Whanaungatanga Wellbeing Survey

2023 Detailed Report

Prepared for Fire and Emergency New Zealand

Suggested citation

Mackay, L., Schofield, G., Prendergast, K., Campbell, J., Li, J. (2023). *Whanaungatanga Wellbeing Survey: 2023 Detailed Report.* Report prepared for Fire and Emergency New Zealand. Auckland, New Zealand.

This document has not been externally peer-reviewed.

Version 1.0
Published: July 2023

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EXECUTIVE SUMMARY

The 2023 Whanaungatanga Wellbeing Survey was conducted to understand the current levels of mental health and perceptions of organisational support of Fire and Emergency New Zealand employees. The survey was undertaken to capture baseline levels before the design and implementation of the Whanaungatanga Programme, a 12-month intervention programme funded by Movember. A follow-up survey will be undertaken in 2024 to assess the effectiveness of the programme.

The Whanaungatanga Programme is a Fire and Emergency initiative to improve the psychological wellbeing of career firefighters and operational managers. The programme is one of 15 international mental ill health or suicide prevention projects for veterans and first responders to receive funding from the Movember Foundation. Auckland University of Technology (AUT) has been subcontracted to evaluate the pilot programme in Te Hiku.

In March 2023, a census survey of all Fire and Emergency employees was conducted online. A total of 1,736 employees completed the survey, with a very high response rate from uniformed firefighters (approximately 70%). This high response rate makes the survey data one of the highest-quality data sets on the mental health of first responders worldwide, as of June 2023.

The purpose of this report is to present the findings of the baseline survey implemented in March 2023.

The objectives of the survey were:

- To determine the current levels of perceived organisational support among uniformed and non-uniformed personnel and managers.

- To determine the current levels of mental health (e.g., post-traumatic stress disorder [PTSD], depression, anxiety, resilience, posttraumatic growth) among uniformed and non-uniformed personnel and managers.

- To determine the relationship between perceived organisational support and factors including mental ill health, behavioural outcomes (e.g., presenteeism, extra-role performance), and organisational attitudes (e.g., organisational commitment, cynicism, turnover intention), while controlling for other factors (e.g., demographic, occupational, exposure to potentially traumatic events [PTEs]).

- To collect baseline data which could be used in a case-control design to determine the efficacy of the Whanaungatanga Programme, after a follow-up survey is undertaken in early 2024.

Mental health

The survey revealed high levels of mental ill health in Fire and Emergency employees. Rates of probable depression, anxiety and PTSD were substantially higher in the sample than in the general population, but similar to those observed in other samples of first responders in New Zealand and internationally.

- Almost one in three uniformed firefighters (29.8%) met the criteria for one or more mental ill health indicators, and 77.3% of uniformed firefighters reported the use of at least one maladaptive coping mechanism.

- Around one in four uniformed firefighters (24.2%) reported moderate-to-severe depressive symptoms, while 13.4% reported moderate-to-severe anxiety symptoms, and 13.4% met the criteria for probable PTSD.

- Communication centre staff had the highest rates of moderate-to-severe depressive symptoms (53.4%), anxiety symptoms (43.1%), and probable PTSD (30.9%) when compared to other roles within the organisation.

- The prevalence of moderate-to-severe depressive symptoms and probable PTSD increased with the length of service.

Maladaptive coping strategies, including alcohol and emotional numbing, were high to very high in the sample.

- Potentially hazardous drinking (64.1%) was higher than would be expected in the general population (15-40%).

- Rates of heavy episodic drinking at least monthly were much higher among males (38.2%) than females (15.2%), and higher than the general population (26.2% males and 13.6% females).

- Emotional numbing was also higher among males (30.8%) than females (9.3%).

Organisational factors

Perceived organisational support is a central tenet of the Whanaungatanga Programme. It is the extent to which each employee believes their organisation values their contributions and cares about their wellbeing. We asked participants to report their perceptions of support at three levels: from Fire and Emergency as an organisation, from their managers, and their co-workers. Managers also reported perceptions of support from their personnel.

- Perceptions of support from the organisation were low (13.2%), but higher from managers (42.2%) and co-workers (80.7%).

