

Prepared for:
Food and Fibre Centre of Vocational Excellence (FFCoVE)



Attraction and Retention Research Programme

Situational analysis - Implications for the
upcoming retention pilots

November 2022



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About this document

Context

For many years, the food and fibre industry has struggled to attract and retain people into its workforce, and to attract students to food and fibre related studies. In response to this challenge, industry organisations, government agencies and employers, have researched, trialled, and implemented a range of strategies and interventions to address workforce shortages. These interventions have focused on attracting people to the workforce, retaining people in the workforce, and improving productivity to reduce the workforce requirement.

Despite these efforts, businesses across the industry continue to struggle to find and keep the employees they require to operate. Workforce shortages have been exacerbated in recent years by the COVID-19 pandemic, and the closure of New Zealand's borders during this time. These challenges are not unique to the food and fibre sector – they are shared by many other industries also.

Attraction and retention research programme

The Food and Fibre Centre of Vocational Excellence (FFCoVE) have contracted Scarlatti to undertake the attraction and retention research programme. Key activities of this work include:

1. Undertaking a situational analysis (including desk research as secondary research, and an IDI analysis and an employee exit survey as primary research)
2. Evaluating performance measurements
3. Piloting retention interventions
4. Writing a final insights report

This report is part B of the situational analysis and includes a synthesis of the key findings from the employee exit survey, the IDI analysis, and a comparative analysis of the hours of industry exposure generated by different means, all to help understand the implications of designing a retention programme for the food and fibre sector. The key findings from the desk research, as part A of the situational analysis, were submitted to the FFCoVE in August 2022.

Situational analyses

This report synthesises information from the following three analyses:

- **Employee exit survey** – The employee exit survey was developed online for ex-employees of the food and fibre sector. The survey was distributed primarily through targeted advertising on Facebook, with some additional promotion from industry organisations through their own social media channels. The objectives of the survey were to identify, characterise and synthesise:
 - The reasons why ex-employees of the food and fibre sector left a job, and
 - How long ex-employees of the food and fibre sector had been working in the sector by the time they left.

A brief introduction to the survey design and promotion is in Appendix 1.

- **Integrated Data Infrastructure (IDI) analysis** – The IDI analysis involved developing and running queries through Statistics NZ’s Integrated Data Infrastructure to explore the retention and tenure of food and fibre sector employees. The objectives of the IDI analysis were to identify, characterise and synthesise:
 - The retention rate of employees in the food and fibre sector and how the rate varies by employee attributes including age, gender, ethnicity, and employment status among others, and
 - The tenure / experience of the food and fibre sector employees and how this varies by the attributes listed above.

A brief introduction to the definition of retention and tenure and how the IDI is used is in Appendix 2.

- **Analysis on comparing how industry exposure is generated by different means** – A comparison is made between the hours of industry exposure generated naturally through employment in the industry, and the hours of industry exposure generated through the talent attraction interventions delivered across the sector¹. The objective of this analysis is to test whether the hours of industry exposure accrued by people who leave jobs in the food and fibre sector within one year of employment exceeds the hours of industry exposure generated through talent attraction interventions. Understanding this will help guide how available resources could be better deployed to address labour shortages in the food and fibre sector.

Links to analyses dashboards

Rather than including each of the above analyses in this report, interactive dashboards have been built to accompany this document. The dashboards can be viewed online using the following links:

- Employee exit survey dashboard – [Click here](#)
- IDI analysis dashboard – [Click here](#)

More details on how to interact with the two dashboards are included as appendices.

Scope and structure of this document

Scope

This document considers the trends and challenges related to the retention of employees in the food and fibre sector workforce. In particular, the report considers how retention trends and challenges vary by industry and demographics.

The discussion about retention trends is mainly addressed by the IDI analysis where retention refers to both retention *and* tenure. Together, these measures are a good indicator of how long people are likely

¹ An analysis of active attraction interventions in the food and fibre sector identified 39 interventions which have talent attraction as a core focus. These interventions are either linked to the education system (e.g. Trade academies, Gateway, student / teacher field trips) or are industry and / or government-led (e.g. industry wide multi-media promotion such as Opportunity Grows Here, GoHort, or GoDairy).

to stay working in the food and fibre sector. The discussion around retention challenges is addressed by the employee exit survey.

This report primarily focuses on horticulture, dairy farming, sheep and beef farming, and forestry sectors. However, other food and fibre sectors can be viewed through the PowerBI dashboards.

Document structure

This report is split into the following two parts:

- A discussion of implications for the upcoming retention pilots, and
- Appendices with introductions to analyses.

The first part of this report synthesises the key findings from the three analyses including what they mean for the design of retention pilots, while the appendices include more detail on how the analyses have been run.

Implications for the design of retention pilots



Key findings

In this section, we discuss some of the information presented in the survey and IDI dashboards to better understand the different implications and considerations for the design of the upcoming retention pilots. Most of the analyses sitting behind the synthesis can be found in the dashboards (refer to 'Links to analyses dashboards' heading on page 3). However, several key charts have been extracted to support the discussion.

Some of the challenges of retaining employees in the food and fibre sector are highlighted by the employee exit survey

The responses from the employee exit survey appear to validate the industry perception that many people are leaving jobs in the food and fibre sector primarily due to bad employment experiences (Figure 1). This is instead of changing life circumstances or being attracted to other job opportunities. Nearly 60% of respondents to the survey indicated they had left their job because they disliked an aspect of it. However, we note an important sampling bias in that many of those responding to the survey are likely to have been more motivated to respond because of a bad employment experience².

