> Example of services not covered include betterhelp.com, a popular online affordable therapy service.

Being on the receiving end of a crime is captured separately by a victimisation indicator derived from the Police victimisation data, available from 2014 onwards. We do not restrict this indicator to crimes where the accused offender was convicted, so as to not under-count instances where the perpetrator was never caught or the weight of the evidence was insufficient to prove guilt. More specifically, we derive an indicator which takes the value of 1 if an individual was a victim of a criminal offence at least once in a given year, and 0 otherwise.

## **Benchmarking against those with no PSQs**

To understand the wellbeing trajectories associated with completing a post-school qualification (PSQ) in 2012, we create a reference group so that wellbeing outcomes post-completion can be compared to a group that hadn't undertaken PSQs at that time. We create this reference group in the following manner:

1. We use the 2013 Census to identify individuals who stated they did not have any PSQs.
2. From this group, we identify those who received income from wages and salaries (W&S) in at least one month in 2012 and worked in an industry related to a WDC sub-group.
3. To improve the comparability between those with no PSQs and the learners in our population of interest, we use entropy balancing on a range of observable characteristics - gender, age, ethnicity, and benefit receipt.

This process ensures we are comparing those who completed a PSQ in 2012 with a group that is similar in demographic characteristics with the key difference being they had not completed a PSQ by 2012.

## **Subpopulation analysis**

When assessing the wellbeing trajectories by WDC sub-group we also present the outcomes of interest stratified by related industry, gender, and ethnicity (Māori and European). Note that we would like to undertake sub-population analysis for Pacific peoples, but the sample size usually means the majority of results are suppressed.

As mentioned above, the related industry is identified using information on ANZSIC codes provided by the WDCs. We classify an individual as working in a related industry using the same methodology as Pacheco et al. (2023), namely, when the individual received income from W&S for at least one month of the financial year in an industry linked to the sub-group they graduated from in 2012, according to concordance tables provided by the WDCs. Note that some sub-populations are small, so we aggregate the NZQF levels into the following two groups: NZQF levels 2-4 and NZQF levels 5-7.

### 3 Descriptive profile across WDC sectors

There are six WDCs, each of these is composed of unique WDC sub-groups. The boundary of each WDC sub-group is based on NZSCED codes provided by the WDCs. Thus, the relevant NZSCED codes for each WDC sub-group determines who enters the respective pool of learners. A full list of these NZSCED codes is provided in Appendix Table A 2. Information about learners' characteristics, grouped by WDC are provided in Table 2 below. The total sample consists of 110,355 learners who graduated in 2012. This count includes double-counting of individuals when NZSCED codes are assigned to multiple sub-groups or when an individual received more than one qualification. The largest WDC is Ringa Hora (RH) with almost one quarter of all learners, and the smallest Muka Tangata (MT) with about 1 in 10 learners.

We note that a high proportion of the Hanga-Aro-Rau (HAR) WDC, focusing on Manufacturing, Engineering and Logistics and Waihanga Ara Rau (WAR) WDC, focusing on construction and infrastructure; are male (73% in both instances), while the opposite is true for RH focusing on services, and Toitū Te Waiora (TTW), focusing on community, health, education and social services (36 and 35% male respectively).

There are also notable age differences across WDCs. Over half of Toi Mai (TM) learners are aged 25 and below (53%), but only a quarter of learners in TTW fall into this age category (26%). Additionally, RH learners are more likely to be born overseas (21%) whereas MT learners, focusing on people, food, and fibre, have the smallest share born overseas (10%).

Differences are also observed regarding ethnicity. Almost two thirds of MT learners identify as European, while this is less than 50% for RH. However, RH has a higher proportion of Pacific, Asian, and MELAA/other ethnicities (a quarter of learners), compared to MT (7%).

Looking at the qualifications achieved, most fall between level 2 and level 4. For example, over 80% of WAR learners attain a qualification in this range. Furthermore, while level 2 and level 3 are the dominant qualification levels for HAR and MT, the level 4 qualification plays a much larger role for WAR, and TM has the largest proportion attaining a level 5 to 7 qualification (nearly a third of their learner cohort).

Table 2. Descriptive statistics of WDC learners, 2012

	Hanga-Aro-Rau	Muka Tangata	Ringa Hora	Toi Mai	Toitū Te Waiora	Waihanga Ara Rau
<b>Male</b>	73.2%	65.4%	35.9%	42.9%	35.2%	72.8%
<b>Age 25 and below</b>	41.4%	38.1%	40.9%	53.2%	25.6%	34.8%
<b>Age above 45</b>	14.0%	13.6%	12.6%	9.7%	23.4%	13.0%
<b>Born overseas</b>	16.8%	10.4%	21.4%	19.1%	19.5%	16.5%
<b>Ethnicity</b>						
European	55.0%	61.6%	46.7%	49.9%	59.6%	59.6%
Māori	27.2%	31.6%	27.9%	29.8%	23.4%	25.8%
Pacific	10.1%	2.7%	13.7%	9.3%	9.3%	6.9%
Asian	5.8%	2.8%	9.5%	8.4%	5.2%	5.5%
MELAA/other	2.0%	1.3%	2.2%	2.5%	2.6%	2.2%
<b>NZQF level of qualification achieved in 2012</b>						
Level 1	19.6%	3.2%	5.2%	0.3%	7.6%	-
Level 2	28.0%	34.1%	10.7%	12.8%	15.1%	15.1%
Level 3	28.1%	39.0%	26.6%	32.7%	31.8%	24.2%
Level 4	17.7%	16.0%	38.8%	22.4%	22.5%	41.9%
Level 5	3.3%	5.8%	10.9%	18.1%	16.6%	7.0%
Level 6	1.0%	1.7%	5.2%	11.8%	4.8%	9.4%
Level 7	2.3%	0.2%	2.6%	1.9%	1.7%	2.3%
<b># of Learners (share of total)</b>	17682	11793	25446	21390	12987	21057

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table 3 shows information about the learners' wellbeing outcomes, grouped by WDC. This is the same sample described in Table 2, consisting of learners' outcomes over time. We describe learners' wellbeing in terms of three dimensions: physical and mental health status, benefit receipt and crime incidents.

For the first dimension, we notice that ACC claims are undertaken by between a quarter and a third of all learners, with the proportions modestly decreasing over time post qualification. WAR has the highest proportion of ACC claims in all time periods (ranging from 32% to 29%), with RH having the lowest (25%). Interestingly, when we look closer at work-related ACC claims, we see that TM has the lowest proportion of claims (4%), while MT has the highest (between 12% and 8%). Differences are also apparent when it comes to mental health treatments, with TTW having the highest proportion of learners with a mental health contact in a given year, reaching over a quarter (27%) by 2022, and WAR having the lowest, at less than 20%. All WDCs see increases in the proportion of mental health contacts over time, with TM having the highest increase of 4 percentage points between 2014 and 2022.

For the second dimension of benefit receipt, we see a general downward trend across all WDCs over time. However, TM remains the WDC with the highest proportion of learners receiving a benefit in a given year, despite this proportion nearly halving from 21% in 2014 to 12% in 2014. WAR on the other

hand has the lowest rate of benefit receipt, down from 11% in 2014 to 8% by 2022. Across the board, it appears that the vast majority of benefit receipt is the from hardship benefits, with two thirds or more of all benefits coming from this category. Interestingly, TTW has the lowest proportion of hardship benefits, and higher unemployment benefits compared to WAR.

Finally, when looking at incidents of crime and victimisations, we see that, across the board, learners with a criminal offence in a given year make up a small proportion of learners and that this proportion decreases over time. By 2022, 2% of the MT WDC learners have had a criminal offence, which is the highest proportion of all WDCs in that year, with TTW having the lowest proportion of 0.5%. On average, incidents of serious criminal history are even lower, making up approximately half of all crime incidents, with MT having the highest proportion of 2.6% in 2014 and 1.1% in 2022. On the other hand, the prevalence of crime victimisations are more homogenous across WDCs, between 2% and 3% in 2014, increasing to between 4% and 5% by 2022, with the differences between WDCs being around 1 percentage point.

Table 3. Wellbeing outcomes of WDC learners over time

	Hanga-Aro-Rau	Muka Tangata	Ringa Hora	Toi Mai	Toitū Te Waiora	Waihanga Ara Rau
<b>Number of Learners</b>						
2014	15 921	10 839	22 620	19 077	11 943	18 963
2017	15 630	10 731	22 113	18 486	11 772	18 723
2022	15 639	10 806	21 978	18 453	11 679	18 795
<b>1) Physical &amp; Mental Health</b>						
<b>ACC accident</b>						
2014	30.5%	30.8%	25.0%	25.9%	28.1%	32.0%
2017	28.8%	30.1%	25.5%	26.4%	27.8%	31.8%
2022	27.2%	28.2%	25.2%	25.4%	27.3%	29.4%
<b>ACC work-related accident</b>						
2014	10.0%	12.0%	4.8%	4.2%	6.2%	9.2%
2017	9.6%	10.7%	4.6%	4.6%	5.9%	8.0%
2022	7.3%	8.4%	4.1%	3.9%	5.0%	6.3%
<b>Any mental health contact</b>						
2014	18.5%	19.2%	19.1%	20.0%	24.0%	17.4%
2017	19.8%	20.5%	21.3%	22.6%	26.4%	19.2%
2022	20.4%	20.3%	22.2%	24.2%	27.4%	19.3%
<b>Any mental health contact+</b>						
2014	19.3%	20.2%	20.1%	21.4%	24.9%	18.3%
2017	20.8%	21.5%	22.4%	23.9%	27.1%	19.9%
2022	21.8%	21.7%	23.5%	25.7%	28.4%	20.2%
<b>2) Benefit Receipt</b>						
<b>Any benefit receipt</b>						
2014	14.7%	13.8%	15.7%	20.7%	12.7%	10.7%
2017	11.3%	11.5%	12.8%	14.7%	9.6%	8.2%
2022	10.1%	11.0%	10.7%	12.0%	9.1%	7.9%
<b>Unemployment benefit receipt</b>						
2014	2.9%	3.5%	5.0%	6.6%	4.3%	2.5%
2017	2.1%	2.7%	4.4%	4.3%	3.2%	1.8%
2022	1.5%	1.5%	2.8%	2.5%	1.8%	1.1%
<b>Hardship benefit receipt</b>						
2014	11.6%	10.1%	10.1%	15.0%	7.5%	8.0%
2017	8.6%	8.4%	7.4%	9.3%	5.4%	5.8%
2022	6.8%	7.5%	5.7%	6.8%	4.0%	5.2%
<b>3) Crime &amp; Victimisation</b>						
<b>Any criminal history</b>						
2014	5.2%	5.8%	3.1%	3.6%	1.8%	4.4%
2017	4.3%	4.9%	2.3%	2.9%	1.4%	3.5%
2022	1.6%	2.0%	0.6%	1.0%	0.5%	1.4%
<b>Serious criminal history</b>						
2014	2.0%	2.6%	1.1%	1.4%	0.7%	2.0%
2017	1.9%	2.7%	0.9%	1.3%	0.6%	1.9%
2022	0.7%	1.1%	0.3%	0.4%	-	0.8%
<b>Victimisation</b>						
2014	2.4%	2.2%	2.7%	2.7%	2.8%	2.2%
2017	4.1%	3.8%	4.8%	4.8%	4.3%	4.3%
2022	4.6%	4.1%	5.4%	4.8%	4.2%	4.2%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## 4 Hanga-Aro-Rau

This section focuses on learners graduating in 2012 with an NZSCED code related to the WDC Hanga-Aro-Rau (HAR).

Hanga-Aro-Rau represents the Manufacturing, Engineering and Logistics industries including wood Manufacturing, bakery, butchery, mechanical, automotive and marine Engineering, dairy processing, extractives and drilling, and transport.

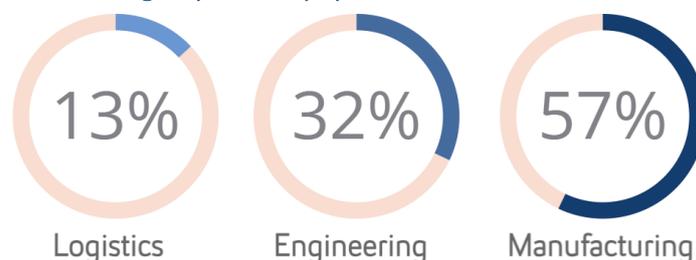


HAR has three sub-groups, named: Engineering, Logistics and Manufacturing. Note that the names of the groupings do not refer to entire industries, but the sub-set of NZSCED codes related to HAR. The mapping of qualifications via NZSCED codes to the sub-groups can be found in Appendix Table A 2. Some NZSCED codes we might expect in the Engineering sub-group, for example Construction Engineering (030901) and Electrical Engineering (031301), are related to a different WDC, or none as is the case with Structural Engineering (030901). HAR has also provided an exhaustive list of ANZSIC codes to identify the qualification-specific related industries.

### 4.1 Descriptive profile by industry sub-group

This section describes the HAR WDC by industry sub-group; the largest of which is Manufacturing, making up over 55% of the 2012 cohort of learners completing a HAR-related PSQ. It is important to note that the group of learners in Logistics is small (2 325 individuals), and therefore, results should be interpreted with caution. This is especially important when we disaggregate the industry sub-groups by gender, ethnicity and industry in the next section.

Figure 2. Proportion of HAR sub-groups in the population of interest



Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR learners between 18 and 54 (inclusive) years old in 2012, according to their education records

Table 4 presents demographic information for learners in the three HAR sub-groups who graduated in 2012. Notably, all groups have a high proportion of males, with Engineering having over 90% of males. HAR learners tend to be young, with 41% being 25 and under, and 14% being over 45. Over half of HAR learners are European (55%), followed by Māori (27%), Pacific peoples (10%), Asian (6%) and MELAA/Other (2%).<sup>5</sup> The ethnicity distribution across the three HAR learner groups is reasonably similar; still, Engineering has a higher share of Europeans (65%) and a lower share of Pacific peoples (6%), while Manufacturing has a higher percentage of Māori (29%) and Pacific learners (13%).

The PSQ level completed in 2012 varies among the three sub-groups. In Logistics, most completed a level 3 qualification. Engineering students are spread across levels 2 to 4 more evenly, while Manufacturing has more students at levels 1 to 3.

**Table 4. Descriptive statistics by HAR group 2012**

	Hanga-Aro-Rau	Engineering	Logistics	Manufacturing
Male	73.2%	93.6%	69.4%	63.2%
Age 25 and below	41.4%	46.0%	24.5%	42.8%
Age above 45	14.0%	10.1%	19.0%	15.2%
Born overseas	16.8%	13.7%	16.9%	18.6%
<b>Ethnicity</b>				
European	55.0%	65.2%	59.6%	48.4%
Māori	27.2%	22.9%	26.3%	29.4%
Pacific	10.1%	5.7%	6.1%	13.4%
Asian	5.8%	4.3%	6.5%	6.5%
MELAA/Other	2.0%	1.8%	1.5%	2.3%
<b>NZQF level of qualification achieved in 2012</b>				
Level 1	19.6%	3.3%	-	33.0%
Level 2	28.0%	34.9%	-	31.0%
Level 3	28.1%	21.7%	88.1%	17.8%
Level 4	17.7%	35.6%	7.0%	10.2%
Level 5	3.3%	3.1%	2.8%	3.5%
Level 6	1.0%	1.2%	-	0.9%
Level 7	2.3%	-	1.0%	3.7%
<b>Number of Learners</b>	17 682	5 592	2 325	10 128

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

<sup>5</sup> MELAA refers to Middle Eastern, Latin American and African.

## 4.2 Wellbeing trajectories by sub-group

This sub-section presents the wellbeing outcomes of the HAR learner cohort by sub-group, at three different time points: two, five and ten years post-graduation (2014, 2017, 2022). First, we examine the sub-groups in their entirety before analysing outcomes by industry, gender and ethnicity. As mentioned earlier, Logistics learners are a small sample, with only few that completed a qualification above level 4 in 2012, and therefore these results should be interpreted cautiously.

Table 5 describes the wellbeing outcomes of HAR learners in aggregate and by industry sub-group. For physical and mental health, we note that the proportions across the HAR WDC on average, for both ACC and ACC work-related accidents are decreasing over time, while mental health contacts are increasing. Overall, all three sub-groups look similar when considering the physical & mental health dimension. The Manufacturing sub-group has the lowest ACC accident rate (28% - 25%), with Engineering having the highest work-related ACC accident rate (8% - 12%). In terms of mental health, Logistics has the highest proportion of mental health contacts at over 20% by 2022.

When considering the benefit receipt dimension, we note that the proportion of learners receiving any kind of benefit is decreasing overall for the HAR WDC on average and that the largest proportion of benefit receipt is of hardship benefits. When analysing the HAR sub-groups we note that the Engineering and Logistics sub-groups have similar proportions of benefit uptake, while Manufacturing has higher uptake. Despite this, benefit uptake is trending down for all three sub-groups, with the gap between Engineering and Logistics decreasing from over 7 percentage points in 2014 to 2 by 2022.

Finally, when considering justice outcomes we note that around 5% of the HAR WDC has some form of criminal charge in 2014, decreasing by more than half to less than 2% by 2022. Opposingly, the proportion of learners experiencing a victimisation increases from just over 2% in 2014 to almost 5% in 2022. When looking at the HAR sub-groups we note that the groups appear rather homogenous, with none of the three sub-groups bucking the trend in any of the justice categories.

Table 5. Wellbeing outcomes by HAR sub-groups

	Hanga-Aro-Rau	Engineering	Logistics	Manufacturing
<b>Share by sub-group</b>				
2014	100%	31.6%	12.7%	57.8%
2017	100%	31.8%	13.0%	57.3%
2022	100%	31.8%	13.2%	57.2%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	30.5%	35.6%	31.1%	27.7%
2017	28.8%	32.1%	32.2%	26.2%
2022	27.2%	30.0%	29.3%	25.1%
<b>ACC work-related accident</b>				
2014	10.0%	12.4%	9.8%	8.7%
2017	9.6%	11.4%	9.7%	8.7%
2022	7.3%	8.1%	7.3%	6.9%
<b>Any mental health contact</b>				
2014	18.5%	16.8%	20.7%	18.9%
2017	19.8%	18.4%	21.2%	20.1%
2022	20.4%	18.2%	22.6%	20.9%
<b>Any mental health contact+</b>				
2014	19.3%	17.4%	21.8%	19.7%
2017	20.8%	18.9%	22.7%	21.2%
2022	21.8%	19.2%	23.9%	22.5%
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	14.7%	10.2%	11.1%	17.8%
2017	11.3%	7.2%	8.8%	13.9%
2022	10.1%	7.2%	9.5%	11.8%
<b>Unemployment benefit receipt</b>				
2014	2.9%	1.5%	1.9%	3.8%
2017	2.1%	0.8%	1.6%	2.9%
2022	1.5%	0.9%	1.2%	1.9%
<b>Hardship benefit receipt</b>				
2014	11.6%	8.3%	7.6%	14.1%
2017	8.6%	6.0%	6.6%	10.3%
2022	6.8%	5.6%	5.7%	7.6%
<b>3) Crime &amp; Victimisation</b>				
<b>Any criminal history</b>				
2014	5.2%	5.4%	3.7%	5.2%
2017	4.3%	4.8%	2.9%	4.2%
2022	1.6%	1.9%	1.2%	1.5%
<b>Serious criminal history</b>				
2014	2.0%	2.1%	1.3%	2.0%
2017	1.9%	2.2%	1.8%	1.7%
2022	0.7%	0.9%	-	0.7%
<b>Victimisation</b>				
2014	2.4%	2.4%	2.2%	2.4%
2017	4.1%	3.9%	4.4%	4.1%
2022	4.6%	4.2%	3.6%	5.0%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR learners between 18 and 54 (inclusive) years old in 2012, according to their education records. All income variables are deflated to March 2022 dollars.

## Engineering

In this subsection, we analyse the wellbeing trajectories of the Engineering sub-group in comparison to those with no PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender and ethnicity) are similar to those of the Engineering sub-group. Table 6 looks at outcomes by NZQF level, while Table 7 focusses on outcomes by industry (whether related or not). Further disaggregation of findings by gender and ethnicity are then discussed in text, and presented in the Appendix B.

### Engineering by NZQF level

In interpreting Table 6, the results for each NZQF level can be compared to those in the first column, which is the comparison group with no PSQs. As evident in Table 6, low counts hinder us from drawing any conclusions from the Level 5-7 cohort of Engineering learners, thus we restrict our discussion to the Level 2-4 learners and the no PSQ group.

Overall, the Level 2-4 learners in the Engineering sub-group have stable wellbeing outcomes over time, with the following two main findings: they have a higher rate of ACC claims than the No PSQ group, and their benefit receipt decreases such that they have a lower rate of benefit receipt than the No PSQ group by 2022.

For the first dimension of physical & mental health, we note that the No PSQ group has a lower proportion of ACC accident claims, with the difference being starker for ACC accidents overall than for work-related accidents. However, the roles are reversed when we consider mental health contacts, with the Level 2-4 learners having a lower proportion of contacts. Interestingly, mental health appears to be quite steady over time, with contacts increasing by 1 percentage point between 2014 and 2022.

Considering the second dimension of benefit receipt, we note that the learners start with a higher proportion of benefit uptake (11%) than the non-learners (9%) in 2014, however, the non-learners are still at 9% by 2022, whereas the Level 2-4 learners have decreased to less than 8%. This pattern appears to be driven by hardship benefit uptake, rather than unemployment benefits.

Finally, looking at justice outcomes, we note that there is less than a 2 percentage point difference between learners and non-learners across all time periods, with proportions decreasing for both groups over time. Conversely, the proportion of those experiencing a victimisation increases for both groups over time, with differences between groups being less than 1 percentage point.

## Engineering by related industry

Table 7 allows us to consider the wellbeing outcomes for graduates working in an industry related to their area of study relative to graduates working in a non-related industry. We note that the Level 5-7 Engineering cohort is small, and thus we will restrict our discussion to Level 2-4 learners. Approximately 80% of the Engineering sub-group at NZQF levels 2-4 do not end up working in a related industry, with that proportion growing by 2 percentage points by 2022.

When considering physical and mental health, we first note that Level 2-4 learners working in a non-related industry have lower rates of ACC claims overall, but very similar rates of work-related accidents. The non-related industry cohort also has a slightly higher proportion of mental health contacts than those working in a related industry, with differences of approximately 2 percentage points between groups.

In the second dimension of benefit receipt, we note that Level 2-4 non-related industry learners have a slightly higher benefit receipt than those working in a related industry, but small counts make comparisons difficult. The same applies to the final dimension of crime and victimisation.

Table 6. Wellbeing outcomes for Engineering sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	28.6%	35.8%	29.7%
2017	28.5%	31.8%	31.9%
2022	25.9%	29.9%	28.4%
ACC work-related accident			
2014	10.1%	12.8%	-
2017	8.9%	11.6%	-
2022	7.2%	8.3%	-
Any mental health contact			
2014	22.6%	17.2%	13.5%
2017	24.8%	18.6%	19.4%
2022	23.6%	18.2%	20.3%
Any mental health contact+			
2014	23.6%	17.7%	14.9%
2017	25.6%	19.0%	19.4%
2022	24.8%	19.3%	20.3%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	9.2%	10.9%	-
2017	7.9%	7.6%	-
2022	9.0%	7.5%	-
Unemployment benefit receipt			
2014	1.5%	1.6%	-
2017	1.3%	0.9%	-
2022	0.8%	1.0%	-
Hardship benefit receipt			
2014	6.9%	8.9%	-
2017	5.7%	6.4%	-
2022	5.3%	5.7%	-
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	4.0%	5.6%	-
2017	3.4%	5.2%	-
2022	1.3%	2.0%	-
Serious criminal history			
2014	1.5%	2.2%	-
2017	1.5%	2.4%	-
2022	0.5%	0.9%	-
Victimization			
2014	1.9%	2.4%	-
2017	3.3%	4.0%	-
2022	3.6%	4.3%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR Engineering learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 7. Wellbeing outcomes for Engineering sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	19.6%	80.4%	22.9%	77.1%
2017	17.5%	82.5%	23.1%	76.9%
2022	17.5%	82.5%	21.5%	78.5%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	39.1%	36.4%	-	31.5%
2017	34.8%	32.6%	-	34.0%
2022	33.0%	30.9%	-	27.5%
<b>ACC work-related accident</b>				
2014	14.2%	13.6%	-	-
2017	12.4%	12.8%	-	-
2022	8.5%	9.2%	-	-
<b>Any mental health contact</b>				
2014	15.0%	16.6%	-	14.8%
2017	14.6%	17.1%	-	20.0%
2022	14.3%	17.4%	-	21.6%
<b>Any mental health contact+</b>				
2014	15.0%	17.1%	-	14.8%
2017	14.6%	17.5%	-	22.0%
2022	15.6%	18.2%	-	21.6%
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	6.9%	8.9%	-	-
2017	3.9%	6.4%	-	-
2022	4.0%	6.6%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	1.0%	-	-
2017	-	0.7%	-	-
2022	-	0.8%	-	-
<b>Hardship benefit receipt</b>				
2014	5.1%	7.4%	-	-
2017	3.4%	5.4%	-	-
2022	-	5.1%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	3.3%	5.2%	-	-
2017	3.4%	4.4%	-	-
2022	-	1.6%	-	-
<b>Serious criminal history</b>				
2014	-	1.8%	-	-
2017	-	1.7%	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	-	2.2%	-	-
2017	3.4%	3.8%	-	-
2022	-	3.9%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR Engineering learners between 18 and 54 (inclusive) years old in 2012, according to their education records. All income variables are deflated to March 2022 dollars.

## **Engineering by gender**

Results by gender are shown in Appendix Table B 1. Women make up a very small proportion of the Engineering learner cohort, with 94% of this group being male. We can only compare gender differences in wellbeing trajectories for NZQF levels 2-4 because the female sample size for NZQF levels 5-7 is too small and suppressed per Stats NZ confidentiality rules.

Looking at ACC claims, the male cohort has higher rates of ACC claims (30% in 2022) than the women (26% in 2022), with both groups decreasing over time in equal proportion. When it comes to mental health contacts however, the women have a higher rate of contacts, (25%-28%) compared to the males (17% to 18%).

Similarly, we see higher rates of benefit receipt for the female Engineering students than the male cohort. By 2022, although both groups see a decrease in benefit uptake, the male cohort has half (7%) the benefit receipt of the female group (14%).

## **Engineering by ethnicity**

Results by ethnicity are shown in Appendix Table B 2. We split our analysis across two ethnicity categories: European and Māori. As mentioned earlier, Pacific, MELAA, Asian and Other ethnicities are outside the scope of our analysis. Once again, our interpretation is focussed on comparing labour market trajectories for those completing a level 2-4 qualification, as the sample is too small at the higher PSQ levels, particularly for Māori.

First, we note that there is a 3:1 ratio of European to Māori Level 2-4 Engineering learners. When it comes to the first dimension, we see similar rates of ACC claims by both groups, with the Māori cohort decreasing by 2022, creating a gap. Despite the similar rates of ACC claims between groups, the Māori group has lower work-related ACC claims at every time point.

As for mental health, we notice that the Māori Level 2-4 Engineering learners have a higher mental health contact rate in 2014 and 2017 compared to the European learners, but that by 2022, their rate is lower. The gap between groups is minimised when considering the mental health+ maker.

When we turn to benefit receipt, we note that Māori Level 2-4 Engineering learners have three times higher benefit reciprocity than Europeans (21% compared to 7%, respectively) and that most of this is driven by hardship benefits rather than unemployment benefits.

Finally, when it comes to crime and victimisation, we notice that Māori have a higher proportion of crime events compared to the European cohort, which decrease by more than half between 2014 (11% for Māori and 4% for European) and 2022 (4% for Māori and 1% for European). Furthermore, both

cohorts start with similar rates of victimisation in 2014, but the proportion of Māori experiencing a victimisation increases by over 100% by 2022, whereas the equivalent difference for the European cohort is less than 50%.

## Logistics

In this subsection, we analyse the wellbeing trajectories of the Logistics sub-group at three time points: two, five and ten years post-graduation. Due to small counts in this group, we are unable to analyse the outcomes by NZQF level. Table 8 focusses on outcomes by industry (whether related or not). Further disaggregation of findings by gender and ethnicity are then discussed in text, and presented in the Appendix B. As aforementioned, the Logistics sub-group is small, and the results in this section should be interpreted with caution due to small sample sizes.

### Logistics by related industry

Table 8 reveals the impact of working in an industry related to the area of study, compared to graduates working in a non-related industry. More than three quarters (75%) of the Logistics learners at NZQF levels 2-4 do not end up working in a related industry. We note that the Level 5-7 Logistics cohort is too small, and thus we will restrict our discussion to Level 2-4 learners.

When considering physical and mental health, we first note that Level 2-4 non-related industry learners have higher rates of ACC claims in 2014 (33% compared to 30% for the related industry group), but lower rates of work-related accidents (10% compared to 15% for the related industry group). Both accident types converge over time, with the proportion of non-related industry learners making an ACC claim decreasing at a faster rate.

For the non-related industry cohort, their proportion of mental health contacts was lower than those working in a related industry, with differences also converging over time, revealing almost no difference between the groups by 2022.

In the second dimension of benefit receipt, we note that learners have similar benefit receipt regardless of industry, but small counts make comparisons difficult. The same applies to the final dimension of crime and victimisation.

Table 8. Labour market outcomes for Logistics sub-group: by related-industry employment

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	24.9%	75.1%	54.2%	45.8%
2017	23.5%	76.5%	43.5%	56.5%
2022	20.4%	79.6%	44.0%	56.0%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	29.6%	32.6%	-	-
2017	31.2%	33.5%	-	-
2022	29.4%	29.5%	-	-
<b>ACC work-related accident</b>				
2014	14.8%	10.0%	-	-
2017	12.0%	10.8%	-	-
2022	8.8%	7.6%	-	-
<b>Any mental health contact</b>				
2014	21.5%	19.1%	-	-
2017	20.0%	20.4%	-	-
2022	19.6%	20.4%	-	-
<b>Any mental health contact+</b>				
2014	23.0%	20.1%	-	-
2017	20.8%	21.2%	-	-
2022	20.6%	21.4%	-	-
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	10.4%	11.3%	-	-
2017	8.8%	8.4%	-	-
2022	8.8%	8.8%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	2.2%	-	-
2017	-	2.0%	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	8.1%	7.1%	-	-
2017	7.2%	6.2%	-	-
2022	-	5.3%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	3.7%	-	-
2017	-	2.7%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	-	2.5%	-	-
2017	-	4.4%	-	-
2022	-	3.3%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR Logistics learners between 18 and 54 (inclusive) years old in 2012, according to their education records. All income variables are deflated to March 2022 dollars.

## **Logistics by gender**

Appendix Table B 3 shows the 2012 Logistics sub-group by gender. Women make up 32% of this sub-group, with 68% of the group being male. We note that the sample sizes for the NZQF levels 5-7 was small and thus suppressed according to Stats NZ confidentiality rules, thus we reserve our comments to the results for NZQF levels 2-4.

Looking at ACC claims, the male cohort has higher rates of ACC claims (29% in 2022) than the women (27% in 2022), with both groups decreasing over time in equal proportion. When it comes to mental health contacts however, the women have a higher rate of contacts, (24%-25%) compared to the males (20%-21%).

Similarly, we see higher rates of benefit receipt for the female Logistics students than the male cohort. By 2022 both groups see a decrease in benefit uptake, with the male cohort at 9% benefit uptake and the female group at 12%.

## **Logistics by ethnicity**

We further split the sample into two ethnicity categories: European and Māori, the results of this disaggregation are reported in Appendix Table B 4.<sup>6</sup> We note that the Māori make up around 32% of the Logistics learners at NZQF level 2-4 and Europeans at 63%. Once again, due to small sample sizes particularly for Māori, our interpretation is focussed on comparing wellbeing trajectories for those who completed a level 2-4 qualification in 2012.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related, however the proportion of work-related accidents converge for the two groups by 2022. We note also that the Māori Logistics learners have lower rates of mental health contacts, and that these rates are quite stable over time, fluctuating by only 1 percentage point. The European cohort appears to have similarly small fluctuations over time.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group, and that these proportions are stable over time, and in both cases they are driven by hardship benefits rather than unemployment benefits. Finally, we note that due to small sample sizes, we cannot comment on ethnic differences when considering the crime and victimisation dimension.

---

<sup>6</sup> MELAA, Asian, Pacific and Other ethnicities are excluded from this analysis.

## Manufacturing

In this subsection, we analyse the wellbeing trajectories of the Manufacturing sub-group in comparison to those with no PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender and ethnicity) are similar to those of the Manufacturing sub-group. Table 9 looks at outcomes by NZQF level, while Table 10 focusses on outcomes by industry (whether related or not). Further disaggregation of findings by gender and ethnicity are then discussed in text, and presented in the Appendix B. We aggregate the qualification levels into two groups: NZQF levels 2-4 and NZQF levels 5-7, to minimise the impact of small sample sizes on our ability to draw meaningful conclusions from the data.

### Manufacturing by NZQF level

Table 9 shows the wellbeing outcomes for the Manufacturing learner cohort over time, by NZQF level. For this analysis, the results for each NZQF level can be compared to those in the first column, which is based on the comparison group without PSQs. We note that the NZQF level 6 group in particular has a small number of individuals, and thus findings for this group should be interpreted with caution.

Overall, the Level 2-4 learners in the Manufacturing sub-group have stable wellbeing outcomes over time, with two main findings: they have a higher rate of ACC claims than the No PSQ group, and their benefit receipt decreases such that they have a lower rate of benefit receipt than the No PSQ group by 2022.

For the first dimension of physical & mental health, we note that the No PSQ group has a very similar proportion of ACC accident claims to learners, with the difference emerging over time for the Level 5-7 learners. However, unlike the No PSQ and Level 2-4 learners, the Level 5-7 learners have a higher proportion of non-work related ACC claims. When looking at mental health contacts, we notice that there are no substantial differences between the groups, except for the Level 5-7 learners in 2022, the only group for whom mental health contacts grew substantially over time. Again, this could be due to small sample sizes and should be interpreted with caution.

Considering the second dimension of benefit receipt, we note that the Level 2-4 learners start with a higher proportion of benefit uptake (over 20%) than the non-learners (10%) and Level 5-7 learners (11%) in 2014, however, the non-learners are still at 10% by 2022, while the Level 2-4 learners have decreased to 13% and the Level 5-7 learners to 6%. This pattern appears to be driven by hardship benefit uptake, rather than unemployment benefits.

Finally, looking at justice outcomes, we note that Level 2-4 learners have a higher proportion of criminal activity, almost double that of the No PSQ group, in 2014, with proportions decreasing for both groups

over time, until they are nearly equivalent by 2022. Conversely, the proportion of those experiencing a victimisation increases for both groups over time, with differences between groups being around 1-2 percentage points.

### **Manufacturing by related industry**

As before, we aggregate the qualification levels into two groups: NZQF 2-4 and NZQF 5-7 to minimise the impact of small sample sizes. Table 10 reveals the impact of working in an industry related to the area of study, compared to graduates working in an un-related industry. We note that there are differences between NZQF 2-4 and NZQF 5-7 in terms of the groups' compositions, with between 34% and 38% of the NZQF 2-4 and between 13% and 15% of the NZQF 5-7 working in a related industry. We note that the Level 5-7 Manufacturing cohort is small, and thus we will restrict our discussion to Level 2-4 learners.

We find that for physical and mental health, those working in a related industry tend to have higher rates of ACC claims both generally and work-related. However, the gaps between those working in a related industry and those not are around 2-3 percentage points. The reverse is true for mental health contacts, with the related industry Manufacturing cohort having lower rates of mental health contacts than their non-related industry counterparts. This gap also widens over time, starting at 2 percentage points in 2014, and increasing to 7 percentage points by 2022.

For the second dimension of benefit receipt we note that those working in a non-related industry have almost double the benefit receipt in 2014 relative to those working in a related industry. By 2022 the gap decreases to approximately 50%, with 8% of Manufacturing students working in a related industry receiving a benefit, and 13% of those working in a non-related industry.

The final dimension of crime and victimisation shows a similar pattern to that of the mental health and benefit receipt, with the related industry cohort faring better than the non-related industry cohort. Sparse data make it difficult to comment on the criminal history outcome, however we can see lower rates of victimisation for Manufacturing students working in a related industry to those not.

Table 9. Wellbeing outcomes for Manufacturing sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	27.9%	27.8%	28.7%
2017	26.8%	26.3%	26.4%
2022	24.9%	25.1%	27.0%
ACC work-related accident			
2014	11.2%	9.0%	4.6%
2017	9.7%	9.2%	3.1%
2022	8.0%	7.5%	3.9%
Any mental health contact			
2014	19.8%	18.5%	17.5%
2017	20.8%	19.8%	20.3%
2022	20.3%	20.9%	24.5%
Any mental health contact+			
2014	20.5%	19.6%	17.5%
2017	21.5%	21.1%	20.7%
2022	21.3%	22.8%	24.9%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	10.0%	20.6%	10.8%
2017	8.6%	15.5%	7.5%
2022	9.8%	13.2%	6.0%
Unemployment benefit receipt			
2014	2.2%	4.5%	-
2017	1.3%	3.1%	-
2022	0.8%	2.3%	-
Hardship benefit receipt			
2014	7.0%	16.4%	7.1%
2017	6.5%	11.5%	5.7%
2022	5.6%	8.7%	3.0%
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	3.9%	6.4%	-
2017	3.2%	4.8%	-
2022	1.2%	1.6%	-
Serious criminal history			
2014	1.6%	2.4%	-
2017	1.6%	2.0%	-
2022	0.5%	0.8%	-
Victimization			
2014	1.5%	2.5%	-
2017	2.8%	4.9%	-
2022	3.2%	5.7%	3.9%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR Manufacturing learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 10. Labour market outcomes for Manufacturing sub-group: by related-industry employment

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	37.7%	62.3%	15.2%	84.8%
2017	37.1%	62.9%	14.4%	85.6%
2022	34.1%	65.9%	12.7%	87.3%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	30.9%	28.3%	35.5%	30.1%
2017	30.8%	25.9%	28.6%	27.1%
2022	24.8%	28.0%	-	27.9%
<b>ACC work-related accident</b>				
2014	12.5%	9.3%	-	4.6%
2017	12.0%	9.8%	-	-
2022	9.8%	8.5%	-	-
<b>Any mental health contact</b>				
2014	15.4%	17.2%	-	16.8%
2017	13.9%	19.3%	-	20.5%
2022	13.3%	20.2%	-	24.2%
<b>Any mental health contact+</b>				
2014	15.5%	18.1%	-	17.3%
2017	14.3%	20.4%	-	21.1%
2022	14.4%	21.8%	-	24.8%
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	11.1%	21.9%	-	8.7%
2017	9.2%	16.2%	-	6.6%
2022	8.7%	12.8%	-	5.5%
<b>Unemployment benefit receipt</b>				
2014	3.0%	3.8%	-	-
2017	2.3%	3.3%	-	-
2022	2.2%	1.9%	-	-
<b>Hardship benefit receipt</b>				
2014	7.8%	17.7%	-	5.8%
2017	5.8%	12.4%	-	5.4%
2022	5.4%	8.8%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	5.1%	6.0%	-	-
2017	3.6%	4.5%	-	-
2022	-	1.6%	-	-
<b>Serious criminal history</b>				
2014	1.8%	2.1%	-	-
2017	-	1.9%	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	1.8%	2.7%	-	-
2017	3.2%	5.4%	-	-
2022	3.1%	5.8%	-	4.8%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR Manufacturing learners between 18 and 54 (inclusive) years old in 2012, according to their education records. All income variables are deflated to March 2022 dollars.