- Uniformed managers had more positive perceptions of organisational support (38.6%) and personnel support (68.7%) than uniformed firefighters, who had much lower perceptions of support from the organisation (6.6%) and their managers (35.2%).

- Positive perceptions of organisational support decreased with the length of service.

Other perceptions of the organisation were mixed. Rates of negative perceptions were higher in uniformed staff and generally increased with the length of service in the organisation.

- Organisational accountability (9.0%), cynicism (59.5%), gratitude towards the organisation (22.4%), psychological safety (30.1%), commitment to the organisation (30.0%), preparedness to serve the community (23.8%), and organisational competence (23.3%) all indicate that many employees maintain a negative view of organisational culture, capability, and performance.

- On the other hand, affective exchange ideology or the willingness to reciprocate (80.3%), pride in membership (72.2%), turnover intention (18.3%), and extra-role performance (69.3%) demonstrated a strong commitment to the organisation.

- Overall, positive perceptions of the organisation decreased with service.

Exposure to potentially traumatic events

First responders are inevitably exposed to PTEs in their work. These events can lead to poor mental health outcomes, such as depression, anxiety, and PTSD. However, some first responders may also experience post-traumatic growth from these events.

- Almost all uniformed personnel (92.8%) and more than one-third (39.0%) of non-uniformed personnel reported at least one PTE exposure in the past 12 months.

- The median number of PTE events in the past month was 3 for uniformed firefighters and 1 for uniformed managers.

- Uniformed communications centre staff reported the highest rate of PTE exposure. The median number of events in the past month was 20, and the median number of events in the past 12 months was 50.

- Similar to other first responder work, those with high PTE exposure were significantly more likely to experience mental ill health and the use of emotional numbing. Those who experienced high exposure to PTEs in the last month were more than twice as likely to report symptoms of probable PTSD, and more likely to report symptoms of anxiety and depression and high work-family conflict.

Positive perceptions of organisational support and performance were associated with lower rates of mental ill health and use of maladaptive coping mechanisms, and more positive wellbeing indicators, even after accounting for PTE exposure, gender, and length of service.

- Those who held positive perceptions of organisational support were at a lower risk for mental ill health and the use of maladaptive coping mechanisms. Even when taking PTE exposure, gender, and length of service into account, the effects of positive perceptions generally outweighed the magnitude of the PTE exposure.

- Organisational support factors were significantly associated with positive wellbeing indicators. Those with positive perceptions of organisational support, accountability, and competence were more than twice as likely to report high levels of resilience and/or post-traumatic growth, even after adjusting for PTE exposure.

Positive perceptions of organisational support and performance factors are associated with increased commitment, reduced cynicism, and extra-role performance, even after accounting for PTE exposure, gender, and length of service.

- Those who held positive perceptions of organisational support, accountability, and competence were between 5 and 12 times more likely to express a strong commitment to the organisation., and 2 and 6 times more likely to go beyond their formal job requirements in extra-role performance.

- Cynical attitudes towards the organisation were between 2 and 4 times less likely among those who held positive perceptions of organisational support, accountability, and competence.

Conclusions

This work provides significant insights into the mental health and wellbeing of career firefighters, operational managers, and other roles in Fire and Emergency New Zealand. This baseline assessment will be used to assess the effectiveness of the Whanaungatanga Programme pilot interventions.

The baseline findings suggest that negative perceptions of organisational support and performance factors are associated with higher rates of mental ill health and negative attitudes towards the organisation, even after accounting for PTE exposure. The findings also highlight a general trend towards poorer mental health outcomes and negative organisational perceptions with increased length of service. However, these findings are correlational. It is not yet known whether changing organisational factors can directly influence perceived organisational support and reduce the burden of mental ill health. This is the goal of the Whanaungatanga programme. The follow-up survey will assess these outcomes.

Organisational climate and performance factors are associated with key outcomes.