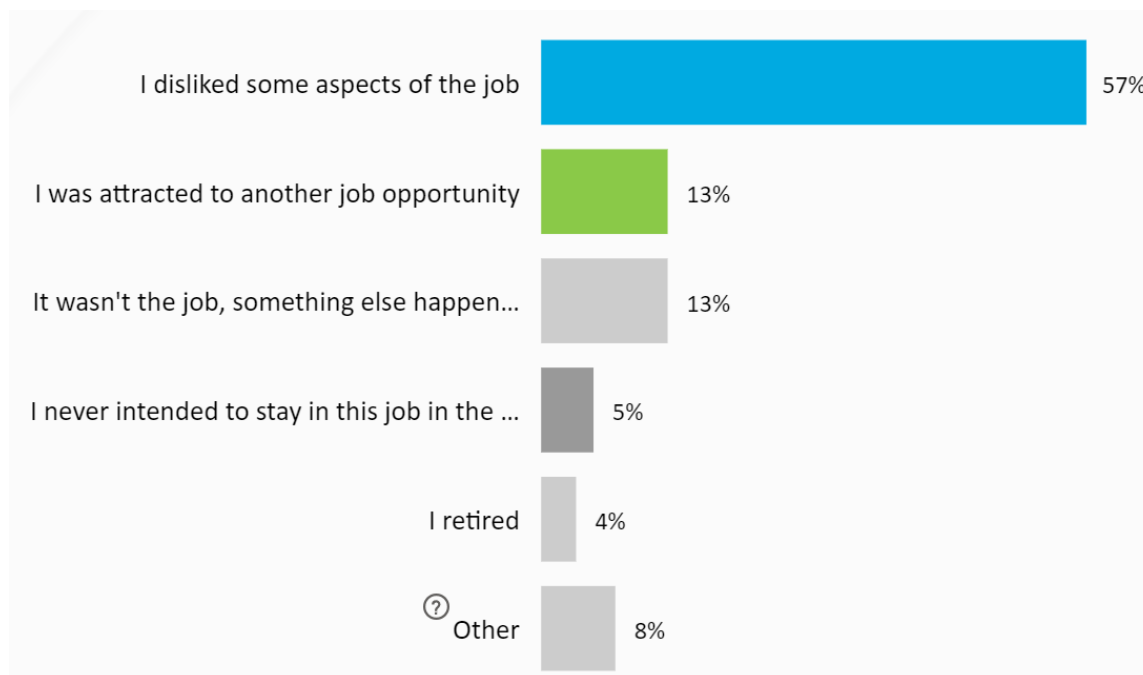


Figure 1: Extract from the [employee exit survey dashboard](#) – Page: Reasons for leaving, Chart: What was the main reason for your change?

The top reasons why people who disliked an aspect of their job left are presented in Figure 2. The most selected reasons were poor management, unfair pay for the hours and work they were doing and having a poor work-life balance. These reasons are similar between industries, although the order changes somewhat. Unfair pay was the most common for ex-horticulture and ex-sheep and beef

² The proportion of all job leavers with five or more years of accumulated experience is less than 20% - see Figure 4. However, this group makes up over 70% of the survey respondents. By contrast, more than 50% leave the sector within 12 months but this group contribute less than 5% of our survey sample. This suggests that long-serving, but unhappy, people were the most attracted to answering our survey.

employees, while poor management was the most common in the dairy industry. Interestingly, remote workplaces in the food and fibre sector was the least selected reason respondents left their job in the food and fibre sector.

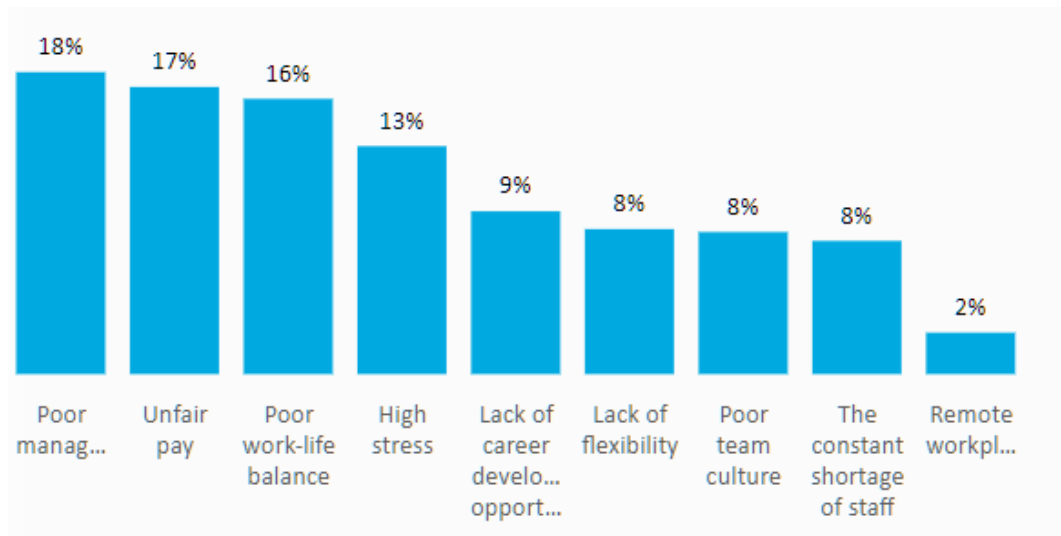


Figure 2: Extract from the [employee exit survey dashboard](#) – Page: Reasons for leaving, Chart: Which aspects of your job didn't you like?

Nearly 70% of the respondents had accrued more than 5 years of experience working in the food and fibre sector by the time they decided to leave.

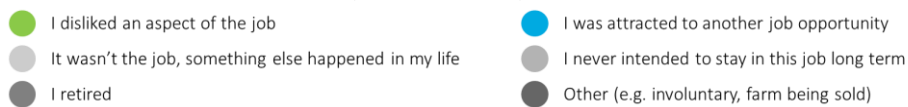


Figure 3 suggests that respondents with between 3 to 5 years' experience (n = 32) or more than 5 years' experience (n = 136) were more likely to leave a job because they disliked an aspect of their job. Respondents with less than 1 year experience (n = 12) indicated they left their job because of something else happening in their life, not because of the job itself. However, these results need to be treated with caution given the likely sample bias and the small number of respondents with less than 12 months experience.