## **Manufacturing by gender**

The results for the Manufacturing sub-group by gender are presented in Appendix Table B 5. Firstly, we note that women make up 36% of this sub-group at NZQF levels 2-4, however they make up over half (56%) of the NZQF Level 5-7 group.

For the first dimension of physical and mental health, we note that males have a higher proportion of ACC claims than women, and that this is true for both NZQF level groups. Specifically, for those who studied a level 2-4 qualification, women's proportion of work-related ACC claims is around half that of the male cohort. As for mental health contacts, we see the reverse, with women having a higher proportion of contacts in both the Level 2-4 and 5-7 cohort. In general, mental health contacts appear to increase across the board, however the difference in contacts between 2014 and 2022 is larger for the Level 5-7 learners; the proportion having a mental health contact goes up by 7 percentage points for both men and women.

For the second dimension of benefit receipt, we note that again, women have higher rates of benefit receipt than their male equivalents, although the data for the Level 5-7 learners is too sparse to comment on. We note that for both males and females of the Level 2-4 cohort, there is a higher proportion of hardship benefits than unemployment benefits, and all benefit receipt is trending down over time.

Finally, when considering criminal and victimisation history, we note that criminal history for the female cohort is sparse and often too small to allow comment. Even for the male cohort, the proportion of Manufacturing learners with a criminal offence in 2022 is only 2%. As for victimisations, the proportion of learners being victims of reported crimes increases over time, however no substantial differences emerge between genders.

## **Manufacturing by ethnicity**

As with the Engineering and Logistics sub-groups, we also split the sample into two ethnicity categories: European and Māori, presented in Appendix Table B 6. We note that the Māori make up around 43% of Manufacturing learners at NZQF level 2-4 and 16% of learners at level 5-7. Our interpretations for the NZQF level 5-7 group are limited in this section, and results should be treated with caution.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related, and these gaps grow over time, with the proportion of accidents for the Māori cohort decreasing over time, while they remain steady for the European cohort. We note also that the Māori manufacturing learners have lower rates of mental health contacts, and that these rates are quite stable over time,

fluctuating by only 1 percentage point on average. The European cohort, however, has increasing mental health contacts over time, growing by 4 percentage points between 2014 and 2022.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group, but that these proportions are decreasing over time, with the differences between the Māori and European cohort narrowing from 10 percentage points in 2014, to 7 percentage points by 2022. In both instances, over two thirds of benefits appear to be hardship benefits rather than unemployment benefits.

Finally, we note the crime and victimisation dimension. Disparities are evident between ethnicities in 2014, with 11% of the Māori cohort and 4% of the European cohort having a criminal conviction. However, these disparities decrease over time, with 3% of the Māori cohort and 1% of the European cohort having a criminal conviction by 2022. Differences are also apparent when considering victimisations, with the Māori cohort experiencing a higher rate of victimisation, which more than doubles between 2014 (3.5%) and 2022 (7%).

## 5 Muka Tangata

This section focuses on learners graduating in 2012 with an NZSCED code related to the WDC Muka Tangata (MT).



MT has six sub-groups: Agriculture, Horticulture, Forestry, Seafood, Veterinary, and Support. It is also worth noting that the names of the groupings do not refer to entire industries, but the sub-set of NZSCED codes related to MT. The mapping of qualifications via NZSCED codes to the sub-groups can be found in Appendix Table A 2. MT has also provided an exhaustive list of ANZSIC codes to identify the qualification-specific related industries.

### 5.1 Descriptive profile by industry sub-group

The six MT sub-groups vary substantially in size, with Agriculture being the largest pool of learners, and Support being the smallest. As shown in Table 11, the Support sub-group has 150 learners, making any further disaggregation of this group impossible due to safety and anonymity rules applied to IDI data.

Figure 3. Proportion of MT sub-groups in the population of interest



Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT learners between 18 and 54 (inclusive) years old in 2012, according to their education records

Table 11 allows us to view descriptive information of each sub-group relative to the MT WDC overall. We find significant variation between the sub-groups in terms of gender, age, ethnicity and study level. We note that Forestry (94%) and Support (92%) have a much higher proportion of males than the average for the WDC (65%), and Veterinary (4%) is the opposite extreme with a female majority. We also note that Veterinary learners have the highest proportion of young learners, with over 60% being under 25 years old, and Horticulture has the highest proportion (26%) of older learners (over 45).

The distribution of ethnicities varies substantially across MT sub-groups. For example, the Seafood and Veterinary sub-groups differ substantially in the proportion of Māori learners, 66% and 12%, respectively.

Finally, we note that the NZQF level qualifications achieved in 2012 also vary by sub-group, with most learners earning level 2-4 qualifications, except for the Veterinary sub-group for whom 31% completed a level 5 qualification.

**Table 11. Descriptive statistics by MT subgroup 2012**

	Muka Tangata	Agriculture	Horticulture	Forestry	Seafood	Support	Veterinary
Male	65.4%	71.2%	58.8%	93.9%	59.9%	95.9%	4.0%
Age 25 and below	38.1%	44.3%	19.7%	33.5%	29.0%	30.6%	62.2%
Age above 45	13.6%	10.8%	25.5%	10.0%	16.2%	24.5%	2.7%
Born overseas	10.4%	9.2%	16.6%	4.6%	7.2%	-	12.4%
<b>Ethnicity</b>							
European	61.6%	67.9%	60.3%	40.6%	27.5%	65.3%	84.3%
Māori	31.6%	26.4%	28.8%	52.6%	66.5%	32.7%	11.7%
Pacific	2.7%	2.2%	3.5%	5.4%	3.0%	-	-
Asian	2.8%	2.2%	6.0%	-	2.4%	-	-
MELAA/Other	1.3%	1.3%	1.5%	-	-	-	-
<b>NZQF level of qualification achieved in 2012</b>							
Level 1	3.2%	-	15.2%	-	-	-	-
Level 2	34.1%	42.1%	28.4%	18.1%	19.8%	22.4%	37.1%
Level 3	39.0%	40.9%	31.2%	47.7%	62.3%	65.3%	4.7%
Level 4	16.0%	10.4%	21.5%	32.0%	15.6%	-	16.1%
Level 5	5.8%	5.0%	2.7%	-	-	-	31.1%
Level 6	1.7%	1.0%	0.8%	-	-	-	11.0%
Level 7	-	-	-	-	-	-	-
<b>Number of Learners</b>	11793	6198	2481	1227	1002	147	897

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## 5.2 Wellbeing outcomes by industry sub-groups

Next, we consider the wellbeing outcomes for our learner cohorts for each sub-group within Muka Tangata (MT), as well as for the aggregate group of learners for this WDC. Column 1 of Table 12 gives the results for the WDC overall.

We note that ACC accidents appear to decrease slightly over time, and that this is driven by a decrease in work-related accidents. We note that mental health moves in the opposite direction but that changes are only by 1 percentage point between 2014 and 2022, making both ACC and mental health markers relatively stable over time for the WDC overall.

Except for the Seafood and the Support sub-groups, variation across sub-groups is minimal (around 3 percentage points) in terms of aggregate ACC accident claims. The Seafood sub-group has a lower proportion of ACC accidents than any other group, while the Support sub-group deviates from the average with a 10 percentage point decrease in ACC claims over time, 10 times larger than the WDC average. Work-related claims see more variation, with the Agriculture and Forestry sub-groups having the highest proportion of work-related ACC claims in all three time points.

Mental health is variable across sub-groups, with Forestry having the lowest proportion of mental health contacts (between 17% and 14%), and Veterinary having the highest (between 29% and 34%). Most commonly, the sub-groups tend to have mental health proportions within the 20%-25% range, and these proportions increase over time for all sub-groups.

In the benefit receipt domain we note that all benefit types decrease over time, for MT learners, except for the Forestry sub-group for whom it stays the same (14%) between 2014 and 2022, despite a drop in 2017 (to 10%). We note that across the board, benefit receipt appears to be driven by hardship benefits more so than unemployment benefits.

Finally, for the crime and victimisation domain, we note that all crimes appear to decrease over time for MT overall, and that all sub-groups also follow this trend. Most notable, the Forestry sub-group starts with the highest proportion of crime events at 12% in 2014, double the proportion of the WDC overall of 6%. Over time, we see this proportion drop steadily, with the Forestry sub-group reaching a 3% crime rate by 2022, much closer to the WDC average of 2%.

The victimisation rate is also increasing over time for the WDC overall. We note that the trend is consistent for all sub-groups between 2014 and 2017, but that the Seafood and Veterinary sub-groups deviate from this trend in 2022, with decreasing victimisations. We note that these two sub-groups are

two of the smallest for the WDC, and so small sample sizes may account for some of the deviations we see in this section.

Next, we analyse each sub-group's wellbeing trajectories by NZQF level achieved in 2012, gender, ethnicity, and whether working in a related industry or not. As aforementioned, the Support group is too small to study in this way and is therefore excluded from this subgroup analysis.

Table 12. Wellbeing outcomes by MT sub-groups

	Muka Tangata	Agriculture	Horticulture	Forestry	Seafood	Support	Veterinary
<b>Share by sub-group</b>							
2014	100%	52.3%	21.1%	10.5%	8.4%	1.3%	7.8%
2017	100%	52.4%	21.1%	10.5%	8.4%	1.3%	7.6%
2022	100%	52.6%	20.9%	10.5%	8.4%	1.3%	7.6%
<b>1) Physical &amp; Mental Health</b>							
<b>ACC accident</b>							
2014	30.8%	32.0%	29.4%	31.4%	24.0%	31.9%	33.1%
2017	30.1%	30.6%	28.6%	30.3%	26.0%	34.0%	32.0%
2022	28.2%	29.6%	27.1%	27.6%	22.6%	21.3%	29.6%
<b>ACC work-related accident</b>							
2014	12.0%	14.3%	9.3%	11.6%	6.6%	-	9.3%
2017	10.7%	12.3%	8.8%	10.4%	8.3%	-	7.0%
2022	8.4%	10.2%	6.4%	8.0%	5.0%	-	6.2%
<b>Any mental health contact</b>							
2014	19.2%	17.0%	21.7%	17.7%	19.1%	23.4%	28.5%
2017	20.5%	18.6%	22.8%	16.2%	21.7%	21.3%	31.6%
2022	20.3%	18.8%	22.0%	14.3%	19.9%	23.4%	33.9%
<b>Any mental health contact+</b>							
2014	20.2%	17.7%	22.8%	18.5%	21.1%	23.4%	28.8%
2017	21.5%	19.4%	24.5%	16.8%	23.0%	21.3%	32.4%
2022	21.7%	19.9%	24.1%	15.6%	22.6%	25.5%	34.3%
<b>2) Benefit Receipt</b>							
<b>Any benefit receipt</b>							
2014	13.8%	12.0%	14.6%	13.5%	23.4%	-	13.9%
2017	11.5%	9.9%	12.7%	10.4%	21.0%	-	11.4%
2022	11.0%	9.3%	11.9%	13.8%	18.9%	-	8.4%
<b>Unemployment benefit receipt</b>							
2014	3.5%	2.5%	3.7%	2.6%	8.2%	-	5.0%
2017	2.7%	2.3%	2.7%	-	6.0%	-	4.0%
2022	1.5%	1.6%	1.1%	-	-	-	-
<b>Hardship benefit receipt</b>							
2014	10.1%	9.1%	10.6%	11.3%	16.1%	-	7.8%
2017	8.4%	7.1%	10.1%	8.5%	15.0%	-	5.5%
2022	7.5%	6.1%	8.4%	10.6%	13.3%	-	4.7%
<b>3) Crime &amp; Victimization</b>							
<b>Any criminal history</b>							
2014	5.8%	5.3%	4.5%	11.9%	8.9%	-	-
2017	4.9%	4.6%	3.2%	9.6%	8.7%	-	-
2022	2.0%	1.7%	2.1%	3.2%	2.7%	-	-
<b>Serious criminal history</b>							
2014	2.6%	2.4%	2.0%	5.8%	3.9%	-	-
2017	2.7%	2.4%	1.9%	5.9%	5.3%	-	-
2022	1.1%	0.9%	1.1%	2.4%	-	-	-
<b>Victimisation</b>							
2014	2.2%	2.2%	2.1%	-	2.6%	-	2.8%
2017	3.8%	3.6%	3.4%	3.7%	6.0%	-	3.7%
2022	4.1%	4.0%	3.7%	5.0%	5.3%	-	3.3%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT learners between 18 and 54 (inclusive) years old in 2012, according to their education records. All income variables are deflated to March 2022 dollars.

## Agriculture

For each WDC sub-group we analyse the wellbeing trajectories in comparison to the benchmark group that don't have PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the relevant WDC sub-group, in this case - Agriculture.

### Agriculture by NZQF level

For the first domain of health, we note that the proportion of ACC accidents is lower for No PSQ group overall, however work-related accidents appear similar to both Level 2-4 and 5-7 learners. Accidents in all domains and groups are decreasing over time between 2014 and 2022. The mental health indicator shows that the No PSQ group has the highest rate of mental health-related contacts, stable at around 23%, while the learners have lower rates (18%-20% for Level 2-4 learners and 14%-16% for Level 5-7 learners). We note that the rate of mental health contacts is increasing for the learners over time, by around 2 percentage points.

For the second dimension of benefit receipt, we note that the cohort of Level 5-7 learners is too small to be released by StatsNZ data rules which protect privacy. As for Level 2-4 learners, they tend to have lower proportions of benefit receipts than the No PSQ group at all three time points, and these proportions are decreasing for the learners, while they become flat for the No PSQ group between 2017 and 2022. Interestingly, hardship benefits appear to drive the benefit receipt for both groups.

Finally, when considering the crime and victimisation domain, we note that all crime indicators are lower for learners and decreasing over time for all groups, with differences becoming negligible by 2022. Victimisations however appear similar for the No PSQ and Level 2-4 learners at all time points, and show an increase over time.

### Agriculture by NZQF level & industry

When considering Table 14, we note that there is a high variation in related/non-related industry proportions over time, which indicates high mobility of Agriculture learners across industries. The proportion of learners in a related industry decreases from 62% (68%) to 43% (49%) over time for the NZQF Level 2-4 group (Level 5-7 group).

When considering the health dimension of those working in a related industry versus those working in a non-related industry, we note that there are no differences in ACC accidents overall for Level 2-4 learners, but that work-related accidents differ, with those in a related industry having a higher proportion of work-related accidents. For Level 5-7 learners, we see more ACC accidents for those

working in a related industry decreasing over time, while those working in a non-related industry see an increase in ACC work-related accidents. This leads to a gap of 16 percentage points in 2014, narrowing to just 4 percentage points by 2022.

Looking at mental health we see that the Level 2-4 learners working in a related industry have a higher proportion of mental health contacts than the non-related industry learners, but that there are no large changes in these proportions over time for either groups.

Secondly, looking at the benefit receipt dimension, we see higher benefit receipt for the non-related industry group, double that of those working in a related industry, with the gap narrowing over time and mainly driven by hardship benefits.

Finally, looking at the crime dimension, we see no significant differences in criminal activity, and slightly more victimisations over time for the non-related industry group.

Table 13. Wellbeing outcomes for Agriculture sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	27.1%	31.7%	36.4%
2017	27.2%	30.2%	37.0%
2022	25.4%	29.3%	34.1%
ACC work-related accident			
2014	13.8%	14.4%	14.4%
2017	13.1%	12.2%	13.4%
2022	10.6%	10.2%	10.6%
Any mental health contact			
2014	21.6%	17.2%	13.6%
2017	23.2%	18.8%	14.3%
2022	21.8%	18.9%	16.3%
Any mental health contact+			
2014	22.8%	18.0%	14.4%
2017	24.3%	19.7%	15.1%
2022	23.1%	20.1%	16.3%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	14.3%	12.7%	-
2017	12.6%	10.4%	-
2022	12.8%	9.7%	-
Unemployment benefit receipt			
2014	4.5%	2.6%	-
2017	3.0%	2.4%	-
2022	1.6%	1.7%	-
Hardship benefit receipt			
2014	9.9%	9.7%	-
2017	9.1%	7.6%	-
2022	8.2%	6.4%	-
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	6.3%	5.6%	-
2017	5.6%	4.8%	-
2022	2.2%	1.8%	-
Serious criminal history			
2014	2.9%	2.5%	-
2017	3.0%	2.5%	-
2022	1.2%	1.0%	-
Victimisation			
2014	2.0%	2.3%	-
2017	3.5%	3.6%	-
2022	4.0%	4.2%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Agriculture learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 14. Wellbeing outcomes for Agriculture sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	61.5%	38.5%	68.3%	31.7%
2017	52.8%	47.2%	61.3%	38.7%
2022	42.5%	57.5%	48.9%	51.1%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	32.8%	32.3%	40.6%	25.0%
2017	30.7%	30.9%	43.9%	27.8%
2022	30.5%	30.6%	34.9%	31.1%
<b>ACC work-related accident</b>				
2014	18.3%	10.3%	17.4%	-
2017	16.7%	9.8%	17.5%	-
2022	14.2%	8.7%	16.3%	-
<b>Any mental health contact</b>				
2014	14.8%	19.0%	10.1%	-
2017	16.4%	19.9%	-	19.4%
2022	14.2%	20.8%	-	20.0%
<b>Any mental health contact+</b>				
2014	15.1%	20.0%	10.1%	-
2017	16.6%	20.8%	-	19.4%
2022	15.1%	21.9%	-	20.0%
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	8.5%	16.2%	-	-
2017	7.8%	11.9%	-	-
2022	7.7%	10.6%	-	-
<b>Unemployment benefit receipt</b>				
2014	2.3%	2.6%	-	-
2017	2.2%	2.3%	-	-
2022	1.8%	1.7%	-	-
<b>Hardship benefit receipt</b>				
2014	6.3%	12.0%	-	-
2017	5.5%	8.7%	-	-
2022	5.7%	6.9%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	5.0%	5.0%	-	-
2017	4.7%	4.4%	-	-
2022	1.6%	1.9%	-	-
<b>Serious criminal history</b>				
2014	2.3%	2.3%	-	-
2017	2.3%	2.3%	-	-
2022	-	0.9%	-	-
<b>Victimization</b>				
2014	1.8%	2.6%	-	-
2017	3.2%	3.8%	-	-
2022	3.6%	4.8%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Agriculture learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

### **Agriculture by NZQF level & gender**

The results for the Agriculture sub-group by gender are presented in Appendix Table C 1. Firstly, we note that women make up 28% of this sub-group at NZQF levels 2-4, however they make up over a third (38%) of those in the NZQF Level 5-7 group.

For the first dimension of physical and mental health, we note that males have a higher proportion of ACC claims than women, and that this is true for both NZQF level groups, with the gender gap being larger for Level 5-7 learners. Specifically, for those who studied a level 2-4 qualification, women's proportion of work-related ACC claims is around a third less than that of the male cohort. As for mental health contacts, we see the reverse, with women having a higher proportion of contacts in both the Level 2-4 and 5-7 cohort. In general, mental health contacts appear to increase across the board, however the difference in contacts between 2014 and 2022 is larger for the Level 5-7 learners.

For the second dimension of benefit receipt, we note that women have higher rates of benefit receipt than their male equivalents, although the data for the Level 5-7 learners is too sparse to comment on. We note that for both males and females of the Level 2-4 cohort there is a higher proportion of hardship benefits than unemployment benefits, and all benefit receipt is trending down over time.

Finally, when considering criminal and victimisation history, we note that criminal history for the female cohort is sparse and often too small to allow comment.

### **Agriculture by NZQF level & ethnicity**

Finally, we split the sample into two ethnicity categories: European and Māori, presented in Appendix Table C 2. We note that the Māori make up around 28% of Agriculture learners at NZQF Level 2-4 and 11% of learners at level 5-7. Our interpretations for the NZQF Level 5-7 group are limited in this section, and results should be treated with caution.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related, and these gaps remain steady over time, with the proportion of accidents for both groups decreasing over time. We note also that the Māori Agriculture learners have similar rates of mental health contacts, but that these rates fluctuate over time, by 2022, a 3 percentage point gap emerges between cohorts.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group, but that these proportions are decreasing over time, with the differences between the Māori and European cohort narrowing from 16 percentage points in 2014, to 12 percentage points by 2022. In both instances, over two thirds of benefits appear to be hardship benefits rather than unemployment benefits.

Finally, we note the crime and victimisation dimension. Disparities are evident between ethnicities in 2014, with 11% of the Māori cohort and 4% of the European cohort having a criminal conviction. However, these disparities decrease over time. Differences are also apparent when considering victimisations, with the Māori cohort experiencing a higher rate of victimisation which more than doubles between 2014 (3%) and 2022 (7%).

## Horticulture

In this subsection, we analyse the wellbeing trajectories of the Horticulture sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Horticulture sub-group.

### Horticulture by NZQF level

Table 15 shows us the Horticulture sub-group compared to those with no PSQ. We note that the Level 5-7 are a small group and thus we cannot comment on their outcomes as they have been suppressed for confidentiality reasons.

For the first dimension of health, we note that Level 2-4 learners have a slightly higher proportion of accidents, but fewer work-related accidents compared to the No PSQ group. We also see that although work-related accidents are decreasing over time for both groups, the same is not true for overall ACC accidents for Level 2-4 learners. Learners have slightly higher proportion of mental health contacts than the No PSQ group, but no large differences are evident (around 3 percentage points).

In terms of benefit receipt, the learners have lower benefit receipt in all time periods compared to those with no PSQ. Although the gap between learners and non-learners starts at approximately 4 percentage points in 2014, it decreases by half to 2 percentage points by 2022. Most notably, the No PSQ group sees a 3 percentage point drop in hardship benefits in 2017, compared to only a 1 percentage point drop for the Level 2-4 Horticulture learners.

When considering the final dimension of crime and victimisation, we note that the No PSQ group has a higher proportion of criminal activity in 2014 and 2017, but that the gap disappears by 2022. We also note that there is almost no difference between groups in terms of victimisations, which increase by 1 percentage point over time.

### Horticulture by NZQF level & industry

When considering Table 16, we note that there is a higher proportion of Horticulture learners working in a non-industry, around 70% – 77% over time, compared to those working in a related industry, 30% – 23%.

When considering the health dimension of those working in a related industry versus those working in a non-related industry, we note that there are no differences in ACC accidents overall for Level 2-4 learners in 2014, but that the related industry learners see an increase in accidents over time, while the non-related industry group sees a decrease. Work-related accidents also differ, with those in a related industry having a higher proportion of work-related accidents.

Looking at mental health we see that the Level 2-4 learners working in a related industry have a lower proportion of mental health contacts than the non-related industry learners in 2014, but that the gap narrows by 2022.

Secondly, looking at the benefit receipt dimension, we see higher benefit receipt for the non-related industry group, which is slightly lower (by 2 percentage points) than those in a related industry.

Table 15. Wellbeing outcomes for Horticulture sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	24.7%	29.7%	33.3%
2017	25.0%	27.9%	28.0%
2022	23.5%	27.0%	29.6%
ACC work-related accident			
2014	10.0%	8.4%	-
2017	10.3%	8.5%	-
2022	8.9%	6.0%	-
Any mental health contact			
2014	21.0%	22.5%	-
2017	21.8%	23.8%	-
2022	20.6%	22.7%	-
Any mental health contact+			
2014	22.6%	23.8%	-
2017	23.3%	25.6%	-
2022	22.4%	25.0%	-
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	20.2%	15.6%	-
2017	16.1%	13.7%	-
2022	14.2%	12.1%	-
Unemployment benefit receipt			
2014	5.9%	3.6%	-
2017	3.9%	2.9%	-
2022	1.6%	-	-
Hardship benefit receipt			
2014	14.0%	11.7%	-
2017	11.3%	10.9%	-
2022	9.4%	8.7%	-
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	6.7%	4.7%	-
2017	6.0%	3.4%	-
2022	2.3%	2.3%	-
Serious criminal history			
2014	3.1%	2.1%	-
2017	3.0%	2.0%	-
2022	1.3%	1.3%	-
Victimization			
2014	2.1%	2.3%	-
2017	3.7%	3.8%	-
2022	3.6%	3.8%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Horticulture learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 16. Wellbeing outcomes for Horticulture sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	30.5%	69.5%	45.8%	54.2%
2017	26.5%	73.5%	42.9%	57.1%
2022	22.8%	77.2%	36.4%	63.6%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	32.4%	31.2%	-	-
2017	31.9%	29.4%	-	-
2022	35.8%	27.7%	-	-
<b>ACC work-related accident</b>				
2014	12.7%	9.6%	-	-
2017	12.6%	9.7%	-	-
2022	10.5%	6.5%	-	-
<b>Any mental health contact</b>				
2014	18.3%	22.5%	-	-
2017	21.0%	21.8%	-	-
2022	21.1%	20.2%	-	-
<b>Any mental health contact+</b>				
2014	19.7%	23.5%	-	-
2017	21.8%	23.0%	-	-
2022	22.1%	21.8%	-	-
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	15.5%	13.9%	-	-
2017	15.1%	11.8%	-	-
2022	13.7%	10.6%	-	-
<b>Unemployment benefit receipt</b>				
2014	5.6%	-	-	-
2017	6.7%	-	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	10.6%	10.5%	-	-
2017	10.9%	9.4%	-	-
2022	11.6%	7.5%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	4.9%	4.0%	-	-
2017	-	2.4%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	-	-	-	-
2017	-	3.0%	-	-
2022	-	3.1%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Horticulture learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

### **Horticulture by NZQF level & gender**

The results for the Horticulture sub-group by gender are presented in Appendix Table C 3. Firstly, we note that women make up 44% of this sub-group at NZQF levels 2-4, however they make up less (35%) of the NZQF Level 5-7 group.

For the first dimension of physical and mental health, we note that males have a higher proportion of ACC claims than women, with the gap appearing to close by 2022. However, where work-related ACC claims are concerted, the male cohort has higher rates of accidents in all time periods. As for mental health contacts, we see the reverse, with women having a higher proportion of contacts in all time points, with the gap growing over time.

For the second dimension of benefit receipt, we note women have lower rates of benefit receipt than their male equivalents, with most of those being hardship benefits.

Finally, when considering criminal and victimisation history, we note that criminal history for the female cohort is sparse and often too small to allow comment.

### **Horticulture by NZQF level & ethnicity**

As with the Agriculture sub-group, we also split the sample into two ethnicity categories: European and Māori, presented in Appendix Table C 4. We note that the Māori make up around a third (32%) of Horticulture learners at NZQF level 2-4 and less than 1% of learners at level 5-7. Our interpretations for the NZQF Level 5-7 group are thus not included in this section due to lack of data.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related, and these gaps shrink over time, with the proportion of accidents for the Māori cohort remaining the same over time, while decreasing by 6 percentage points for the European cohort. We note also that the Māori Horticulture learners have lower rates of mental health contacts, and that these rates are decreasing over time. The European cohort, however, has stable mental health contacts over time, growing by 1 percentage point between 2014 and 2022.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group, but that these proportions are decreasing over time, with the differences between the Māori and European cohort narrowing from 23 percentage points in 2014, to 15 percentage points by 2022. In both instances, over two thirds of benefits appear to be hardship benefits rather than unemployment benefits.

Finally, we note the crime and victimisation dimension that sample sizes are too small to comment on.

## Forestry

In this subsection, we analyse the wellbeing trajectories of the Forestry sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Forestry sub-group. We note that, in this section, the group of learners with a level 5-7 qualification is too small to comment on, and thus we reserve our interpretation of the results to the Level 2-4 Forestry learners.

Gender difference – 94% male, thus female sample too small and the table is excluded.

### Forestry by NZQF level

In the first dimension of health, Table 17 shows that the Level 2-4 Forestry learners have higher ACC accident claims overall, however, the work-related ACC claims are the same between the learners and the No PSQ group in 2014, with the claims decreasing further for learners (8%) by 2022 than for non-learners (9%).

As for mental health outcomes, learners have a lower proportion of mental health contacts in all time periods, with the proportion of contacts decreasing steadily over time for both the learner and non-learner cohorts.

When considering the benefits dimension, we note that there are no substantial differences between learners and non-learners, with approximately 1 percentage point separating the two groups.

Finally, looking at the crime dimension, we again see similar outcomes for both cohorts, with crime indicators decreasing over time for both groups, and victimisations increasing over time.

### Forestry by NZQF level & industry

As before, we aggregate the qualification levels into two groups: NZQF 2-4 and NZQF 5-7 to minimise the impact of small sample sizes. Table 18 reveals the impact of working in an industry related to the area of study, compared to graduates working in an un-related industry. We note that the NZQF Level 5-7 cohort is too small and thus the stats is suppressed according to Stats NZ's confidentiality rules.

In terms of the groups' compositions, 62% of Level 2-4 learners work in a related industry in 2014, with that proportion dwindling to 46% by 2022.

We find that for physical and mental health, those working in a non-related industry tend to have higher rates of ACC claims both generally and work-related. However, the gaps between those working in a related industry and those not, are only around 1-2 percentage points. The reverse is true for mental

health contacts, with the related industry Forestry cohort having higher rates of mental health contacts than their non-related industry counterparts. By 2022 however, both groups' mental health contacts decrease and leave less than a 1 percentage point gap between them.

For the second dimension of benefit receipt and the final dimension of crime and victimisation we note that small sample sizes prevent us from making meaningful claims about either group.

Table 17. Wellbeing outcomes for Forestry sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	28.7%	31.4%	-
2017	27.5%	30.1%	-
2022	24.7%	27.4%	-
ACC work-related accident			
2014	11.9%	11.9%	-
2017	9.8%	10.4%	-
2022	9.1%	7.9%	-
Any mental health contact			
2014	19.3%	17.8%	-
2017	20.0%	16.4%	-
2022	17.3%	14.4%	-
Any mental health contact+			
2014	20.1%	18.6%	-
2017	20.5%	16.9%	-
2022	18.8%	15.7%	-
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	14.3%	13.5%	-
2017	11.8%	10.4%	-
2022	12.6%	13.8%	-
Unemployment benefit receipt			
2014	2.3%	2.4%	-
2017	2.0%	-	-
2022	1.3%	-	-
Hardship benefit receipt			
2014	12.1%	11.4%	-
2017	9.2%	8.5%	-
2022	9.7%	10.8%	-
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	10.8%	12.2%	-
2017	9.7%	9.8%	-
2022	3.4%	3.5%	-
Serious criminal history			
2014	4.7%	5.7%	-
2017	4.8%	5.7%	-
2022	2.2%	2.4%	-
Victimization			
2014	1.9%	-	-
2017	4.1%	3.8%	-
2022	4.0%	5.1%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Forestry learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 18. Wellbeing outcomes for Forestry sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	62.3%	37.7%	-	-
2017	53.5%	46.5%	-	-
2022	46.2%	53.8%	-	-
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	31.5%	32.8%	-	-
2017	30.1%	32.6%	-	-
2022	26.7%	29.3%	-	-
<b>ACC work-related accident</b>				
2014	11.7%	12.6%	-	-
2017	10.2%	12.5%	-	-
2022	7.4%	10.8%	-	-
<b>Any mental health contact</b>				
2014	17.3%	15.1%	-	-
2017	11.4%	17.4%	-	-
2022	13.3%	12.7%	-	-
<b>Any mental health contact+</b>				
2014	17.3%	16.0%	-	-
2017	11.4%	18.8%	-	-
2022	13.3%	14.0%	-	-
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	5.6%	19.3%	-	-
2017	-	15.3%	-	-
2022	5.2%	17.2%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	4.6%	15.1%	-	-
2017	-	11.8%	-	-
2022	-	13.4%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	10.7%	9.2%	-	-
2017	4.8%	11.8%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	5.1%	-	-	-
2017	-	6.9%	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	-	-	-	-
2017	-	4.9%	-	-
2022	-	6.4%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Forestry learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## **Forestry by NZQF level & ethnicity**

Finally, we split the sample into two ethnicity categories: European and Māori, presented in Appendix Table C 5. We note that the Māori make up around 56% of Forestry learners at NZQF level 2-4.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related, and these change over time, with the proportion of accidents for Māori remaining steady while decreasing for the European cohort. We note also that the Māori Forestry learners have lower rates of mental health contacts, and that these rates decrease over time for both cohorts.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group, and that these proportions are increasing over time, with the differences between the Māori and European cohort growing from 10 percentage points in 2014, to 14 percentage points by 2022.

Finally, we note the crime and victimisation dimension, the sample sizes are too small to comment on any ethnic differences.

## **Seafood**

In this subsection, we analyse the wellbeing trajectories of the Seafood sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Seafood sub-group. We note that, in this section, the group of learners with a level 5-7 qualification is too small to comment on, and thus we reserve our interpretation of the results to the Level 2-4 Seafood learners. Even so, in order to comply with StatsNZ confidentiality rules, we are unable to comment on Seafood learners working in a related industry.

### **Seafood by NZQF level**

In the first dimension of health, Table 19 shows that the Level 2-4 Seafood learners have similar ACC accident claims overall compared to the No PSQ group, however, the work-related ACC claims are lower for the learners than for non-learners, with the claims decreasing further for learners (to 5%) by 2022 than for non-learners (to 10%). As for mental health outcomes, learners have a lower proportion for mental health contacts in all time periods, with differences between groups being small, 2 percentage points on average.

When considering the benefits dimension, we note that learners have a higher proportion of benefit receipt in all time periods, with differences between groups ranging from 5 to 8 percentage points.

The proportion of benefits decrease slightly over time for both the learner and non-learner cohorts.

Finally, looking at the crime dimension, we that learners have a higher proportion of criminal activity (9%) compared to non-learners (7%), with differences being small and with crime indicators decreasing over time for both groups, and victimisations increasing over time.

Table 19. Wellbeing outcomes for Seafood sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	23.6%	23.5%	-
2017	24.9%	25.9%	-
2022	23.5%	22.7%	-
ACC work-related accident			
2014	11.5%	7.0%	-
2017	11.0%	8.5%	-
2022	9.5%	4.7%	-
Any mental health contact			
2014	20.3%	18.5%	-
2017	22.6%	21.4%	-
2022	22.0%	19.7%	-
Any mental health contact+			
2014	21.9%	20.8%	-
2017	23.4%	23.1%	-
2022	23.9%	22.7%	-
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	16.0%	23.8%	-
2017	13.1%	21.1%	-
2022	13.9%	19.0%	-
Unemployment benefit receipt			
2014	4.3%	8.1%	-
2017	2.3%	6.1%	-
2022	-	-	-
Hardship benefit receipt			
2014	11.3%	16.4%	-
2017	9.8%	15.3%	-
2022	9.6%	13.6%	-
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	6.7%	9.1%	-
2017	4.6%	8.8%	-
2022	2.2%	3.1%	-
Serious criminal history			
2014	3.0%	4.0%	-
2017	2.0%	5.1%	-
2022	1.2%	-	-
Victimization			
2014	1.4%	2.3%	-
2017	3.4%	6.1%	-
2022	3.9%	5.1%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Seafood learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

### **Seafood by NZQF level & gender**

The results for the Seafood sub-group by gender are presented in Appendix Table C 6. Firstly, we note that women make up 41% of this sub-group at NZQF levels 2-4.

For the first dimension of physical and mental health, we note that males have a higher proportion of ACC claims than women, and that this is true over time, with the ACC claims for the female cohort decreasing by 2022 but staying relatively the same for the male group. As for mental health contacts, we see that men have a higher proportion of contacts in 2014, but fluctuations in 2017 mean that the groups close the gap over time.

For the second dimension of benefit receipt, we note that women have lower rates of benefit receipt than their male equivalents. We note that for both males and females of the Level 2-4 cohort all benefit receipt is trending down over time with hardship benefits being twice as large for the male cohort than for the female group.

Finally, when considering criminal and victimisation history, we note that criminal history for the female cohort is sparse and often too small to allow comment.

### **Seafood by NZQF level & ethnicity**

Lastly, we split the sample into two ethnicity categories: European and Māori, presented in Appendix Table C 7. We note that the Māori make up 71% of Seafood learners at NZQF level 2-4.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related, and these gaps widen slightly over time, with the proportion of accidents for the Māori cohort decreasing over time, while increasing by 1 percentage point for the European cohort. We note also that the Māori Seafood learners have lower rates of mental health contacts, and that mental health contacts increase slightly for both cohorts between 2014 and 2022, growing by 1 percentage point each.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group, but that these proportions are decreasing over time, with the differences between the Māori and European cohort narrowing from 17 percentage points in 2014, to 12 percentage points by 2022.

Finally, we note the crime and victimisation dimension that sample sizes are too small to comment on.

## Veterinary

In this subsection, we analyse the wellbeing trajectories of the Veterinary sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Veterinary sub-group.

We note that, due to small sample sizes, we cannot comment on gender or ethnicity disaggregations. The Veterinary sub-group has a high proportion of female learners, 94%; the male learner cohort is too small. Furthermore, there is a high proportion of Europeans, 88%, making the Māori cohort too small to comment on. Thus, our focus is on discussing the wellbeing results by NZQF level and industry in this section.

### Veterinary by NZQF level

Table 20 shows the wellbeing outcomes of Veterinary learners compared to those with no PSQ. We note that, due to small sample sizes, we can only comment on the first dimension of physical and mental health. We note that the Level 2-4 Veterinary learners have similar ACC accident claims in 2014 and 2022, with a spike in 2017, whereas the No PSQ group and Level 5-7 group have ACC trends that slowly decrease over time. There is a larger difference between the No PSQ group and the Level 2-4 learners than the Level 5-7 learners by 2022. Mental health contacts are lower for learners in 2014, however the proportion of learners with a mental health-related contact increases at a faster rate than for non-learners in the Level 2-4 group (by 8 percentage points), leading to the Level 2-4 learners over-taking the non-learner group by 2022. The Level 5-7 group do not see such dramatic increases in mental health contacts, with a modest 2 percentage point increase between 2014 and 2022.

### Veterinary by NZQF level & industry

Table 21 shows the impact of working in an industry related to the area of study, compared to graduates working in an unrelated industry. We note that in the areas of benefits and crime, both Level 2–4 and Level 5-7 cohorts are too small and thus suppressed according to Stats NZ’s confidentiality rules.

In terms of the groups’ compositions, 30% of Level 2-4 learners work in a related industry in 2014, with that proportion decreasing to 23% by 2022. Graduates in the Level 5-7 cohort were more likely to work in a related industry in 2014, with over half (55%) doing so, however this proportion dropped significantly by 2022 (to 38%).

We find that for physical and mental health, those working in a related industry tend to have higher rates of ACC claims by 2022, despite starting out at similar levels in 2014. This result holds true for both NZQF level groups. This is also true for mental health contacts for Level 2-4 learners, with the related industry Veterinary cohort having similar rates of mental health contacts to their non-related industry counterparts in 2014, but higher rates by 2022. The Level 5-7 cohort, however, sees the proportion of mental health contacts for those working in a related industry stay stable over time, while contacts for those working in non-related industries increase over time.

For the second dimension of benefit receipt and the final dimension of crime and victimisation we note that small sample sizes prevent us from making meaningful claims about either group.