		Mental Health Outcomes			Organisational Attitudes			Behavioural Outcomes		
		Mental ill health	Maladaptive Coping	Positive Wellbeing	High Affective Organisational Commitment	High Organisational Cynicism	High Manager Cynicism	High Turnover Intention	High Presenteeism	High Extra-role Performance
Organisational Climate	High perceived co-worker support	↓	-	↑	↑	-	↓	↓↓	↓	↑↑
	High perceived manager support	↓	↓	↑	↑	↓	↓↓↓	↓	↓	↑
	High perceived organisational support	↓	↓	↑	↑↑↑	↓↓	-	↓↓↓	-	↑
	High perceived psychological safety	↓	↓	↑	↑↑	↓	↓	↓↓	↓	↑
Organisational Performance	High preparedness to serve the community	↓	↓	↑	↑↑	↓	↓	↓	↓	↑
	High organisational accountability	↓	↓	↑	↑↑↑	↓↓	-	↓↓	-	↑↑↑
	High organisational competence	↓	↓	↑	↑↑	↓	-	↓↓	-	↑

Notes.
Adjusted for PTE exposure, gender, and length of service. ↑ AOR 1-3; ↑↑ AOR 3-5; ↑↑↑ AOR >5. ↓ AOR 0.33-1; ↓↓ AOR 0.20-0.33; ↓↓↓ AOR <0.20;. ¬ AOR is not statistically significant.

Data Source: Appendix D-Table 7

BACKGROUND

The Whanaungatanga Programme is a Fire and Emergency initiative to improve the psychological wellbeing of career firefighters and operational managers. It aims to promote connection, trust, and a strong sense of value and belonging. The programme is one of 15 international mental ill health or suicide prevention projects for veterans and first responders to receive funding from the Movember Foundation[1] to support the development and rigorous evaluation of the programme.

The development of the Whanaungatanga Programme uses a positive participatory approach[2] that draws on insights from career firefighters and operational managers gathered through organisational change workshops. The initial pilot programme is being developed and delivered to career firefighters and managers in the Te Hiku region.

Auckland University of Technology (AUT) has been subcontracted to conduct two evaluations for the pilot programme. The first evaluation will assess change in individual outcomes through an electronic survey at baseline and after implementation of the interventions. The second evaluation will understand changes in organisational practice through interviews and focus groups with operational managers.

Additionally, the University of Canberra, which was appointed by Movember as the evaluator, will perform a Return on Investment (ROI) evaluation and a meta-evaluation of all 15 Movember-funded programmes, including the Whanaungatanga Programme.

To ensure the pilot evaluation is robust, Fire and Emergency have provided additional funding to extend the survey to all employees. This extension allows for a comparison of outcomes between the pilot group of career firefighters and managers in Te Hiku and career firefighters and managers in other regions, as well as a non-uniformed group.

The Whanaungatanga Programme has been endorsed by Fire and Emergency New Zealand's Executive Leadership Team (ELT), as well as the New Zealand Professional Firefighters' Union (NZPFU), the Auckland and Whangarei Local Union Committees (ALC, WLC), the Fire and Emergency Commanders' Association (FECA), the Public Services Association (PSA), and the Rural Professionals Association (RPA).

The purpose of this report is to present the findings of the baseline survey implemented in March 2023.

Whanaungatanga Wellbeing Survey

The purpose of the Whanaungatanga Wellbeing Survey is to gain insight into the current levels of mental health and perceptions of organisational support and to assess the effectiveness of organisational change initiatives in improving these outcomes.

The objectives of the survey are:

- To determine the current levels of perceived organisational support among uniformed and non-uniformed personnel and managers.
- To determine the current levels of mental health (e.g., post-traumatic stress disorder [PTSD], depression, anxiety, resilience, posttraumatic growth) among uniformed and non-uniformed personnel and managers.

- To determine the relationship between perceived organisational support and factors including mental ill health, behavioural outcomes (e.g., presenteeism, extra-role performance), and organisational attitudes (e.g., organisational commitment, cynicism, turnover intention), while controlling for other factors (e.g., demographic, occupational, exposure to potentially traumatic events).
- To determine differences in perceived organisational support, mental ill health, behavioural outcomes, and organisational attitudes between the baseline survey and the follow-up survey.
    - To determine the extent to which these differences are explained by the pilot Whanaungatanga Programme.