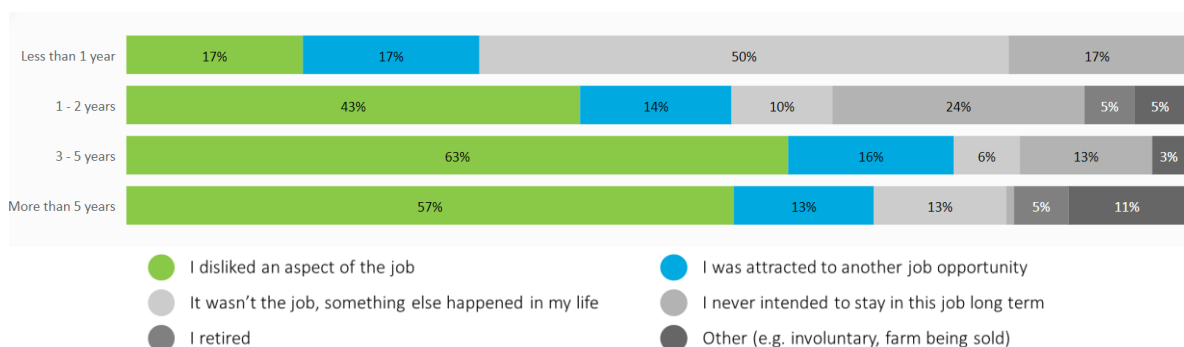


Figure 3: Extract from the [employee exit survey dashboard](#) – Page: Comparison by tenure, Chart: What was the main reason for your change? – by industry tenure

These reasons for leaving a job in the food and fibre industry are not unexpected – they have been a focus across industries for the past several years. For example, DairyNZ has been working in this space as part of their [new workplace design programme](#) to design great dairy workplaces by 2030. However,

these challenges will take time to resolve considering the need for a shift in employer behaviours and attitudes.

Across New Zealand sectors, employee retention rates are at their lowest during the first 12 months of employment

The retention rates of employees are at their lowest during the first 12 months of employment. This is not only true for the food and fibre sector, but also for most New Zealand economic sectors. This insight is presented in Figure 4 with the retention profiles for dairy farming and horticulture (as the two extremes in the food and fibre sector), and financial and advisory services and hospitality and food services (as the two extremes for the available benchmark industries). Retention profiles for other sectors are available in the dashboard.

The retention profiles for the four industries are not only at their lowest in the first 12 months, but also the most variable compared to each other. This initial variability in retention visually skews the retention trends over the longer term. To test how retention rates vary over time, the retention profiles in Figure 4 have been split into two time periods. The first being retention rates of those still in the industry after 12 months of employment, and the second for retention rates of those in the sector for less than 12 months.

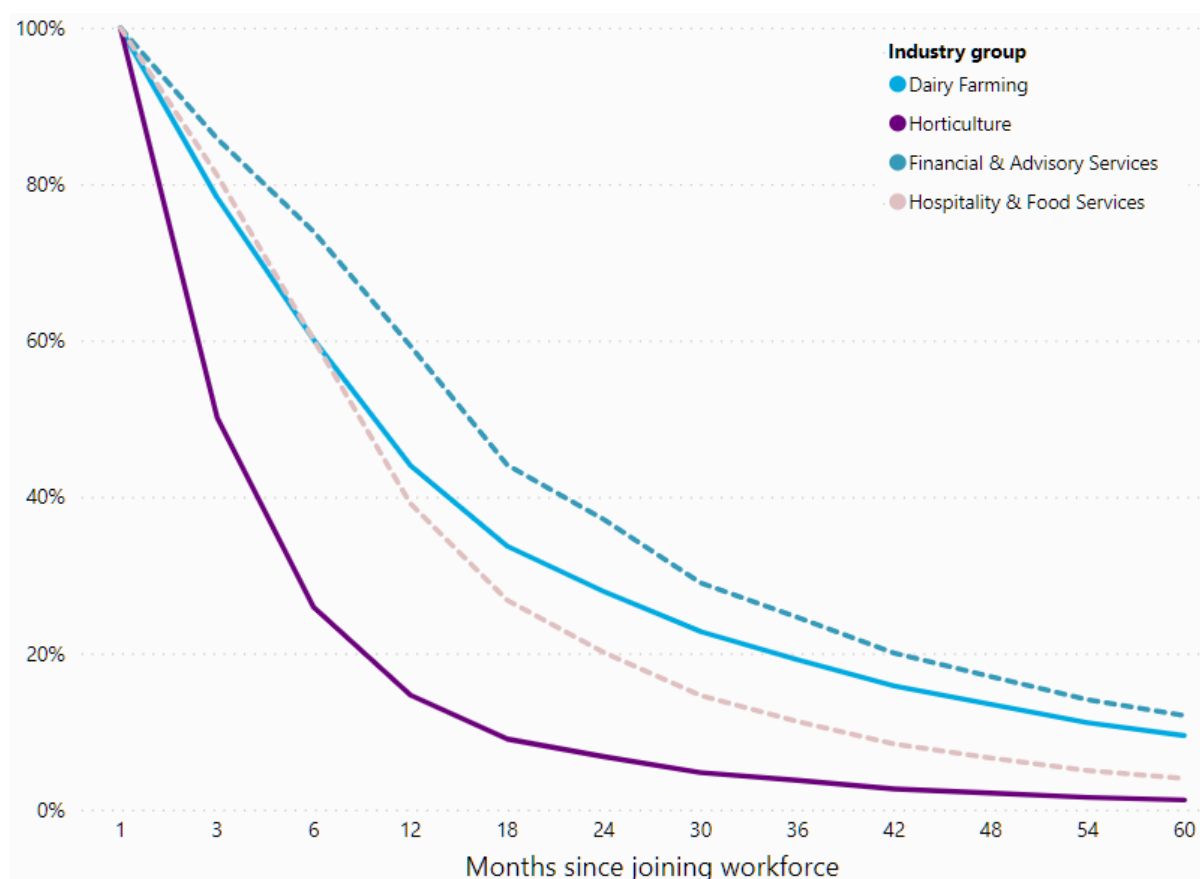


Figure 4: Extract from the [IDI analysis dashboard](#) – Data type: Retention, Page: The full picture

Over the long term, retention rates in the food and fibre sector are broadly comparable to other New Zealand sectors

The retention rate profiles for people still in the sector following 12 months of employment are comparable between the different food and fibre industries and the benchmark sectors (Figure 5), they are also less variable than retention in the first 12 months of employment (Figure 4). Interestingly, dairy farming has slightly better retention of employees over the long term than the other industries considered in this analysis.