Table 20. Wellbeing outcomes for Veterinary sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	30.4%	31.3%	35.9%
2017	28.3%	33.1%	30.4%
2022	26.7%	31.2%	28.2%
ACC work-related accident			
2014	-	6.1%	12.8%
2017	-	7.0%	7.8%
2022	-	7.0%	-
Any mental health contact			
2014	34.8%	29.4%	26.5%
2017	32.6%	34.4%	27.0%
2022	33.3%	36.9%	29.9%
Any mental health contact+			
2014	34.8%	30.1%	28.2%
2017	34.8%	35.0%	27.8%
2022	35.6%	37.6%	30.8%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	-	16.0%	11.1%
2017	-	14.0%	7.8%
2022	-	9.6%	6.8%
Unemployment benefit receipt			
2014	-	5.5%	-
2017	-	4.5%	-
2022	-	-	-
Hardship benefit receipt			
2014	-	8.6%	6.8%
2017	-	6.4%	-
2022	-	5.7%	-
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	-	-	-
2017	-	-	-
2022	-	-	-
Serious criminal history			
2014	-	-	-
2017	-	-	-
2022	-	-	-
Victimization			
2014	-	-	-
2017	-	5.7%	-
2022	-	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Veterinary learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 8. Wellbeing outcomes for Veterinary sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	29.9%	70.1%	54.5%	45.5%
2017	26.0%	74.0%	46.1%	53.9%
2022	23.2%	76.8%	38.4%	61.6%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	32.5%	33.0%	38.3%	38.0%
2017	35.3%	34.0%	31.9%	30.9%
2022	44.8%	30.2%	34.2%	27.9%
<b>ACC work-related accident</b>				
2014	-	7.4%	16.7%	-
2017	-	7.2%	-	-
2022	-	-	-	-
<b>Any mental health contact</b>				
2014	27.5%	27.7%	25.0%	24.0%
2017	32.4%	32.0%	25.5%	23.6%
2022	37.9%	33.3%	26.3%	29.5%
<b>Any mental health contact+</b>				
2014	30.0%	28.7%	26.7%	26.0%
2017	32.4%	32.0%	27.7%	23.6%
2022	37.9%	34.4%	26.3%	31.1%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	-	18.1%	-	-
2017	-	14.4%	-	-
2022	-	10.4%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	-	9.6%	-	-
2017	-	7.2%	-	-
2022	-	-	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	-	-	-	-
2017	-	7.2%	-	-
2022	-	-	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Veterinary learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## 6 Ringa Hora

This section focuses on learners graduating in 2012 with an NZSCED code related to the WDC Ringa Hora (RH).

Ringa Hora are a values based, people-centred organisation that serves Aotearoa by responding to the current and future workforce needs of the Service sector.



RH has 6 sub-groups, named: Business, finance & industry support, Hospitality & cleaning, Real estate & rental, Retail & distribution, Security & government, and Travel & aviation. Note that the names of the groupings do not refer to entire industries, but the sub-set of NZSCED codes related to RH. The mapping of qualifications via NZSCED codes to the sub-groups can be found in Appendix Table A 2. RH has also provided an exhaustive list of ANZSIC codes to identify the qualification-specific related industries.

### 6.1 Descriptive profile by industry sub-group

Figure 4. Proportion of RH sub-groups in the population of interest



Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH learners between 18 and 54 (inclusive) years old in 2012, according to their education records

Table 22 presents demographic information for learners from the 6 RH sub-groups who graduated in 2012. We note the small sample sizes of some groups, Real estate & rental, for example is particularly small, thus their demographic characteristics should be interpreted with caution.

Notably, all sub-groups have a majority of female learners, with the highest proportion of males being in the Real estate & rental (47%) and Security & government (47%) groups. All other sub-groups are made up of around a third male learners and two thirds or more female learners. When looking at the age distribution of the sub-groups, Hospitality & cleaning and Travel & aviation have the highest proportion of those aged 25 and over, at 67% and 63% respectively. Real estate & rental had the lowest proportion of young people at 14%. Real Estate & rental also had the highest proportion of those aged over 45, at 25%.

The proportion of those born overseas is around 20% for the WDC on average, with two outliers, namely Real estate & rental with 35% born overseas and Travel & aviation with 18%. Real estate & rental also had the highest proportion of Asian learners, at 23%, compared to the WDC average of 10%, and the lowest proportion of Māori and Pacific learners, 7% and 2% respectively.

Just under half of RH learners are European (47%), followed by Māori (28%), Pacific peoples (14%), Asian (10%) and MELAA/Other (2%).<sup>7</sup> The ethnicity distribution across the 6 RH learner groups is varied, with Travel & aviation having the lowest proportion of European learners.

The distribution of the level of the PSQ completed in 2012 also differs between the sub-groups. On average, over 60% of RH learners achieved a level 3 or 4 qualification in 2012, with the Retail & distribution sub-group deviating from this trend with 31% of their cohort achieving a level 2 qualification and 40% of the Security & government sub-group achieving a level 5 qualification.

---

<sup>7</sup> MELAA refers to Middle Eastern, Latin American and African.

Table 22. Descriptive statistics by RH group 2012

	Ringa Hora	Business, finance & industry support	Hospitality & cleaning	Real estate & rental	Retail & distribution	Security & government	Travel & aviation
Male	35.9%	32.0%	39.4%	47.4%	35.4%	47.3%	30.9%
Age 25 and below	40.9%	25.8%	67.4%	14.1%	33.9%	30.7%	63.6%
Age above 45	12.6%	16.2%	5.1%	24.8%	13.0%	16.8%	6.6%
Born overseas	21.4%	20.1%	20.5%	34.5%	20.9%	26.7%	18.4%
<b>Ethnicity</b>							
European	46.7%	46.4%	46.4%	66.2%	53.9%	41.4%	40.1%
Māori	27.9%	31.7%	29.4%	6.6%	19.0%	22.2%	31.2%
Pacific	13.7%	11.7%	10.6%	1.9%	16.9%	23.8%	19.8%
Asian	9.5%	7.7%	11.8%	22.6%	8.0%	10.1%	7.4%
MELAA/Other	2.2%	2.5%	1.9%	2.4%	2.4%	2.6%	1.6%
<b>NZQF level of qualification achieved in 2012</b>							
Level 1	5.2%	-	-	-	-	-	-
Level 2	10.7%	4.4%	26.2%	-	31.0%	7.8%	-
Level 3	26.6%	21.3%	31.1%	-	41.5%	18.5%	38.7%
Level 4	38.8%	37.5%	28.8%	98.3%	27.4%	26.0%	49.2%
Level 5	10.9%	8.9%	12.7%	-	-	40.6%	6.7%
Level 6	5.2%	10.8%	0.9%	-	-	-	4.3%
Level 7	2.6%	4.4%	-	-	-	6.8%	0.7%
<b>Number of Learners</b>	25446	10530	5322	1233	2214	2397	4149

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## 6.2 Wellbeing outcomes by industry sub-groups

Table 23 presents wellbeing outcomes for our learner cohorts for each sub-group within Ringa Hora, as well as for the aggregate group of learners for this WDC.

Firstly, we note that ACC claims are stable over time for RH, both in terms of all accidents and work-related accidents more specifically. Within-group fluctuations appear to follow this trend as well, with some groups experiencing an increase in ACC claims in 2017, such as the Security & government sub-group.

Mental health contacts increase over time for RH on average, by a total of 3 percentage points between 2014 and 2022. The Travel & aviation sub-group has the lowest rate of mental health contacts (between 15% and 17%), while the Business, finance & industry support sub-group has the highest (between 21% and 24%).

Benefit receipt decreases over time for RH, with a 5 percentage point drop between 2014 and 2022. One notable outlier in this metric is the Real estate & rental sub-group, which has the lowest proportion of benefit receipt, however, it is important to note that this group has the smallest sample size, thus we should be cautious when interpreting this finding. The Hospitality & cleaning sub-group has the highest rate of benefit receipt in 2014, 6 percentage points higher than the WDC average. Between one third and a half of all benefit receipts come from hardship benefits, with unemployment benefits making up almost all of the remainder.

Finally, when assessing the last dimension of crime and victimisation, we note that the WDC overall has low levels of criminal history, ranging between 3% and less than 1%. Overall, victimisations increase over time for all groups and are highest for the Hospitality & cleaning sub-group.

Next, we analyse each sub-group's wellbeing trajectories by NZQF level achieved in 2012, gender, ethnicity, and whether working in a related industry or not. We note that, for the Real estate & rental sub-group both Level 2–4 and Level 5-7 cohorts are too small and thus suppressed according to Stats NZ's confidentiality rules, and thus further analysis on this group is omitted from the report.

Table 23. Wellbeing outcomes by RH sub-groups

	Ringa Hora	Business, finance & industry support	Hospitality & cleaning	Real estate & rental	Retail & distribution	Security & government	Travel & aviation
<b>Share by sub-group</b>							
2014	100%	42.2%	20.5%	5.1%	8.8%	9.4%	15.6%
2017	100%	42.3%	20.5%	5.0%	8.9%	9.3%	15.6%
2022	100%	42.2%	20.6%	5.0%	8.8%	9.2%	15.8%
<b>1) Physical &amp; Mental Health</b>							
<b>ACC accident</b>							
2014	25.0%	25.4%	23.1%	28.5%	25.6%	25.6%	24.6%
2017	25.5%	26.4%	22.5%	30.2%	24.8%	30.1%	22.9%
2022	25.2%	25.5%	24.6%	28.8%	25.0%	25.6%	23.3%
<b>ACC work-related accident</b>							
2014	4.8%	4.6%	6.5%	2.9%	5.0%	3.8%	4.4%
2017	4.6%	4.1%	5.6%	2.7%	4.3%	5.4%	4.9%
2022	4.1%	3.5%	6.0%	2.5%	4.0%	4.0%	3.5%
<b>Any mental health contact</b>							
2014	19.1%	20.9%	18.9%	19.9%	18.4%	17.7%	15.4%
2017	21.3%	22.9%	22.6%	21.6%	21.6%	16.7%	17.3%
2022	22.2%	23.7%	24.0%	23.0%	22.6%	18.5%	17.2%
<b>Any mental health contact+</b>							
2014	20.1%	22.0%	20.1%	20.4%	19.2%	18.5%	16.1%
2017	22.4%	24.2%	23.9%	21.8%	21.9%	17.3%	18.1%
2022	23.5%	25.0%	25.7%	23.6%	24.0%	19.3%	18.7%
<b>2) Benefit Receipt</b>							
<b>Any benefit receipt</b>							
2014	15.7%	14.7%	21.8%	5.2%	11.9%	13.1%	18.6%
2017	12.8%	12.2%	17.8%	3.5%	9.9%	9.2%	15.0%
2022	10.7%	10.0%	14.1%	4.7%	10.0%	8.9%	12.4%
<b>Unemployment benefit receipt</b>							
2014	5.0%	5.2%	6.1%	-	3.3%	3.8%	6.1%
2017	4.4%	4.3%	5.4%	-	2.9%	3.2%	6.1%
2022	2.8%	2.6%	3.6%	-	2.3%	1.9%	3.7%
<b>Hardship benefit receipt</b>							
2014	10.1%	8.8%	15.8%	2.1%	7.8%	8.5%	12.0%
2017	7.4%	6.8%	11.3%	-	6.1%	5.1%	8.3%
2022	5.7%	4.9%	8.2%	2.2%	5.7%	4.7%	6.6%
<b>3) Crime &amp; Victimization</b>							
<b>Any criminal history</b>							
2014	3.1%	2.5%	4.6%	-	3.6%	2.7%	3.3%
2017	2.3%	1.9%	3.7%	-	2.6%	1.8%	2.3%
2022	0.6%	0.5%	1.1%	-	-	-	-
<b>Serious criminal history</b>							
2014	1.1%	1.1%	1.8%	-	1.2%	-	0.8%
2017	0.9%	0.9%	1.3%	-	-	-	0.9%
2022	0.3%	0.3%	0.5%	-	-	-	-
<b>Victimization</b>							
2014	2.7%	2.4%	3.3%	2.6%	1.8%	2.4%	3.2%
2017	4.8%	4.9%	5.4%	2.7%	4.0%	4.5%	5.0%
2022	5.4%	5.0%	6.6%	4.1%	4.8%	5.3%	5.5%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH learners between 18 and 54 (inclusive) years old in 2012, according to their education records. All income variables are deflated to March 2022 dollars.

## **Business, finance & industry support**

In this subsection, we analyse the wellbeing trajectories of the Business, finance & industry support sub-group. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group with no PSQ (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Business, finance & industry support sub-group. As a result of low counts of Level 2 learners in this group, we were unable to generate a large enough comparison group.

### **Business, finance & industry support by NZQF level**

Firstly, Table 24 gives the health outcomes for our learners by NZQF level. As a result of low counts of Level 2 learners in this group, we were unable to generate a large enough comparison group, thus we discuss the results for learners.

Level 5-7 learners have stable ACC accidents over time, both in general and work-related, while Level 2-4 learners have more noisy ACC results, with work-related accidents decreasing over time. Mental health contacts are increasing over time for both Level 2-4 and 5-7 learner groups, reaching a similar level by 2022.

For the second dimension of benefit receipt, we note that there is a higher proportion of Level 2-4 learners receiving benefits in all time points, although the proportion decreases over time for both sets of learners, the gap between Level 2-4 and 5-7 learners remains at 5 percentage points in 2022. It also appears that most of the benefit receipts are for hardship benefits, rather than unemployment.

Finally, for the final dimension of crime and victimisation, we note that crime data is sparse for the Level 5-7 cohort, and, by 2022 is less than 1% for the Level 2-4 learners. Victimisations increase over time for both groups, with 5% of Level 2-4 learners being victimised in 2022 and 4% of the Level 5-7 learners.

### **Business, finance & industry support by NZQF level & industry**

When considering Table 25, we note that there is little variation in the related/non-related industry proportions over time, which indicates low mobility for Business, finance & industry support learners across industries. The proportion of learners in a related industry decreases from 18% (30%) to 17% (28%) over time for the NZQF Level 2-4 group (Level 5-7 group).

When considering the health dimension of those working in a related industry versus those working in a non-related industry, we note that there is little fluctuation in ACC accidents across the board and that Level 2-4 learners working in a related industry have a lower proportion of accidents compared to those working in a non-related industry, and that work-related accidents are similar. For Level 5-7

learners, we see slightly fewer ACC accidents for those working in a related industry, however, the results are less consistent. The gap between those working in a related industry versus not is small and constant (between 1 and 2 percentage points).

Looking at mental health we see that the Level 2-4 learners working in a related industry have a similar proportion of mental health contacts than the non-related industry learners, and that there are no large changes in these proportions over time. For Level 5-7 learners, changes over time are more evident, with the proportion of learners with a mental health contact increasing from 15% (17%) in 2014, to 22% (21%) in 2022 for those working in a related industry (non-related industry). Of note is the fact that those working in a related industry had lower mental health contacts than those working in a non-related industry in 2014, however the roles reverse by 2022.

Secondly, looking at the benefit receipt dimension, we see higher benefit receipt for the related industry group (23%) for the Level 2-4 learners, more than double that of those working in a non-related industry (11%), with the not gap narrowing over time despite proportions for both groups decreasing over time. The gap between those working in a related industry compared to those not is less stark when considering Level 5-7 learners who, despite having higher benefit receipt in 2014, seem to reach the same proportion as those in a non-related industry by 2022.

Finally, looking at the crime dimension, we note the very small counts, and thus we do not attempt to interpret these results.

Table 9. Wellbeing outcomes for Business, finance & industry support sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	-	24.8%	27.3%
2017	-	26.2%	27.2%
2022	-	25.0%	27.6%
ACC work-related accident			
2014	-	5.5%	2.9%
2017	-	4.7%	2.4%
2022	-	3.8%	2.4%
Any mental health contact			
2014	-	19.6%	17.3%
2017	-	21.7%	20.8%
2022	-	22.3%	21.8%
Any mental health contact+			
2014	-	20.7%	17.9%
2017	-	22.9%	21.3%
2022	-	23.5%	22.6%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	-	15.4%	10.3%
2017	-	13.1%	5.9%
2022	-	10.7%	5.5%
Unemployment benefit receipt			
2014	-	5.4%	3.5%
2017	-	4.7%	1.8%
2022	-	2.8%	0.9%
Hardship benefit receipt			
2014	-	9.5%	6.4%
2017	-	7.3%	3.4%
2022	-	5.5%	2.4%
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	-	3.0%	1.0%
2017	-	2.4%	-
2022	-	0.7%	-
Serious criminal history			
2014	-	1.3%	-
2017	-	1.1%	-
2022	-	-	-
Victimization			
2014	-	2.2%	2.2%
2017	-	5.5%	3.2%
2022	-	5.2%	3.7%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Business, finance & industry support learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 25. Wellbeing outcomes for Business, finance & industry support sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	18.1%	81.9%	30.4%	69.6%
2017	18.2%	81.8%	30.5%	69.5%
2022	17.1%	82.9%	28.1%	71.9%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	22.9%	26.2%	27.1%	29.2%
2017	23.0%	28.1%	28.0%	27.7%
2022	23.1%	26.5%	28.0%	28.6%
<b>ACC work-related accident</b>				
2014	4.3%	6.8%	-	3.4%
2017	4.7%	5.8%	-	2.8%
2022	3.1%	4.9%	-	3.0%
<b>Any mental health contact</b>				
2014	19.6%	18.0%	15.1%	16.9%
2017	18.7%	19.9%	18.3%	21.5%
2022	21.6%	20.0%	22.0%	20.9%
<b>Any mental health contact+</b>				
2014	20.4%	18.8%	15.1%	17.5%
2017	19.8%	20.4%	18.8%	21.7%
2022	22.4%	20.7%	22.6%	21.6%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	23.2%	11.0%	11.5%	8.4%
2017	21.2%	8.9%	5.4%	5.2%
2022	18.8%	8.4%	5.4%	4.7%
<b>Unemployment benefit receipt</b>				
2014	6.8%	3.7%	4.2%	2.5%
2017	7.2%	3.0%	-	-
2022	5.1%	2.2%	-	-
<b>Hardship benefit receipt</b>				
2014	15.0%	6.2%	7.8%	4.3%
2017	12.2%	4.7%	-	2.6%
2022	10.2%	4.1%	-	2.3%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	4.3%	2.1%	-	-
2017	-	1.4%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	0.8%	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	2.9%	1.7%	-	2.1%
2017	5.4%	4.5%	-	2.6%
2022	5.1%	4.0%	-	3.0%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Business, finance & industry support learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

### **Business, finance & industry support by NZQF level & gender**

The results for the Business, finance & industry support sub-group by gender are presented in Appendix Table D 1. Firstly, we note that women make up over a third, 35%, of this sub-group at both NZQF levels 2-4 and 5-7.

For the first dimension of physical and mental health, we note that males have a higher proportion of ACC claims than women for Level 2-4 learners, by 7 percentage points in 2014, and as ACC claims increase over time for both groups, the difference narrows to 3 percentage points by 2022. Notably, the male cohort of Level 2-4 learners also has higher work-related ACC claims in all time points, decreasing over time. For Level 5-7 learners, we see that in 2014, the female cohort had higher ACC claims, with the male cohort briefly overtaking them in 2017, before equalising in 2022. However, the male cohort has higher work-related ACC claims in all three time points.

As for mental health contacts, we see women having a higher proportion of contacts in both the Level 2-4 and 5-7 cohort. In general, mental health contacts appear to increase across the board. The difference between the Level 2-4 cohort and 5-7 group is minimal. In general, the female cohort has a higher proportion of mental health contacts in 2022 than 2014, and a higher proportion of contacts for the female cohort compared to the male cohort in all time points.

For the second dimension of benefit receipt, we note that women have higher rates of benefit receipt than their male equivalents in both NZQL groups. We note that for both males and females of the Level 2-4 cohort there is a higher proportion of hardship benefits than unemployment benefits, and all benefit receipt is trending down over time.

Finally, when considering criminal and victimisation history, we note that criminal history for the female cohort is sparse and often too small to allow comment. The female cohort has similar victimisation rates in 2014 to the male group, however the rate increases for the female cohort by 4 percentage points to 6% (3 times the 2014 rate) by 2017, while the male cohort doubled to 4%.

### **Business, finance & industry support by NZQF level & ethnicity**

Finally, we split the sample into two ethnicity categories: European and Māori, presented in Appendix Table D 2. We note that the Māori make up over a third (less than a third), 40% (23%) of Business, finance & industry support learners at NZQF level 2-4 (level 5-7). Our interpretations for the NZQF Level 5-7 group are limited in this section, and results should be treated with caution.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related, and these gaps remain steady over time for both NZQL Level 2-4 and 5-7 groups. We note also that the

Māori learners have similar rates of mental health contacts, over time, whereas the mental health contacts increase over time for the European cohort, by 2022, a 6 percentage point gap emerges between cohorts at level 2-4. For learners at levels 5-7, both ethnic groups see an increase in the number of mental health contacts they experience over time, however the European group has higher proportions in all three time points.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group, but that these proportions are decreasing over time, with the differences between the Māori and European cohort narrowing from 13 (11) percentage points in 2014, to 9 (6) percentage points by 2022 for Level 2-4 (Level 5-7) learners. In both instances, over two thirds of benefits appear to be hardship benefits rather than unemployment benefits.

## Hospitality & cleaning

In this subsection, we analyse the wellbeing trajectories of the Hospitality & cleaning sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Hospitality & cleaning sub-group.

### Hospitality & cleaning by NZQF level

Table 26 breaks down the wellbeing trajectories of Hospitality & cleaning learners compared to those with no PSQ. We note that Level 2-4 learners have a similar level of ACC claims to the No PSQ group (between 22% and 23%), with the learners seeing an increase in accident claims in 2022 (to 25%). Level 5-7 learners have higher ACC claims (26% in 2014) which fluctuates down in 2017 and then up one percentage point in 2022 (also to 25% by 2022).

As for mental health contacts, learners have a lower proportion of mental health contacts than non-learners in all time points, however the gap appears to narrow over time. The Level 5-7 learners, who have the lowest proportion of mental health contacts, have a proportion 10 percentage points lower than the No PSQ group in 2014, but by 2022 that difference is halved, at 5 percentage points.

In the second dimension of benefit receipt, Level 2-4 learners have a higher proportion of benefit receipt than non-learners at all time points, however the gap appears to narrow over time. The Level 5-7 learners, who have the lowest proportion of benefit receipt in 2014, reach the same proportion as non-learners by 2022. Overall, it appears that apparent differences between groups all disappear over time.

Finally, for the crime and victimisation dimension, we note that Level 2-4 learners have a higher proportion of crime incidents than those with no PSQ, however the 2 percentage point gap evident between the groups in 2014 disappears by 2022. As for victimisations, we note the inverse, that the learners and non-learners start with a similar proportion of victimisations in 2014, however the proportion of Level 2-4 learners experiencing a victimisation increases faster than that of non-learners, leading to a 2 percentage point gap between the groups by 2022.

### **Hospitality & cleaning by NZQF level & industry**

Table 27 shows the wellbeing trajectories of learners from the Hospitality & cleaning sub-group by the industry they ended up working in. We note that there is high variation in related/non-related industry proportions over time, indicating high mobility of learners across industries. The proportion of learners in a related industry decreases from 59% (65%) to 24% (28%) over time for the NZQF Level 2-4 group (Level 5-7 group).

When considering the health dimension of those working in a related industry versus those working in a non-related industry, we note that for Level 2-4 learners, ACC accidents are increasing over time, with those working in a non-related industry having higher proportions than those in a related industry. Oddly, the statistics for 2017 buck the trend for both NZQF level groups, noticeably for Level 5-7 learners, we see fewer ACC accidents for those working in a related industry and more for those in a non-related industry in 2017, however both groups end up at similar proportions (26%) by 2022.

Looking at mental health we see that the Level 2-4 learners working in a related industry have a lower proportion of mental health contacts than the non-related industry learners, and that these proportions increase over time for both groups. For Level 5-7 learners, the trends are the same for those working in a related industry, for whom mental health contacts increase over time, as for those in a non-related industry. We note that although there was a 2 percentage point difference between the groups in 2014, the gap widens to 4 percentage points by 2022.

Secondly, looking at the benefit receipt dimension for Level 2-4 learners, we see higher benefit receipt for the non-related industry group, double that of those working in a related industry, with the gap narrowing over time until they are non-existent and this is mainly driven by decreases in hardship benefits. For Level 5-7 learners, we note an increase in benefit uptake over time for those working in a related industry (13% to 19%) and a decrease for those working in a non-related industry (15% to 12%). So despite those in a related industry initially having lower benefit receipt in 2014, their non-related industry counterparts have lower benefit uptake by 2022.

Finally, when considering criminal and victimisation history, we note that criminal history is sparse and often too small to allow comment. For crime victimisation, looking at Level 2-4 learners, we note that there are no substantial differences between those in a related industry compared to those not in a related industry.

**Table 26. Wellbeing outcomes for Hospitality & cleaning sub-group: by NZQF level**

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	21.2%	22.7%	26.0%
2017	21.9%	22.3%	24.3%
2022	21.6%	24.6%	25.3%
ACC work-related accident			
2014	6.5%	6.2%	7.7%
2017	6.4%	5.5%	6.9%
2022	5.8%	6.2%	4.7%
Any mental health contact			
2014	24.9%	19.4%	15.3%
2017	26.9%	23.2%	18.5%
2022	26.9%	24.3%	22.1%
Any mental health contact+			
2014	26.5%	20.6%	15.8%
2017	28.6%	24.6%	18.5%
2022	29.0%	26.0%	23.7%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	17.2%	22.9%	15.3%
2017	14.3%	18.2%	14.3%
2022	13.4%	14.2%	13.7%
Unemployment benefit receipt			
2014	4.5%	6.5%	3.6%
2017	3.7%	5.5%	5.3%
2022	2.0%	3.6%	-
Hardship benefit receipt			
2014	9.6%	16.5%	11.2%
2017	8.4%	11.6%	7.9%
2022	7.3%	8.3%	7.9%
<b>3) Crime &amp; Victimisation</b>			
Any criminal history			
2014	3.3%	4.9%	-
2017	2.8%	3.9%	-
2022	0.9%	1.1%	-
Serious criminal history			
2014	1.3%	1.9%	-
2017	1.3%	1.4%	-
2022	0.3%	0.5%	-
Victimisation			
2014	2.6%	3.3%	-
2017	4.6%	5.5%	5.8%
2022	4.8%	6.8%	5.8%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Hospitality & cleaning learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 10. Wellbeing outcomes for Hospitality & cleaning sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	59.5%	40.5%	64.9%	35.1%
2017	39.0%	61.0%	45.2%	54.8%
2022	24.1%	75.9%	27.7%	72.3%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	22.9%	26.4%	26.1%	26.7%
2017	20.6%	25.1%	23.9%	27.9%
2022	26.6%	27.0%	25.6%	25.9%
<b>ACC work-related accident</b>				
2014	7.7%	7.2%	9.9%	-
2017	6.6%	6.6%	-	9.3%
2022	9.0%	7.3%	-	-
<b>Any mental health contact</b>				
2014	17.5%	18.7%	14.4%	15.0%
2017	19.9%	21.0%	15.5%	17.4%
2022	22.1%	23.3%	18.6%	22.3%
<b>Any mental health contact+</b>				
2014	18.3%	20.5%	15.3%	16.7%
2017	21.3%	21.8%	15.5%	17.4%
2022	23.4%	24.6%	18.6%	23.2%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	19.2%	22.1%	12.6%	15.0%
2017	16.9%	15.9%	12.7%	12.8%
2022	14.8%	14.0%	18.6%	11.6%
<b>Unemployment benefit receipt</b>				
2014	5.2%	5.4%	-	-
2017	5.4%	3.8%	-	-
2022	4.1%	3.5%	-	-
<b>Hardship benefit receipt</b>				
2014	12.9%	16.5%	9.9%	11.7%
2017	10.3%	10.7%	-	9.3%
2022	7.8%	8.5%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	3.5%	5.4%	-	-
2017	2.7%	3.3%	-	-
2022	-	1.2%	-	-
<b>Serious criminal history</b>				
2014	1.4%	1.6%	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	3.2%	2.7%	-	-
2017	4.2%	5.3%	-	-
2022	6.1%	6.0%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Hospitality & cleaning learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

### **Hospitality & cleaning by NZQF level & gender**

The results for the Hospitality & cleaning support sub-group by gender are presented in Appendix Table D 3. Firstly, we note that women make up over a third, 39%, of this sub-group at NZQF level 2-4 and 40% for the Level 5-7 group.

For the first dimension of physical and mental health, we note that males have a similar proportion of ACC claims between men and women for Level 2-4 learners, and as ACC claims increase over time for both groups, the difference remains small by 2022. Notably, the male cohort of Level 2-4 learners has higher work-related ACC claims in all time points, decreasing slightly over time. For Level 5-7 learners, we see that in 2014, the female cohort had higher ACC claims, with the 4 percentage point difference persisting over time, despite the proportion of ACC claims decreasing for both men and women over time.

As for mental health contacts, we see women having a higher proportion of contacts in both the Level 2-4 and 5-7 cohort. In general, mental health contacts appear to increase across the board. Due to small counts, we focus more on the Level 2-4 learners. The 4 percentage point difference between male and female cohort persists over time, similar to ACC accidents.

For the second dimension of benefit receipt, we note that regardless of gender, Level 2-4 learners have higher proportions of benefit receipt compared to Level 5-7 learners. Women have higher rates of benefit receipt than their male equivalents in both NZQL groups, with differences being more stark for Level 2-4 learners. We note that for both males and females of the Level 2-4 cohort, there is a higher proportion of hardship benefits than unemployment benefits, and all benefit receipt is trending down over time.

Finally, when considering criminal and victimisation history, we note that criminal history for the female cohort is sparse and often too small to allow comment. The female cohort has similar victimisation rates in 2014 to the male group, however, the rate increases for the female cohort by 3 percentage points to 7% by 2017, while the male cohort more than doubled to 6%.

### **Hospitality & cleaning by NZQF level & ethnicity**

Finally, we split the sample into two ethnicity categories: European and Māori, presented in Appendix Table D 4. We note that the Māori make up around a third, 39% (37%) of Hospitality & cleaning learners at NZQF level 2-4 (level 5-7). Our interpretations for the NZQF Level 5-7 group are limited in this section, and results should be treated with caution.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related, and these gaps remain steady over time for Level 2-4 learners, with the proportion of accidents increasing over time for both ethnicity groups. The gap decreases between Level 2-4 European learners and Māori, from 9 percentage points to 5 percentage points by 2022. For Level 5-7 learners we see a closing gap also, from 7 percentage points in 2014, to 2 percentage points by 2022.

Considering mental health contacts, Māori Level 2-4 learners have lower proportions of contacts in all time periods. Despite the proportion increasing over time for both ethnicity groups, it grows faster for the European cohort, the gap between groups increasing from 4 percentage points in 2014, to 9 percentage points by 2022.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group, but that these proportions are decreasing over time faster for the Māori cohort, with the differences between the Māori and European cohort narrowing from 14 percentage points in 2014, to 10 percentage points by 2022. In both instances, over two thirds of benefits appear to be hardship benefits rather than unemployment benefits.

Finally, we note the crime and victimisation dimension. Differences are apparent when considering victimisations, although the two groups start with a similar proportion of victimised individuals in 2014, the Māori cohort's rate of victimisation more than doubles between 2014 (4%) and 2022 (11%), while the European cohort sees only a 2 percentage point increase (from 3% to 5%).

## Retail & distribution

In this subsection, we analyse the wellbeing trajectories of the Retail & distribution sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Retail & distribution sub-group.

### Retail & distribution by NZQF level

Table 28 breaks down the wellbeing trajectories of Retail & distribution learners by qualification level, compared to those with no PSQ. We note that, due to small sample sizes, we can only focus on Level 2-4 learners and those with no PSQ in this section. Level 2-4 learners have a similar level of ACC claims to the No PSQ group (between 26% and 24%). As for mental health contacts, learners have a lower proportion of mental health contacts than non-learners in all time points, however the gap appears to

narrow over time. The Level 2-4 learners have a proportion 8 percentage points lower than the No PSQ group in 2014, but by 2022 that difference decreases to 6 percentage points.

In the second dimension of benefit receipt, Level 2-4 learners have a higher proportion of benefit receipt than non-learners in 2014 by 1 percentage point, however, it appears that apparent differences between groups disappear over time.

Finally, for the crime and victimisation dimension, we note that Level 2-4 learners have a higher proportion of crime incidents than those with no PSQ, however, the gap is small at only 2 percentage points. As for victimisations, we note that the learners and non-learners start with a similar proportion of victimisations in 2014, however the proportion of Level 2-4 learners experiencing a victimisation increases faster than that of non-learners, leading to a 1 percentage point gap between the groups by 2022.

### **Retail & distribution by NZQF level & industry**

Table 29 shows the wellbeing trajectories of learners from the Retail & distribution sub-group by the industry they ended up working in. We note that, due to small counts, our analysis is limited to the mental and physical health of the Level 2-4 learners. The share of those working in a related industry decreases over time, starting at 35% in 2014 and dropping to 25% by 2022.

In the health dimension, we note that those in a related industry don't appear to have a large advantage over those in an unrelated industry in 2014, however, as far as ACC claims, a gap of 7 percentage points emerges between the groups by 2022. Contrastingly, only a small gap emerges between the groups when considering mental health contacts, which increases by 1 percentage point between 2014 and 2022. It is notable that the related industry learners have slightly higher mental health contacts than their non-related industry counterparts.

Table 28. Wellbeing outcomes for Retail & distribution sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	24.3%	25.5%	-
2017	25.0%	25.0%	-
2022	23.7%	24.9%	-
ACC work-related accident			
2014	6.9%	5.0%	-
2017	7.2%	4.4%	-
2022	5.9%	4.0%	-
Any mental health contact			
2014	25.9%	18.3%	-
2017	27.5%	21.5%	-
2022	28.6%	22.6%	-
Any mental health contact+			
2014	27.2%	19.2%	-
2017	28.8%	22.0%	-
2022	30.2%	23.8%	-
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	10.9%	11.9%	-
2017	9.1%	9.8%	-
2022	10.2%	9.9%	-
Unemployment benefit receipt			
2014	2.3%	3.2%	-
2017	2.0%	2.9%	-
2022	1.1%	2.3%	-
Hardship benefit receipt			
2014	6.1%	7.9%	-
2017	5.4%	6.1%	-
2022	5.2%	5.6%	-
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	2.2%	3.8%	-
2017	1.6%	2.4%	-
2022	0.5%	-	-
Serious criminal history			
2014	0.8%	1.4%	-
2017	0.7%	-	-
2022	0.2%	-	-
Victimisation			
2014	1.9%	2.0%	-
2017	3.5%	4.0%	-
2022	3.5%	4.8%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Retail & distribution learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 29. Wellbeing outcomes for Retail & distribution sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	34.5%	65.5%	-	-
2017	28.5%	71.5%	-	-
2022	24.9%	75.1%	-	-
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	26.4%	27.0%	-	-
2017	22.2%	27.1%	-	-
2022	20.2%	27.7%	-	-
ACC work-related accident				
2014	5.7%	5.5%	-	-
2017	5.2%	5.2%	-	-
2022	-	4.4%	-	-
Any mental health contact				
2014	18.7%	18.0%	-	-
2017	20.3%	21.6%	-	-
2022	24.0%	21.5%	-	-
Any mental health contact+				
2014	19.2%	18.3%	-	-
2017	20.3%	21.9%	-	-
2022	24.0%	21.8%	-	-
<b>2) Income from benefits</b>				
Any benefit receipt				
2014	9.8%	11.2%	-	-
2017	5.9%	9.1%	-	-
2022	10.1%	8.7%	-	-
Unemployment benefit receipt				
2014	-	3.0%	-	-
2017	-	2.3%	-	-
2022	-	2.6%	-	-
Hardship benefit receipt				
2014	5.7%	7.4%	-	-
2017	-	5.7%	-	-
2022	7.0%	4.6%	-	-
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	-	3.6%	-	-
2017	-	2.1%	-	-
2022	-	-	-	-
Serious criminal history				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Victimization				
2014	-	1.9%	-	-
2017	-	3.9%	-	-
2022	-	4.4%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Retail & distribution learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

### **Retail & distribution by NZQF level & gender**

The results for the Retail & distribution sub-group by gender are presented in Appendix Table D 5. Firstly, we note that women make up almost two thirds, 65%, of this sub-group at NZQF level 2-4. We note that, due to small counts, our analysis is limited to the Level 2-4 learners.

For the first dimension of physical and mental health, we note that males have a larger proportion of ACC claims compared to women, with the male cohort seeing a decrease over time, while the female cohort staying relatively constant over time. This led to a 4 percentage point difference between genders in 2014, shrinking to less than a 1 percentage point difference in 2022. Despite this, the male cohort have consistently higher proportions of work-related ACC claims.

As for mental health contacts, we see women have a higher proportion of mental health contacts, which increases over time for both gender groups. The 8 percentage point difference between male and female cohort persists over time, increasing slightly to 9 percentage points by 2022.

For the second dimension of benefit receipt, women have higher rates of benefit receipt than their male equivalents, with differences being more stark in 2014 (3 percentage points) than by 2022 (1 percentage point).

### **Retail & distribution by NZQF level & ethnicity**

Finally, we split the sample into two ethnicity categories: European and Māori, presented in Appendix Table D 6. We note that the Māori make up around a quarter, 26%, of Retail & distribution learners at NZQF level 2-4. Results for the NZQF Level 5-7 group are suppressed in this section, thus we focus our analysis on the Level 2-4 group.

We first notice that the Māori cohort has a lower rate of ACC accidents, and this gap decreases over time, from 9 percentage points in 2014, to 7 percentage points by 2022, with the proportion of accidents remaining steady over time for Europeans.

Considering mental health contacts, Māori learners have lower proportions of contacts in all time periods. The gap between ethnicities widens as the proportion of Māori with a mental health contact decreases over time, while mental health contacts increase for the European cohort. This leads to a 5 percentage point gap increasing to a 12 percentage point gap by 2022.

Next, when assessing benefit receipt, we see that the Māori cohort has a three times higher uptake of benefits than the European group. This gap persists over time, with neither group varying more than 2 percentage points over time.

## Security & government

In this subsection, we analyse the wellbeing trajectories of the Security & government sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Security & government sub-group. We note that counts for those working in a related industry are too small and thus suppressed according to Stats NZ's confidentiality rules.

### Security & government by NZQF level

Table 30 shows the wellbeing trajectories of Security & government learners compared to those with no PSQ. We note that Level 2-4 learners have the highest level of ACC claims, followed by the No PSQ group, with both groups seeing an increase in accident claims in 2017, followed by a 5 percentage point decrease for non-learners by 2022 and a 3 percentage point drop for learners. Level 5-7 learners have the lowest ACC claims (23% in 2014) which fluctuates up 5 percentage points in 2017 and then down 7 percentage points in 2022 (to 22%).

As for mental health contacts, learners have a lower proportion of mental health contacts than non-learners in all time points. The Level 5-7 learners, who have the lowest proportion of mental health contacts, have a proportion 12 percentage points lower than the No PSQ group in 2014, with that difference decreasing to 10 percentage points by 2022.

In the second dimension of benefit receipt, Level 2-4 learners have the lowest proportion of benefit receipt (9%) and Level 5-7 learners have the highest (18%) in 2014. While the benefit receipt proportion decreases over time for learners, non-learners have a more stable benefit uptake of 11%. Overall, it appears that apparent differences between learner groups are minimised over time.

Finally, for the crime and victimisation dimension, we note that small counts prevent us from making meaningful claims regarding criminal incidents. As for victimisations, we note that the learners and non-learners start with a similar proportion of victimisations for Level 2-4 learners in 2014, however, the proportion of Level 2-4 learners experiencing a victimisation increases faster than that of non-learners, leading to a 2 percentage point gap between the groups by 2022.

Table 30. Wellbeing outcomes for Security & government sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	25.9%	27.8%	23.1%
2017	28.4%	31.5%	27.9%
2022	23.3%	28.5%	22.2%
ACC work-related accident			
2014	7.1%	5.5%	-
2017	8.2%	7.3%	3.5%
2022	5.0%	5.2%	2.6%
Any mental health contact			
2014	26.2%	19.2%	16.1%
2017	26.9%	17.5%	15.4%
2022	26.8%	19.0%	17.6%
Any mental health contact+			
2014	27.5%	20.2%	16.4%
2017	28.3%	18.5%	16.0%
2022	28.2%	20.1%	18.0%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	11.6%	9.4%	17.6%
2017	8.9%	7.3%	11.5%
2022	11.2%	7.6%	10.5%
Unemployment benefit receipt			
2014	2.3%	2.1%	5.8%
2017	1.8%	1.9%	4.8%
2022	-	-	2.9%
Hardship benefit receipt			
2014	7.9%	6.6%	10.9%
2017	5.7%	4.6%	5.8%
2022	6.1%	4.1%	5.9%
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	2.1%	1.8%	3.3%
2017	1.4%	2.2%	-
2022	-	-	-
Serious criminal history			
2014	1.0%	-	-
2017	0.9%	-	-
2022	-	-	-
Victimization			
2014	2.3%	2.9%	-
2017	4.1%	4.6%	4.5%
2022	3.7%	6.3%	4.2%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Security & government learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

### **Security & government by NZQF level & gender**

The results for the Security & government sub-group by gender are presented in Appendix Table D 7. Firstly, we note that women make up over a third (two thirds), 40% (68%), of this sub-group at NZQF level 2-4 (level 5-7). We note that, due to small counts, our analysis is limited to the first and second dimensions of health and benefit receipt.

For the first dimension of physical and mental health, we note that Level 2-4 males have a slightly larger proportion of ACC claims compared to women, but that the 3 percentage point differences evaporates over time, as the proportion of female ACC claims increases over time. Despite starting with a similar difference between genders, the Level 5-7 cohort maintains its divergence over time, with the male cohort having a 5 percentage point higher proportion of ACC claims by 2022.

As for mental health contacts, we see women have a higher proportion of mental health contacts for Level 2-4 learners, this difference in 2014 is of 8 percentage points in 2014, remaining steady over time. For the Level 5-7 cohort, we see no difference between genders in 2014, but a 6 percentage point difference emerges over time, as the proportion of mental health contacts increases for the female cohort and decreases for the males.

For the second dimension of benefit receipt, women have higher rates of benefit receipt than their male equivalents, with small sample counts making further comparisons impossible.

### **Security & government by NZQF level & ethnicity**

Finally, we split the sample into two ethnicity categories: European and Māori, presented in Appendix Table D 8. We note that the Māori make up around a third, 33% (35%) of Security & government learners at NZQF level 2-4 (level 5-7). Our interpretations are limited in this section due to small sample sizes, and results should be treated with caution.

We first notice that the Māori cohort has a lower rate of ACC accidents, in all three time periods for both NZQF level groups. For the Level 2-4 learners, the European cohort starts and ends with the same proportion of ACC claims, however they have a large spike in 2017. A similar pattern emerges for the Level 2-5 learners, with the European cohort experiencing a spike in ACC claims in 2017 and the Māori cohort also experiencing a more modest increase. However, despite these fluctuations, the ethnic gaps between Māori and European learners remain relatively constant over time.

Considering mental health contacts, Māori Level 2-4 learners have lower proportions of contacts in all time periods with mental health contacts decreasing for Māori over time and increasing for Europeans. This trend means that for Level 2-4 learners, the ethnicity gap increases from 3 percentage points in

2014, to 10 percentage points by 2022. For Level 5-7 learners we see a gap of less than 1 percentage point grow to 3 percentage points by 2022.

## **Travel & aviation**

In this subsection, we analyse the wellbeing trajectories of the Travel & aviation sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Travel & aviation sub-group.

### **Travel & aviation by NZQF level**

Table 31 breaks down the wellbeing trajectories of Travel & aviation learners by qualification level. We note that Level 2-4 learners are the only group with a large enough sample size to comment on.

We note that over time it appears that 23% of learners make an ACC claim per year, and that, on average, 4% make work-related ACC claims. As for mental health contacts, they start at 16% of learners in 2014 and increase over time to 18% by 2022.

In the second dimension of benefit receipt, Level 2-4 learners have relatively high benefit receipt, at 20% in 2014, which decreases to 13% over time, most of this decrease appears to be from hardship benefits.

Finally, for the crime and victimisation dimension, we note that here the small sample sizes make it difficult to comment on criminal activity. As for victimisations, that learners start with a small proportion (3%) of victimisations in 2014, however they experience a slight increase to 6% by 2022.

### **Travel & aviation by NZQF level & industry**

Table 32 shows the wellbeing trajectories of the Travel & aviation sub-group by the industry they end up working in. We note that those who studied at NZQF levels 2-4 see a decrease in the proportion of those working in a related industry over time, from 23% in 2014, to 14% in 2022. This trend is not observed by the Level 5-7 cohort, 32% of whom are working in a related industry in 2014, increasing to 36% by 2022. Unfortunately, due to small sample sizes, we cannot comment further on the NZQF Level 5-7 group.

In the health dimension, the Level 2-4 cohort working in a related industry have a higher proportion of ACC accidents in 2014, at 33% compared to the 24% of those not working in a related industry. By 2022

however, these proportions meet up, with the rate of ACC accidents dropping starkly for the related industry group, to 24%.

In terms of mental health, we note that learners working in a related industry have a higher proportion (18% compared to 15%) of mental health contacts in 2014, but again, this proportion drops for the related industry learners to 12% by 2022, compared to the increase the non-related industry learners see to 17%.

Table 31. Wellbeing outcomes for Travel & aviation sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	-	24.6%	24.1%
2017	-	22.5%	25.6%
2022	-	22.8%	27.3%
ACC work-related accident			
2014	-	4.7%	-
2017	-	5.0%	-
2022	-	3.5%	-
Any mental health contact			
2014	-	16.1%	9.0%
2017	-	18.0%	11.3%
2022	-	17.8%	12.1%
Any mental health contact+			
2014	-	17.0%	9.0%
2017	-	19.0%	11.3%
2022	-	19.4%	12.9%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	-	19.5%	11.3%
2017	-	16.0%	7.5%
2022	-	13.4%	-
Unemployment benefit receipt			
2014	-	6.4%	-
2017	-	6.6%	-
2022	-	4.1%	-
Hardship benefit receipt			
2014	-	12.9%	6.0%
2017	-	8.7%	-
2022	-	7.0%	-
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	-	3.4%	-
2017	-	2.6%	-
2022	-	-	-
Serious criminal history			
2014	-	0.9%	-
2017	-	1.0%	-
2022	-	-	-
Victimization			
2014	-	3.4%	-
2017	-	5.2%	-
2022	-	5.8%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Travel & aviation learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 32. Wellbeing outcomes for Travel &amp; aviation sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	22.9%	77.1%	31.6%	68.4%
2017	19.9%	80.1%	35.0%	65.0%
2022	13.9%	86.1%	35.7%	64.3%
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	32.6%	24.4%	25.0%	25.6%
2017	25.3%	22.8%	26.8%	26.3%
2022	24.3%	23.2%	29.3%	27.0%
ACC work-related accident				
2014	7.3%	5.2%	-	-
2017	4.8%	6.1%	-	-
2022	-	4.1%	-	-
Any mental health contact				
2014	17.6%	14.7%	-	10.3%
2017	15.7%	16.9%	-	11.8%
2022	11.7%	16.8%	-	17.6%
Any mental health contact+				
2014	17.6%	15.1%	-	10.3%
2017	15.7%	17.6%	-	13.2%
2022	11.7%	18.3%	-	17.6%
<b>2) Income from benefits</b>				
Any benefit receipt				
2014	4.1%	19.9%	-	11.5%
2017	-	17.0%	-	9.2%
2022	-	14.2%	-	-
Unemployment benefit receipt				
2014	-	5.7%	-	-
2017	-	6.7%	-	-
2022	-	4.5%	-	-
Hardship benefit receipt				
2014	-	13.1%	-	-
2017	-	9.0%	-	-
2022	-	7.1%	-	-
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	-	3.7%	-	-
2017	-	2.2%	-	-
2022	-	-	-	-
Serious criminal history				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Victimization				
2014	-	3.5%	-	-
2017	-	5.1%	-	-
2022	-	5.1%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Travel & aviation learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

### **Travel & aviation by NZQF level & gender**

The results for the Travel & aviation sub-group by gender are presented in Appendix Table D 9. Firstly, we note that women make up over two thirds (a third), 72% (46%), of this sub-group at NZQF level 2-4 (level 5-7). We note that, due to small counts, our analysis is limited to the first and second dimensions of health and benefit receipt.

For the first dimension of physical and mental health, we note that Level 2-4 males have a larger proportion of ACC claims compared to women, and that the 12 percentage point difference almost halves over time, as the proportion of male ACC claims decrease over time. Despite starting with a similar proportion of ACC claims between genders (less than a 1 percentage point difference in 2014), the Level 5-7 cohort diverges over time, with the male cohort having a 12 percentage point higher proportion of ACC claims by 2022.

As for mental health contacts, we see women have a higher proportion of mental health contacts for Level 2-4 learners, this difference in 2014 is of 6 percentage points in 2014, increasing over time to 9 percentage points by 2022. This gap is mostly explained by an increase in mental health contacts for the female cohort over time, rather than a decrease for the male cohort.

For the second dimension of benefit receipt, women have higher rates of benefit receipt than their male equivalents, with small sample counts making further comparisons impossible.

### **Travel & aviation by NZQF level & ethnicity**

Finally, we split the sample into two ethnicity categories: European and Māori, presented in Appendix Table D 10. We note that the Māori make up around a third (a quarter), 47% (24%) of Travel & aviation learners at NZQF level 2-4 (level 5-7). The NZQF Level 5-7 group is small and thus the results are suppressed in order to comply with Stats NZ confidentiality rules, as such we focus on Level 2-4 learners in this section.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related, and these gaps remain steady over time, with the proportion of accidents decreasing over time for both ethnicity groups. Considering mental health contacts, Māori Travel & aviation learners have lower proportions of contacts in all time periods. The proportion of contacts increases over time for the European cohort, enlarging existing gaps between groups from 5 percentage points in 2014, to 9 percentage points by 2022.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits, more than double that of the European group, but that these proportions are decreasing over time for

the Māori cohort, with the differences between the Māori and European cohort narrowing from 18 percentage points in 2014, to 12 percentage points by 2022, a 50% reduction. In both instances, over two thirds of benefits appear to be hardship benefits rather than unemployment benefits.

## 7 Toi Mai

This section focuses on 2012 learners with an NZSCED code related to the WDC Toi Mai (TM).

Toi Mai represents the creative, cultural, recreation and technology sectors. These sectors are comprised of industries specified in the Australia and New Zealand Standard Industrial Classification 2006 (ANZSIC).

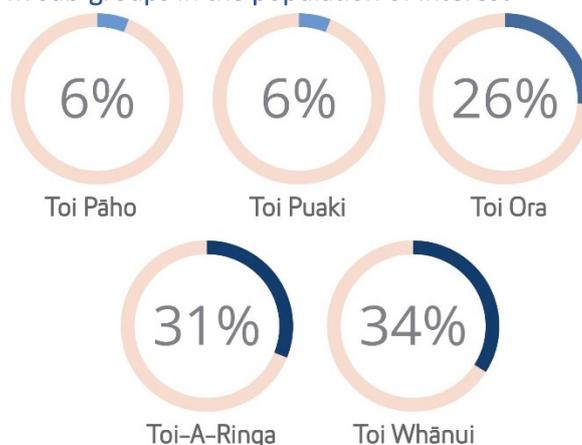


TM has five sub-groups, namely: Toi Ora (sport, recreation and cultural organisations), Toi Puaki (expressive arts), Toi Pāho (broadcast and screen), Toi Whānui (enabling technologies) and Toi-A-Ringa (art and design). The number of NZSCED codes related to a sub-group ranges between 4 (Toi Whānui) and 12 (Toi-A-Ringa). This means that a small number of NZSCED codes define the pool of learners. Moreover, residual NZSCED categories that include learners not elsewhere classified (e.g., 039999 “Engineering and Related Technologies not elsewhere classified”) play a substantial role. Furthermore, one NZSCED code (031399 “Electrical and Electronic Engineering and Technology not elsewhere classified”) has been assigned to two WDC sub-groups, which results in double counting of a few individuals.

### 7.1 Descriptive profile by industry sub-group

The number of learners that are identified in the five sub-groups of TM differs substantially: while about one third of TM’s learners belong to Toi Whānui or Toi-A-Ringa, only about 6% belong to Toi Puaki or Toi Pāho.

Figure 5. Proportion of TM sub-groups in the population of interest



Source: Authors’ compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM learners between 18 and 54 (inclusive) years old in 2012, according to their education records

Table 33 discusses the demographic characteristics for each TM sub-group. Large diversity can be found regarding gender and age. For example, while Toi Puaki has a large share of male learners (70%) and three out of four are below the age of 25 (77%), a flipped distribution is found for Toi Whānui where only 41% are male and one third (37%) aged below 25. When we move to the achieved qualification levels, we see that levels 2-4 are the by far most dominant levels for Toi Ora and Toi Whānui; however, in case of Toi Puaki and Toi Pāho, more than every second learner graduated with level 5 or 6.

**Table 33. Descriptive statistics by TM sub-group 2012**

	Toi Mai	Toi Ora	Toi Puaki	Toi Pāho	Toi Whānui	Toi-A-Ringa
<b>Male</b>	42.9%	62.9%	69.9%	63.4%	41.1%	21.9%
<b>Age 25 and below</b>	53.2%	53.3%	76.9%	66.2%	36.8%	64.5%
<b>Age above 45</b>	9.7%	7.5%	2.0%	5.2%	16.6%	6.2%
<b>Born overseas</b>	19.1%	14.5%	17.3%	17.4%	26.3%	15.9%
<b>Ethnicity</b>						
European	49.9%	53.4%	58.1%	66.4%	38.6%	55.1%
Māori	29.8%	31.1%	21.3%	17.2%	32.7%	29.2%
Pacific	9.3%	10.0%	13.8%	6.5%	11.0%	6.4%
Asian	8.4%	3.2%	5.0%	7.0%	14.8%	6.8%
MELAA/Other	2.5%	2.3%	1.8%	3.0%	2.7%	2.5%
<b>NZQF level of qualification achieved in 2012</b>						
Level 1	0.3%	-	-	-	-	0.6%
Level 2	12.8%	12.0%	6.5%	2.7%	26.0%	2.2%
Level 3	32.7%	34.9%	14.3%	10.2%	38.2%	31.4%
Level 4	22.4%	25.8%	24.6%	23.6%	10.8%	31.5%
Level 5	18.1%	17.2%	35.6%	40.8%	14.2%	17.0%
Level 6	11.8%	9.8%	17.5%	16.2%	9.7%	13.7%
Level 7	1.9%	-	-	5.5%	1.0%	3.4%
<b>Number of Learners</b>	21390	5487	1197	1206	7224	6657

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## 7.2 Wellbeing outcomes by industry sub-groups

Table 34 shows each sub-group's wellbeing trajectories, compared to the averages for the Toi Mai (TM) WDC overall. First, looking at the health dimension, we notice that Toi Ora has the highest proportion of ACC claims, over 10 percentage points higher than the TM average. Toi Whānui and Toi-A-Ringa have the lowest ACC claims, averaging 4 percentage points lower than the TM average over time. In general, ACC claims appear to be stable over time, with work-related ACC claims following the same trends.

For mental health, we note that Toi Ora has the lowest proportion of mental health contacts of all sub-groups, while Toi-A-Ringa has the highest. Across the board the proportion of learners having a mental health contact in a given year is increasing over time, with the WDC average increasing by 4 percentage points between 2014 and 2022.

For benefit receipts, we again notice Toi Ora as an outlier, with lower-than-average benefit receipt compared to the WDC as a whole; despite this, by 2022, Toi Pāho also decreases to the same level. At the other end of the spectrum, Toi Puaki has the highest proportion of benefit receipt in 2014, however this is no longer the case by 2017 and 2022. Overall, benefit uptake is going down for the TM WDC over time, with most of the benefits coming from the hardship rather than the unemployment group of benefits.

For the final dimension of crime and victimisation, we note that criminal activity for TM is decreasing over time, going from almost 4% to 1% by 2022. For victimisation we note that the sub-group proportions are all very similar, with the proportion of victimisations increasing over time for TM, but never peaking over 5%.

Next, we analyse each sub-group's wellbeing trajectories by NZQF level achieved in 2012, gender, ethnicity, and whether working in a related industry or not.

Table 34. Wellbeing outcomes by TM sub-groups

	Toi Mai	Toi Ora	Toi Puaki	Toi Pāho	Toi Whānui	Toi-A-Ringa
<b>Share by sub-group</b>						
2014	100%	24.8%	5.6%	5.5%	34.6%	31.3%
2017	100%	25.0%	5.4%	5.4%	34.8%	31.2%
2022	100%	25.1%	5.5%	5.5%	34.4%	31.3%
<b>1) Physical &amp; Mental Health</b>						
<b>ACC accident</b>						
2014	25.9%	39.0%	23.9%	23.3%	21.2%	21.3%
2017	26.4%	36.5%	25.6%	22.9%	22.9%	22.9%
2022	25.4%	33.1%	24.3%	24.8%	22.2%	23.1%
<b>ACC work-related accident</b>						
2014	4.2%	6.3%	5.6%	4.0%	3.4%	3.4%
2017	4.6%	6.4%	5.4%	4.2%	4.3%	3.5%
2022	3.9%	5.2%	4.7%	4.1%	3.5%	3.3%
<b>Any mental health contact</b>						
2014	20.0%	15.5%	16.3%	18.4%	20.6%	23.7%
2017	22.6%	17.1%	19.3%	21.4%	23.1%	26.9%
2022	24.2%	18.5%	22.8%	24.2%	24.3%	28.5%
<b>Any mental health contact+</b>						
2014	21.4%	16.4%	17.4%	20.2%	22.1%	25.2%
2017	23.9%	18.1%	20.5%	22.9%	24.5%	28.2%
2022	25.7%	19.5%	24.6%	26.0%	26.1%	30.0%
<b>2) Benefit Receipt</b>						
<b>Any benefit receipt</b>						
2014	20.7%	15.6%	25.0%	18.7%	22.1%	22.6%
2017	14.7%	10.3%	13.9%	11.1%	17.0%	16.1%
2022	12.0%	8.7%	11.3%	8.3%	13.6%	13.3%
<b>Unemployment benefit receipt</b>						
2014	6.6%	4.4%	8.7%	4.9%	7.1%	7.6%
2017	4.3%	2.9%	2.7%	2.4%	4.9%	5.4%
2022	2.5%	1.6%	-	-	2.4%	3.8%
<b>Hardship benefit receipt</b>						
2014	15.0%	11.9%	21.3%	14.7%	15.8%	15.5%
2017	9.3%	7.2%	10.5%	8.1%	10.9%	9.2%
2022	6.8%	6.0%	7.4%	5.6%	8.0%	6.2%
<b>3) Crime &amp; Victimization</b>						
<b>Any criminal history</b>						
2014	3.6%	5.1%	3.1%	2.3%	3.9%	2.6%
2017	2.9%	4.0%	2.4%	-	3.2%	2.1%
2022	1.0%	1.5%	-	-	0.9%	0.8%
<b>Serious criminal history</b>						
2014	1.4%	2.2%	-	-	1.4%	1.0%
2017	1.3%	2.0%	-	-	1.5%	0.8%
2022	0.4%	0.6%	-	-	-	-
<b>Victimization</b>						
2014	2.7%	2.4%	2.5%	2.0%	2.8%	3.0%
2017	4.8%	4.4%	4.2%	4.8%	5.2%	4.8%
2022	4.8%	4.3%	5.3%	4.1%	5.2%	4.9%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM learners between 18 and 54 (inclusive) years old in 2012, according to their education records. All income variables are deflated to March 2022 dollars.

## Toi Ora

In this subsection, we analyse the wellbeing trajectories of the Toi Ora sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Toi Ora sub-group.

### Toi Ora by NZQF level

Table 35 breaks down the wellbeing trajectories of Toi Ora learners compared to those with no PSQ. We note that the No PSQ group has the lowest proportions of ACC claims in all time periods with the Level 5-7 learners having the highest. The gap between learners and non-learners is 13 (10) percentage points in 2014, and 6 (5) percentage points in 2022 for Level 5-7 (Level 2-4) learners. We note that the proportion of claims made by learners decreases over time, while the proportion of claims made by non-learners stays the same. Most surprisingly non-learners have the highest proportion of work-related ACC claims in all time periods, while Level 5-7 learners have the lowest.

As for mental health contacts, learners have a lower proportion of mental health contacts than non-learners in all time points, with the gap remaining similar over time despite all groups seeing an increase in mental health contacts over time. The Level 5-7 (Level 2-4) learners, have a proportion of mental health contacts 14 (9) percentage points lower than the No PSQ group in 2014, and by 2022, that difference is the same.

In the second dimension of benefit receipt, Level 2-4 learners have a higher proportion of benefit receipt than non-learners in 2014 and 2017, however the learners drop lower than non-learners by 2022, albeit by only 1 percentage point. The Level 5-7 learners, who have the lowest proportion of benefit receipt in all time periods widen the gap between themselves and non-learners from less than one percentage point in 2014, to 5 percentage points in 2022.

Finally, for the crime and victimisation dimension, we note that Level 2-4 learners have a higher proportion of crime incidents than those with no PSQ, however the 3 percentage point gap evident between the groups in 2014 disappears by 2022. As for victimisations, we note the inverse, that the learners and non-learners start with a similar proportion of victimisations in 2014, however the proportion of Level 2-4 learners experiencing a victimisation increases faster than that of non-learners, leading to a 1 percentage point gap between the groups by 2022.

### Toi Ora by NZQF level & industry

When considering Table 36, we note that there is high variation in related/non-related industry proportions over time, indicating the mobility of Toi Ora learners across industries. The proportion of learners in a related industry decreases from 21% (23%) to 10% (12%) over time for the NZQF Level 2-4 group (Level 5-7 group).

For the health dimension of those working in a related industry versus those working in a non-related industry, we note that there are negligible differences in ACC accidents overall for Level 2-4 learners, but that work-related accidents differ, with those in a non-related industry having a higher proportion of work-related accidents. For Level 5-7 learners, we see more ACC accidents for those working in a related industry, however both groups see a decrease in accidents. The gap between groups narrows over time from 6 percentage points in 2014, narrowing to just 2 percentage points by 2022.

Looking at mental health we see that the Level 2-4 learners working in a related industry have a lower proportion of mental health contacts than the non-related industry learners, and that as these proportions grow for both groups over time, the gap between them narrows.

Due to small sample sizes, we are unable to compare related and non-related industry workers for the last two dimensions in this section.

Table 35. Wellbeing outcomes for Toi Ora sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	27.7%	38.4%	41.2%
2017	28.9%	35.5%	39.3%
2022	28.0%	32.8%	33.7%
ACC work-related accident			
2014	8.3%	6.5%	5.6%
2017	8.3%	6.7%	5.5%
2022	7.3%	5.4%	4.7%
Any mental health contact			
2014	25.6%	16.5%	12.5%
2017	27.6%	17.6%	15.9%
2022	28.6%	19.6%	15.6%
Any mental health contact+			
2014	27.0%	17.5%	13.2%
2017	29.3%	18.8%	16.1%
2022	30.3%	20.7%	15.8%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	12.8%	16.8%	12.5%
2017	10.6%	11.2%	7.6%
2022	11.3%	9.8%	5.7%
Unemployment benefit receipt			
2014	3.5%	4.4%	4.4%
2017	2.9%	3.2%	-
2022	1.3%	1.8%	-
Hardship benefit receipt			
2014	7.4%	12.7%	9.6%
2017	6.3%	8.1%	4.8%
2022	6.2%	7.0%	3.5%
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	2.6%	6.2%	2.2%
2017	2.9%	5.1%	-
2022	1.1%	1.8%	-
Serious criminal history			
2014	-	2.6%	-
2017	1.4%	2.4%	-
2022	-	0.8%	-
Victimization			
2014	2.3%	2.5%	2.2%
2017	3.9%	4.6%	3.5%
2022	3.9%	4.5%	4.0%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Ora learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 3611. Wellbeing outcomes for Toi Ora sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	21.4%	78.6%	22.7%	77.3%
2017	14.7%	85.3%	16.2%	83.8%
2022	10.2%	89.8%	11.5%	88.5%
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	41.1%	39.3%	46.3%	40.3%
2017	40.7%	36.0%	40.0%	39.4%
2022	40.0%	34.1%	35.9%	33.6%
ACC work-related accident				
2014	6.3%	7.5%	-	5.9%
2017	6.7%	7.7%	-	6.0%
2022	-	6.2%	-	4.7%
Any mental health contact				
2014	14.0%	16.3%	-	13.2%
2017	13.3%	16.6%	-	15.1%
2022	18.9%	18.1%	-	14.6%
Any mental health contact+				
2014	14.5%	17.4%	-	13.9%
2017	13.3%	17.4%	12.7%	15.5%
2022	18.9%	18.9%	-	14.6%
<b>2) Income from benefits</b>				
Any benefit receipt				
2014	6.8%	17.2%	10.0%	12.1%
2017	-	10.7%	-	7.0%
2022	-	9.3%	-	5.3%
Unemployment benefit receipt				
2014	-	4.1%	-	4.0%
2017	-	2.8%	-	-
2022	-	1.9%	-	-
Hardship benefit receipt				
2014	3.4%	13.2%	-	9.2%
2017	-	7.8%	-	4.2%
2022	-	6.6%	-	3.0%
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	-	6.6%	-	-
2017	-	4.3%	-	-
2022	-	1.5%	-	-
Serious criminal history				
2014	-	2.5%	-	-
2017	-	1.8%	-	-
2022	-	-	-	-
Victimization				
2014	-	2.5%	-	-
2017	-	5.0%	-	4.6%
2022	-	4.4%	-	4.3%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Ora learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

### **Toi Ora by NZQF level & gender**

The results for the Toi Ora sub-group by gender are presented in Appendix Table E 1. Firstly, we note that women make up 39% of this sub-group at NZQF levels 2-4, and similarly, 37% of the NZQF Level 5-7 group.

For the first dimension of physical and mental health, we note that males have a higher proportion of ACC claims than women, and that this is true for both NZQF level groups. Specifically, for those who studied a level 2-4 qualification, women's proportion of work-related ACC claims is an average of one percentage point away from that of the male cohort. A larger gap is apparent for Level 5-7 learners, starting at 7 percentage points in 2014, and ending at 6 percentage points in 2022.

As for mental health contacts, we see the reverse, with women having a higher proportion of contacts in both the Level 2-4 and 5-7 cohort. In general, mental health contacts appear to increase across the board, however this is less consistent for the Level 5-7 learners. The gaps between the male and female cohorts grow over time, from 5 (4) percentage points in 2014, to 8 (7) percentage points in 2022 for the Level 2-4 learners (Level 5-7 learners), indicating that despite the female cohort starting with higher mental health contacts, they increase by more than for the male groups.

For the second dimension of benefit receipt, we note that again, women have higher rates of benefit receipt than their male equivalents, although the gaps are not as stark as for other sub-groups. We note that for both males and females of the Level 2-4 (Level 5-7) cohort there is a decrease in benefit uptake over time, however the gaps between genders remain, starting at 6 (2) percentage points in 2014 and staying stable at 5 (2) percentage points by 2022. We also note a higher proportion of hardship benefits than unemployment benefits, and all benefit receipt is trending down over time.

### **Toi Ora by NZQF level & ethnicity**

Finally, we split the Toi Ora sample into two ethnicity categories: European and Māori, presented in Appendix Table E 2. We note that the Māori make up around 39% of Toi Ora learners at NZQF level 2-4 and 29% of learners at level 5-7.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related, for Level 2-4 learners, but that the opposite is true for Level 5-7 learners. Across the board, the proportion of ACC accident claims is decreasing over time, and the gaps between Māori and Europeans is remaining constant.

We note also that the Māori Toi Ora learners have lower rates of mental health contacts than their European counterparts, and that these rates are quite stable over time for Level 2-4 learners but

decreasing over time for Level 5-7 learners. The European cohort appears to move in the opposite direction, with both NZQF level groups seeing an increase in mental health contacts over time. The ethnic gap grows from 0 (1) percentage point to in 2014, to 6 (9) percentage points by 2022 for Level 2-4 (Level 5-7) learners.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group, for Level 2-4 learners in 2014, the rate is almost 5 times higher for Māori and for Level 5-7 the Māori rate is twice as high. Despite the fact that benefit receipts decrease over time for all groups, we see that large disparities persist (14 percentage points for Level 2-4 learners and 5 percentage points for Level 5-7 learners) even in 2022.

## **Toi Puaki**

In this subsection, we analyse the wellbeing trajectories of the Toi Puaki sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Toi Puaki sub-group. We note that due to small sample sizes, we cannot use the data to draw any conclusions about Toi Puaki learners working in a related industry.

### **Toi Puaki by NZQF level**

Table 37 breaks down the wellbeing trajectories of Toi Puaki learners compared to those with no PSQ. We note that, due to small sample sizes, we cannot always interpret the results of the No-PSQ group.

For the health dimension, Level 5-7 learners have a similar level of ACC claims to the No PSQ group, despite a spike in claims for the No PSQ group in 2017. The Level 2-4 learners also see a small spike in 2017, however they consistently have lower ACC claims than the No PSQ cohort.

As for mental health contacts, learners have a lower proportion of mental health contacts than non-learners in all time points, however the gap narrows over time, with Level 2-4 learners overtaking the No PSQ group by 2022. The Level 5-7 learners, who have the lowest proportion of mental health contacts, are 9 percentage points lower than the No PSQ group in 2014, but by 2022 that difference is reduced to only 2 percentage points.

In the second dimension of benefit receipt, Level 2-4 learners have a higher proportion of benefit receipt than Level 5-7 in all time points, however both groups see a decrease in benefit receipt over time.

Table 37. Wellbeing outcomes for Toi Puaki sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	25.6%	21.5%	26.4%
2017	28.2%	26.9%	24.9%
2022	25.6%	23.4%	25.3%
ACC work-related accident			
2014	-	5.5%	5.7%
2017	-	6.4%	4.5%
2022	-	5.8%	3.8%
Any mental health contact			
2014	23.1%	18.4%	14.5%
2017	28.2%	21.2%	17.5%
2022	23.1%	24.7%	21.4%
Any mental health contact+			
2014	28.2%	20.2%	15.5%
2017	30.8%	22.4%	18.6%
2022	23.1%	26.6%	23.1%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	-	28.2%	22.3%
2017	-	17.3%	10.7%
2022	-	13.6%	8.8%
Unemployment benefit receipt			
2014	-	10.4%	7.3%
2017	-	-	-
2022	-	-	-
Hardship benefit receipt			
2014	-	23.9%	18.7%
2017	-	14.1%	7.3%
2022	-	9.1%	6.0%
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	-	-	-
2017	-	-	-
2022	-	-	-
Serious criminal history			
2014	-	-	-
2017	-	-	-
2022	-	-	-
Victimization			
2014	-	-	-
2017	-	5.1%	-
2022	-	7.1%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Puaki learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

### **Toi Puaki by NZQF level & gender**

The results for the Toi Puaki sub-group by gender are presented in Appendix Table E 3. Firstly, we note that women make up around a quarter, 26%, of this sub-group at NZQF levels 2-4, however they make up almost a third (32%) of the NZQF Level 5-7 group.

For the first dimension of physical and mental health, we note that males have a higher proportion of ACC claims than women, and that this is true for both NZQF level groups. Specifically, for those who studied a level 2-4 qualification, women's proportion of work-related ACC claims is 3 percentage points lower than men's in 2014 and 2022. The gap between genders is larger for Level 5-7 learners, in which case the female cohort has ACC claims 5 percentage points lower than men.

As for mental health contacts, we see the reverse, with women having a higher proportion of contacts in both the Level 2-4 and 5-7 cohort. In general, mental health contacts appear to increase across the board, however the difference in contacts between 2014 and 2022 is larger for the female learners; the proportion having a mental health contact goes up by 12 (8) percentage points for Level 5-7 (Level 2-4) women, compared to 5 (5) percentage points for the male Level 5-7 (Level 2-4) cohort.

For the second dimension of benefit receipt, we note that again, women have higher rates of benefit receipt than their male equivalents, although the data for the Level 5-7 learners is too sparse to comment on. We note that for both males and females of the Level 2-4 cohort, the proportion receiving a benefit decreases substantially over time, by half for the males (14 percentage points) and over one third for the females (13 percentage points).

### **Toi Puaki by NZQF level & ethnicity**

As with earlier sub-groups, we also split the sample into two ethnicity categories: European and Māori, presented in Appendix Table E 4. We note that the Māori make up around 31% of Toi Puaki learners at NZQF level 2-4 and 22% of learners at level 5-7. Our interpretations for the NZQF Level 5-7 group are limited in this section, as the sample size of the Māori cohort is small.

We first notice that the Māori cohort has a lower rate of ACC accidents in all time periods compared to Europeans for Level 2-4 learners. We notice that the rate of accident claims spikes in 2017 for both ethnicities, however, by 2022, both groups see a decrease. Overall, the gap between the groups stays stable over time. For Level 5-7 groups, we note that despite having a lower proportion of ACC accidents in 2014 and 2017, the Māori cohort overtakes the European group by 2022. This takes the ethnic gap from Europeans having a 4 percentage point higher proportion in 2014, to Māori having a 5 percentage point higher proportion in 2022.

For mental health, we note that Māori have lower rates of mental health contacts in 2014 for Level 2-4 learners, and that these rates increase over time so quickly, that they overtake the European cohort by 2017. This takes the ethnic gap from Europeans having a 4 percentage point higher proportion in 2014, to Māori having a 7 percentage point higher proportion in 2022.

Next, when assessing benefit receipt, we see that the Level 2-4 Māori cohort has a higher uptake of benefits than the European group, but that these proportions are increasing over time, with the differences between the Māori and European cohort increasing from 8 percentage points in 2014, to 10 percentage points by 2022.

## **Toi Pāho**

In this subsection, we analyse the wellbeing trajectories of the Toi Pāho sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Toi Pāho sub-group. We note that due to small sample sizes, we cannot use the data to draw any conclusions about those working in related industry in this sub-group.

### **Toi Pāho by NZQF level**

Table 38 shows the wellbeing trajectories of Toi Pāho learners By NZQF level. We note that, due to small sample sizes, we cannot interpret the results of the No-PSQ group.

For the health dimension, Level 5-7 learners have a lower level of ACC claims than Level 2-4 learners in 2014, however the learners reach similar levels of ACC claims by 2022.

As for mental health contacts, Level 5-7 learners have a lower proportion of mental health contacts than Level 2-4 learners in 2014, however the gap narrows over time, with Level 2-4 learners' mental health contacts increasing over time, while Level 5-7 learner's contacts increase. This is notable, as the Level 5-7 learners see an 8 percentage point increase in mental health contacts, while Level 2-4 only see a 2 percentage point increase.

In the second dimension of benefit receipt, Level 2-4 learners have a higher proportion of benefit receipt than Level 5-7 in all time points, however both groups see a decrease in benefit receipt over time, and, by 2022, both groups reach a similar level.

Table 38. Wellbeing outcomes for Toi Pāho sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	-	26.0%	21.9%
2017	-	27.4%	20.5%
2022	-	25.0%	25.7%
ACC work-related accident			
2014	-	-	3.7%
2017	-	-	3.9%
2022	-	-	3.8%
Any mental health contact			
2014	-	21.3%	16.7%
2017	-	22.6%	20.5%
2022	-	24.2%	24.8%
Any mental health contact+			
2014	-	22.8%	18.1%
2017	-	24.2%	21.5%
2022	-	25.0%	25.7%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	-	23.6%	15.3%
2017	-	13.7%	8.8%
2022	-	8.9%	8.1%
Unemployment benefit receipt			
2014	-	8.7%	-
2017	-	-	-
2022	-	-	-
Hardship benefit receipt			
2014	-	18.1%	13.0%
2017	-	11.3%	6.8%
2022	-	-	6.2%
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	-	-	-
2017	-	-	-
2022	-	-	-
Serious criminal history			
2014	-	-	-
2017	-	-	-
2022	-	-	-
Victimization			
2014	-	-	-
2017	-	7.3%	-
2022	-	-	4.3%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Pāho learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

### **Toi Pāho by NZQF level & gender**

The results for the Toi Pāho sub-group by gender are presented in Appendix Table E 5. Firstly, we note that women make up more than a quarter, 38%, of this sub-group at NZQF levels 2-4, and at NZQF Level 5-7 group, 35%.

For the first dimension of physical and mental health, we note that males have a lower proportion of ACC claims than women, but that this is only true for both NZQF Level 2-4 learners. Specifically, for those who studied a Level 2-4 qualification, women's proportion of work-related ACC claims is 1 percentage point higher than men's in 2014, 5 percentage points higher in 2017 and 3 percentage points lower in 2022. The gap between genders is reversed in chronological order for Level 5-7 learners, in which case the female cohort has ACC claims 3 percentage points lower than men in 2014, 5 percentage points higher in 2017 and 1 percentage point higher in 2022.

As for mental health contacts, we see that the women have higher proportions of contacts in both the Level 2-4 and 5-7 cohort, with gender gaps being larger for the Level 2-4 learners. In general, mental health contacts increase across the board, with differences in contacts between 2014 and 2022 being similar across genders; the proportion of having a mental health contact goes up by 8 (3) percentage points for Level 5-7 (Level 2-4) women, compared to 8 (4) percentage points for the male Level 5-7 (Level 2-4) cohort.

### **Toi Pāho by NZQF level & ethnicity**

Finally, we split the sample into two ethnicity categories: European and Māori, presented in Appendix Table E 6. We note that the Māori make up around 18% of Toi Pāho learners at NZQF level 2-4 and 23% of learners at level 5-7. Our interpretations for the NZQF Level 2-4 group are not possible due to the small sample of Māori in this cohort.

We first notice that the Māori cohort has a lower rate of ACC accidents, with the proportion of accidents increasing over time for both ethnicities. Because the proportion of accidents increases faster for Māori than for Europeans, we see the ethnic gap decrease from 4 percentage points in 2014 to less than 1 percentage point in 2022.

## Toi Whānui

In this subsection, we analyse the wellbeing trajectories of the Toi Whānui sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Toi Whānui sub-group. We note counts for those working in a related industry are too small and thus suppressed according to Stats NZ's confidentiality rules.

### Toi Whānui by NZQF level

Table 39 breaks down the wellbeing trajectories of Toi Whānui learners compared to those with no PSQ. We note that the No PSQ group has the highest proportions of ACC claims in all time periods with the Level 5-7 learners having the lowest. The gap between learners and non-learners is 4 (1) percentage points in 2014, and 6 (4) percentage points in 2022 for Level 5-7 (Level 2-4) learners. We note that the proportion of claims increase over time for all groups. Most surprisingly, non-learners have the highest proportion of work-related ACC claims.