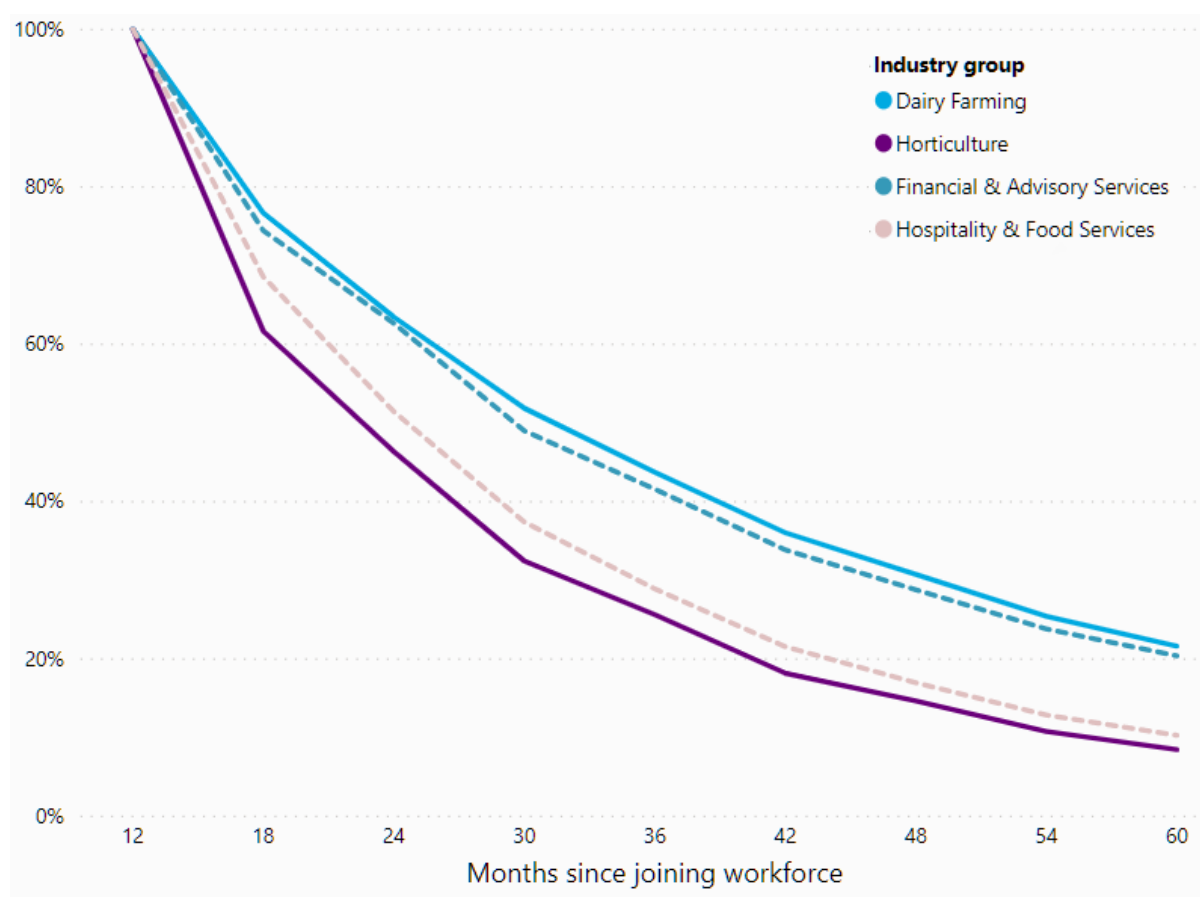


Figure 5: Extract from the [IDI analysis dashboard](#) – **Data type:** Retention, **Page:** The post-year view

Retention rates for NZ Europeans and Asians are significantly better than those for Māori and Pacific people

Over the long term, Asian and NZ European ethnicities have similar retention rates. Both are, however, significantly better than those for Māori and Pacific peoples (see Figure 6). Of those people that make it to the 12-month point, Asian and NZ Europeans are roughly twice as likely than Māori to still be employed at the 5-year point (17% vs 9%) and over three times as likely as Pacific peoples (17% vs 5%).