As for mental health contacts, learners have a lower proportion of mental health contacts than non-learners in all time points, with the gap narrowing over time as all groups see an increase in mental health contacts. The Level 5-7 (Level 2-4) learners, have mental health contacts 9 (7) percentage points lower than the No PSQ group in 2014, and by 2022, that difference is the same 5 (6) percentage points.

In the second dimension of benefit receipt, Level 2-4 learners have a higher proportion of benefit receipt than non-learners in all time periods. The Level 5-7 learners, have a 7 percentage point higher proportion of benefit receipt in 2014, with the gap closing to less than 1 percentage point by 2022.

Table 39. Wellbeing outcomes for Toi Whānui sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	22.7%	21.9%	19.2%
2017	25.1%	23.1%	22.3%
2022	26.5%	22.6%	20.7%
ACC work-related accident			
2014	-	3.4%	3.5%
2017	5.0%	4.3%	4.4%
2022	4.6%	3.7%	2.7%
Any mental health contact			
2014	28.0%	21.2%	19.0%
2017	29.1%	23.5%	21.7%
2022	30.1%	24.2%	24.6%
Any mental health contact+			
2014	29.5%	22.8%	19.9%
2017	30.2%	25.0%	23.3%
2022	31.6%	26.2%	25.9%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	12.1%	23.2%	19.0%
2017	9.0%	18.8%	11.5%
2022	9.2%	14.8%	9.7%
Unemployment benefit receipt			
2014	-	8.0%	4.4%
2017	-	6.0%	1.7%
2022	-	2.7%	1.6%
Hardship benefit receipt			
2014	7.2%	15.8%	15.5%
2017	5.5%	11.4%	9.0%
2022	5.1%	8.3%	6.8%
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	-	4.2%	3.0%
2017	-	3.6%	1.9%
2022	-	1.0%	-
Serious criminal history			
2014	-	1.5%	-
2017	-	1.7%	-
2022	-	-	-
Victimisation			
2014	-	2.9%	2.6%
2017	4.5%	5.8%	3.5%
2022	4.6%	5.4%	4.3%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Whānui learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

### **Toi Whānui by NZQF level & gender**

The results for the Toi Whānui sub-group by gender are presented in Appendix Table E 7. Firstly, we note that women make up the majority, 71%, of this sub-group at NZQF levels 2-4, however they make up only a quarter (25%) of the NZQF Level 5-7 group.

For the first dimension of physical and mental health, we note that both the male and female groups of Level 2-4 learners fluctuate very little in their proportion of ACC claims over time, and there are no substantial gender differences. A similar story can be seen for the Level 5-7 learners, however, the female cohort sees an increase in ACC claims in 2022, deviating from the pattern. For work-related ACC claims, we see that males have higher proportions of claims in the Level 2-4 group, and these proportions are stable over time.

As for mental health contacts, we see differences emerge between Level 2-4 learners and Level 5-7 learners. Level 2-4 learners appear to have fluctuating mental health outcomes over time for men and increasing mental health contacts for the female cohort. Both genders in the Level 5-7 learners group see increases in mental health contacts over time, however, they maintain a steady 3 percentage point gap between genders, with the female cohort having the higher proportion of contacts.

For the second dimension of benefit receipt, we note that benefit receipt is decreasing over time for all groups, and that Level 5-7 learners have lower rates of benefit receipt compared to Level 2-4 learners, regardless of gender. For Level 2-4 (Level 5-7) learners, we see a 5 (5) percentage point gap between genders, with males having higher benefit receipt in 2014, with the gap decreasing to 2 (1) percentage points by 2022, with the majority of benefits coming from hardship benefits.

### **Toi Whānui by NZQF level & ethnicity**

Finally, we split the Toi Whānui sub-group into two ethnicity categories: European and Māori, presented in Appendix Table E 8. We note that the Māori make up just over half, 53%, of Toi Whānui learners at NZQF level 2-4 and a quarter, 25%, of learners at level 5-7. Our interpretations for the NZQF Level 5-7 group are limited in this section, and results should be treated with caution.

We first notice that the Māori cohort has a lower rate of ACC accidents in both NZQF level groups. For the Level 2-4 learners, we see that both ethnicities have stable rates of accidents over time. Considering the Level 5-7 learners we see that both ethnicity groups have increasing proportions of ACC accidents over time, growing by 2 percentage points for Europeans and 4 percentage points for Māori between 2014 and 2022. This asymmetric growth leads to a closing gap between the ethnicities over time.

We note also that mental health contacts are increasing over time for all but the Level 5-7 Māori cohort. For Level 2-4 learners, we note that Europeans have a substantially higher proportion of mental health contacts than Māori, at 10 percentage points, and that this gap persists over time. The ethnicity gap is much smaller for Level 5-7 learners in 2014, however, it increases from 1 percentage point to 9 percentage points by 2022. This gap is mainly driven by an increase in mental health contacts for the European cohort.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group for both NZQL level groups, and that these proportions are decreasing over time. For Level 2-4 learners we see the differences between the Māori and European cohort narrowing from 15 percentage points in 2014, to 11 percentage points by 2022. For Level 5-7 learners we note a more modest ethnic gap in 2014, of 7 percentage points, increasing to 10 percentage points by 2022. In both instances, over two thirds of benefits appear to be hardship benefits rather than unemployment benefits.

Finally, we note the crime and victimisation dimension is small and we can draw limited conclusions in this section. Disparities are evident between ethnicities when considering victimisations for Level 2-4 learners, with the Māori cohort experiencing higher rates of victimisation which more than double over time.

## **Toi-A-Ringa**

In this subsection, we analyse the wellbeing trajectories of the Toi-A-Ringa sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Toi-A-Ringa sub-group.

### **Toi-A-Ringa by NZQF level**

Table 40 gives the wellbeing trajectories of Toi-A-Ringa learners compared to those with No PSQ. We note that ACC claims are increasing slightly over time for all groups, with the Level 5-7 learners seeing the largest increase (of 3 percentage points) between 2014 and 2022, and the No PSQ group having the highest proportion of ACC claims in all time periods. Work-related ACC claims are also highest for the No PSQ group, although differences both across time and learner groups are negligible, staying stable around 3%.

As for mental health contacts, learners have a lower proportion of mental health contacts than non-learners in all time points, with the gap closing slowly over time between Level 5-7 learners and non-learners, despite all groups seeing an increase in mental health contacts. The Level 5-7 learners have a proportion of mental health contacts 6 percentage points lower than the No PSQ group in 2014, and by 2022, that difference is 2 percentage points.

In the second dimension of benefit receipt, Level 2-4 learners have a higher proportion of benefit receipt than non-learners in 2014 and 2017, however the learners are getting closer to closing the gap by 2022. The gap between Level 5-7 learners and non-learners decreases over time from 6 percentage points in 2014, to 2 percentage points in 2022.

Finally, for the crime and victimisation dimension, we note that Level 2-4 learners have a higher proportion of victimisations than all other groups, and this proportion grows over time by 2 percentage points, whereas the non-learners and Level 5-7 learners see only a modest 1 percentage point fluctuation in their victimisation proportions over time.

#### **Toi-A-Ringa by NZQF level & industry**

Table 41 gives the wellbeing trajectories of Toi-A-Ringa learners by whether they went on to work in a related or non-related industry. We note that there is a variation in the related/non-related industry proportions over time, indicating high mobility of Toi-A-Ringa learners across industries. The proportion of learners in a related industry decreases from 28% (12%) to 15% (5%) over time for the NZQF Level 2-4 group (Level 5-7 group). Due to the small sample size of the Toi-A-Ringa Level 5-7 group working in a related industry, we focus our analysis on the Level 2-4 learners.

When considering the health dimension of those working in a related industry versus those working in a non-related industry, we note that, in 2014, those working in a related industry have higher ACC claims than those working in a non-related industry, but that this fluctuates over time, with both groups arriving at a similar proportion of ACC accidents by 2022 (24%).

Looking at mental health we see that learners working in a related industry have a lower proportion of mental health contacts than the non-related industry learners, but that there are no large changes in these proportions over time for them, whereas those in a non-related industry see increases in mental health contacts over time, creating a 4 percentage point gap between groups by 2022.

For the second dimension of benefit receipt, we see higher benefit receipt for the non-related industry group, with a proportion 9 percentage points higher in 2014, decreasing to 6 percentage points by 2022.

Table 40. Wellbeing outcomes for Toi-A-Ringa sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	23.0%	21.3%	21.2%
2017	23.9%	22.5%	23.8%
2022	24.9%	22.6%	24.2%
ACC work-related accident			
2014	4.2%	3.3%	3.4%
2017	3.7%	3.6%	3.3%
2022	3.3%	3.4%	3.3%
Any mental health contact			
2014	30.0%	23.6%	24.2%
2017	31.9%	26.3%	28.4%
2022	32.6%	27.4%	30.5%
Any mental health contact+			
2014	31.6%	25.1%	25.5%
2017	33.5%	27.7%	29.3%
2022	34.8%	29.1%	31.6%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	13.6%	23.7%	20.0%
2017	10.1%	17.9%	12.9%
2022	10.1%	14.2%	11.5%
Unemployment benefit receipt			
2014	4.2%	9.0%	5.0%
2017	3.2%	6.4%	3.4%
2022	2.2%	4.7%	2.2%
Hardship benefit receipt			
2014	5.5%	15.7%	14.8%
2017	5.1%	9.7%	8.4%
2022	4.4%	6.2%	6.5%
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	2.9%	3.2%	1.3%
2017	2.1%	2.3%	1.6%
2022	-	0.8%	-
Serious criminal history			
2014	-	1.1%	-
2017	-	0.8%	-
2022	-	-	-
Victimization			
2014	2.9%	3.5%	2.2%
2017	3.5%	5.5%	3.3%
2022	3.8%	5.8%	3.1%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi-A-Ringa learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 41. Wellbeing outcomes for Toi-A-Ringa sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	28.2%	71.8%	11.5%	88.5%
2017	20.7%	79.3%	7.5%	92.5%
2022	14.8%	85.2%	5.4%	94.6%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	25.3%	21.0%	23.7%	22.0%
2017	21.8%	24.4%	22.2%	26.0%
2022	23.8%	24.5%	-	25.4%
<b>ACC work-related accident</b>				
2014	4.2%	4.4%	-	4.4%
2017	-	5.0%	-	3.8%
2022	-	4.7%	-	3.9%
<b>Any mental health contact</b>				
2014	21.5%	22.5%	23.7%	22.4%
2017	23.4%	24.1%	25.0%	26.0%
2022	22.3%	26.3%	36.0%	28.8%
<b>Any mental health contact+</b>				
2014	21.9%	23.9%	23.7%	23.5%
2017	24.5%	25.5%	25.0%	26.6%
2022	22.3%	27.9%	40.0%	29.3%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	15.1%	24.3%	-	20.2%
2017	10.1%	17.8%	-	11.6%
2022	8.5%	15.2%	-	11.0%
<b>Unemployment benefit receipt</b>				
2014	4.2%	7.7%	-	4.4%
2017	4.3%	5.5%	-	2.5%
2022	-	4.5%	-	1.8%
<b>Hardship benefit receipt</b>				
2014	6.4%	16.9%	-	14.7%
2017	-	10.3%	-	7.6%
2022	-	6.5%	-	5.9%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	3.0%	-	-
2017	-	1.9%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	3.0%	3.6%	-	2.4%
2017	4.8%	5.3%	-	2.9%
2022	-	4.9%	-	2.5%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi-A-Ringa learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

### **Toi-A-Ringa by NZQF level & gender**

The results for the Toi-A-Ringa sub-group by gender are presented in Appendix Table E 9. Firstly, we note that women make up the vast majority, 83%, of this sub-group at NZQF levels 2-4, however they make up a bit over half (67%) of the NZQF Level 5-7 group.

For the first dimension of physical and mental health, we note that both the male and female groups of Level 2-4 learners fluctuate very little in their proportion of ACC claims over time, and there are no substantial gender differences. The same is evident in the work-related ACC claims for Level 2-4 learners. The story is different for Level 5-7 learners, for whom the male cohort has increasing ACC claims over time, while the female cohort peaks in 2017. Overall, these fluctuations do not reveal substantial gender gaps.

For mental health contacts, we see that the female cohort has a higher proportion of contacts in both the Level 2-4 and 5-7 cohort, with the gender gap increasing over time (from 5 percentage points in 2014, to 10 percentage points in 2022) for Level 5-7 learners. In general, mental health contacts appear to increase across the board, however, the difference in contacts between 2014 and 2022 is larger for the Level 5-7 learners.

For the second dimension of benefit receipt, we note that males have higher rates of benefit receipt than their female equivalents, although the gaps are small, around 3 percentage points. Interestingly, the gender differences do not change over time, despite a decrease in benefit uptake for all groups between 2014 and 2022. As with previous sub-groups, we see that the majority of benefits come from hardship benefits; this is especially true for males in 2014, regardless of the NZQF level of study.

### **Toi-A-Ringa by NZQF level & ethnicity**

As with previous sub-groups, we also split the sample into two ethnicity categories: European and Māori, presented in Appendix Table E 10 for the Toi-A-Ringa sub-group. We note that the Māori make up around 41% of learners at NZQF level 2-4 and 22% of learners at level 5-7.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related, and these gaps shrink slightly over time, with the proportion of accidents for the Māori cohort increasing over time, while they remain steady for the European cohort. We note also that the Māori learners have lower rates of mental health contacts, and that these rates are quite stable over time for Level 2-4 learners, fluctuating by only 1 percentage point on average. The European cohort, however, has increasing mental health contacts over time, growing by 5 percentage points between 2014 and 2022. Considering the Level 5-7 learners, we see that both ethnicity groups have increasing proportions

of mental health contacts over time, growing by 6 percentage points for Europeans and 7 percentage points for Māori between 2014 and 2022.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group, but that these proportions are decreasing over time, with the differences between the Māori and European cohort narrowing from 9 (9) percentage points in 2014, to 7 (4) percentage points by 2022 for Level 2-4 (Level 5-7) learners. In both instances, over two thirds of benefits appear to be hardship benefits rather than unemployment benefits, more so for the European cohort than for Māori.

Finally, we note the crime and victimisation dimension is small and we can draw limited conclusions in this section. Disparities are evident between ethnicities when considering victimisations for Level 2-4 learners, with the Māori cohort experiencing higher rates of victimisation.

## 8 Toitū te Waiora

This section focuses on 2012 learners graduating with an NZSCED code related to Toitū te Waiora (TTW).

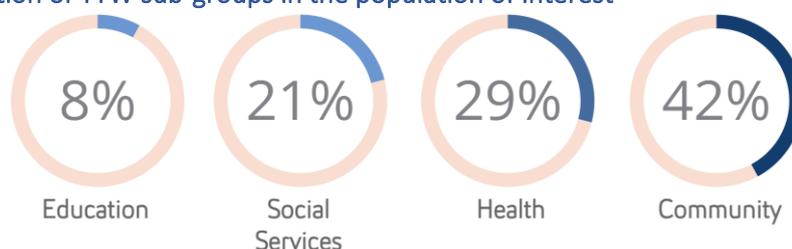
**Toitū te Waiora represents the community, health, education and social services sectors. These sectors are comprised of industries specified in the Australia and New Zealand Standard Industrial Classification 2006 (ANZSIC).**



TTW consists of four sub-groups: Education, Social Services, Health and Community. Similar to the WDC section Hanga-Ora-Rau it is important to note that the sub-group names do not refer to an entire industry; the pool of learners is identified by using specific NZSCED codes. The mapping of qualifications vis NZSCED codes to the sub-groups can be found in Appendix Table A 2.

### 8.1 Descriptive profile by industry sub-group

Figure 6. Proportion of TTW sub-groups in the population of interest



Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW learners between 18 and 54 (inclusive) years old in 2012, according to their education records

As Figure 6 highlights, the distribution of learners across the four sub-groups is very uneven: two out of five learners (42%) belong to the sub-group Community, 29% to Health and another 21% to Social Services. The by far smallest sub-group is Education, where less than one out of ten learners (8%) completed their qualification.

Table 42 shows the distribution of the demographic characteristics, and it is apparent that the sub-groups Health and Social Services have a large share of female workers (more than four out of five). This pattern is flipped for the sub-group Community where 58% are male.

Differences are also observable regarding the age distribution, where the learners of Community and Social Services have a much higher share of young learners compared to Education and Health, which

have a larger share of learners aged 45 and above. Except for Social Services, about two thirds of the learners are of European ethnicity, around 20% of Māori ethnicity and below 10% are of Pacific ethnicity. For Social Services, the ethnic distribution looks different with a lower share of Europeans (49%) and a higher share of Māori (30%) and Pacific peoples (14%).

Finally, we can also observe large differences in terms of qualifications. For the sub-groups Community and Health, level 2 and level 3 qualifications are very common while the level 4 qualification is dominant for Social Services and level 5 for Education.

**Table 42. Descriptive statistics by TTW group 2012**

	Toitū Te Waiora	Community	Education	Health	Social Services
Male	35.2%	57.9%	38.2%	16.8%	13.3%
Age 25 and below	25.6%	30.0%	10.9%	14.5%	37.5%
Age above 45	23.4%	19.5%	31.2%	33.3%	14.9%
Born overseas	19.5%	17.0%	20.9%	23.6%	18.8%
<b>Ethnicity</b>					
European	59.6%	62.9%	63.2%	61.7%	48.7%
Māori	23.4%	22.9%	23.4%	19.5%	29.6%
Pacific	9.3%	7.8%	6.7%	9.0%	13.6%
Asian	5.2%	4.2%	3.6%	6.6%	5.5%
MELAA/Other	2.6%	2.1%	3.3%	3.1%	2.4%
<b>NZQF level of qualification achieved in 2012</b>					
Level 1	7.6%	16.3%	-	-	-
Level 2	15.1%	13.9%	-	30.7%	-
Level 3	31.8%	35.6%	3.9%	37.3%	27.6%
Level 4	22.5%	18.4%	29.0%	15.8%	37.0%
Level 5	16.6%	14.6%	53.5%	10.3%	14.6%
Level 6	4.8%	0.5%	-	4.9%	14.9%
Level 7	1.7%	-	5.3%	1.0%	4.0%
<b>Number of Learners</b>	12987	5517	1077	3720	2730

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## 8.2 Wellbeing outcomes by industry sub-groups

Table 43 presents wellbeing outcomes for our learner cohorts for each sub-group within TTW, as well as for the aggregate group of learners for this WDC at three different time points: two, five and ten years post-graduation (2014, 2017, 2022).

Firstly, no clear pattern emerges for ACC claims, with some sub-groups seeing modest increases in claims over time, while others see decreases. This leads to an overall stable rate of ACC claims for the WDC as a whole. Work-related accidents have a more noticeable, although modest trend of decreasing over time, although this decrease is around 1 percentage point between 2014 and 2022. For mental health contacts we notice a clear pattern of increasing contacts over time for all sub-groups, with the Health sub-group having the highest proportion of mental health contacts out of this WDC, at over 30%.

In the second dimension of benefit receipt, we see that benefit receipt proportions fluctuate across time and sub-groups, with a 15 percentage point difference in benefit receipt between sub-groups in 2014. Mostly, benefit receipt is trending down over time, with some sub-groups, such as Social Services seeing a 10 percentage point decrease in benefit uptake between 2014 and 2022, while others, such as Education, seeing only a 1 percentage point decrease. It also appears that around half of these benefits are hardship related, which is a lower proportion than most other WDCs analysed this far.

Finally, when looking at crime and victimisation, we note firstly that results are sparse due to small sample sizes. It is clear that criminality is not a large issue for learners in this WDC. As for victimisations, we notice that the proportion of those victimised is increasing over time, although these increases are modest (between 1 and 2 percentage points).

Next, we analyse each sub-group's wellbeing trajectories by NZQF level achieved in 2012, gender, ethnicity, and whether working in a related industry or not. We note that due to small sample sizes, we cannot use the data to draw any conclusions about the Education sub-group, and it is thus omitted from further analysis.

**Table 43. Labour market outcomes by TTW sub-groups**

	Toitū Te Waiora	Community	Education	Health	Social Services
<b>Share by sub-group</b>					
2014	100%	42.4%	8.2%	28.7%	21.1%
2017	100%	42.5%	8.3%	28.7%	20.9%
2022	100%	42.6%	8.3%	28.6%	20.9%
<b>1) Physical &amp; Mental Health</b>					
<b>ACC accident</b>					
2014	28.1%	31.1%	28.2%	26.0%	25.1%
2017	27.8%	29.4%	28.4%	26.4%	26.2%
2022	27.3%	29.1%	26.2%	27.0%	24.8%
<b>ACC work-related accident</b>					
2014	6.2%	7.6%	5.5%	6.0%	3.9%
2017	5.9%	6.3%	5.5%	6.3%	4.9%
2022	5.0%	5.7%	3.4%	5.7%	3.7%
<b>Any mental health contact</b>					
2014	24.0%	19.1%	19.3%	30.8%	26.5%
2017	26.4%	20.9%	23.9%	33.7%	28.8%
2022	27.4%	21.4%	25.9%	34.1%	31.0%
<b>Any mental health contact+</b>					
2014	24.9%	19.7%	19.9%	31.6%	28.2%
2017	27.1%	21.3%	24.5%	34.5%	30.0%
2022	28.4%	22.3%	26.2%	35.1%	32.3%
<b>2) Benefit Receipt</b>					
<b>Any benefit receipt</b>					
2014	12.7%	10.1%	7.1%	11.0%	22.2%
2017	9.6%	8.2%	5.5%	7.7%	16.7%
2022	9.1%	8.1%	6.2%	9.1%	12.3%
<b>Unemployment benefit receipt</b>					
2014	4.3%	3.1%	2.5%	2.8%	9.4%
2017	3.2%	2.8%	-	2.2%	5.9%
2022	1.8%	1.9%	-	0.6%	3.7%
<b>Hardship benefit receipt</b>					
2014	7.5%	6.3%	3.4%	5.7%	13.8%
2017	5.4%	4.8%	3.4%	4.2%	8.9%
2022	4.0%	3.6%	2.5%	3.9%	5.4%
<b>3) Crime &amp; Victimisation</b>					
<b>Any criminal history</b>					
2014	1.8%	2.4%	-	1.0%	1.9%
2017	1.4%	1.7%	-	0.9%	2.0%
2022	0.5%	0.5%	-	-	-
<b>Serious criminal history</b>					
2014	0.7%	0.9%	-	-	-
2017	0.6%	0.7%	-	-	1.1%
2022	-	-	-	-	-
<b>Victimisation</b>					
2014	2.8%	3.0%	2.1%	2.5%	3.2%
2017	4.3%	4.7%	4.6%	3.1%	4.9%
2022	4.2%	4.4%	2.8%	3.4%	5.5%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW learners between 18 and 54 (inclusive) years old in 2012, according to their education records. All income variables are deflated to March 2022 dollars.

## Community

In this subsection, we analyse the wellbeing trajectories of the Community sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Community sub-group.

### Community by NZQF level

Table 44 gives the wellbeing trajectories of Community learners by NZQF level and compared to those with no PSQ. The first thing we notice is that the No PSQ group has higher ACC claims than Level 5-7 learners but not Level 2-4 learners. We also note that although ACC claims are decreasing modestly over time for the No PSQ group and the Level 2-4 learners, the same cannot be said for Level 5-7 learners. For mental health, we see that the Level 2-4 learners have much lower rates of mental health contacts (7 percentage points lower) than the No PSQ group, but that Level 5-7 learners have similar rates, especially from 2017 onwards.

For the second dimension of benefit receipt, we see that non-learners have lower rates of benefit receipt in all time points, while, surprisingly, Level 5-7 learners have the highest rates. The gaps between groups does close over time, becoming just 1 (0) percentage point by 2022 between the No PSQ group and the Level 5-7 (Level 2-4) learners. Notably, hardship benefits increased for the Level 5-7 group in 2017, which is rare and surprising, but this should be interpreted with caution due to small sample sizes.

### Community by NZQF level & industry

The wellbeing trajectories of Community learners by whether they went on to work in a related or non-related industry are presented in Table 45. We note that there is more variation in the related/non-related industry proportions over time for Level 5-7 learners, indicating higher mobility across industries for this group. The proportion of learners in a related industry decreases from 38% (23%) to 23% (22%) over time for the NZQF Level 5-7 group (Level 2-4 group).

When considering the health dimension, we note differences between NZQF level groups. For Level 2-4 learners, those working in a related industry have a higher proportion of ACC claims at every time point, and although these proportions decrease over time for both related industry workers and non-related industry workers, this does not close the gap between them. For Level 5-7 learners, we see very similar level of ACC claims in 2014 and 2022 between groups with those working in a non-related industry having marginally larger proportions of ACC claims, with some fluctuations in 2017.

Looking at mental health, we see that learners working in a related industry have a lower proportion of mental health contacts than the non-related industry learners across the board. For Level 2-4 learners, the non-related industry workers see a slight increase in their mental health contacts over time, increasing the gap slightly. For Level 5-7 learners, both groups see an increase in in mental health contacts overt time, but again, the gap does not change substantially.

Table 44. Wellbeing outcomes for Community sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	30.0%	32.3%	27.3%
2017	31.1%	31.3%	29.1%
2022	28.2%	30.5%	28.5%
ACC work-related accident			
2014	8.5%	7.9%	5.5%
2017	7.6%	7.1%	4.3%
2022	5.7%	5.7%	4.0%
Any mental health contact			
2014	26.1%	19.0%	23.7%
2017	26.2%	20.6%	27.6%
2022	27.4%	20.9%	27.7%
Any mental health contact+			
2014	27.0%	19.8%	24.5%
2017	27.1%	21.1%	28.3%
2022	28.3%	22.1%	28.5%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	8.1%	10.9%	12.3%
2017	6.7%	8.4%	11.4%
2022	7.6%	7.8%	10.3%
Unemployment benefit receipt			
2014	2.3%	3.3%	4.0%
2017	2.2%	2.7%	5.1%
2022	-	1.8%	3.2%
Hardship benefit receipt			
2014	4.1%	7.2%	5.9%
2017	3.7%	4.9%	6.7%
2022	3.6%	3.9%	3.6%
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	1.8%	2.7%	-
2017	1.4%	1.6%	-
2022	-	0.6%	-
Serious criminal history			
2014	-	0.9%	-
2017	-	0.7%	-
2022	-	-	-
Victimisation			
2014	3.1%	3.4%	3.2%
2017	4.1%	5.4%	3.5%
2022	4.9%	4.9%	3.2%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW Community learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 45. Wellbeing outcomes for Community sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	22.7%	77.3%	37.6%	62.4%
2017	23.5%	76.5%	27.0%	73.0%
2022	21.7%	78.3%	23.4%	76.6%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	38.2%	32.2%	26.2%	27.8%
2017	35.1%	31.7%	28.3%	31.5%
2022	34.5%	29.9%	27.3%	29.9%
<b>ACC work-related accident</b>				
2014	11.1%	7.8%	-	6.0%
2017	9.8%	7.1%	-	-
2022	7.5%	5.4%	-	4.9%
<b>Any mental health contact</b>				
2014	16.0%	18.9%	20.0%	24.8%
2017	17.3%	20.3%	22.6%	28.0%
2022	17.0%	20.7%	25.0%	28.5%
<b>Any mental health contact+</b>				
2014	16.4%	19.6%	20.0%	25.6%
2017	17.8%	20.7%	22.6%	28.0%
2022	17.0%	21.4%	27.3%	28.5%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	4.9%	10.6%	-	14.3%
2017	-	9.1%	-	11.9%
2022	-	8.6%	-	9.7%
<b>Unemployment benefit receipt</b>				
2014	-	2.7%	-	-
2017	-	3.0%	-	-
2022	-	2.1%	-	-
<b>Hardship benefit receipt</b>				
2014	-	7.4%	-	6.0%
2017	-	5.4%	-	7.7%
2022	-	4.3%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	2.6%	-	-
2017	-	1.9%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	8.0%	2.2%	-	-
2017	10.7%	3.8%	-	-
2022	7.5%	4.0%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW Community learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## **Community by gender**

The results for the Community sub-group by gender are presented in Appendix Table F 1. Firstly, we note that women make up around a third, 37% of this sub-group at NZQF levels 2-4, however they make up over three quarters (76%) of the NZQF Level 5-7 group.

For the first dimension of physical and mental health, we note that males have a higher proportion of ACC claims than women, and that this is true for both NZQF level groups. Specifically, for those who studied a level 2-4 qualification, women's proportion of work-related ACC claims is 10 percentage points lower than the male cohort in 2014. As for mental health contacts, we see the reverse, with women having a higher proportion of contacts in both the Level 2-4 and 5-7 cohort. In general, mental health contacts appear to increase across the board, however the difference between men and women for Level 5-7 learners is largest, with women having more than double the mental health contacts than men.

For the second dimension of benefit receipt, we note that again, women have higher rates of benefit receipt than their male equivalents (almost three times higher), although the data for the Level 5-7 learners is too sparse to comment on.

Finally, when considering criminal and victimisation history, we note that for victimisations, the proportion of learners being victims of reported crimes increases over time, with the female cohort having slightly higher victimisation rates than the male cohort.

## **Community by ethnicity**

Finally, we split the Community subgroup into two ethnicity categories: European and Māori, presented in Appendix Table F 2. We note that the Māori make up around 26% of Community learners at NZQF level 2-4 and only 18% of learners at level 5-7. Our interpretations for the NZQF Level 5-7 group are therefore limited in this section, and results should be treated with caution.

We first notice that the Māori cohort has a lower rate of ACC accidents for Level 2-4 learners, both in total and work-related, and these gaps narrow over time, with the proportion of accidents for the Māori cohort increasing over time, while increasing for the European cohort. Level 5-7 learners however, have stable rates of ACC accidents over time regardless of ethnicity.

We note also that the Māori learners have lower rates of mental health contacts, and that these rates increase modestly over time, slowly closing the gap between ethnicities for both Level 2-4 and Level 5-7 learners.

Next, when assessing benefit receipt, we see that the Māori cohorts have substantially higher uptake of benefits than the European group, and that despite these proportions are decreasing over time, the differences between the Māori and European cohort remain from 15 (11) percentage points in 2014, to 9 (12) percentage points by 2022 for Level 2-4 (Level 5-7) learners.

## Health

In this subsection, we analyse the wellbeing trajectories of the Health sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Health sub-group.

### Health by NZQF level

Table 46 gives the wellbeing trajectories of Health learners compared to those with no PSQ. We note that ACC claims are stable over time for non-learners and Level 2-4 learners, with the Level 5-7 learners seeing an increase (of 4 percentage points) between 2014 and 2022, despite already having the highest proportion of ACC claims. Work-related ACC claims are surprisingly highest for the No PSQ group in 2014, before the Level 2-4 learners take over in 2017 and 2022, although differences between them and the No PSQ group are negligible.

As for mental health contacts, learners have a lower proportion of mental health contacts than non-learners in all time points, with the gap closing slowly over time. The Level 5-7 (Level 2-4) learners, have a proportion of mental health contacts 7 (2) percentage points lower than the No PSQ group in 2014, and by 2022, that difference is 3 (1) percentage points.

In the second dimension of benefit receipt, Level 2-4 learners have a similar proportion of benefit receipt to non-learners in 2014, however the learners see a more sharp decrease in benefit receipt than non-learners.

Finally, for the crime and victimisation dimension, we note that Level 2-4 learners have a similar proportion of victimisations with non-learners and that this does not change over time.

### Health by NZQF level & industry

Table 47 gives the wellbeing trajectories of Health learners by whether they went on to work in a related or non-related industry. We note that there is a variation in the related/non-related industry proportions over time, indicating high mobility of Level 5-7 learners across industries. The proportion

of learners in a related industry decreases from 42% (67%) to 27% (61%) over time for the NZQF Level 5-7 group (Level 2-4 group).

When considering the health dimension of those working in a related industry versus those working in a non-related industry, we see very little difference between groups for Level 2-4 learners, for whom ACC accident claims are stable over time. However, work-related ACC injuries are modestly higher for the related industry group. For Level 5-7 learners, we see that those working in a related industry have higher ACC accident claims in 2014 and 2017, but that the gap between groups dissipated by 2022.

Looking at mental health we see that learners working in a related industry have a higher proportion of mental health contacts than the non-related industry learners for the Level 2-4 learners, but that there are no large changes in these proportions over time for them. For Level 5-7 learners we see large fluctuations in mental health contacts for those in a related industry, and a consistent increase in contacts for those not in a related industry, with gaps between groups remaining modest (2 percentage points in 2014 and 3 percentage points in 2022).

For the second dimension of benefit receipt, we see similar proportions of benefit uptake for both groups when looking at Level 2-4 learners. However, we note that those working in a non-related industry see a smaller decrease in benefit uptake than those in a related industry.

Table 46. Wellbeing outcomes for Health sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	24.8%	25.8%	28.1%
2017	25.3%	25.7%	29.8%
2022	24.3%	25.9%	32.1%
ACC work-related accident			
2014	7.0%	6.0%	5.9%
2017	6.6%	6.7%	4.4%
2022	5.4%	5.9%	4.3%
Any mental health contact			
2014	33.8%	31.6%	26.5%
2017	35.7%	34.1%	32.0%
2022	35.7%	34.2%	33.2%
Any mental health contact+			
2014	35.1%	32.5%	26.5%
2017	37.0%	34.9%	32.0%
2022	37.5%	35.5%	33.7%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	11.7%	12.0%	5.9%
2017	10.4%	8.4%	4.4%
2022	11.9%	9.9%	4.9%
Unemployment benefit receipt			
2014	2.7%	3.0%	-
2017	2.1%	2.1%	-
2022	1.2%	-	-
Hardship benefit receipt			
2014	5.7%	6.3%	-
2017	6.0%	4.7%	-
2022	5.3%	4.2%	-
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	1.5%	1.3%	-
2017	1.4%	1.1%	-
2022	0.5%	-	-
Serious criminal history			
2014	0.6%	-	-
2017	0.5%	-	-
2022	-	-	-
Victimisation			
2014	2.1%	2.6%	-
2017	3.5%	3.2%	-
2022	3.4%	3.3%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW Health learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 47. Wellbeing outcomes for Health sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	69.5%	30.5%	41.8%	58.2%
2017	62.2%	37.8%	43.4%	56.6%
2022	61.7%	38.3%	27.0%	73.0%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	25.7%	26.2%	31.8%	27.2%
2017	25.7%	26.0%	33.3%	29.1%
2022	26.5%	27.8%	31.7%	32.4%
<b>ACC work-related accident</b>				
2014	7.0%	5.2%	-	-
2017	7.6%	7.1%	-	-
2022	7.3%	6.2%	-	-
<b>Any mental health contact</b>				
2014	32.5%	28.8%	27.3%	25.0%
2017	34.7%	31.4%	37.9%	26.7%
2022	33.8%	31.3%	29.3%	32.4%
<b>Any mental health contact+</b>				
2014	33.3%	29.2%	28.8%	25.0%
2017	35.1%	32.7%	37.9%	26.7%
2022	34.8%	32.0%	29.3%	31.5%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	11.3%	11.8%	-	-
2017	6.6%	9.0%	-	-
2022	8.1%	10.0%	-	-
<b>Unemployment benefit receipt</b>				
2014	2.3%	3.7%	-	-
2017	1.6%	2.6%	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	5.5%	6.6%	-	-
2017	2.9%	5.4%	-	-
2022	3.2%	5.2%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	2.4%	-	-	-
2017	2.9%	2.6%	-	-
2022	3.6%	2.7%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW Health learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Health by gender

The results for the Health sub-group by gender are presented in Appendix Table F 3. Firstly, we note that women make up 36% of this sub-group at NZQF levels 2-4, however they make up over half (56%) of the NZQF Level 5-7 group.

For the first dimension of physical and mental health, we see very little differences between Level 2-4 gender groups, however we see that males have higher ACC accident claims for Level 5-7 learners, with disparities decreasing over time from 12 percentage points in 2014, to 5 percentage points by 2022. For mental health contacts, we note that the female groups have higher proportions of contacts in both the Level 2-4 and 5-7 cohorts. In general, mental health contacts appear to increase across the board, however the difference in contacts between 2014 and 2022 is larger for the Level 5-7 learners; the proportion having a mental health contact goes up by 7 percentage points for both men and women.

For the second dimension of benefit receipt, we note for the Level 2-4 cohort there are no substantial gender gaps, although the female cohort has less consistent benefit receipt over time than the male cohort.

## Health by ethnicity

Finally, Appendix Table F 4 presents the Health sub-group split into two ethnicity categories: European and Māori. We note that the Māori make up around 25% of Health learners at NZQF level 2-4 and 16% of learners at level 5-7. Our interpretations for this section, are limited to Level 2-4 learners, due to small sample sizes.

We first notice that the Māori cohort has modestly lower rates of ACC accidents, both in total and work-related, and that the proportion of accidents remain relatively steady over time for both ethnicity cohorts. We note that the Māori Health learners have much lower rates of mental health contacts, and that these rates are quite stable over time, fluctuating by only 1 percentage point on average. The ethnicity gap is stable at 11 percentage points.

Next, when assessing benefit receipt, we see that the Māori cohort has slightly higher uptake of benefits than the European group, but that these proportions are decreasing over time, with the differences between the Māori and European cohort narrowing from 7 percentage points in 2014, to 2 percentage points by 2022. In both instances, over half of benefits appear to be hardship benefits rather than unemployment benefits.

## Social Services

In this subsection, we analyse the wellbeing trajectories of the Social Services sub-group by NZQF level. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Social Services sub-group however, we note that due to small sample sizes, we cannot use the data to draw any conclusions.

### Social Services by NZQF level

Table 48 gives the wellbeing trajectories of Social Services learners across NZQL level qualification achieved in 2012. We note that ACC claims are stable over time for Level 2-4 learners, but fluctuating for Level 5-7 learners. As such, Level 5-7 learners have higher ACC claims than Level 2-4 learners, although this does not always translate to work-related claims, where we see Level 2-4 learners overtake Level 5-7 learners in 2022.

For mental health contacts, learners have similar proportions of mental health contacts in 2014 and 2017, before the proportion of contacts for Level 5-7 learners jumps up by 5 percentage points in 2022.

In the second dimension of benefit receipt, Level 2-4 learners have a higher proportion of benefit receipt than non-learners in all time periods. The gap between Level 5-7 learners and Level 2-4 learners decreases over time from 10 percentage points in 2014, to 6 percentage points in 2022. We also note, as previously has been the case, that most of these benefits appear to be hardship benefits rather than unemployment benefits.

### Social Services by NZQF level & industry

The wellbeing trajectories of Social Services learners by whether they went on to work in a related or non-related industry are presented in Table 49. We note that there is a variation in the related/non-related industry proportions over time for Level 5-7 learners, indicating some mobility of Social Services learners with high-level qualifications across industries. The proportion of learners in a related industry decreases from 22% (17%) to 16% (15%) over time for the NZQF Level 5-7 group (Level 2-4 group).

When considering the health dimension of those working in a related industry versus those working in a non-related industry, we see that for Level 2-4 learners those working in a related industry have modestly higher proportions of ACC accidents in all time periods, while for Level 5-7 learners the proportions between groups are similar until 2022, when those in a related industry see a small drop in ACC accidents.

Looking at mental health we see that Level 2-4 learners working in a related industry have a lower proportion of mental health contacts than the non-related industry learners initially, but that the gap

between groups dissipates over time. For Level 5-7 learners, the related and non-related industry learners have similar proportions of mental health contacts in all time periods. Across the board, mental health contacts appear to be increasing.

For the second dimension of benefit receipt, we again see very little difference (1 or 2 percentage points) between those working in a related industry to those working in a non-related industry.

Table 48. Wellbeing outcomes for Social Services sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	-	23.5%	28.2%
2017	-	24.4%	29.8%
2022	-	24.1%	26.2%
ACC work-related accident			
2014	-	3.6%	4.6%
2017	-	5.0%	5.1%
2022	-	4.1%	2.5%
Any mental health contact			
2014	-	26.6%	26.4%
2017	-	28.6%	29.5%
2022	-	28.9%	34.9%
Any mental health contact+			
2014	-	28.5%	27.5%
2017	-	29.9%	30.2%
2022	-	30.4%	36.0%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	-	25.7%	15.7%
2017	-	20.2%	9.8%
2022	-	14.3%	8.0%
Unemployment benefit receipt			
2014	-	11.6%	5.0%
2017	-	7.5%	2.5%
2022	-	4.6%	-
Hardship benefit receipt			
2014	-	15.5%	10.4%
2017	-	10.5%	5.5%
2022	-	6.3%	3.3%
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	-	2.5%	-
2017	-	2.6%	-
2022	-	-	-
Serious criminal history			
2014	-	-	-
2017	-	1.3%	-
2022	-	-	-
Victimization			
2014	-	3.7%	-
2017	-	5.7%	3.3%
2022	-	5.8%	5.1%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW Social Services learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 49. Wellbeing outcomes for Social Services sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	16.7%	83.3%	21.8%	78.2%
2017	16.0%	84.0%	18.9%	81.1%
2022	14.9%	85.1%	16.1%	83.9%
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	26.6%	24.8%	29.4%	29.0%
2017	29.7%	24.7%	30.2%	30.8%
2022	29.3%	25.2%	26.5%	29.4%
ACC work-related accident				
2014	-	4.4%	-	4.9%
2017	-	6.5%	-	5.4%
2022	-	4.5%	-	-
Any mental health contact				
2014	23.4%	25.7%	25.5%	25.7%
2017	21.9%	27.1%	30.2%	28.6%
2022	27.6%	27.6%	32.4%	32.2%
Any mental health contact+				
2014	26.6%	27.0%	25.5%	26.2%
2017	21.9%	28.0%	30.2%	29.2%
2022	27.6%	27.9%	32.4%	33.3%
<b>2) Income from benefits</b>				
Any benefit receipt				
2014	23.4%	24.5%	17.6%	13.7%
2017	17.2%	19.0%	-	10.3%
2022	12.1%	13.9%	-	7.3%
Unemployment benefit receipt				
2014	-	10.3%	-	4.4%
2017	-	6.3%	-	-
2022	-	4.5%	-	-
Hardship benefit receipt				
2014	17.2%	14.7%	-	9.3%
2017	-	9.8%	-	5.4%
2022	-	6.1%	-	-
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Serious criminal history				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Victimization				
2014	-	4.1%	-	-
2017	-	4.5%	-	-
2022	-	5.2%	-	4.0%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW Social Services learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## **Social Services by gender**

The results for the Social Services sub-group by gender are presented in Appendix Table F 5. Firstly, we note that women make up the vast majority of this sub-group, at 87% of both NZQF Level 2-4 and Level 5-7 groups.

For the first dimension of physical and mental health, we note that males have a higher proportion of ACC claims than women, and that this is true for both NZQF level groups. Specifically, for those who studied a level 2-4 (level 5-7) qualification, women's proportion of ACC claims is 6 (13) percentage points lower than men's in 2014, decreasing by 50% to 3 (6) percentage points in 2022. As for mental health contacts, we see the reverse, with women having a higher proportion of contacts in both the Level 2-4 and 5-7 cohorts, and the gaps between genders increasing for the Level 5-7 group (from 2 percentage points to 11 percentage points in 2022) and decreasing for Level 2-4 learners (from 5 percentage points to 1 percentage point in 2022).

For the second dimension of benefit receipt, we note that Level 2-4 learners see a decrease in benefit receipt regardless of gender over time, but that women have higher rates of benefit receipt than their male equivalents in all time points.

## **Social Services by ethnicity**

As with previous sub-groups, we split the Social Services sub-group into two ethnicity categories: European and Māori, presented in Appendix Table F 6. We note that the Māori make up around 44% of learners at NZQF level 2-4 and only 27% of learners at level 5-7. Our interpretations for the NZQF Level 5-7 group are limited in this section, and results should be treated with caution.

We first notice that the Māori cohort has a lower rate of ACC accidents, and these gaps grow (decrease) over time for Level 2-4 (Level 5-7) learners, from 2 (7) percentage points in 2014, to 5 (5) percentage points in 2022. We note that the Māori Social Services learners have lower rates of mental health contacts, and that these rates increase over time for all groups. This leads to a modest decrease in the ethnicity gaps for Level 2-4 (Level 5-7) learners, from 14 (10) percentage point difference in 2014, to a 13 (7) percentage point difference in 2022.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group, but that these proportions are decreasing over time. For Level 2-4 (Level 5-7) learners, we see the differences between the Māori and European cohort remain stable over time at 7 (4) percentage points in 2014, and 7 (3) percentage points in 2022.

## 9 Waihanga Ara Rau

This section focuses on learners graduating in 2012 with an NZSCED code related to Waihanga Ara Rau (WAR).

Waihanga Ara Rau represents the construction and infrastructure workforce. This workforce is broken down into 3 sectors which are comprised of industries specified in the Australia and New Zealand Standard Industrial Classification 2006 (ANZSIC).



WAR has the following three sub-groups: Infrastructure, Services and Construction. In total, 38 unique NZSCED codes were used to identify the pool of learners. Broken down by sub-group, 6 NZSCED codes were used to identify learners related to Infrastructure, 12 for Services and 20 for Construction. In total, our final sample consists of 21,045 WAR learners completing their qualification in 2012.

### 9.1 Descriptive profile by industry sub-group

Figure 7. Proportion of WAR sub-groups in the population of interest



Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of WAR learners between 18 and 54 (inclusive) years old in 2012, according to their education records

Figure 7 shows the distribution of learners across the three sub-groups. As the image shows, Infrastructure is the smallest sub-group with a share of 11% of the learners, while Services (40%) and Construction (49%) are of almost similar size.

Table 50 presents demographic information for learners from the three HAR sub-groups who graduated in 2012. The table shows substantial differences in demographic characteristics across the three sub-groups. While the learners of the sub-groups Construction and Infrastructure are almost exclusively male (in both cases 95%), only 41% of the Services learners are male. Further differences are also found when looking at the age profile: while almost every second learner (43%) of the sub-group Construction is of age 25 or below when completing their qualification, the share is much lower for Infrastructure

(30%) and Services (26%). Differences are also found regarding birthplace and location of residence, with learners from the Infrastructure sub-group having the lowest proportion of those born overseas at 8%, half that of the WDC average. Substantial differences are also observed in terms of qualification. Around 90% of the learners in the sub-groups Construction and Infrastructure have a qualification ranging between level 2 and 4. However, less than two thirds of the learners of the sub-group Services studied a level 2 and 4 qualification.

**Table 50. Descriptive statistics by WAR group 2012**

	Waihanga Ara Rau	Construction	Infrastructure	Services
Male	72.8%	94.5%	94.9%	40.8%
Age 25 and below	34.8%	43.1%	29.9%	25.8%
Age above 45	13.0%	10.6%	13.8%	16.0%
Born overseas	16.5%	13.9%	8.0%	21.8%
<b>Ethnicity</b>				
European	59.6%	64.8%	53.2%	55.1%
Māori	25.8%	23.3%	39.0%	25.3%
Pacific	6.9%	6.4%	4.9%	7.9%
Asian	5.5%	3.6%	1.5%	8.9%
MELAA/Other	2.2%	1.9%	1.5%	2.8%
<b>NZQF level of qualification achieved in 2012</b>				
Level 1	-	-	-	-
Level 2	15.1%	23.6%	14.7%	5.3%
Level 3	24.2%	20.8%	50.0%	21.2%
Level 4	41.9%	48.4%	23.7%	38.9%
Level 5	7.0%	4.0%	3.1%	11.7%
Level 6	9.4%	3.1%	8.2%	17.5%
Level 7	2.3%	-	-	5.5%
<b>Number of Learners</b>	21057	10383	2406	8493

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## 9.2 Wellbeing outcomes by industry sub-groups

This sub-section presents the wellbeing outcomes of the WAR learner cohort by sub-group, at three different time points: two, five and ten years post-graduation (2014, 2017, 2022). First, we examine the sub-groups in their entirety before analysing outcomes by industry, gender and ethnicity.

Table 51 describes the wellbeing outcomes of WAR learners in aggregate and by industry sub-group. For physical and mental health we note that the proportions across the WDC on average, for both ACC and ACC work-related accidents are decreasing over time, while mental health contacts are increasing. Overall, all two sub-groups look similar when considering the physical & mental health dimension, with the Services sub-group standing out as having much lowest ACC claims and largest mental health contacts in the WDC.

When considering the benefit receipt dimension, we note that the proportion of learners receiving any kind of benefit is decreasing overall for the WAR WDC on average and that the largest proportion of benefit receipt is of hardship benefits. We note that again, the Services group has slightly different outcomes compared to the Construction and Infrastructure sub-groups, with the largest proportion of benefit receipt in 2014 and 2017.

Finally, when considering justice outcomes we note that around 4% of the WAR WDC has some form of criminal charge in 2014, decreasing by three quarters to less than 1% by 2022. Opposingly, the proportion of learners experiencing a victimisation increases from just over 2% in 2014 to 4% in 2022. When looking at the WAR sub-groups we note that the groups show a lot of variation in criminality data, but not so much in victimisations. For example, the Infrastructure sub-group has 6 percentage point higher rates of criminal activity compared to the Services sub-group in 2014, but less than 1 percentage point difference in victimisations.

Next, we analyse each sub-group's wellbeing trajectories by NZQF level achieved in 2012, gender, ethnicity, and whether working in a related industry or not.

Table 51. Labour market outcomes by WAR sub-groups

	Waihanga Ara Rau	Construction	Infrastructure	Services
<b>Share by sub-group</b>				
2014	100%	48.7%	11.6%	40.7%
2017	100%	49.1%	11.6%	40.4%
2022	100%	49.4%	11.7%	40.0%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC Accident</b>				
2014	32.0%	36.3%	32.8%	26.7%
2017	31.8%	35.0%	32.6%	27.7%
2022	29.4%	31.8%	28.6%	26.9%
<b>ACC work-related accident</b>				
2014	9.2%	12.2%	10.5%	5.2%
2017	8.0%	10.5%	10.3%	4.4%
2022	6.3%	8.7%	7.6%	3.3%
<b>Any mental health contact</b>				
2014	17.4%	16.3%	17.3%	19.0%
2017	19.2%	18.1%	16.3%	21.2%
2022	19.3%	18.0%	14.7%	22.2%
<b>Any mental health contact+</b>				
2014	18.3%	17.0%	17.9%	19.9%
2017	19.9%	18.9%	16.7%	22.1%
2022	20.2%	19.0%	15.5%	23.1%
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	10.7%	9.9%	8.5%	12.2%
2017	8.2%	7.5%	7.0%	9.2%
2022	7.9%	7.6%	8.8%	7.9%
<b>Unemployment benefit receipt</b>				
2014	2.5%	1.5%	1.5%	4.0%
2017	1.8%	1.0%	1.0%	3.0%
2022	1.1%	0.7%	-	1.8%
<b>Hardship benefit receipt</b>				
2014	8.0%	8.7%	7.0%	7.4%
2017	5.8%	6.3%	6.1%	5.2%
2022	5.2%	5.8%	6.4%	4.1%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	4.4%	5.6%	7.9%	1.9%
2017	3.5%	4.6%	6.5%	1.4%
2022	1.4%	2.0%	2.3%	0.4%
<b>Serious criminal history</b>				
2014	2.0%	2.4%	3.8%	0.9%
2017	1.9%	2.4%	3.7%	0.6%
2022	0.8%	1.1%	1.5%	-
<b>Victimisation</b>				
2014	2.2%	2.6%	1.4%	2.0%
2017	4.3%	4.4%	3.4%	4.4%
2022	4.2%	4.4%	4.2%	4.1%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of WAR learners between 18 and 54 (inclusive) years old in 2012, according to their education records. All income variables are deflated to March 2022 dollars.

## Construction

In this subsection, we analyse the wellbeing trajectories of the Construction sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Construction sub-group.

### Construction by NZQF level

Table 52 gives the wellbeing trajectories of Construction learners compared to those with no PSQ. We note that ACC claims are decreasing over time for all groups, with the No PSQ group seeing the largest decrease (of 5 percentage points) between 2014 and 2022, and the Level 2-4 group having the highest proportion of ACC claims in all time periods. Work-related ACC claims are highest for the No PSQ group, although differences between them and Level 2-4 learners are negligible.

As for mental health contacts, the No PSQ group has the highest proportion of mental health contacts in all time periods, and with the exception of a modest increase for the Level 2-4 learners in 2017, all mental health contacts appear constant over time. The Level 5-7 learners, have a proportion of mental health contacts 6 percentage points lower than the No PSQ group in 2014, and by 2022, that difference is 7 percentage points.

In the second dimension of benefit receipt, Level 5-7 learners have a lower proportion of benefit receipt in all time points, with the gap widening modestly over time, despite all learners seeing a decrease in benefit receipts over time, with the No PSQ group being stable.

Finally, for the crime and victimisation dimension, we note that Level 2-4 learners have a similar proportion of criminal charges to the No PSQ group, even as this proportion decreases over time. For victimisations this proportion grows over time by 2 percentage points.

### Construction by NZQF level & industry

Table 53 gives the wellbeing trajectories of Construction learners by whether they went on to work in a related or non-related industry. We note that the proportion of Level 2-4 learners working in a related industry decreases over time from 46% in 2014 to 41% in 2022. The Level 5-7 cohort however is small and due to small sample sizes we restrict our interpretation to the findings for Level 2-4 learners in this section.

When considering the health dimension of those working in a related industry versus those working in a non-related industry, we note that those working in a related industry have higher ACC claims than those working in a non-related industry, but that this fluctuates over time, with the gap narrowing from

5 percentage points in 2014 to 3 percentage points by 2022. This trend continues when looking at work-related accidents, with those working in a related industry having higher proportions of accidents. Looking at mental health we see that learners working in a related industry have a lower proportion of mental health contacts than the non-related industry learners, and that there are no large changes in these proportions over time, meaning that the gap between groups is steady over time.

For the second dimension of benefit receipt, we see higher benefit receipt for the non-related industry group, with a 6 percentage point higher proportion of benefit receipt in 2014, decreasing to 4 percentage points by 2022 compared to those working in a related industry. As before, most of these benefits appear to be hardship benefits.

Finally, looking at crime and victimisations, we see that both groups have similar proportions of criminal activity regardless of industry worked, and that these proportions decrease over time. The opposite is true for victimisations, which increase over time. Overall, no differences are apparent in this dimension.

Table 52. Wellbeing outcomes for Construction sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	32.0%	36.4%	34.4%
2017	30.1%	35.0%	34.3%
2022	27.2%	31.8%	31.4%
ACC work-related accident			
2014	13.3%	12.6%	7.1%
2017	12.3%	10.7%	7.7%
2022	9.2%	8.9%	5.2%
Any mental health contact			
2014	22.0%	16.4%	14.2%
2017	23.9%	18.4%	14.5%
2022	22.2%	18.2%	14.8%
Any mental health contact+			
2014	23.3%	17.2%	14.6%
2017	25.0%	19.1%	15.0%
2022	23.8%	19.2%	14.8%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	9.7%	10.1%	7.1%
2017	8.4%	7.7%	3.9%
2022	9.8%	7.9%	3.3%
Unemployment benefit receipt			
2014	1.3%	1.4%	-
2017	1.1%	1.0%	-
2022	0.7%	0.8%	-
Hardship benefit receipt			
2014	7.5%	8.9%	6.1%
2017	6.6%	6.5%	-
2022	6.4%	6.1%	-
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	6.0%	5.9%	-
2017	5.1%	4.8%	-
2022	2.2%	2.1%	-
Serious criminal history			
2014	2.6%	2.6%	-
2017	2.6%	2.6%	-
2022	1.0%	1.2%	-
Victimization			
2014	2.0%	2.5%	-
2017	3.7%	4.6%	-
2022	3.9%	4.5%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of WAR Construction learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 53. Wellbeing outcomes for Construction sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	45.9%	54.1%	16.5%	83.5%
2017	44.0%	56.0%	17.6%	82.4%
2022	40.9%	59.1%	17.3%	82.7%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	41.2%	34.5%	36.7%	32.2%
2017	40.0%	32.3%	41.9%	31.7%
2022	34.5%	32.1%	33.3%	32.2%
<b>ACC work-related accident</b>				
2014	16.1%	10.9%	-	5.9%
2017	13.0%	9.6%	-	6.2%
2022	11.3%	8.3%	-	5.6%
<b>Any mental health contact</b>				
2014	13.6%	16.6%	-	13.2%
2017	15.8%	17.7%	-	13.8%
2022	14.8%	18.2%	-	15.4%
<b>Any mental health contact+</b>				
2014	14.2%	17.1%	-	13.2%
2017	16.0%	18.6%	-	15.2%
2022	15.4%	19.2%	-	15.4%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	5.7%	11.2%	-	6.6%
2017	3.9%	9.1%	-	-
2022	4.9%	8.8%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	1.6%	-	-
2017	-	1.2%	-	-
2022	-	0.8%	-	-
<b>Hardship benefit receipt</b>				
2014	4.9%	9.9%	-	5.3%
2017	3.2%	8.0%	-	-
2022	4.0%	7.0%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	5.0%	5.6%	-	-
2017	3.3%	4.5%	-	-
2022	1.6%	1.8%	-	-
<b>Serious criminal history</b>				
2014	1.5%	2.5%	-	-
2017	1.4%	2.2%	-	-
2022	-	0.9%	-	-
<b>Victimization</b>				
2014	2.3%	2.6%	-	-
2017	4.4%	4.3%	-	-
2022	4.0%	4.5%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of WAR Construction learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## **Construction by gender**

The results for the Construction sub-group by gender are presented in Appendix Table G 1. Firstly, we note that women make up a very small proportion, 5%, of this sub-group at NZQF levels 2-4, and 11% of the NZQF Level 5-7 group. Due to the small sample size of the NZQF Level 5-7 group, most results for the female cohort are suppressed, thus we restrict our analysis to the Level 2-4 learner cohort.

For the first dimension of physical and mental health, we note that males have a slightly higher proportion of ACC claims than women in 2014, and that the gender gap remains constant at 3 percentage points as the rate of ACC claims decrease over time for both genders. For mental health contacts, we see the reverse, with women having a higher proportion of contacts and mental health contacts increasing across the board. The difference between genders also increases from 10 to 12 percentage points by 2022.

For the second dimension of benefit receipt, we note that again, women have higher rates of benefit receipt than their male equivalents. We note that both genders have a higher proportion of hardship benefits than unemployment benefits, and all benefit receipt is trending down over time.

## **Construction by ethnicity**

As with previous sub-groups, we also split the Construction sample into two ethnicity categories: European and Māori, presented in Appendix Table G 2. We note that the Māori make up around 27% of learners at NZQF level 2-4 and 13% of learners at level 5-7. Due to the small sample size of the NZQF Level 5-7 group, most results for the Māori cohort are suppressed, thus we restrict our analysis to the Level 2-4 learners.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related, and these gaps decrease over time. We note also that the Māori Construction learners have higher rates of mental health contacts, and that these rates are quite stable over time, fluctuating by only 1 percentage point on average. The European cohort, however, has increasing mental health contacts over time, growing by 3 percentage points between 2014 and 2022.

Next, when assessing benefit receipt, we see that the Māori cohort has a much higher uptake of benefits, over four times that of the European group, but that these proportions are decreasing over time, with the differences between the Māori and European cohort narrowing modestly from 17 to 15 percentage points in by 2022. In both instances, almost all benefits appear to be hardship benefits rather than unemployment benefits.

Finally, we note the crime and victimisation dimension. Disparities are evident between ethnicities in 2014, with 13% of the Māori cohort and 3% of the European cohort having a criminal conviction. However, these disparities decrease over time, with 5% of the Māori cohort and 1% of the European cohort having a criminal conviction by 2022. Differences are also apparent when considering victimisations, with the Māori cohort experiencing a higher rate of victimisation which doubles between 2014 (3%) and 2022 (6%).

## **Infrastructure**

In this subsection, we analyse the wellbeing trajectories of the Infrastructure sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Infrastructure sub-group. We note that women make up a very small proportion, 4%, of this sub-group at NZQF levels 2-4, and 11% of the NZQF Level 5-7 group. As a result of small sample sizes, most of the results in this section are suppressed in line with Stats NZ confidentiality rules and thus are not discussed further.

### **Infrastructure by NZQF level**

Table 54 gives the wellbeing trajectories of Infrastructure learners compared to those with no PSQ. Due to small sample sizes for the Level 5-7 learners, we focus on the No PSQ group and the Level 2-4 learners in this section.

We note that ACC claims are decreasing slightly over time, with Level 2-4 learners having higher proportions of ACC claims in all time periods. When we look at work-related claims however, we notice no significant difference between the No PSQ group and our learners. For mental health contacts, which also decrease over time, we see that the No PSQ group has higher rates of contacts compared to Level 2-4 learners, with the gap widening from 2 percentage points in 2014, to 4 percentage points in 2022.

In the second dimension of benefit receipt, Level 2-4 learners have a higher proportion of benefit receipt than non-learners, however both groups see increases over time, which closes the gap between our learner and non-learner cohort. Most benefits appear to be hardship benefits for both groups.

### **Infrastructure by NZQF level & industry**

Table 55 gives the wellbeing trajectories of Infrastructure learners by whether they went on to work in a related or non-related industry. We note that there is slight variation in the related/non-related industry proportions over time, the proportion of learners in a related industry decreases from 26% (39%) to 21% (32%) over time for the NZQF Level 2-4 group (Level 5-7 group). Due to the small sample

size of the Infrastructure Level 5-7 group working in a related industry, we focus our analysis on the Level 2-4 learners.

When considering the health dimension of those working in a related industry versus those working in a non-related industry, we note that those working in a related industry have higher ACC claims than those working in a non-related industry, but that the gap between groups does not change over time, despite the proportion of ACC claims decreasing for both groups. Notably, the non-related industry group has a higher proportion of work-related claims, although gaps are small between groups.

Looking at mental health we see that learners working in a related industry have a very similar proportion of mental health contacts to those in a non-related industry, and that these proportions decrease over time for both groups, indicating either improved mental health over time or decreases in access to mental health treatments.

Table 54. Wellbeing outcomes for Infrastructure sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	28.1%	32.2%	38.3%
2017	28.3%	32.2%	36.7%
2022	25.4%	28.4%	29.8%
ACC work-related accident			
2014	11.1%	11.2%	-
2017	9.6%	11.3%	-
2022	8.3%	8.1%	-
Any mental health contact			
2014	20.0%	18.0%	12.3%
2017	21.7%	16.4%	16.5%
2022	19.4%	14.9%	14.3%
Any mental health contact+			
2014	20.7%	18.6%	12.3%
2017	22.4%	16.9%	16.5%
2022	20.4%	15.7%	14.3%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	6.9%	9.4%	-
2017	6.5%	7.9%	-
2022	8.7%	9.7%	-
Unemployment benefit receipt			
2014	0.9%	1.7%	-
2017	0.8%	1.1%	-
2022	0.4%	-	-
Hardship benefit receipt			
2014	5.5%	7.7%	-
2017	5.0%	6.5%	-
2022	5.3%	7.1%	-
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	4.2%	8.6%	-
2017	3.6%	7.1%	-
2022	1.4%	2.3%	-
Serious criminal history			
2014	1.6%	4.2%	-
2017	1.9%	4.2%	-
2022	0.6%	1.7%	-
Victimization			
2014	1.7%	1.4%	-
2017	3.3%	3.6%	-
2022	3.3%	4.5%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of WAR Infrastructure learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

Table 55. Wellbeing outcomes for Infrastructure sub-group: By industry

	NZQF 2-4		NZQF 5-7	
	Related Industry	Non-Related Industry	Related Industry	Non-Related Industry
<b>Share in related industry (based on W&amp;S information)</b>				
2014	25.6%	74.4%	38.7%	61.3%
2017	23.5%	76.5%	33.3%	66.7%
2022	20.6%	79.4%	31.6%	68.4%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	36.5%	31.3%	35.5%	40.8%
2017	34.6%	32.9%	32.0%	38.0%
2022	33.9%	28.3%	37.5%	25.0%
<b>ACC work-related accident</b>				
2014	10.8%	12.3%	-	-
2017	11.3%	12.5%	-	-
2022	8.3%	9.3%	-	-
<b>Any mental health contact</b>				
2014	18.2%	16.9%	-	-
2017	14.3%	15.5%	-	14.0%
2022	13.8%	13.3%	-	17.3%
<b>Any mental health contact+</b>				
2014	18.2%	17.2%	-	-
2017	14.3%	16.0%	-	16.0%
2022	13.8%	14.0%	-	17.3%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	-	9.5%	-	-
2017	-	8.1%	-	-
2022	-	9.5%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	2.1%	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	-	7.7%	-	-
2017	-	6.7%	-	-
2022	-	6.9%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	8.8%	-	-
2017	-	7.2%	-	-
2022	-	2.4%	-	-
<b>Serious criminal history</b>				
2014	-	3.9%	-	-
2017	-	3.9%	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	-	-	-	-
2017	-	3.9%	-	-
2022	-	5.2%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of WAR Infrastructure learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Infrastructure by ethnicity

Finally, we split the Infrastructure sub-group into two ethnicity categories: European and Māori, presented in Appendix Table G 3. We note that the Māori make up around 44% of learners at NZQF level 2-4 and 23% of learners at level 5-7. Our interpretations in this section are limited to the NZQF Level 2-4 learners, due to small sample sizes of Level 5-7 learners in this sub-group.

We first notice that the Māori cohort has a lower rate of ACC accidents, both in total and work-related accidents. The ethnic gap decreases over time, from 8 to 3 percentage points by 2022 in terms of accidents overall, and from 4 to less than 1 percentage point for work-related accidents. We note also that the Māori Infrastructure learners have lower rates of mental health contacts, and that these rates decrease over time, increasing the gap between the Māori and European cohort from 2 percentage points in 2014 to 7 percentage points in 2022.

Next, when assessing benefit receipt, we see that the Māori cohort has a three times higher uptake of benefits than the European group, and that these proportions are increasing over time, with the differences between the Māori and European cohort growing from 10 percentage points in 2014, to 13 percentage points by 2022. In both instances, most benefits appear to be hardship benefits rather than unemployment benefits.

## Services

In this subsection, we analyse the wellbeing trajectories of the Services sub-group in comparison to those without PSQs. Recall that we apply entropy balancing to ensure that the characteristics of the comparison group (in terms of age, gender, ethnicity, and benefit receipt) are similar to those of the Services sub-group. We note that women make up a small minority, 4%, of this sub-group at NZQF levels 2-4, and 11% of the NZQF Level 5-7 group. We also note that very few Service learners go on to work in a related industry, as little as 1% of Level 2-4 learners and 8% of Level 5-8 learners. As a result of small sample sizes, most of the results in this section are suppressed in line with Stats NZ confidentiality rules and thus are not discussed further.

### Services by NZQF level

Table 56 gives the wellbeing trajectories of Services learners compared to those with no PSQ. We note that ACC claims are stable over time for both Level 2-4 and 5-7 learners, but are decreasing for those with no PSQ. Therefore, although the No PSQ group starts out with higher ACC claims than learners, the proportion reaches similar levels to Level 5-7 learners by 2022. For mental health contacts, learners

have a lower proportion of mental health contacts than non-learners, but this gap is more evident with Level 5-7 learners in 2014 and 2017, decreasing to just 1 percentage point by 2022.

In the second dimension of benefit receipt, Level 2-4 learners have a higher proportion of benefit receipt than non-learners, however the learners are getting closer to closing the gap by 2022. The gap between Level 5-7 learners and non-learners decreases over time as well, in fact, Level 5-7 learners go from having a higher benefit receipt than non-learners to a lower proportion of benefit receipt by 2017.

Table 56. Wellbeing outcomes for Services sub-group: by NZQF level

	NZQF Level Qualification gained in 2012		
	No PSQ	Level 2-4	Level 5-7
<b>1) Physical &amp; Mental Health</b>			
ACC accident			
2014	32.2%	26.3%	27.6%
2017	30.0%	27.5%	28.2%
2022	28.9%	26.2%	28.2%
ACC work-related accident			
2014	13.9%	6.2%	3.3%
2017	10.4%	5.2%	3.0%
2022	9.8%	3.8%	2.3%
Any mental health contact			
2014	21.0%	20.1%	16.7%
2017	24.3%	21.8%	20.0%
2022	23.1%	22.5%	21.8%
Any mental health contact+			
2014	22.3%	21.2%	17.6%
2017	24.5%	22.9%	20.7%
2022	23.9%	23.5%	22.4%
<b>2) Benefit Receipt</b>			
Any benefit receipt			
2014	6.8%	13.6%	9.6%
2017	7.3%	11.1%	5.6%
2022	7.2%	9.5%	5.1%
Unemployment benefit receipt			
2014	-	4.5%	3.3%
2017	-	3.8%	1.6%
2022	-	2.2%	0.9%
Hardship benefit receipt			
2014	4.8%	8.2%	5.8%
2017	5.5%	6.2%	3.4%
2022	4.2%	4.9%	2.5%
<b>3) Crime &amp; Victimization</b>			
Any criminal history			
2014	3.8%	2.4%	1.1%
2017	3.4%	1.7%	-
2022	-	0.5%	-
Serious criminal history			
2014	2.3%	1.2%	-
2017	1.8%	0.8%	-
2022	-	-	-
Victimization			
2014	-	2.0%	2.2%
2017	3.1%	4.9%	3.1%
2022	3.4%	4.2%	3.6%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of WAR Services learners between 18 and 54 (inclusive) years old in 2012, according to their education records, and non-learners according to 2014 Census data.

## Services by ethnicity

As with previous sub-groups, we split the Services sub-group into two ethnicity categories: European and Māori, presented in Appendix Table G 4. We note that the Māori make up around 37% of learners at NZQF level 2-4 and 21% of learners at level 5-7.

We first notice that the Māori cohort has a lower rate of ACC accidents, and that this ethnic gap shrinks for the Level 2-4 (Level 5-7) learners from 7 (3) to 4 (1) percentage points between 2014 and 2022. Work-related accidents follow a similar pattern for Level 2-4 learners, decreasing over time for both ethnicities. When referring to mental health contacts, we note that Māori have lower rates of mental health contacts than Europeans in both NZQL level groups, and that although the European group sees an increase in contacts over time, Māori either see a decrease or a much more modest increase between 2014 and 2022.

Next, when assessing benefit receipt, we see that the Māori cohort has a higher uptake of benefits than the European group, but that these proportions are decreasing over time for both ethnic groups, with the differences between the Māori and European cohort narrowing from 11 (11) percentage points in 2014, to 8 (6) percentage points by 2022 for Level 2-4 (Level 5-7) learners. In all instances, over half of benefits appear to be hardship benefits rather than unemployment benefits.

Finally, we note the crime and victimisation dimension. Differences are also apparent when considering victimisations, with the Māori cohort experiencing a higher rate of victimisation which more than triples between 2014 (2%) and 2022 (7%).

## 10 Conclusion & Next Steps

This study investigates the relationship between a post-school qualification (below a Bachelor's qualification) and several wellbeing outcomes in New Zealand. Looking at a ten-year time window post completion of a qualification in 2012, we provide detailed empirical evidence for each of the six WDC's sub-groups on (i) physical (accident-related) and mental health; (ii) benefit receipt; and (iii) criminal offending and victimisation. The study shows that wellbeing is a multidimensional concept, where large differences can be observed depending on the socio-demographic characteristics of the pool of Learners, like gender or ethnicity. Moreover, while work-related ACC claims, MSD benefit receipt and criminal records drop over time, we observe at the same time an increase of mental health related treatment.

This study uses the detailed qualification- and wellbeing-related administrative data hosted by Stats NZ's Integrated Data Infrastructure (IDI). As the information is population wide, it enables us to portray the wellbeing of sub-groups with a small number of learners. For future research in this space, the following aspects are likely to be worthy of further exploration:

1. The use of ACC data to estimate the physical health of learners paints a broad picture. Other healthcare information, such as number of hospital admissions, prescriptions and GP visits, could be used in future work to better understand the intensity of healthcare use as a measure of wellbeing.
2. Our measures of wellbeing are based on administrative records, which have the limitation of only capturing aspects in one's life which are of relevance to the government. However, there is a plethora of alternative indicators which provide insight regarding one's wellbeing, like life satisfaction measures. This information is normally collected in wellbeing surveys, and one challenge will be to link this information to the WDC-specific qualification.
3. Attaining a qualification can open new pathways and have spillover effects. For example, having a qualification might impact the likelihood of moving overseas for employment prospects (e.g., Australia). Thus, future research can also investigate migration patterns post qualification, and the role they play with respect to any brain drain from New Zealand.

# References

Pacheco, G., Plum, A. & Turcu, A. (2023). *Learner Pathways: by Workforce Development Council*. New Zealand Work Research Institute, Auckland.

Sullivan, C., Su-Wuen, O. & McRae, R. (2017). *Justice Sector Seriousness Score (2016 update): FAQs*. Ministry of Justice. <https://www.justice.govt.nz/assets/justice-sector-offence-seriousness-score-faq.pdf>

# Appendix A

**Table A 1. Datasets used**

**Population data**

Census 2014  
Border movement  
APC constants

**Income and work data**

Inland Revenue – Employee Monthly Schedule

**Education and training data**

Industry training  
Tertiary Education (enrolment and completion)

**Wellbeing data**

ACC accident data  
Ministry of Social Development benefits  
Ministry of Justice charges  
Police victimisations  
Pharmaceutical  
Public hospital discharges  
Private hospital discharges  
Programme for the Integration of Mental Health Data

Source: Authors' compilation from Stats NZ IDI.

Table A 2. WDC sub-grouping and qualification code concordance

NZSCED level 6 code	NZSCED level 6 qualification
<b>HAR</b>	<b>Engineering</b>
030599	Automotive Engineering and Technology not elsewhere classified
030507	Automotive Vehicle Refinishing
030711	Boiler-making and Welding
030301	Chemical Engineering
040323	Glazing
030101	Manufacturing Engineering
031703	Marine Construction
031701	Maritime Engineering
030799	Mechanical and Industrial Engineering & Technology not elsewhere classified
030701	Mechanical Engineering
030713	Metal Casting and Pattern Making
030303	Mining and Resources Engineering
030511	Panel Beating
030399	Process and Resources Engineering not elsewhere classified
031315	Refrigeration, Heating and Air Conditioning
030709	Sheetmetal Working
030503	Vehicle Mechanics
<b>HAR</b>	<b>Logistics</b>
030515	Automotive Vehicle Operations
039901	Environmental Engineering
080311	International Business
031705	Marine Craft Operation
031799	Maritime Engineering and Technology not elsewhere classified
089901	Purchasing, Warehousing and Distribution
039907	Rail Operations
<b>HAR</b>	<b>Manufacturing</b>
030501	Automotive Engineering
110107	Baking and Pastry Making
110105	Butchery
120599	Employment Skills Programmes not elsewhere classified
030307	Food (excluding Seafood) Processing Technology
030107	Garment Making
030199	Manufacturing Engineering and Technology not elsewhere classified.
030108	Plastics Processing Technology
030103	Printing
030105	Textile Making
030304	Wood Based Manufacturing
<b>MT</b>	<b>Agriculture</b>
050101	Agricultural Science
050199	Agriculture not elsewhere classified
059999	Agriculture, Environmental and Related Studies not elsewhere classified
050105	Animal Husbandry
050104	Beekeeping

050106	Crop Production
050108	Equine Trades
080321	Farm Management and Agribusiness
050112	General Land Skills
050110	Wool and Fibre Harvesting
050103	Wool and Fibre Science
<b>MT</b>	<b>Horticulture</b>
050301	Horticulture
040105	Landscape Architecture
050303	Viticulture
<b>MT</b>	<b>Forestry</b>
050501	Forestry Studies
<b>MT</b>	<b>Seafood</b>
030308	Seafood Processing
050701	Aquaculture
050702	Seafood Harvesting (Fishing)
050799	Fisheries Studies not elsewhere classified
<b>MT</b>	<b>Support</b>
010711	Hydrology
059901	Pest and Weed Control
<b>MT</b>	<b>Veterinary</b>
061101	Veterinary Science
061103	Veterinary Assisting
061199	Veterinary Studies not elsewhere classified
<b>RH</b>	<b>Aviation &amp; tourism</b>
031501	Aerospace Engineering
031599	Aerospace Engineering and Technology not elsewhere classified
031507	Air Traffic Control
031503	Aircraft Maintenance Engineering
031505	Aircraft Operation
080701	Tourism Studies
<b>RH</b>	<b>Hospitality</b>
110109	Cookery
039909	Cleaning
110103	Food and Beverage Service
110101	Hospitality
080319	Hospitality Management
<b>RH</b>	<b>Real estate &amp; rental</b>
080503	Real Estate
<b>RH</b>	<b>Business &amp; industry support</b>
080199	Accountancy not elsewhere classified
080301	Business Management
080901	General Office Administration
080315	Project Management
080317	Quality Management
050901	Land, Parks and Wildlife Management
080599	Sales and Marketing not elsewhere classified

081101	Banking and Finance
081199	Banking, Finance and Related Fields not elsewhere classified
<b>RH</b>	<b>Retail &amp; distribution</b>
080501	Sales
<b>RH</b>	<b>Government, defence &amp; security</b>
099905	Security Services
080399	Business and Management not elsewhere classified
080313	Public and Health Care Administration
<b>TM</b>	<b>Toi Ora</b>
040399	Building not elsewhere classified
039999	Engineering and Related Technologies not elsewhere classified
069903	Human Movement and Sports Science
091301	Librarianship and Information Management
092101	Sport and Recreation Activities
092103	Sports Coaching, Playing, Officiating and Instructing
<b>TM</b>	<b>Toi Pāho</b>
100701	Audio Visual Studies
100799	Communication and Media Studies not elsewhere classified
031399	Electrical and Electronic Engineering and Technology not elsewhere classified
100703	Journalism, Communication and Media Studies
<b>TM</b>	<b>Toi Puaki</b>
100105	Dance
100103	Drama and Theatre Studies
031399	Electrical and Electronic Engineering and Technology not elsewhere classified
100101	Music
100199	Performing Arts not elsewhere classified
<b>TM</b>	<b>Toi Whānui</b>
020103	Computer Applications and Programming
020399	Information Systems not elsewhere classified
029999	Information Technology not elsewhere classified
020115	Multimedia Computing Science
020113	Networks and Communications
020117	Operating Systems
029901	Security Science
020305	Systems Analysis and Design
080904	Text and Information Processing
<b>TM</b>	<b>Toi-A-Ringa</b>
110301	Beauty Therapy
109999	Creative Arts not elsewhere classified
100505	Fashion Design
100301	Fine Arts
100309	Floristry
100599	Graphic and Design Studies not elsewhere classified
100501	Graphic Arts and Design Studies
110303	Hairdressing
100307	Jewellery Making
110399	Personal Services not elsewhere classified

100303	Photography
100399	Visual Arts and Crafts not elsewhere classified
<b>TTW</b>	<b>Community</b>
110301	Beauty Therapy
039905	Fire Technology and Rescue Services
091199	Justice and Law Enforcement not elsewhere classified
061301	Occupational Health and Safety
110399	Personal Services not elsewhere classified
<b>TTW</b>	<b>Education</b>
070199	Teacher Education not elsewhere classified
<b>TTW</b>	<b>Health</b>
090511	Community Client Care
061303	Environmental Health
069907	First Aid
061307	Health Education, Promotion, Counselling
010913	Human Biology
069901	Nutrition and Dietetics
069905	Paramedical Studies
060501	Pharmacy
<b>TTW</b>	<b>Social Services</b>
090509	Care for People with Disabilities
090502	Children's Services
090513	Counselling
090599	Human Welfare Studies and Services not elsewhere classified
090503	Nannying and Early Childhood Care
090501	Social Work
090507	Support for the Older Person
090515	Welfare Studies
090505	Youth Work
<b>WAR</b>	<b>Construction</b>
030711	Boiler-making and Welding (Engineering Fabrication – steel construction)
040309	Bricklaying and Stonemasonry
040399	Building not elsewhere classified
040311	Carpentry and Joinery
040313	Ceiling, Wall and Floor Fixing
039909	Cleaning (Hard Floor Surfaces)
031309	Communications Equipment Installation and Maintenance
031399	Electrical and Electronic Engineering and Technology not elsewhere classified
031301	Electrical Engineering
031313	Electrical Fitting, Electrical Mechanics
031303	Electronic Engineering
039999	Engineering and Related Technologies not elsewhere classified
039905	Fire Technology and Rescue Services (Fire detection and Alarm system)
040321	Floor Coverings ( Flooring Fundamentals, Flooring Installations)
040323	Glazing
031701	Maritime Engineering ( for Marine Electric – Electronics level apprenticeship)
040325	Painting, Decorating, Sign Writing and Other Finishes

040327	Plumbing, Gas fitting and Drain laying
040315	Roof Fixing
040329	Scaffolding and Rigging
<b>WAR</b>	<b>Infrastructure</b>
030999	Civil Engineering not elsewhere classified
050501	Forestry Studies ( NZA in Infrastructure (Forestry Earthworks) (L4) Complex Apprenticeship)
030717	Plant and Machine Operations
031311	Power Line Installation and Maintenance
030910	Road Construction
030907	Water and Sanitary Engineering
<b>WAR</b>	<b>Services</b>
040101	Architecture
040199	Architecture and Urban Environment not elsewhere classified
040307	Building Construction Economics (including Quantity Surveying)
040303	Building Construction Management
040301	Building Science and Technology
040305	Building Surveying (Inspection)
080301	Business Management ( Project management strand)
030901	Construction Engineering
030703	Industrial Engineering
040107	Interior and Environmental Design
080315	Project Management
031101	Surveying

Source: Authors' compilation from WDCs data.