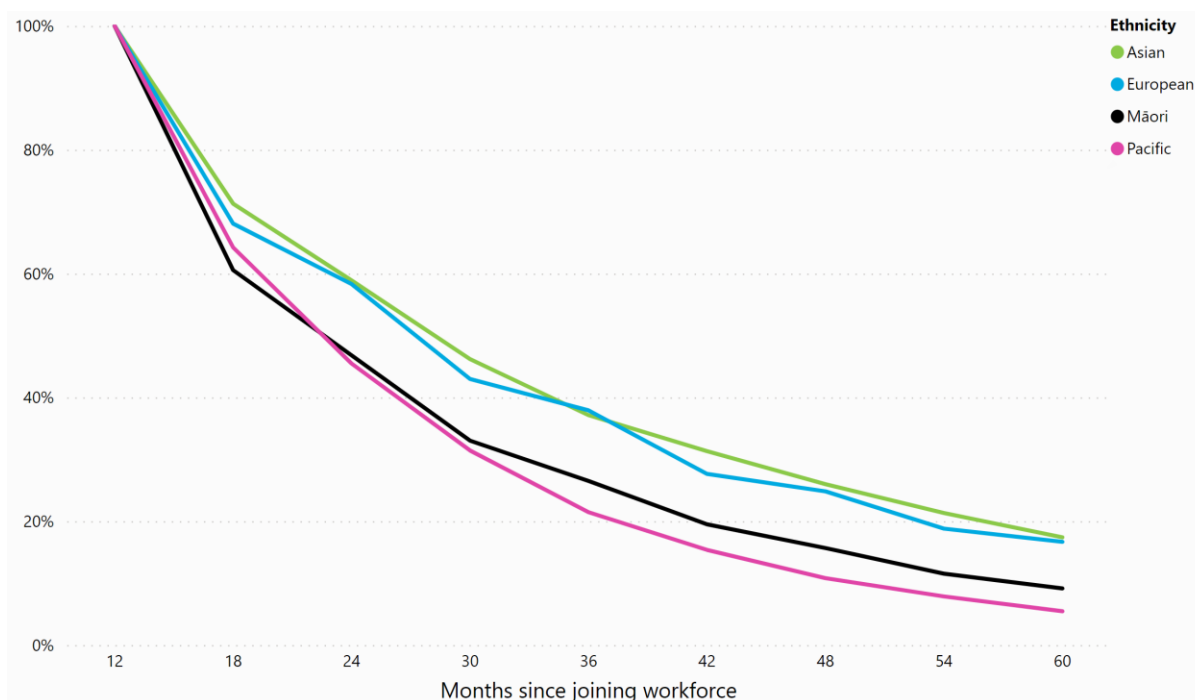


Figure 6: Extract from the [IDI analysis dashboard](#) – **Data type:** Retention, **Page:** The post-year view

In the short term, however, retention rates in the food and fibre sector are lower than other New Zealand sectors

The retention rate profiles for people in the first 12 months of their employment (Figure 7) present a different narrative to that from Figure 5 over the longer term. During the first 12 months of employment, retention rates in the food and fibre sector are considerably more variable between industries and tend to be lower than the benchmark industries.

There are several reasons why we believe employees are leaving the food and fibre sector faster in their first year of employment. A key reason, particularly for horticulture, will be the seasonal nature of food and fibre sector industries. That being said, we suspect that poor employment experiences, including the reasons from Figure 2, contribute to the low retention rates also.

The rapid decrease in retention during the first 12 months could be considered as either a problem or an opportunity:

- A *problem* in that the food and fibre sector is seeing a lot of people entering the workforce annually, either not liking it or had planned for short-term employment, and then leaving to find another job, or
- An *opportunity* in that the food and fibre sector is seeing a lot of people entering the workforce annually, *get varying levels of exposure to the industry*, and then leaving to find another job.

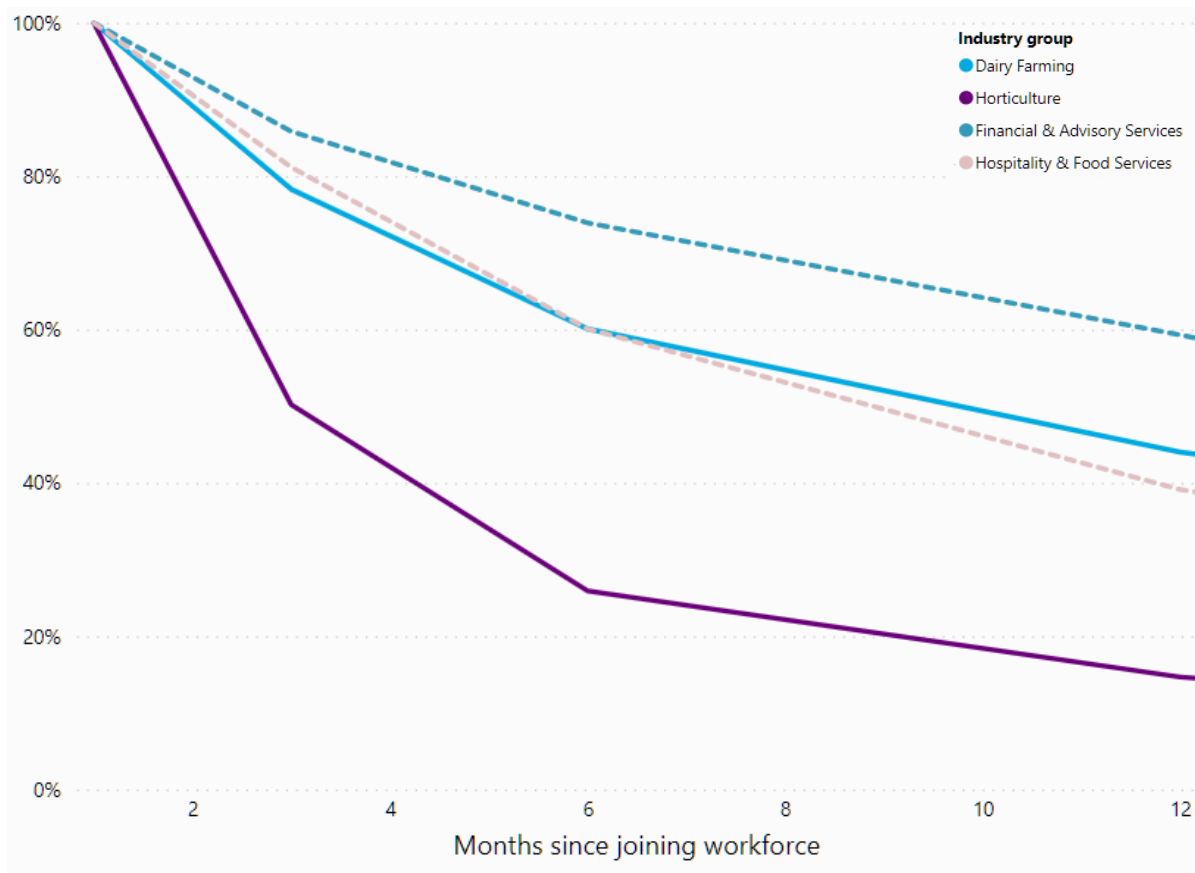


Figure 7: Extract from the [IDI analysis dashboard](#) – **Data type:** Retention, **Page:** The first year

Also in the short term, there is little difference between the retention rates of Māori, Asian and Pacific peoples. All are, however, lower than the retention of NZ Europeans (see Figure 8). NZ Europeans are almost 50% more likely to still be employed after one year than Māori, Asian and/or Pacific peoples (35% vs 24%).

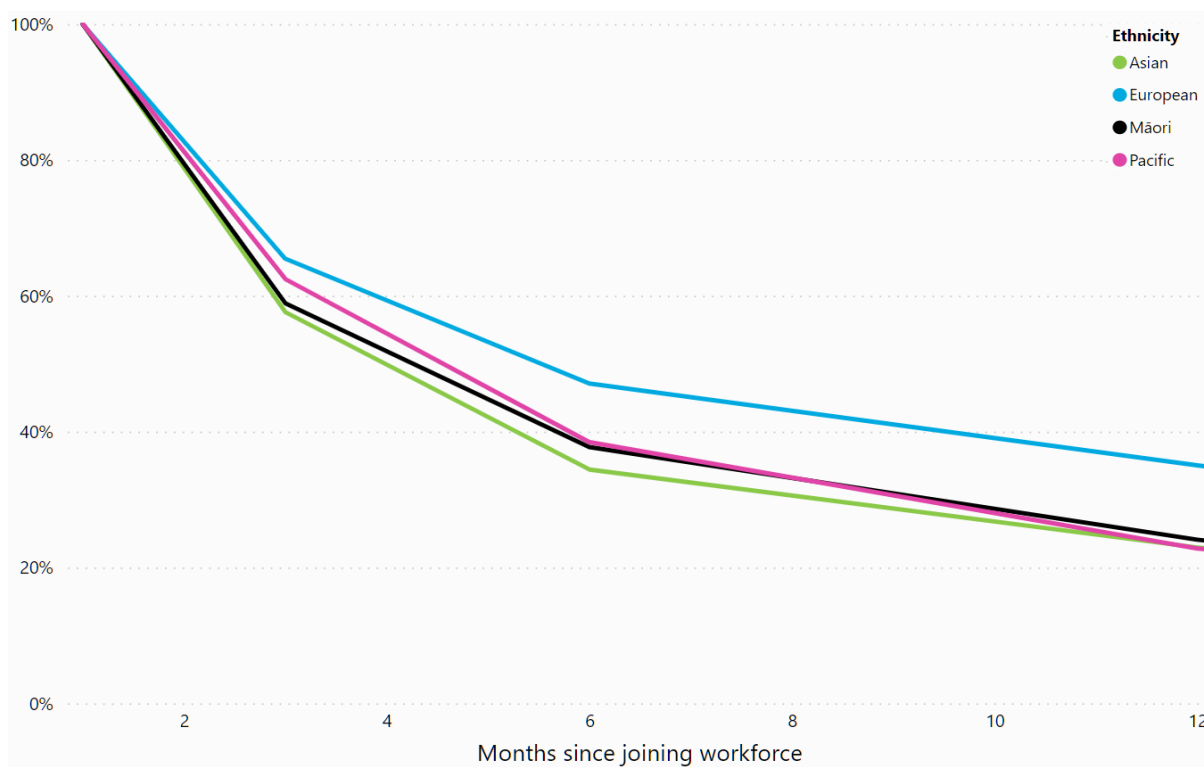


Figure 8: Extract from the [IDI analysis dashboard](#) – **Data type:** Retention, **Page:** The first year

The exposure to the food and fibre sector for employees in the first 12 months greatly exceeds that from talent attraction initiatives

The average number of people entering the food and fibre sector in any given year is approximately 75,000 people. Over the course of 12 months, 50-60,000 of these people then leave the sector having accrued varying amounts of experience in it. We estimate that this first-year group of leavers collectively generate somewhere between 10 to 50 million hours of exposure to the food and fibre sector over a 12-month period.

By comparison, the talent attraction interventions identified in the situational analysis phase 1 report (delivered to the FFCoVE in August) which are:

- Linked to the *education* system (e.g. Trade academies, Gateway, field trips) were estimated to generate between 1 to 5 million hours of exposure to the sector. That is, these provide an order of magnitude less exposure than what naturally occurs without intervention.
- *Industry and or government-led* and not linked to the education system (e.g. industry-wide multi-media promotion) are estimated to generate between 100,000 to 500,000 hours of exposure to the sector. That is, the exposure that these initiatives generate are collectively a further order of magnitude lower than the exposure generated by education linked attraction interventions.

Implications for retention pilots

In this section, we seek to infer from the analyses presented in the previous section how the upcoming retention pilots could be designed and targeted. At a high level, the previous section identified two areas of opportunity to improve retention in the food and fibre sector: retention in the first year of employment (short-term), and retention following the first year of employment (long-term). The opportunities in each of these areas for novel retention initiatives are highlighted in the following sections.

Retention following the first year of employment (long-term)

The opportunity to improve retention in the long-term is to address the reasons why people are leaving jobs in the food and fibre sector presented in Figure 2 (e.g. poor management, unfair pay, poor work-life balance, etc). These issues are, unfortunately, hard and slow to address as they rely on changing management practices on farm.

While the Vocational Education and Training (VET) system can theoretically contribute by building employment capability, this is likely to be a weak lever. In the absence of ‘hard’ incentives created by regulators or customers (such as greater access to immigrant workers or better prices for produce) employers are only likely to engage with the VET system to build employment capability if they are both aware that their own practices are poor and are intrinsically motivated to change them (i.e. only a small minority). The limited scope for the VET system to address employment practices perhaps explains why most of the leadership in this area has come from central government agencies (e.g. MBIE, MPI) and industry bodies (e.g. Federated Farmers, DairyNZ, NZKGI) in the past.