**Table A 3. Benefit descriptions**

Benefit description	Unemployment Benefits	Hardship Benefits
All Benefits		
Accommodation Benefit		Y
Accommodation Supplement		Y
Advance of Benefit		
Away From Home Allowance		
Benefit Due		
Blind Subsidy		
Child Disability Allowance		
Civil Defence Payment		
Clothing Allowance	Y	
Course Participation Assistance	Y	
Community Services Card Reimbursement - General Medical		
Community Services Card Reimbursement - Hospital Outpatient		
Community Services Card Reimbursement - Pharmaceutical Prescription		
Disability Allowance		
Disabled Civilian Amputee		
Domestic Purposes Benefit Caring for Sick or Infirm weekly		
Domestic Purposes Benefit Woman Alone		Y
Domestic Purposes Benefit Woman Alone weekly		
Emergency Benefit		
Emergency Invalids Benefit		
Emergency Maintenance Allowance		Y
Emergency Maintenance Allowance weekly		
Family Tax Credit		Y
Funeral Grant - Child		
Funeral Grant - Married		
Funeral Grant - Single		
High Health User - General Medical		
High Health User - Hospital Outpatient		
High Health User - Pharmaceutical Prescription		
Home Help - Domestic Emergency		Y
Home Help - Families needing Domestic Support		
Home Help - Family Group Conference		
Home Help - Multiple Births		
Invalids Benefit		Y
Job Search Allowance	Y	
Job Seeker	Y	
Job Seeker Student Hardship	Y	Y
Miscellaneous Subsidy		
New Zealand Superannuation		
Non Beneficiary		
Orphans Benefit		Y
Orphans Benefit weekly		
Partner in Rest Home		
Pension Under Section 55		
Pre-enrolment Fee		

Benefit description		
All Benefits	Unemployment Benefits	Hardship Benefits
Prescription Subsidy Card		
Recoverable Assistance Payment		
Relocation Allowance		
Residential Support Service		Y
Rest Home Subsidy		
Sickness Benefit		Y
Sole Parent Support		Y
Sole Parent Support Overseas		
Special Annuity (Service to Society)		
Special Benefit		
Special Disability Allowance		
Special Needs Grant		
Special Transfer Allowance		
Supported Living Payment		
Supported Living Payment Overseas		
Temporary Additional Support		
Tenure Protection Allowance		
Training Incentive Allowance	Y	
Transition to Work Allowance	Y	
Transition to Work Grant	Y	
Transitional Retirement Benefit		
Transitional Retirement Benefit weekly		
Unemployment Benefit	Y	
Unemployment Benefit (in Training)	Y	
Unemployment Benefit Hardship	Y	Y
Unemployment Benefit Hardship (in Training)	Y	Y
Unemployment Benefit Student Hardship		
Unknown		
Unsupported Childs Benefit		Y
Unsupported Childs Benefit weekly		
Veterans Pension		
Veterans Pension Lump Sum Vietnam		
War 2 Assessment		
War Bursaries		
War Funeral Grant		
War Medical Treatment - AUS Pensioner		
War Medical Treatment - NZ Pensioner		
War Medical Treatment - UK Pensioner		
War Surgical Appliances		
War Travel Concessions		
Widows Benefit		Y
Widows Benefit Overseas		
Work Bonus	Y	
Work Start Grant	Y	
Youth Payment or Young Parent Payment		Y

Source: Authors' compilation from MSD data available in the IDI.

Table A 4. Seriousness scores – illustrative examples

Offence description	Seriousness Score 2016
Murders (manually)	*12045
Attempts to murder (firearm)	3994
Male rapes female over 16	3627
Produce/manufacture/ methamphetamine and amphetamine	2684
Aggravated robbery (firearm)	1583
Injures with intent to cause grievous bodily harm (manually)	865
Burgles (other property) estimated value \$500 to \$5000 by day	318
Take/obtain/use doc for pecuniary advantage	221
Assault person with stabbing/cutting weapon	227
Unlawfully takes motor vehicles (motor cars/trucks etc)	177
Computer fraud	101
Drove while disqualified 3rd or subsequent	77
Common assault (Crimes Act) manually	32
Theft (under \$500)	25
Driving while disqualified	12
Breach of community work	11
Drives reckless/dangerous no injury	11
Breath alcohol level over 400 mcg per litre of breath	7.62
Breach of liquor ban local government	1.42
Parked in a clearway	0.19

Source: Table 1, page 2, in Sullivan et al. (2017).

# Appendix B

## Engineering

Table B 1. Wellbeing outcomes for Engineering sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	93.5%	6.5%	-	-
2017	93.5%	6.5%	-	-
2022	93.6%	6.4%	-	-
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	36.1%	29.7%	27.5%	-
2017	32.0%	28.3%	31.3%	-
2022	30.2%	25.8%	28.2%	-
<b>ACC work-related accident</b>				
2014	13.4%	-	-	-
2017	12.0%	-	-	-
2022	8.5%	-	-	-
<b>Any mental health contact</b>				
2014	16.6%	24.8%	14.5%	-
2017	18.0%	26.3%	17.9%	-
2022	17.5%	27.8%	19.7%	-
<b>Any mental health contact+</b>				
2014	17.2%	24.8%	15.9%	-
2017	18.5%	27.3%	17.9%	-
2022	18.6%	28.9%	19.7%	-
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	10.4%	18.8%	-	-
2017	7.1%	14.1%	-	-
2022	7.0%	14.4%	-	-
<b>Unemployment benefit receipt</b>				
2014	1.4%	-	-	-
2017	0.6%	-	-	-
2022	0.7%	-	-	-
<b>Hardship benefit receipt</b>				
2014	8.8%	10.9%	-	-
2017	6.2%	9.1%	-	-
2022	5.5%	10.3%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	5.7%	-	-	-
2017	5.3%	-	-	-
2022	2.2%	-	-	-
<b>Serious criminal history</b>				
2014	2.2%	-	-	-
2017	2.4%	-	-	-
2022	1.0%	-	-	-
<b>Victimisation</b>				
2014	2.2%	-	-	-
2017	3.9%	-	-	-
2022	4.1%	-	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR Engineering learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table B 2. Wellbeing outcomes for Engineering sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	73.0%	27.0%	-	-
2017	73.1%	26.9%	-	-
2022	73.5%	26.5%	87.3%	12.7%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	35.9%	37.5%	30.9%	-
2017	32.0%	33.0%	32.7%	-
2022	31.0%	27.8%	29.1%	-
<b>ACC work-related accident</b>				
2014	13.6%	11.3%	-	-
2017	12.2%	11.0%	-	-
2022	8.7%	6.7%	-	-
<b>Any mental health contact</b>				
2014	16.7%	19.9%	16.4%	-
2017	18.5%	21.2%	19.2%	-
2022	19.3%	17.8%	23.6%	-
<b>Any mental health contact+</b>				
2014	17.2%	21.3%	18.2%	-
2017	18.8%	22.0%	19.2%	-
2022	20.1%	19.4%	23.6%	-
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	7.3%	21.0%	-	-
2017	4.1%	17.9%	-	-
2022	4.1%	16.4%	-	-
<b>Unemployment benefit receipt</b>				
2014	0.9%	3.5%	-	-
2017	-	2.5%	-	-
2022	-	2.8%	-	-
<b>Hardship benefit receipt</b>				
2014	6.0%	17.5%	-	-
2017	3.5%	14.8%	-	-
2022	2.9%	13.6%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	3.8%	10.8%	-	-
2017	3.1%	11.5%	-	-
2022	1.3%	3.9%	-	-
<b>Serious criminal history</b>				
2014	1.0%	5.4%	-	-
2017	1.0%	6.0%	-	-
2022	-	2.5%	-	-
<b>Victimization</b>				
2014	2.4%	2.7%	-	-
2017	3.4%	5.2%	-	-
2022	3.5%	6.4%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR Engineering learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Logistics

Table B 3. Wellbeing outcomes for Logistics sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	68.3%	31.7%	-	-
2017	68.2%	31.8%	-	-
2022	68.1%	31.9%	-	-
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	32.3%	28.9%	29.2%	-
2017	33.0%	30.1%	33.3%	-
2022	29.3%	26.8%	37.5%	-
<b>ACC work-related accident</b>				
2014	12.3%	5.4%	-	-
2017	12.7%	4.4%	-	-
2022	9.2%	-	-	-
<b>Any mental health contact</b>				
2014	19.8%	23.5%	-	-
2017	19.7%	25.2%	-	-
2022	21.0%	24.9%	-	-
<b>Any mental health contact+</b>				
2014	20.9%	24.5%	-	-
2017	21.3%	26.2%	-	-
2022	22.1%	27.3%	-	-
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	9.5%	14.7%	-	-
2017	8.4%	10.7%	-	-
2022	8.9%	11.5%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	3.9%	-	-
2017	-	3.9%	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	8.0%	6.9%	-	-
2017	7.0%	6.3%	-	-
2022	6.0%	5.3%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	5.0%	-	-	-
2017	4.1%	-	-	-
2022	1.6%	-	-	-
<b>Serious criminal history</b>				
2014	1.8%	-	-	-
2017	2.3%	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	2.0%	-	-	-
2017	4.8%	3.9%	-	-
2022	4.0%	3.3%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR Logistics learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table B 4. Wellbeing outcomes for Logistics sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	68.2%	31.8%	-	-
2017	68.2%	31.8%	-	-
2022	69.0%	31.0%	-	-
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	33.5%	28.1%	-	-
2017	35.2%	27.8%	36.8%	-
2022	30.3%	25.8%	47.4%	-
<b>ACC work-related accident</b>				
2014	11.0%	9.6%	-	-
2017	11.4%	9.4%	-	-
2022	7.3%	7.9%	-	-
<b>Any mental health contact</b>				
2014	23.8%	19.1%	-	-
2017	24.6%	20.0%	-	-
2022	25.5%	20.2%	-	-
<b>Any mental health contact+</b>				
2014	24.6%	21.9%	-	-
2017	25.4%	22.2%	-	-
2022	27.0%	22.5%	-	-
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	8.9%	17.4%	-	-
2017	6.2%	16.7%	-	-
2022	7.3%	16.3%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	-	-	-
2017	-	5.0%	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	5.8%	13.5%	-	-
2017	4.9%	12.2%	-	-
2022	4.3%	10.1%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	3.4%	5.1%	-	-
2017	1.8%	7.2%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	4.4%	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	2.6%	-	-	-
2017	3.9%	5.0%	-	-
2022	3.3%	5.6%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR Logistics learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Manufacturing

Table B 5. Wellbeing outcomes for Manufacturing sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	64.2%	35.8%	43.8%	56.3%
2017	64.2%	35.8%	43.2%	56.8%
2022	64.1%	35.9%	43.3%	56.7%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	30.4%	23.0%	33.3%	24.4%
2017	27.5%	23.9%	28.6%	24.8%
2022	27.4%	20.8%	30.7%	23.5%
<b>ACC work-related accident</b>				
2014	11.1%	5.3%	-	-
2017	10.9%	6.0%	-	-
2022	9.4%	4.1%	-	-
<b>Any mental health contact</b>				
2014	15.3%	24.3%	13.3%	20.0%
2017	17.0%	24.9%	17.3%	22.5%
2022	17.4%	26.9%	20.8%	27.3%
<b>Any mental health contact+</b>				
2014	16.3%	25.3%	14.3%	20.0%
2017	18.4%	26.1%	19.4%	22.5%
2022	19.4%	29.0%	21.8%	27.3%
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	18.4%	24.7%	10.5%	10.4%
2017	13.4%	19.3%	9.2%	6.2%
2022	12.1%	15.2%	7.9%	-
<b>Unemployment benefit receipt</b>				
2014	3.2%	7.0%	-	-
2017	1.3%	6.3%	-	-
2022	1.4%	3.8%	-	-
<b>Hardship benefit receipt</b>				
2014	15.8%	17.6%	7.6%	6.7%
2017	11.5%	11.4%	8.2%	-
2022	8.9%	8.4%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	8.4%	2.8%	-	-
2017	6.1%	2.4%	-	-
2022	2.2%	-	-	-
<b>Serious criminal history</b>				
2014	3.4%	-	-	-
2017	2.6%	-	-	-
2022	1.1%	-	-	-
<b>Victimisation</b>				
2014	2.3%	2.9%	-	-
2017	4.5%	5.5%	-	-
2022	5.4%	6.3%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR Manufacturing learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table B 6. Wellbeing outcomes for Manufacturing sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	56.9%	43.1%	84.4%	15.6%
2017	56.7%	43.3%	84.1%	15.9%
2022	56.7%	43.3%	84.2%	15.8%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	29.8%	27.9%	31.8%	31.0%
2017	28.9%	25.0%	31.1%	-
2022	28.6%	21.7%	29.0%	31.0%
<b>ACC work-related accident</b>				
2014	10.3%	9.1%	5.7%	-
2017	9.6%	8.7%	-	-
2022	8.1%	6.0%	5.2%	-
<b>Any mental health contact</b>				
2014	23.0%	18.8%	19.7%	-
2017	24.9%	20.2%	25.7%	-
2022	27.0%	19.8%	28.4%	27.6%
<b>Any mental health contact+</b>				
2014	24.3%	20.1%	20.4%	-
2017	26.1%	22.0%	26.4%	-
2022	28.7%	22.8%	29.0%	27.6%
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	16.9%	27.6%	8.9%	-
2017	11.5%	23.2%	6.1%	-
2022	10.7%	18.5%	5.8%	-
<b>Unemployment benefit receipt</b>				
2014	3.3%	6.8%	-	-
2017	2.3%	5.1%	-	-
2022	1.6%	4.1%	-	-
<b>Hardship benefit receipt</b>				
2014	13.2%	22.3%	6.4%	-
2017	8.6%	17.4%	5.4%	-
2022	7.0%	12.2%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	4.4%	11.0%	-	-
2017	3.0%	8.0%	-	-
2022	1.1%	2.5%	-	-
<b>Serious criminal history</b>				
2014	1.5%	4.4%	-	-
2017	1.2%	3.4%	-	-
2022	-	1.6%	-	-
<b>Victimization</b>				
2014	2.2%	3.5%	-	-
2017	4.6%	6.0%	-	-
2022	4.9%	7.2%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of HAR Manufacturing learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

# Appendix C

## Agriculture

Table C 1. Wellbeing outcomes for Agriculture sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	71.7%	28.3%	62.5%	37.5%
2017	71.6%	28.4%	63.9%	36.1%
2022	71.6%	28.4%	65.0%	35.0%
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	33.1%	28.3%	42.7%	24.4%
2017	30.9%	28.3%	40.8%	32.6%
2022	29.6%	28.4%	40.0%	20.9%
ACC work-related accident				
2014	15.9%	10.4%	17.3%	-
2017	13.5%	8.8%	15.8%	-
2022	11.4%	7.4%	13.8%	-
Any mental health contact				
2014	15.7%	21.0%	9.3%	20.0%
2017	17.5%	22.5%	10.5%	20.9%
2022	16.6%	24.7%	11.2%	25.6%
Any mental health contact+				
2014	16.3%	22.2%	9.3%	20.0%
2017	18.2%	23.7%	10.5%	20.9%
2022	17.8%	25.6%	11.2%	25.6%
<b>2) Benefit Receipt</b>				
Any benefit receipt				
2014	11.0%	17.0%	-	-
2017	9.6%	12.4%	-	-
2022	9.2%	11.1%	-	-
Unemployment benefit receipt				
2014	1.3%	6.0%	-	-
2017	1.4%	4.8%	-	-
2022	0.9%	3.4%	-	-
Hardship benefit receipt				
2014	9.5%	10.2%	-	-
2017	8.0%	6.4%	-	-
2022	6.9%	5.2%	-	-
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	7.0%	1.8%	-	-
2017	6.0%	1.6%	-	-
2022	2.4%	-	-	-
Serious criminal history				
2014	3.3%	-	-	-
2017	3.2%	-	-	-
2022	1.3%	-	-	-
Victimisation				
2014	2.1%	2.6%	-	-
2017	3.2%	4.8%	-	-
2022	4.1%	4.4%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Agriculture learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table C 2. Wellbeing outcomes for Agriculture sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	71.6%	28.4%	88.6%	11.4%
2017	71.5%	28.5%	89.6%	10.4%
2022	71.8%	28.2%	89.9%	10.1%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	33.5%	28.5%	37.6%	-
2017	32.0%	26.3%	38.8%	-
2022	30.9%	26.2%	33.6%	-
<b>ACC work-related accident</b>				
2014	15.7%	11.4%	13.9%	-
2017	13.3%	10.0%	13.6%	-
2022	11.0%	8.5%	11.2%	-
<b>Any mental health contact</b>				
2014	17.8%	17.1%	12.9%	-
2017	19.1%	19.5%	12.6%	-
2022	20.0%	17.3%	16.8%	-
<b>Any mental health contact+</b>				
2014	18.3%	18.4%	12.9%	-
2017	19.7%	21.0%	13.6%	-
2022	20.9%	19.5%	16.8%	-
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	8.1%	24.5%	-	-
2017	6.4%	20.6%	-	-
2022	6.4%	18.4%	-	-
<b>Unemployment benefit receipt</b>				
2014	1.3%	6.1%	-	-
2017	1.6%	4.7%	-	-
2022	1.2%	2.7%	-	-
<b>Hardship benefit receipt</b>				
2014	6.4%	18.4%	-	-
2017	4.5%	15.5%	-	-
2022	3.5%	13.7%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	3.6%	10.6%	-	-
2017	2.9%	9.7%	-	-
2022	0.8%	4.2%	-	-
<b>Serious criminal history</b>				
2014	1.5%	5.1%	-	-
2017	1.2%	5.5%	-	-
2022	-	2.5%	-	-
<b>Victimization</b>				
2014	1.8%	3.2%	-	-
2017	3.3%	5.1%	-	-
2022	3.2%	6.8%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Agriculture learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Horticulture

Table C 3. Wellbeing outcomes for Horticulture sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	55.6%	44.4%	65.4%	34.6%
2017	56.0%	44.0%	64.0%	36.0%
2022	56.1%	43.9%	63.0%	37.0%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	31.2%	27.4%	-	-
2017	29.2%	26.0%	-	-
2022	27.3%	26.0%	-	-
<b>ACC work-related accident</b>				
2014	9.9%	6.2%	-	-
2017	11.4%	5.2%	-	-
2022	8.4%	3.0%	-	-
<b>Any mental health contact</b>				
2014	21.9%	23.4%	-	-
2017	22.2%	26.0%	-	-
2022	20.6%	25.7%	-	-
<b>Any mental health contact+</b>				
2014	23.6%	24.1%	-	-
2017	24.5%	27.1%	-	-
2022	23.0%	27.5%	-	-
<b>2) Benefit Receipt</b>				
<b>Any benefit receipt</b>				
2014	16.6%	13.9%	-	-
2017	16.3%	10.4%	-	-
2022	13.1%	10.4%	-	-
<b>Unemployment benefit receipt</b>				
2014	3.8%	3.6%	-	-
2017	2.3%	3.3%	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	14.3%	8.8%	-	-
2017	14.0%	7.1%	-	-
2022	10.5%	6.3%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	7.0%	-	-	-
2017	5.0%	-	-	-
2022	2.9%	-	-	-
<b>Serious criminal history</b>				
2014	3.2%	-	-	-
2017	2.9%	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	2.0%	-	-	-
2017	4.1%	3.3%	-	-
2022	4.4%	3.0%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Horticulture learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table C 4. Wellbeing outcomes for Horticulture sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	67.7%	32.3%	100.0%	-
2017	67.2%	32.8%	100.0%	-
2022	67.1%	32.9%	100.0%	-
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	34.3%	23.0%	40.0%	-
2017	31.3%	21.7%	-	-
2022	28.2%	23.2%	-	-
<b>ACC work-related accident</b>				
2014	10.2%	5.6%	-	-
2017	9.0%	7.8%	-	-
2022	5.7%	6.1%	-	-
<b>Any mental health contact</b>				
2014	24.4%	21.9%	-	-
2017	25.5%	22.8%	-	-
2022	25.2%	19.9%	-	-
<b>Any mental health contact+</b>				
2014	25.7%	23.0%	-	-
2017	27.2%	25.6%	-	-
2022	26.6%	23.8%	-	-
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	8.6%	32.0%	-	-
2017	6.5%	29.4%	-	-
2022	7.6%	22.7%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	9.6%	-	-
2017	-	7.2%	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	6.4%	24.2%	-	-
2017	5.2%	22.8%	-	-
2022	4.1%	18.8%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	2.1%	10.7%	-	-
2017	-	10.0%	-	-
2022	-	5.0%	-	-
<b>Serious criminal history</b>				
2014	-	5.6%	-	-
2017	-	5.6%	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	1.9%	-	-	-
2017	3.0%	6.1%	-	-
2022	2.4%	7.2%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Horticulture learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Forestry

Table C 5. Wellbeing outcomes for Forestry sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	43.9%	56.1%	-	-
2017	44.4%	55.6%	-	-
2022	44.3%	55.7%	-	-
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	35.8%	26.9%	-	-
2017	32.2%	27.4%	-	-
2022	30.1%	27.1%	-	-
<b>ACC work-related accident</b>				
2014	14.6%	9.3%	-	-
2017	12.5%	8.9%	-	-
2022	8.5%	7.8%	-	-
<b>Any mental health contact</b>				
2014	20.5%	16.6%	-	-
2017	18.4%	15.3%	-	-
2022	18.3%	12.5%	-	-
<b>Any mental health contact+</b>				
2014	21.2%	17.6%	-	-
2017	18.4%	16.3%	-	-
2022	19.0%	13.5%	-	-
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	7.9%	18.7%	-	-
2017	5.3%	15.3%	-	-
2022	5.9%	20.3%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	3.6%	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	6.6%	16.1%	-	-
2017	-	12.6%	-	-
2022	-	16.7%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	6.6%	17.1%	-	-
2017	-	14.7%	-	-
2022	-	4.7%	-	-
<b>Serious criminal history</b>				
2014	-	9.3%	-	-
2017	-	8.9%	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	-	-	-	-
2017	-	4.7%	-	-
2022	-	6.8%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Forestry learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Seafood

Table C 612. Wellbeing outcomes for Seafood sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	59.1%	40.9%	-	-
2017	59.0%	41.0%	-	-
2022	58.8%	41.2%	-	-
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	25.0%	21.3%	-	-
2017	27.6%	23.1%	-	-
2022	24.7%	18.9%	-	-
<b>ACC work-related accident</b>				
2014	9.1%	-	-	-
2017	9.8%	6.6%	-	-
2022	6.3%	-	-	-
<b>Any mental health contact</b>				
2014	19.3%	17.2%	-	-
2017	21.3%	21.5%	-	-
2022	19.5%	19.7%	-	-
<b>Any mental health contact+</b>				
2014	22.7%	18.0%	-	-
2017	23.6%	22.3%	-	-
2022	24.1%	20.5%	-	-
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	26.7%	19.7%	-	-
2017	22.4%	19.8%	-	-
2022	20.7%	16.4%	-	-
<b>Unemployment benefit receipt</b>				
2014	6.8%	9.8%	-	-
2017	-	9.1%	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	21.6%	9.0%	-	-
2017	18.4%	9.9%	-	-
2022	16.7%	8.2%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	12.5%	-	-	-
2017	13.2%	-	-	-
2022	4.6%	-	-	-
<b>Serious criminal history</b>				
2014	5.7%	-	-	-
2017	8.0%	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	-	-	-	-
2017	5.7%	6.6%	-	-
2022	5.2%	-	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Seafood learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table C 713. Wellbeing outcomes for Seafood sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	28.9%	71.1%	-	-
2017	28.9%	71.1%	-	-
2022	29.4%	70.6%	-	-
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	24.7%	23.6%	-	-
2017	30.0%	24.9%	-	-
2022	25.6%	21.3%	-	-
<b>ACC work-related accident</b>				
2014	9.9%	5.5%	-	-
2017	10.0%	7.6%	-	-
2022	-	4.1%	-	-
<b>Any mental health contact</b>				
2014	21.0%	17.1%	-	-
2017	26.2%	20.3%	-	-
2022	22.0%	18.3%	-	-
<b>Any mental health contact+</b>				
2014	23.5%	20.1%	-	-
2017	27.5%	21.8%	-	-
2022	23.2%	22.3%	-	-
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	12.3%	29.6%	-	-
2017	10.0%	27.4%	-	-
2022	11.0%	23.4%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	9.5%	-	-
2017	-	7.6%	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	-	20.6%	-	-
2017	-	19.8%	-	-
2022	9.8%	15.7%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	11.1%	-	-
2017	-	9.6%	-	-
2022	-	4.1%	-	-
<b>Serious criminal history</b>				
2014	-	4.5%	-	-
2017	-	5.6%	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	-	-	-	-
2017	-	7.1%	-	-
2022	-	6.1%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of MT Seafood learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

# Appendix D

## Business, finance & industry support

Table D 1. Wellbeing outcomes for Business, finance & industry support sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	34.5%	65.5%	34.9%	65.1%
2017	34.7%	65.3%	34.5%	65.5%
2022	34.7%	65.3%	34.0%	66.0%
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	29.0%	22.5%	26.8%	27.5%
2017	28.0%	25.3%	29.3%	26.1%
2022	27.0%	24.0%	27.5%	27.9%
ACC work-related accident				
2014	9.4%	3.3%	4.1%	2.2%
2017	7.0%	3.5%	3.1%	2.1%
2022	5.9%	2.7%	3.2%	2.3%
Any mental health contact				
2014	16.4%	21.3%	14.9%	18.6%
2017	17.6%	23.9%	16.0%	23.0%
2022	17.8%	24.6%	17.1%	24.2%
Any mental health contact+				
2014	17.6%	22.3%	15.6%	19.4%
2017	18.5%	25.2%	16.8%	23.7%
2022	18.4%	26.1%	17.9%	25.0%
<b>2) Income from benefits</b>				
Any benefit receipt				
2014	10.1%	18.1%	8.6%	11.0%
2017	7.7%	15.9%	5.1%	6.4%
2022	7.1%	12.7%	4.8%	5.7%
Unemployment benefit receipt				
2014	2.0%	7.2%	2.6%	4.2%
2017	1.2%	6.6%	-	2.3%
2022	-	4.0%	-	-
Hardship benefit receipt				
2014	8.2%	10.2%	6.3%	6.4%
2017	6.0%	8.0%	3.5%	3.5%
2022	4.9%	5.8%	-	2.5%
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	4.0%	2.4%	-	-
2017	3.4%	1.9%	-	-
2022	-	-	-	-
Serious criminal history				
2014	2.0%	0.9%	-	-
2017	1.6%	0.8%	-	-
2022	-	-	-	-
Victimization				
2014	2.4%	2.1%	-	2.2%
2017	4.1%	6.2%	3.1%	3.3%
2022	4.1%	5.7%	4.4%	3.3%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Business, finance & industry support learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table D 2. Wellbeing outcomes for Business, finance & industry support sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	59.4%	40.6%	77.2%	22.8%
2017	59.4%	40.6%	76.7%	23.3%
2022	59.7%	40.3%	76.5%	23.5%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	29.3%	21.3%	30.4%	26.4%
2017	29.8%	23.5%	31.9%	21.0%
2022	27.9%	23.0%	29.3%	26.4%
<b>ACC work-related accident</b>				
2014	6.4%	4.7%	2.7%	-
2017	5.1%	5.2%	2.6%	-
2022	4.0%	4.0%	2.6%	-
<b>Any mental health contact</b>				
2014	23.7%	21.1%	20.5%	14.3%
2017	27.2%	21.1%	24.4%	18.1%
2022	28.2%	20.5%	26.5%	18.6%
<b>Any mental health contact+</b>				
2014	24.8%	22.7%	20.9%	16.4%
2017	28.2%	22.9%	24.6%	20.3%
2022	29.1%	22.5%	26.9%	20.7%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	10.1%	23.1%	7.2%	17.9%
2017	6.7%	22.4%	3.5%	12.3%
2022	6.8%	15.9%	3.7%	10.0%
<b>Unemployment benefit receipt</b>				
2014	2.8%	8.9%	1.9%	8.6%
2017	1.9%	9.0%	-	-
2022	1.1%	5.3%	-	-
<b>Hardship benefit receipt</b>				
2014	5.8%	14.6%	3.8%	11.4%
2017	3.7%	12.9%	2.2%	8.0%
2022	3.5%	8.3%	1.8%	5.0%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	1.2%	5.8%	-	-
2017	-	4.7%	-	-
2022	-	1.3%	-	-
<b>Serious criminal history</b>				
2014	-	2.8%	-	-
2017	-	2.3%	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	2.1%	2.6%	1.9%	-
2017	3.7%	8.2%	2.9%	5.8%
2022	2.8%	9.4%	2.8%	6.4%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Business, finance & industry learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Hospitality & cleaning

Table D 3. Wellbeing outcomes for Hospitality & cleaning sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	38.8%	61.2%	40.0%	60.0%
2017	38.2%	61.8%	39.7%	60.3%
2022	37.7%	62.3%	40.2%	59.8%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	24.7%	21.5%	24.4%	27.4%
2017	22.4%	22.2%	24.0%	24.6%
2022	26.0%	23.8%	23.7%	26.5%
<b>ACC work-related accident</b>				
2014	8.6%	4.8%	10.3%	6.8%
2017	7.5%	4.2%	-	-
2022	7.2%	5.5%	-	-
<b>Any mental health contact</b>				
2014	17.0%	21.0%	-	20.5%
2017	21.2%	24.3%	10.7%	23.7%
2022	21.5%	25.8%	14.5%	28.3%
<b>Any mental health contact+</b>				
2014	18.4%	22.1%	9.0%	20.5%
2017	23.2%	25.6%	10.7%	23.7%
2022	23.7%	27.4%	15.8%	28.3%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	20.3%	24.4%	14.1%	16.2%
2017	15.6%	19.6%	12.0%	16.7%
2022	12.5%	15.2%	11.8%	14.2%
<b>Unemployment benefit receipt</b>				
2014	2.7%	8.8%	-	-
2017	1.4%	7.8%	-	7.0%
2022	-	5.2%	-	-
<b>Hardship benefit receipt</b>				
2014	18.0%	15.4%	11.5%	11.1%
2017	14.3%	9.9%	9.3%	7.9%
2022	9.9%	7.3%	9.2%	6.2%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	6.1%	4.0%	-	-
2017	5.5%	2.9%	-	-
2022	1.6%	-	-	-
<b>Serious criminal history</b>				
2014	2.5%	1.5%	-	-
2017	1.8%	1.1%	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	2.3%	3.9%	-	-
2017	4.8%	6.0%	-	7.0%
2022	5.8%	7.3%	-	6.2%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Hospitality & cleaning learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table D 4. Wellbeing outcomes for Hospitality & cleaning sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	61.3%	38.7%	63.3%	36.7%
2017	61.0%	39.0%	61.5%	38.5%
2022	60.9%	39.1%	62.7%	37.3%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	26.9%	18.0%	29.6%	23.4%
2017	24.9%	20.2%	29.3%	23.4%
2022	27.3%	22.1%	25.3%	23.4%
<b>ACC work-related accident</b>				
2014	7.5%	5.4%	9.9%	-
2017	6.2%	4.7%	-	-
2022	5.8%	6.8%	-	-
<b>Any mental health contact</b>				
2014	23.8%	19.5%	23.5%	-
2017	28.5%	22.4%	26.7%	-
2022	30.6%	21.9%	29.1%	23.4%
<b>Any mental health contact+</b>				
2014	25.0%	21.2%	23.5%	-
2017	30.0%	24.1%	26.7%	-
2022	32.2%	24.3%	30.4%	25.5%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	18.4%	32.4%	12.3%	25.5%
2017	13.2%	28.3%	13.3%	25.5%
2022	11.2%	20.9%	-	25.5%
<b>Unemployment benefit receipt</b>				
2014	4.5%	9.7%	-	-
2017	2.8%	9.4%	-	-
2022	2.2%	6.3%	-	-
<b>Hardship benefit receipt</b>				
2014	12.9%	23.4%	8.6%	19.1%
2017	9.0%	17.5%	-	-
2022	6.3%	12.2%	-	17.0%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	3.1%	8.5%	-	-
2017	2.1%	7.1%	-	-
2022	-	2.2%	-	-
<b>Serious criminal history</b>				
2014	-	3.6%	-	-
2017	-	2.7%	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	3.4%	3.6%	-	-
2017	4.1%	8.1%	-	-
2022	4.8%	10.9%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Hospitality & cleaning learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Retail & distribution

Table D 5. Wellbeing outcomes for Retail & distribution sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	35.0%	65.0%	-	-
2017	35.1%	64.9%	-	-
2022	34.4%	65.6%	-	-
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	27.6%	24.4%	-	-
2017	27.8%	23.5%	-	-
2022	25.2%	24.8%	-	-
<b>ACC work-related accident</b>				
2014	6.0%	4.4%	-	-
2017	6.1%	3.5%	-	-
2022	4.5%	3.8%	-	-
<b>Any mental health contact</b>				
2014	13.8%	20.9%	-	-
2017	18.3%	23.5%	-	-
2022	16.7%	25.7%	-	-
<b>Any mental health contact+</b>				
2014	13.8%	21.9%	-	-
2017	18.7%	23.5%	-	-
2022	18.0%	26.9%	-	-
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	10.3%	12.8%	-	-
2017	9.1%	10.1%	-	-
2022	9.0%	10.4%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	4.4%	-	-
2017	-	4.0%	-	-
2022	-	3.1%	-	-
<b>Hardship benefit receipt</b>				
2014	9.1%	7.0%	-	-
2017	7.4%	5.2%	-	-
2022	6.3%	5.2%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	6.9%	2.1%	-	-
2017	4.3%	-	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	-	1.9%	-	-
2017	3.9%	4.0%	-	-
2022	4.1%	5.2%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Retail & distribution learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table D 6. Wellbeing outcomes for Retail & distribution sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	74.1%	25.9%	-	-
2017	74.7%	25.3%	-	-
2022	74.3%	25.7%	-	-
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	28.9%	19.7%	-	-
2017	26.6%	20.3%	-	-
2022	28.5%	22.4%	-	-
ACC work-related accident				
2014	4.7%	6.3%	-	-
2017	4.1%	-	-	-
2022	3.9%	-	-	-
Any mental health contact				
2014	22.3%	17.3%	-	-
2017	26.6%	18.7%	-	-
2022	28.8%	16.8%	-	-
Any mental health contact+				
2014	22.9%	18.9%	-	-
2017	26.9%	19.5%	-	-
2022	29.6%	20.0%	-	-
<b>2) Income from benefits</b>				
Any benefit receipt				
2014	6.3%	22.8%	-	-
2017	4.7%	20.3%	-	-
2022	6.4%	20.8%	-	-
Unemployment benefit receipt				
2014	-	7.1%	-	-
2017	-	6.5%	-	-
2022	-	5.6%	-	-
Hardship benefit receipt				
2014	3.6%	15.7%	-	-
2017	2.7%	12.2%	-	-
2022	3.0%	13.6%	-	-
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	-	6.3%	-	-
2017	-	7.3%	-	-
2022	-	-	-	-
Serious criminal history				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Victimization				
2014	-	-	-	-
2017	2.7%	7.3%	-	-
2022	3.0%	11.2%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Retail & distribution learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Security & government

Table D 7. Wellbeing outcomes for Security & government sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	59.8%	40.2%	32.1%	67.9%
2017	59.5%	40.5%	31.7%	68.3%
2022	59.1%	40.9%	32.7%	67.3%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	28.9%	26.1%	24.5%	21.9%
2017	31.5%	31.1%	33.3%	25.4%
2022	28.1%	28.7%	25.0%	20.9%
<b>ACC work-related accident</b>				
2014	6.6%	-	-	-
2017	7.7%	6.0%	-	-
2022	6.5%	-	-	-
<b>Any mental health contact</b>				
2014	16.2%	23.5%	16.0%	16.1%
2017	14.4%	21.2%	13.1%	16.4%
2022	15.7%	24.0%	14.0%	19.9%
<b>Any mental health contact+</b>				
2014	17.5%	24.2%	16.0%	16.5%
2017	15.3%	22.5%	13.1%	17.4%
2022	16.1%	26.0%	14.0%	20.4%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	7.5%	11.8%	10.4%	21.4%
2017	4.1%	11.3%	-	13.6%
2022	6.5%	9.3%	8.0%	12.1%
<b>Unemployment benefit receipt</b>				
2014	-	-	-	7.6%
2017	-	-	-	6.6%
2022	-	-	-	4.4%
<b>Hardship benefit receipt</b>				
2014	6.1%	7.2%	8.5%	12.1%
2017	4.1%	5.3%	-	5.6%
2022	3.7%	-	-	5.3%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	3.1%	-	-	3.1%
2017	-	-	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	3.1%	-	-	-
2017	5.9%	-	-	5.2%
2022	6.5%	6.0%	-	3.9%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Security & government learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table D 814. Wellbeing outcomes for Security & government sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	67.2%	32.8%	65.2%	34.8%
2017	66.4%	33.6%	64.0%	36.0%
2022	66.2%	33.8%	64.6%	35.4%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	29.3%	27.8%	28.8%	22.2%
2017	36.1%	24.2%	34.8%	27.0%
2022	29.2%	26.4%	27.4%	21.0%
<b>ACC work-related accident</b>				
2014	5.4%	-	-	-
2017	6.7%	-	-	-
2022	4.5%	-	-	-
<b>Any mental health contact</b>				
2014	23.9%	21.1%	20.3%	20.6%
2017	21.7%	18.7%	20.5%	19.0%
2022	25.3%	15.4%	25.7%	21.0%
<b>Any mental health contact+</b>				
2014	24.5%	23.3%	21.2%	22.2%
2017	22.2%	20.9%	21.4%	20.6%
2022	25.3%	16.5%	25.7%	22.6%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	4.9%	18.9%	-	33.3%
2017	-	15.4%	-	20.6%
2022	5.6%	12.1%	-	17.7%
<b>Unemployment benefit receipt</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	-	14.4%	-	25.4%
2017	-	11.0%	-	12.7%
2022	-	-	-	12.9%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	-	-	-	-
2017	5.6%	-	-	-
2022	5.1%	9.9%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Security & government learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Travel & aviation

Table D 9. Wellbeing outcomes for Travel & aviation sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	27.8%	72.2%	53.8%	46.2%
2017	27.8%	72.2%	52.7%	47.3%
2022	27.6%	72.4%	50.8%	49.2%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	33.0%	21.4%	23.9%	23.0%
2017	25.8%	21.1%	24.6%	27.4%
2022	27.7%	20.7%	34.3%	21.5%
<b>ACC work-related accident</b>				
2014	8.9%	2.9%	-	-
2017	8.5%	3.7%	-	-
2022	6.0%	2.4%	-	-
<b>Any mental health contact</b>				
2014	12.4%	17.6%	-	-
2017	13.4%	19.8%	10.1%	12.9%
2022	11.3%	20.3%	-	15.4%
<b>Any mental health contact+</b>				
2014	13.7%	18.3%	-	-
2017	14.5%	20.6%	10.1%	12.9%
2022	12.8%	21.9%	-	15.4%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	11.7%	22.5%	-	19.7%
2017	8.1%	19.1%	-	12.9%
2022	8.2%	15.4%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	8.1%	-	-
2017	-	8.7%	-	-
2022	-	5.4%	-	-
<b>Hardship benefit receipt</b>				
2014	10.3%	13.9%	-	-
2017	7.1%	9.4%	-	-
2022	6.0%	7.3%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	4.8%	2.9%	-	-
2017	3.2%	2.3%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	1.1%	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	2.7%	3.8%	-	-
2017	3.9%	5.7%	-	-
2022	4.3%	6.4%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Travel & aviation learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table D 10. Wellbeing outcomes for Travel & aviation sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	52.8%	47.2%	76.0%	24.0%
2017	52.4%	47.6%	78.4%	21.6%
2022	52.7%	47.3%	76.7%	23.3%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	30.5%	21.3%	28.9%	-
2017	27.3%	19.7%	30.0%	-
2022	28.9%	19.3%	31.6%	-
<b>ACC work-related accident</b>				
2014	6.4%	3.4%	-	-
2017	5.8%	4.3%	-	-
2022	4.4%	2.9%	-	-
<b>Any mental health contact</b>				
2014	21.6%	16.5%	11.8%	-
2017	23.4%	18.8%	12.5%	-
2022	25.0%	16.4%	12.7%	-
<b>Any mental health contact+</b>				
2014	22.4%	17.9%	11.8%	-
2017	24.1%	20.2%	13.8%	-
2022	26.3%	19.0%	12.7%	-
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	10.9%	29.3%	-	-
2017	8.1%	24.3%	-	-
2022	7.2%	19.3%	-	-
<b>Unemployment benefit receipt</b>				
2014	3.3%	10.2%	-	-
2017	3.1%	10.4%	-	-
2022	2.3%	5.5%	-	-
<b>Hardship benefit receipt</b>				
2014	6.9%	19.3%	-	-
2017	5.0%	13.9%	-	-
2022	3.4%	11.5%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	2.5%	5.4%	-	-
2017	-	5.2%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	2.3%	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	3.1%	4.3%	-	-
2017	3.7%	8.4%	-	-
2022	4.4%	8.3%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of RH Travel & aviation learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

# Appendix E

## Toi Ora

Table E 1. Wellbeing outcomes for Toi Ora sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	61.5%	38.5%	62.7%	37.3%
2017	61.2%	38.8%	62.2%	37.8%
2022	60.9%	39.1%	61.4%	38.6%
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	38.8%	37.5%	43.8%	36.8%
2017	36.2%	34.4%	42.1%	34.7%
2022	32.6%	33.4%	35.9%	29.5%
ACC work-related accident				
2014	7.8%	4.7%	6.6%	-
2017	7.7%	5.2%	6.5%	-
2022	6.8%	3.4%	6.5%	-
Any mental health contact				
2014	14.5%	19.7%	11.3%	15.1%
2017	15.0%	21.7%	13.8%	19.3%
2022	16.4%	24.4%	12.5%	19.9%
Any mental health contact+				
2014	15.6%	20.6%	11.7%	15.1%
2017	16.8%	22.2%	14.2%	19.3%
2022	18.0%	25.1%	12.5%	20.5%
<b>2) Income from benefits</b>				
Any benefit receipt				
2014	18.9%	13.3%	12.9%	11.2%
2017	11.6%	10.9%	7.7%	7.3%
2022	11.8%	6.5%	6.9%	4.5%
Unemployment benefit receipt				
2014	3.9%	5.1%	4.7%	-
2017	1.9%	5.4%	-	-
2022	1.3%	2.5%	-	-
Hardship benefit receipt				
2014	15.7%	7.8%	10.5%	7.9%
2017	9.6%	5.4%	6.1%	-
2022	9.7%	2.7%	4.4%	-
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	9.2%	-	2.7%	-
2017	7.0%	1.8%	-	-
2022	2.7%	-	-	-
Serious criminal history				
2014	3.9%	-	-	-
2017	3.6%	-	-	-
2022	1.3%	-	-	-
Victimization				
2014	2.1%	2.9%	-	-
2017	5.2%	3.8%	3.6%	-
2022	4.6%	4.5%	4.0%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Ora learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table E 15. Wellbeing outcomes for Toi Ora sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	61.0%	39.0%	71.0%	29.0%
2017	60.8%	39.2%	71.2%	28.8%
2022	60.6%	39.4%	71.2%	28.8%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	40.7%	33.8%	39.6%	41.7%
2017	38.9%	31.2%	38.8%	38.3%
2022	35.3%	29.4%	32.9%	35.1%
<b>ACC work-related accident</b>				
2014	7.6%	5.6%	5.5%	-
2017	6.7%	6.7%	5.2%	-
2022	5.5%	5.6%	4.2%	-
<b>Any mental health contact</b>				
2014	17.4%	17.0%	13.6%	12.5%
2017	19.5%	17.5%	16.4%	16.0%
2022	23.3%	17.4%	19.2%	10.3%
<b>Any mental health contact+</b>				
2014	18.0%	18.8%	13.6%	13.5%
2017	20.1%	19.3%	16.8%	17.0%
2022	23.8%	19.4%	19.6%	11.3%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	6.7%	32.6%	8.9%	18.8%
2017	4.7%	22.4%	4.3%	13.8%
2022	4.2%	18.2%	3.8%	9.3%
<b>Unemployment benefit receipt</b>				
2014	1.6%	9.2%	3.8%	-
2017	1.7%	6.2%	-	-
2022	-	3.1%	-	-
<b>Hardship benefit receipt</b>				
2014	4.2%	25.4%	6.4%	15.6%
2017	2.8%	16.8%	-	10.6%
2022	2.2%	14.6%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	1.6%	13.5%	-	-
2017	1.3%	11.1%	-	-
2022	-	3.6%	-	-
<b>Serious criminal history</b>				
2014	-	6.1%	-	-
2017	-	5.7%	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	2.3%	2.8%	-	-
2017	3.2%	6.4%	-	-
2022	3.2%	6.1%	3.8%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Ora learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Toi Puaki

Table E 316. Wellbeing outcomes for Toi Puaki sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	74.4%	25.6%	67.9%	32.1%
2017	74.2%	25.8%	68.4%	31.6%
2022	73.4%	26.6%	67.6%	32.4%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	22.1%	19.0%	27.5%	22.6%
2017	27.8%	22.5%	26.4%	19.6%
2022	22.1%	26.8%	26.8%	22.0%
<b>ACC work-related accident</b>				
2014	5.7%	-	6.1%	-
2017	6.1%	-	5.8%	-
2022	6.2%	-	-	-
<b>Any mental health contact</b>				
2014	16.4%	23.8%	14.5%	14.5%
2017	20.0%	25.0%	15.7%	23.2%
2022	21.2%	31.7%	19.5%	27.1%
<b>Any mental health contact+</b>				
2014	17.2%	26.2%	14.5%	16.1%
2017	20.0%	27.5%	16.5%	23.2%
2022	23.9%	34.1%	20.3%	28.8%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	26.2%	33.3%	19.1%	30.6%
2017	17.4%	17.5%	8.3%	16.1%
2022	12.4%	19.5%	8.9%	-
<b>Unemployment benefit receipt</b>				
2014	9.0%	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	23.8%	26.2%	17.6%	22.6%
2017	14.8%	-	7.4%	-
2022	8.8%	-	6.5%	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	7.1%	-	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Puaki learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table E 4. Wellbeing outcomes for Toi Puaki sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	68.7%	31.3%	77.8%	22.2%
2017	68.8%	31.2%	76.4%	23.6%
2022	68.0%	32.0%	77.4%	22.6%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	22.2%	17.1%	27.7%	23.5%
2017	27.9%	25.6%	26.2%	24.2%
2022	24.7%	20.0%	24.8%	30.3%
<b>ACC work-related accident</b>				
2014	-	-	6.7%	-
2017	-	-	-	-
2022	-	-	-	-
<b>Any mental health contact</b>				
2014	21.1%	17.1%	17.6%	-
2017	22.1%	25.6%	20.6%	-
2022	25.9%	32.5%	25.7%	-
<b>Any mental health contact+</b>				
2014	22.2%	22.0%	19.3%	-
2017	23.3%	25.6%	21.5%	-
2022	28.2%	35.0%	26.5%	-
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	25.6%	34.1%	18.5%	32.4%
2017	14.0%	23.1%	9.3%	-
2022	10.6%	20.0%	7.1%	-
<b>Unemployment benefit receipt</b>				
2014	10.0%	-	5.9%	-
2017	-	-	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	24.4%	26.8%	16.8%	26.5%
2017	10.5%	23.1%	-	-
2022	-	-	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Puaki learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Toi Pāho

Table E 5. Wellbeing outcomes for Toi Pāho sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	61.9%	38.1%	65.1%	34.9%
2017	61.8%	38.2%	64.7%	35.3%
2022	62.4%	37.6%	63.8%	36.2%
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	25.6%	27.1%	22.9%	20.0%
2017	25.0%	29.8%	18.9%	23.6%
2022	25.6%	23.4%	25.4%	26.3%
ACC work-related accident				
2014	-	-	5.0%	-
2017	-	-	-	-
2022	-	-	-	-
Any mental health contact				
2014	14.1%	31.3%	14.3%	21.3%
2017	14.5%	36.2%	17.4%	27.8%
2022	17.9%	34.0%	22.4%	28.9%
Any mental health contact+				
2014	16.7%	33.3%	15.7%	22.7%
2017	15.8%	36.2%	18.2%	27.8%
2022	19.2%	36.2%	23.9%	28.9%
<b>2) Income from benefits</b>				
Any benefit receipt				
2014	20.5%	29.2%	17.1%	13.3%
2017	10.5%	19.1%	8.3%	-
2022	-	14.9%	9.0%	-
Unemployment benefit receipt				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Hardship benefit receipt				
2014	17.9%	18.8%	15.7%	-
2017	9.2%	-	6.8%	-
2022	-	-	6.7%	-
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Serious criminal history				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Victimization				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	5.2%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Pāho learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table E 6. Wellbeing outcomes for Toi Pāho sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	81.7%	18.3%	77.2%	22.8%
2017	81.2%	18.8%	77.0%	23.0%
2022	81.6%	18.4%	78.0%	22.0%
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	28.2%	-	22.6%	18.6%
2017	29.3%	-	21.2%	19.5%
2022	25.0%	-	25.4%	25.0%
ACC work-related accident				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Any mental health contact				
2014	23.5%	-	19.9%	-
2017	25.6%	-	22.6%	17.1%
2022	26.2%	-	28.2%	22.5%
Any mental health contact+				
2014	24.7%	-	21.9%	-
2017	26.8%	-	23.4%	19.5%
2022	28.6%	-	29.6%	22.5%
<b>2) Income from benefits</b>				
Any benefit receipt				
2014	21.2%	-	13.0%	23.3%
2017	12.2%	-	6.6%	-
2022	-	-	7.0%	-
Unemployment benefit receipt				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Hardship benefit receipt				
2014	16.5%	-	9.6%	20.9%
2017	11.0%	-	-	-
2022	-	-	5.6%	-
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Serious criminal history				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Victimization				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Pāho learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Toi Whānui

Table E 7. Wellbeing outcomes for Toi Whānui sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	29.1%	70.9%	75.5%	24.5%
2017	29.2%	70.8%	75.4%	24.6%
2022	28.9%	71.1%	75.2%	24.8%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	21.9%	21.8%	19.3%	18.8%
2017	21.9%	23.7%	22.2%	22.7%
2022	22.5%	22.8%	19.7%	23.6%
<b>ACC work-related accident</b>				
2014	4.6%	2.9%	3.7%	-
2017	5.7%	3.6%	5.1%	-
2022	4.5%	3.4%	2.8%	-
<b>Any mental health contact</b>				
2014	20.3%	21.6%	18.0%	21.8%
2017	23.8%	23.4%	20.2%	25.8%
2022	22.2%	25.0%	23.8%	26.8%
<b>Any mental health contact+</b>				
2014	22.6%	23.0%	19.0%	22.6%
2017	25.9%	24.6%	21.9%	27.3%
2022	25.3%	26.6%	24.9%	29.1%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	27.3%	21.6%	20.0%	15.0%
2017	19.8%	18.3%	12.2%	10.2%
2022	16.0%	14.3%	10.1%	8.7%
<b>Unemployment benefit receipt</b>				
2014	7.2%	8.3%	4.4%	-
2017	2.3%	7.4%	-	-
2022	1.5%	3.2%	-	-
<b>Hardship benefit receipt</b>				
2014	22.8%	12.9%	17.1%	10.5%
2017	16.4%	9.4%	10.2%	5.5%
2022	10.8%	7.3%	7.8%	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	7.0%	2.9%	3.4%	-
2017	6.3%	2.3%	2.3%	-
2022	1.9%	-	-	-
<b>Serious criminal history</b>				
2014	2.7%	0.9%	-	-
2017	2.9%	1.1%	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	2.5%	3.0%	2.4%	-
2017	5.5%	5.9%	3.8%	-
2022	5.0%	5.7%	4.4%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Whānui learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table E 8. Wellbeing outcomes for Toi Whānui sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	47.1%	52.9%	75.3%	24.7%
2017	47.2%	52.8%	75.1%	24.9%
2022	47.1%	52.9%	74.9%	25.1%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	27.3%	18.6%	19.7%	17.3%
2017	27.2%	19.3%	23.9%	18.8%
2022	27.8%	18.7%	22.0%	20.8%
<b>ACC work-related accident</b>				
2014	3.9%	3.3%	3.3%	-
2017	4.5%	4.0%	4.5%	-
2022	3.3%	3.7%	2.8%	-
<b>Any mental health contact</b>				
2014	30.0%	20.8%	22.4%	21.4%
2017	31.5%	24.1%	26.6%	22.9%
2022	32.5%	23.2%	30.7%	21.9%
<b>Any mental health contact+</b>				
2014	32.0%	22.5%	23.4%	22.4%
2017	33.3%	25.4%	28.7%	25.0%
2022	34.5%	25.5%	32.4%	24.0%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	17.9%	32.9%	19.1%	25.5%
2017	13.5%	28.6%	9.7%	19.8%
2022	10.7%	21.8%	7.7%	17.7%
<b>Unemployment benefit receipt</b>				
2014	4.6%	12.4%	4.0%	-
2017	3.4%	9.8%	-	-
2022	1.6%	4.8%	-	-
<b>Hardship benefit receipt</b>				
2014	12.3%	21.9%	15.1%	22.4%
2017	9.0%	17.4%	8.3%	14.6%
2022	5.2%	12.9%	5.2%	13.5%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	1.6%	7.9%	-	-
2017	1.4%	7.1%	-	-
2022	-	1.8%	-	-
<b>Serious criminal history</b>				
2014	-	2.7%	-	-
2017	-	3.2%	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	2.1%	3.8%	2.3%	-
2017	4.9%	7.9%	2.8%	-
2022	3.1%	9.0%	3.5%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi Whānui learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Toi-A-Ringa

Table E 9. Wellbeing outcomes for Toi-A-Ringa sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	17.4%	82.6%	31.2%	68.8%
2017	17.3%	82.7%	30.7%	69.3%
2022	16.8%	83.2%	29.9%	70.1%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	21.2%	21.4%	20.0%	21.6%
2017	22.0%	22.6%	21.7%	24.7%
2022	22.5%	22.7%	23.3%	24.6%
<b>ACC work-related accident</b>				
2014	4.0%	3.2%	3.8%	3.2%
2017	5.5%	3.2%	4.5%	2.5%
2022	5.2%	2.9%	4.1%	2.9%
<b>Any mental health contact</b>				
2014	19.9%	24.4%	20.5%	25.9%
2017	21.6%	27.4%	22.7%	30.5%
2022	22.5%	28.5%	23.8%	33.6%
<b>Any mental health contact+</b>				
2014	22.1%	25.7%	22.4%	27.2%
2017	23.9%	28.4%	23.7%	31.6%
2022	24.9%	30.0%	25.4%	34.5%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	26.1%	23.2%	22.4%	19.2%
2017	16.1%	18.2%	14.1%	12.1%
2022	11.7%	14.7%	14.5%	10.0%
<b>Unemployment benefit receipt</b>				
2014	8.0%	9.2%	3.8%	5.4%
2017	-	7.3%	-	4.3%
2022	-	5.4%	-	2.4%
<b>Hardship benefit receipt</b>				
2014	23.9%	14.0%	20.5%	12.3%
2017	14.7%	8.5%	10.6%	7.4%
2022	8.0%	5.8%	10.4%	4.6%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	5.3%	2.8%	-	-
2017	4.1%	1.8%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	0.9%	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	-	3.5%	-	2.4%
2017	6.0%	5.5%	-	3.1%
2022	-	6.3%	-	3.3%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi-A-Ringa learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table E 1017. Wellbeing outcomes for Toi-A-Ringa sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	59.2%	40.8%	78.2%	21.8%
2017	58.6%	41.4%	78.4%	21.6%
2022	58.7%	41.3%	78.0%	22.0%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	24.0%	19.1%	22.9%	18.8%
2017	25.4%	20.5%	25.8%	20.7%
2022	24.0%	20.3%	25.2%	21.0%
<b>ACC work-related accident</b>				
2014	4.3%	2.7%	3.7%	-
2017	3.7%	4.1%	3.0%	-
2022	3.3%	3.2%	3.4%	-
<b>Any mental health contact</b>				
2014	29.4%	20.9%	27.5%	20.3%
2017	32.4%	22.5%	32.0%	24.0%
2022	33.7%	22.8%	34.3%	26.6%
<b>Any mental health contact+</b>				
2014	30.8%	22.4%	28.8%	21.9%
2017	33.7%	23.6%	32.9%	25.6%
2022	34.9%	25.3%	35.2%	29.0%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	19.7%	29.4%	17.9%	26.6%
2017	13.6%	24.5%	11.2%	19.8%
2022	11.7%	19.2%	10.5%	15.3%
<b>Unemployment benefit receipt</b>				
2014	6.5%	12.1%	4.1%	7.8%
2017	4.5%	9.5%	3.0%	-
2022	3.7%	6.5%	2.0%	-
<b>Hardship benefit receipt</b>				
2014	13.2%	19.3%	12.9%	19.5%
2017	7.5%	12.5%	7.3%	13.2%
2022	5.2%	7.7%	5.7%	8.9%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	1.9%	5.2%	-	-
2017	-	3.9%	-	-
2022	-	1.6%	-	-
<b>Serious criminal history</b>				
2014	-	2.0%	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	2.9%	4.5%	2.2%	-
2017	4.0%	8.6%	2.7%	-
2022	4.6%	7.7%	3.2%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TM Toi-A-Ringa learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

# Appendix F

## Community

Table F 1. Wellbeing outcomes for Community sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	62.9%	37.1%	24.0%	76.0%
2017	63.2%	36.8%	23.2%	76.8%
2022	63.1%	36.9%	23.2%	76.8%
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	36.1%	26.0%	34.4%	24.9%
2017	33.2%	28.3%	37.3%	26.7%
2022	32.5%	27.2%	30.5%	27.7%
ACC work-related accident				
2014	10.3%	4.0%	-	5.2%
2017	9.0%	3.8%	-	-
2022	7.0%	3.6%	-	-
Any mental health contact				
2014	15.4%	25.1%	11.5%	27.5%
2017	15.9%	28.7%	15.3%	30.8%
2022	16.4%	28.6%	15.3%	31.3%
Any mental health contact+				
2014	15.9%	26.3%	11.5%	28.5%
2017	16.2%	29.5%	15.3%	31.8%
2022	17.1%	30.3%	15.3%	32.3%
<b>2) Income from benefits</b>				
Any benefit receipt				
2014	5.8%	19.5%	-	16.1%
2017	4.0%	15.9%	-	14.4%
2022	5.2%	12.4%	-	11.8%
Unemployment benefit receipt				
2014	-	7.4%	-	5.2%
2017	-	6.4%	-	6.7%
2022	-	4.1%	-	4.1%
Hardship benefit receipt				
2014	4.8%	11.2%	-	7.3%
2017	3.5%	7.6%	-	8.7%
2022	3.2%	4.8%	-	4.1%
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	2.3%	3.0%	-	-
2017	1.8%	-	-	-
2022	-	-	-	-
Serious criminal history				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Victimization				
2014	2.9%	4.4%	-	-
2017	4.8%	6.2%	-	4.1%
2022	4.5%	6.0%	-	3.6%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW Community learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table F 2. Wellbeing outcomes for Community sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	74.2%	25.8%	81.9%	18.1%
2017	74.0%	26.0%	82.5%	17.5%
2022	74.3%	25.7%	82.3%	17.7%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	34.0%	28.9%	28.9%	21.4%
2017	32.3%	31.7%	31.2%	17.5%
2022	31.7%	30.7%	28.3%	22.0%
<b>ACC work-related accident</b>				
2014	8.8%	5.3%	5.8%	-
2017	7.4%	6.4%	5.3%	-
2022	6.1%	5.7%	4.7%	-
<b>Any mental health contact</b>				
2014	20.4%	18.4%	24.7%	21.4%
2017	21.9%	20.4%	29.1%	25.0%
2022	22.2%	21.1%	28.3%	29.3%
<b>Any mental health contact+</b>				
2014	20.9%	19.9%	25.8%	21.4%
2017	22.3%	20.8%	29.6%	25.0%
2022	23.0%	23.0%	28.8%	31.7%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	6.4%	21.4%	10.0%	21.4%
2017	5.3%	15.5%	10.1%	20.0%
2022	5.6%	14.6%	7.9%	19.5%
<b>Unemployment benefit receipt</b>				
2014	1.6%	6.8%	-	-
2017	1.5%	5.3%	4.8%	-
2022	1.1%	3.8%	-	-
<b>Hardship benefit receipt</b>				
2014	4.2%	14.7%	4.7%	-
2017	3.3%	8.3%	5.3%	-
2022	2.6%	6.5%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	1.4%	5.3%	-	-
2017	-	3.4%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	3.1%	4.1%	-	-
2017	4.8%	8.7%	-	-
2022	4.1%	7.7%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW Community learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Health

Table F 3. Wellbeing outcomes for Health sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	15.4%	84.6%	19.6%	80.4%
2017	15.4%	84.6%	18.8%	81.2%
2022	15.4%	84.6%	19.6%	80.4%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	25.0%	25.9%	38.9%	25.7%
2017	24.8%	25.8%	26.5%	30.6%
2022	25.9%	25.9%	36.1%	31.1%
<b>ACC work-related accident</b>				
2014	4.7%	6.2%	-	4.7%
2017	9.0%	6.3%	-	-
2022	7.0%	5.7%	-	-
<b>Any mental health contact</b>				
2014	25.7%	32.7%	22.2%	27.0%
2017	29.0%	34.9%	26.5%	32.7%
2022	28.0%	35.3%	30.6%	33.8%
<b>Any mental health contact+</b>				
2014	27.0%	33.7%	25.0%	27.0%
2017	29.7%	36.0%	26.5%	32.7%
2022	29.4%	36.7%	30.6%	34.5%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	10.8%	12.1%	-	6.1%
2017	11.0%	7.8%	-	4.8%
2022	10.5%	9.8%	-	4.7%
<b>Unemployment benefit receipt</b>				
2014	-	3.2%	-	-
2017	-	2.4%	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	6.8%	6.3%	-	-
2017	9.0%	3.8%	-	-
2022	5.6%	3.9%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	-	2.6%	-	-
2017	-	3.1%	-	-
2022	4.9%	3.0%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW Health learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table F 4. Wellbeing outcomes for Health sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	74.6%	25.4%	84.5%	15.5%
2017	74.5%	25.5%	84.9%	15.1%
2022	74.8%	25.2%	84.5%	15.5%
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	27.2%	25.3%	28.7%	-
2017	28.8%	21.2%	31.1%	-
2022	27.9%	25.8%	32.4%	32.0%
ACC work-related accident				
2014	6.5%	5.7%	6.6%	-
2017	7.4%	5.7%	-	-
2022	6.0%	6.3%	-	-
Any mental health contact				
2014	38.4%	29.4%	28.7%	-
2017	41.9%	31.1%	35.6%	-
2022	41.9%	30.5%	36.0%	32.0%
Any mental health contact+				
2014	39.6%	30.4%	29.4%	-
2017	42.8%	33.7%	35.6%	-
2022	43.3%	32.1%	36.8%	32.0%
<b>2) Income from benefits</b>				
Any benefit receipt				
2014	11.1%	17.5%	-	-
2017	7.8%	13.0%	-	-
2022	10.1%	11.6%	-	-
Unemployment benefit receipt				
2014	2.3%	5.2%	-	-
2017	1.8%	4.7%	-	-
2022	-	-	-	-
Hardship benefit receipt				
2014	5.8%	9.3%	-	-
2017	4.2%	7.8%	-	-
2022	4.4%	5.3%	-	-
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Serious criminal history				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
Victimisation				
2014	2.5%	-	-	-
2017	2.3%	4.7%	-	-
2022	3.2%	4.7%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW Health learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Social services

Table F 5. Wellbeing outcomes for Social Services sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	13.0%	87.0%	12.9%	87.1%
2017	13.2%	86.8%	12.7%	87.3%
2022	12.5%	87.5%	13.0%	87.0%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	28.8%	22.7%	38.9%	26.2%
2017	34.7%	22.9%	37.1%	28.7%
2022	26.9%	23.8%	30.6%	25.4%
<b>ACC work-related accident</b>				
2014	-	3.5%	-	3.7%
2017	-	4.2%	-	4.6%
2022	-	4.0%	-	-
<b>Any mental health contact</b>				
2014	23.3%	27.3%	25.0%	27.0%
2017	23.6%	29.4%	25.7%	30.0%
2022	28.4%	29.3%	25.0%	36.3%
<b>Any mental health contact+</b>				
2014	23.3%	29.3%	25.0%	27.9%
2017	23.6%	30.9%	25.7%	30.8%
2022	28.4%	30.8%	25.0%	37.1%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	23.3%	25.6%	-	16.0%
2017	16.7%	20.8%	-	10.8%
2022	11.9%	14.6%	-	8.3%
<b>Unemployment benefit receipt</b>				
2014	-	12.1%	-	4.9%
2017	-	8.5%	-	-
2022	-	5.1%	-	-
<b>Hardship benefit receipt</b>				
2014	20.5%	14.8%	-	10.7%
2017	13.9%	10.0%	-	5.8%
2022	-	6.2%	-	3.3%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	2.3%	-	-
2017	-	1.9%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimisation</b>				
2014	-	3.9%	-	-
2017	-	5.7%	-	3.3%
2022	-	6.2%	-	4.6%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW Social Services learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table F 6. Wellbeing outcomes for Social Services sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	56.5%	43.5%	73.3%	26.7%
2017	56.5%	43.5%	73.3%	26.7%
2022	57.3%	42.7%	73.6%	26.4%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	26.1%	24.0%	29.8%	23.1%
2017	27.3%	24.2%	30.7%	29.7%
2022	27.7%	23.4%	28.1%	23.4%
<b>ACC work-related accident</b>				
2014	4.2%	-	5.1%	-
2017	5.6%	5.1%	4.5%	-
2022	4.3%	-	-	-
<b>Any mental health contact</b>				
2014	37.8%	23.5%	29.8%	20.0%
2017	39.0%	29.2%	33.0%	25.0%
2022	39.6%	26.9%	37.6%	31.3%
<b>Any mental health contact+</b>				
2014	40.3%	25.1%	30.3%	21.5%
2017	40.3%	30.3%	33.0%	26.6%
2022	40.9%	29.1%	38.8%	32.8%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	23.9%	31.1%	14.6%	20.0%
2017	16.9%	26.4%	9.7%	12.5%
2022	12.3%	19.4%	7.9%	10.9%
<b>Unemployment benefit receipt</b>				
2014	10.1%	15.3%	4.5%	-
2017	6.9%	11.2%	-	-
2022	4.3%	6.3%	-	-
<b>Hardship benefit receipt</b>				
2014	15.1%	18.0%	11.2%	-
2017	7.8%	15.2%	5.7%	-
2022	5.1%	8.6%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	-	4.9%	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	-	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	-	6.0%	-	-
2017	4.8%	8.4%	-	-
2022	5.5%	8.0%	4.5%	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of TTW Social Services learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

# Appendix G

## Construction

Table G 1. Wellbeing outcomes for Construction sub-group: By gender

	NZQF 2-4		NZQF 5-7	
	Male	Female	Male	Female
<b>Proportion by gender</b>				
2014	94.8%	5.2%	89.2%	10.8%
2017	94.8%	5.2%	88.9%	11.1%
2022	94.9%	5.1%	88.6%	11.4%
<b>1) Physical &amp; Mental Health</b>				
ACC accident				
2014	36.5%	34.0%	35.4%	-
2017	35.4%	28.9%	34.8%	30.4%
2022	32.0%	29.1%	31.6%	-
ACC work-related accident				
2014	12.9%	6.0%	7.4%	-
2017	11.0%	5.4%	8.2%	-
2022	9.1%	4.7%	5.9%	-
Any mental health contact				
2014	15.9%	25.3%	12.7%	-
2017	17.9%	27.5%	13.0%	-
2022	17.6%	29.7%	13.4%	-
Any mental health contact+				
2014	16.7%	26.7%	13.2%	-
2017	18.6%	28.9%	13.6%	-
2022	18.6%	30.4%	13.4%	-
<b>2) Income from benefits</b>				
Any benefit receipt				
2014	9.8%	16.0%	6.9%	-
2017	7.4%	14.1%	-	-
2022	7.8%	11.5%	-	-
Unemployment benefit receipt				
2014	1.2%	-	-	-
2017	0.7%	6.0%	-	-
2022	0.6%	-	-	-
Hardship benefit receipt				
2014	8.7%	12.0%	5.8%	-
2017	6.4%	8.1%	-	-
2022	6.1%	6.1%	-	-
<b>3) Crime &amp; Victimization</b>				
Any criminal history				
2014	6.0%	-	-	-
2017	4.9%	-	-	-
2022	2.2%	-	-	-
Serious criminal history				
2014	2.6%	-	-	-
2017	2.6%	-	-	-
2022	1.2%	-	-	-
Victimisation				
2014	2.4%	-	-	-
2017	4.5%	5.4%	-	-
2022	4.4%	6.1%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of WAR Construction learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

Table G 2. Wellbeing outcomes for Construction sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	72.8%	27.2%	86.7%	13.3%
2017	72.8%	27.2%	86.4%	13.6%
2022	73.2%	26.8%	86.1%	13.9%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	38.5%	31.6%	37.8%	-
2017	36.6%	31.5%	36.2%	-
2022	33.5%	28.9%	31.6%	36.0%
<b>ACC work-related accident</b>				
2014	13.9%	9.7%	7.1%	-
2017	11.2%	9.4%	7.2%	-
2022	9.2%	8.1%	5.2%	-
<b>Any mental health contact</b>				
2014	16.4%	19.1%	14.7%	-
2017	18.3%	21.2%	15.8%	-
2022	18.5%	20.3%	15.5%	-
<b>Any mental health contact+</b>				
2014	17.0%	20.6%	14.7%	-
2017	18.9%	23.0%	15.8%	-
2022	19.2%	22.4%	15.5%	-
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	5.3%	22.8%	-	-
2017	3.8%	18.2%	-	-
2022	4.3%	17.6%	-	-
<b>Unemployment benefit receipt</b>				
2014	0.6%	3.5%	-	-
2017	0.5%	2.2%	-	-
2022	-	2.2%	-	-
<b>Hardship benefit receipt</b>				
2014	4.6%	20.1%	-	-
2017	3.2%	15.6%	-	-
2022	3.0%	14.5%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	3.3%	12.6%	-	-
2017	2.3%	11.0%	-	-
2022	1.0%	5.4%	-	-
<b>Serious criminal history</b>				
2014	1.2%	6.5%	-	-
2017	1.1%	6.3%	-	-
2022	0.5%	3.2%	-	-
<b>Victimization</b>				
2014	2.5%	2.8%	-	-
2017	4.1%	5.7%	-	-
2022	3.6%	6.1%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of WAR Construction learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Infrastructure

Table G 3. Wellbeing outcomes for Infrastructure sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	55.6%	44.4%	77.5%	22.5%
2017	55.6%	44.4%	76.8%	23.2%
2022	55.8%	44.2%	78.4%	21.6%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	34.8%	28.0%	40.0%	-
2017	33.7%	28.5%	35.8%	-
2022	30.4%	26.5%	31.0%	-
<b>ACC work-related accident</b>				
2014	13.4%	9.0%	-	-
2017	11.6%	10.9%	-	-
2022	8.3%	8.2%	-	-
<b>Any mental health contact</b>				
2014	19.3%	17.2%	-	-
2017	17.6%	15.7%	17.0%	-
2022	18.6%	11.9%	15.5%	-
<b>Any mental health contact+</b>				
2014	19.6%	18.3%	12.7%	-
2017	17.9%	16.9%	17.0%	-
2022	18.9%	13.1%	15.5%	-
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	4.8%	15.3%	-	-
2017	3.9%	13.5%	-	-
2022	3.8%	16.8%	-	-
<b>Unemployment benefit receipt</b>				
2014	-	3.4%	-	-
2017	-	-	-	-
2022	-	-	-	-
<b>Hardship benefit receipt</b>				
2014	4.2%	12.7%	-	-
2017	3.3%	10.9%	-	-
2022	2.7%	13.4%	-	-
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	5.1%	13.8%	-	-
2017	3.0%	12.4%	-	-
2022	-	3.7%	-	-
<b>Serious criminal history</b>				
2014	-	7.5%	-	-
2017	-	7.1%	-	-
2022	-	3.0%	-	-
<b>Victimisation</b>				
2014	-	-	-	-
2017	3.0%	3.7%	-	-
2022	2.9%	6.3%	-	-

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of WAR Infrastructure learners between 18 and 54 (inclusive) years old in 2012, according to their education records.

## Services

Table G 4. Wellbeing outcomes for Services sub-group: By ethnicity

	NZQF 2-4		NZQF 5-7	
	European	Māori	European	Māori
<b>Proportion by ethnicity</b>				
2014	63.5%	36.5%	79.1%	20.9%
2017	63.6%	36.4%	78.6%	21.4%
2022	63.8%	36.2%	78.7%	21.3%
<b>1) Physical &amp; Mental Health</b>				
<b>ACC accident</b>				
2014	30.1%	22.7%	30.2%	27.2%
2017	30.5%	24.4%	31.8%	22.7%
2022	28.4%	23.8%	29.6%	28.5%
<b>ACC work-related accident</b>				
2014	7.1%	5.1%	3.1%	5.3%
2017	5.5%	5.7%	2.9%	-
2022	4.2%	3.5%	2.3%	-
<b>Any mental health contact</b>				
2014	23.0%	21.3%	19.7%	15.9%
2017	25.7%	21.0%	23.4%	18.0%
2022	26.8%	20.5%	25.5%	19.9%
<b>Any mental health contact+</b>				
2014	24.2%	22.7%	20.1%	17.2%
2017	26.8%	22.4%	23.8%	20.0%
2022	27.7%	21.9%	25.9%	21.9%
<b>2) Income from benefits</b>				
<b>Any benefit receipt</b>				
2014	9.9%	20.9%	6.8%	17.9%
2017	5.8%	21.0%	3.4%	12.7%
2022	6.5%	14.8%	3.4%	9.3%
<b>Unemployment benefit receipt</b>				
2014	2.6%	8.5%	1.6%	8.6%
2017	1.6%	7.9%	-	-
2022	1.0%	4.5%	-	-
<b>Hardship benefit receipt</b>				
2014	5.7%	13.0%	3.5%	11.9%
2017	3.3%	12.0%	2.0%	8.7%
2022	3.4%	8.0%	1.6%	5.3%
<b>3) Crime &amp; Victimization</b>				
<b>Any criminal history</b>				
2014	1.4%	4.7%	-	-
2017	-	3.9%	-	-
2022	-	-	-	-
<b>Serious criminal history</b>				
2014	-	2.4%	-	-
2017	-	1.8%	-	-
2022	-	-	-	-
<b>Victimization</b>				
2014	2.0%	2.0%	1.7%	-
2017	3.6%	7.3%	2.7%	5.3%
2022	2.8%	7.4%	3.1%	6.0%

Source: Authors' compilation from Stats NZ IDI and WDCs.

Notes: The sample consists of WAR Services learners between 18 and 54 (inclusive) years old in 2012, according to their education records.



**NEW ZEALAND POLICY  
RESEARCH INSTITUTE**  
TE KĀHUI RANGAHAU MANA TAURITE

Auckland University of Technology, Auckland, New Zealand  
[policy.research@aut.ac.nz](mailto:policy.research@aut.ac.nz) | [www.nzpri.aut.ac.nz](http://www.nzpri.aut.ac.nz)