That is not to say that there is no room for innovation in this area within the VET system. For example, it might be possible to:

- Promote courses in novel ways,
- Embed content relating to employment practices within courses that have wider appeal to employers, and/or
- Deliver content in more attractive ways

However, we judge there to be only limited scope for real novelty with these types of ideas considering the previous and current investment in this space across the industry. We therefore think that targeting an improvement in the retention of employees during their first year of employment will be a more fruitful space to pilot a novel retention initiative.

Retention in the first year of employment (short-term)

Considering the synthesis of the implications for the upcoming retention pilots in the previous section, we propose designing a pilot targeting the improvement of employee retention rates in their first 12 months of employment. The key opportunity in this space is to leverage the naturally occurring exposure to food and fibre sector, which is considerably larger than the exposure generated through talent attraction interventions, and design a pilot to reach those new to the sector to better align:

- The retention rates of Māori and Pasifika employees with those of other ethnicities, and

- The retention rates of food and fibre industries (e.g. dairy, sheep and beef, horticulture, etc) with those of other New Zealand economic sectors (e.g. financial and advisory services, or hospitality and food services).

We expect to design and deliver two retention pilots targeting each of the above opportunities. Retention pilots in these spaces would be expected to be designed to support employees during their first year of employment in a variety of ways. For example, a new Māori employee in the food and fibre sector may be employed by a farm manager with little awareness or understanding of the Māori culture. The employee may feel unsupported culturally as a result and be inclined to leave their job and the sector. However, if they were engaged with during this time through an intervention, then they may have been supported to either find the cultural support they were seeking or find a new employer with these capabilities.

Appendices



Appendix 1: Introduction to the employee exit survey

Research questions

The primary focus of the employee exit surveys have been to collect information to understand:

1. For what reasons ex-employees of the food and fibre sector left their job in the sector?
2. How long had ex-employees of the food and fibre sector had been working in the sector by the time they left?

Survey approach

To address the above research questions, we developed a survey with a series of questions split into two parts. First, we asked demographic / segmentation type questions to identify their position in the sector (e.g. industry, role, age, etc.), followed by questions relating to their experience working in the sector. The survey can be viewed by clicking on the following link – [Employee exit survey link](#).

The survey was primarily promoted using targeted Facebook advertising to broadly reach the appropriate audiences without bias towards particular groups of ex-employees. We approached the first days of the survey similar to how we might approach a survey pilot. Over this time, the responses were regularly reviewed and the survey's questions, response options, logic and promotional graphics were updated as necessary. Towards the end of the survey timeframe, we started contacting industry organisations to promote the survey through their social media channels for industries which we were lacking responses from.

Survey summary

In total, 229 responses to the employee exit survey have been collected. A summary of the responses according to industry, role, age, gender, and ethnicity is provided in the 'Demographic summary' group of charts in the dashboard – see below.

Visualisation of survey responses

To view the survey dashboard, click on the yellow button below³.



The following sections will provide an overview of how to interact with and filter the charts in the dashboard. The sample sizes are reported next to each of the charts in the dashboard. Note that there

³

<https://app.powerbi.com/view?r=eyJrIjoieYzdkNTJkYTctNDMyZi00NTUwLWU5NmQtN2MyZjg0NzNhNWU3liwidCI6IjE5MzU4YzgxLTViMWItNGZjYS1iZmM2LTcwOTEzZDU1ZDA3ZCJ9&pageName=ReportSectionb6f19c337c6f616c1cbc>

is a natural drop-off as respondents progress through the survey and therefore the sample sizes will not always match between charts.

Dashboard structure

Clicking on the above link will open the dashboard's home page which can be used to navigate to different groups of charts by clicking on the light grey buttons. You will then be able to navigate between other groups of charts in the same section by using the arrows to the top left of the screen. Clicking on the house icon also in the top left of the screen will return you to the home page.

The charts used to present the results from the employee exit survey have been grouped into the following two sections:

1. **Overview of employee exit survey responses** including a survey summary, the reasons for leaving, and tenure at the time of leaving, and
2. **Comparison** of survey responses according to industry type, respondent age, and respondent tenure.

More details on the information provided in each of these sections is available below.

Overview of employee exit survey responses

The charts presenting the data collected from responses to the employee exit survey is presented in the following three groups:

1. **Demographic summary** – The charts on this page present the breakdown of the survey's total responses according to industry, industry role, age, gender, and ethnicity.
2. **Reasons for leaving** – The charts on this page present why ex-employees of the food and fibre sector chose to leave their job, including which specific aspects of their previous job they did not like.
3. **Tenure and retention** – The charts on this page present how long ex-employees of the food and fibre sector had intended to stay in the sector when they first joined compared to how long they ended up staying in the sector.

In each of the above groups of charts you will be able to 'slice and dice' the data using the filters to the right of the screen to evaluate how the information varies by different segments (e.g. industry group, role, employer size, gender, age, region, and ethnicity) of the food and fibre sector workforce. Click on the blue boxes to select a filter from the dropdown lists. As you filter, the adjusted sample size (n) will be visible above the filters.

Comparison of responses

This group of charts has been put together to compare how the reasons for leaving vary by the respondents' industry, age and tenure in the food and fibre sector. Like the groups of charts in overview of survey responses section, you will be able to use the filters to the right of the screen to filter the data in the charts according to several workforce demographics.

Appendix 2: Introduction to the IDI analysis

Definition of retention

In this analysis, we consider the following two measures of retention to illustrate how long people are likely to stay in the food and fibre sector: *tenure* and *retention*.

Tenure, as we define it here, is a measure of the cumulative work experience individuals in a workforce have at a point in time. Tenure here mainly focuses on *industry* tenure, i.e., the total number of months that a person's income meets an income threshold (if any) from any combination of employers in an industry during a time period. This is different to *job* tenure – the time spent working for a single employer. Tenure is a 'stocks' measure – that is, an attribute of the workforce at a point in time.

Retention, as we define it here, is a 'flows' measure. This measures how long a cohort of new entrants will remain working in an industry before leaving. An important note is that retention considers collective months in the workforce rather than sequential months.

The Integrated Data Infrastructure (IDI)

The key source of data in this analysis is the Statistics New Zealand Integrated Data Infrastructure (IDI). The IDI is a large world-leading research database containing de-identified microdata about people and households in New Zealand, specifically detailing life events such as employment, income, and education.

Research questions

This IDI analysis has focused on the collection of people's employment information to address the following research questions:

1. How long have employees been employed in the food and fibre sector? (i.e. tenure - stock)
2. How long do new entrants stay employed within the food and fibre sector? (i.e. retention – flow)

For each of these questions, we will break down the analysis according to age, gender, and ethnicity among other attributes.

Issues worth considering

We must consider that a lot of industry turnover is planned. People will often enter a workforce planning to stay for only a brief period of time. It is difficult to distinguish between this planned turnover and any unplanned turnover in the IDI. Typically, people do not just leave the workforce, many people enter and leave the workforce repeatedly over time.

In the food and fibre sector, this is particularly relevant when considering the importance of seasonal employment to meet the seasonal labour demand in horticulture for example. In this case, employment will have lasted typically for several months. In the dashboard supporting this analysis (see below) we attempt to distinguish between the retention rates of employees in the following two scenarios:

- During the first year of employment,
- Following the first year of employment.

The understanding is that a lot of the variance in retention rates between industries is realised in the first year. By re-indexing the workforce at 12 months of employment, we expect to be able to achieve a clearer picture of the retention rates for the permanent workforce across industries, and other workforce segments (e.g. ethnicity and employment status).

We will struggle however to differentiate between planned and unplanned exits from the sector during the first 12 months using the IDI data. In the first instance, we can make assumptions based on the production systems used in the different industries. For example, the low retention rates in horticulture industries (e.g. kiwifruit, vegetables, apples and pears) are likely due to planned exits from seasonal employees as the production systems in these industries are for the most part seasonal. Whereas production systems in industries such as dairy or sheep and beef have less seasonal demand for labour and therefore the drop off in retention rates are more likely to be from unplanned exits.

Benchmarking

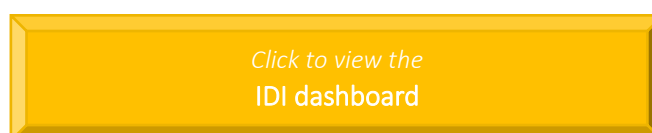
To put the retention rates and tenure for the food and fibre sector into context, we have included retention rates and tenure breakdowns for the following industries from other New Zealand economic sectors:

- Hospitality and food services,
- Business and professional services,
- Finance and advisory services,
- Retail and distribution.

You will be able to select whether or not these appear in the dashboard – see below.

Visualisation of IDI outputs

To view the IDI dashboard, click on the yellow box below⁴.



The following sections will provide an overview of how to interact with and filter the charts in the dashboard, and how to interpret the results.

Dashboard structure

Clicking on the above link will open the dashboard's home page which can be used to navigate to different charts by clicking on the green buttons. You will then be able to navigate between other charts in the same data type (e.g. retention or tenure) by using the arrows to the top left of the screen,

⁴

<https://app.powerbi.com/view?r=eyJrIjoieYzdkNTJkYTctNDMyZi00NTUwLWl5NmQtN2MyZjg0NzNhNWU3liwidCI6IjE5MzU4YzgxLTViMmWltNGZjYS1iZmM2LTcwOTEzZDU1ZDA3ZCJ9>

although you will need to return to the home page to switch between the retention and tenure charts. Clicking on the house icon also in the top left of the screen will return you to the home page.

Retention charts

The chart used to illustrate retention rates in the food and fibre sector is called a retention profile. It illustrates what proportion of a cohort of new entrants is expected to be employed in the food and fibre sector each month following the start of their employment. The retention profile is available in the following three views:

1. Retention rates **during the first year of employment** ('The first-year view'),
2. Retention rates **following the first year of employment** ('The post-year view'), and
3. Retention rates across **all years** ('The full picture').

As highlighted previously, the purpose of distinguishing between retention rates in the first year and following the first year is to achieve a clearer picture of the retention of the permanent workforce between industries by removing the short-term variability. In each view of the retention profile, you will be able to 'slice and dice' the data to evaluate how retention rates vary by different segments of the food and fibre sector workforce. The two filters you will be able to adjust are:

- The filter in the top right of the chart below the 'view by' heading. This will allow you to **change the chart key** (note that for Visa status to be chosen in this filter, 'Visa' must also be chosen in the following filter).
- The filters to the right of the screen. These will allow you to filter the data in the chart according to a range of **workforce demographics** including industry group, industry, ethnicity, age, region, gender, etc. Click on the blue boxes to select your desired filter from the dropdown lists.

To benchmark the food and fibre retention rates in each of the three views, you will be able to select to include benchmarks in the chart using the switch to the top right of the chart. Note that this switch should always be switched off unless the 'View by' filter equals 'Industry'.

Tenure charts

The charts in the dashboard used to illustrate tenure in the food and fibre sector is a stacked 100% column chart where each column indicates what proportion of a workforce segment have been in the workforce for different periods of time⁵. The following four views of the tenure chart, which change the x-axis segments, are available in the dashboard:

- Tenure of workforce by **industry** ('Industry view')
- Tenure of workforce by **ethnicity** ('Ethnicity view'), and
- Tenure of workforce by **visa** held ('Visa view').
- Tenure of workforce by **source of new entrant** ('New entrant view')

⁵ The periods considered in this analysis are 1 – 11 months, 12 – 23 months, 24 – 35 months, 36 – 47 months, 48 – 59 months, and 60 plus months.

Similar to the retention chart, you will then be able to use the filters to the right of the screen to filter the data in the chart according to a range of workforce demographics including industry group, industry, ethnicity, age, region, visa status, and gender.