Survey development

The AUT research team developed the comprehensive survey in collaboration with a technical advisory group from Fire and Emergency, the late Professor Robert Eisenberger (1943-2022), and Dr Zihan Liu from the University of Houston. Professor Eisenberger was an internationally renowned expert in organisational psychology, management, and leadership, best known for his pioneering work on perceived organisational support (POS)[3]. The survey was reviewed by clinical psychologists and subject matter experts in first responder trauma research.

The survey is specifically designed for the unique challenges and demands faced by first responders. It is based on the Job Demands-Resources (JD-R) Model[4] and POS Theory[5]. The JD-R model explains how the demands of the job can impact employee wellbeing and work outcomes. It recognises that job demands such as high workload, time pressure, and repeated exposure to potentially traumatic events (PTEs) can lead to mental ill health if not balanced by job resources such as organisational and social support. POS Theory highlights the importance of employees' perceptions of organisational support and their sense of being valued.

Together, these frameworks provide a comprehensive understanding of the unique work demands and pressures faced by first responders and can help the organisation develop targeted strategies to better support their employees in the face of repeated exposure to PTEs.

Survey testing

Pilot testing of the survey was conducted by the technical advisory group, firefighters, managers, non-operational staff, clinical psychologists, and several subject matter experts in the first responder research field. Based on their feedback, amendments were made to the wording, order, and presentation of survey questions.

Approvals

The Auckland University of Technology Ethics Committee (AUTEC) approved the application for ethics approval for the Whanaungatanga Wellbeing Survey on 17 January 2023 (reference number 22/320). AUTEC approved the amendment for the extended sample to include all Fire and Emergency employees on 2 February 2023. The final survey was signed off by Fire and Emergency on 2 February 2023.

Survey implementation

The baseline survey was conducted online using the Qualtrics survey platform in March 2023 before the organisational change workshops were held in the Te Hiku Region. A total of 1,736 employees completed the survey.

Respondents to the baseline survey will be invited to complete the same survey in 2024, after the pilot implementation of the co-designed organisational change interventions. This follow-up survey will help to measure the effectiveness of the organisational change interventions.

The target population for the survey was employees of Fire and Emergency New Zealand, including both operational and non-operational staff. Two distribution lists were created from HRIS information:

- Career firefighters and operational managers in the Te Hiku region (Whanaungatanga Programme Group), and
- All other employees (Control Group).

Invitations to participate in the survey were sent by the Fire and Emergency communications team to each list,

along with the relevant Participant Information Sheet attached.

Upon completing the electronic consent form and two-step verification, participants were able to self-complete the survey online via the Qualtrics survey platform.

Due to a series of significant weather events that impacted the operations of Fire and Emergency, the release of the survey was delayed until the first week of March 2023. The survey was launched with a soft launch on 7 March to a small number of stations and then expanded to the full organisation on 9 March. The survey was open for three weeks, from 9 March to 30 March 2023.

To encourage participation, two reminders were sent to eligible participants during the survey period. Targeted reminders were sent to participants that started but had not completed the survey within 5 days.

The Whanaungatanga Project Team undertook additional advocacy, through the NZPFU and other informal channels, to encourage career firefighters to complete the survey.

Structure of the report

This report presents the findings of the baseline 2023 Whanaungatanga Wellbeing Survey. It begins by providing an overview of self-reported exposure to PTEs. It then presents findings on the perceptions of organisational factors and mental health outcomes in the sample.

Each section of the report begins with an overview of the topic and relevant insights from the literature. This is followed by a presentation of key findings from the survey. Relevant indicators within each section are then presented in detail. Survey findings are presented for the whole sample, and key differences between role types and trends across the length of service are highlighted.

All data presented in the report are drawn from the tables in the appendices.

At the end of the survey, respondents were provided an option to add comments in an open-ended text box. These comments will be analysed and reported along with findings from the qualitative interviews and focus groups held with operational managers.

Interpretation of the survey findings

Medians and interquartile range
The median and interquartile range (IQR) are two statistical measures that describe the centre and spread of a set of data. The median is the middle value in a set of numbers when arranged in order. The IQR is the range of values that includes the middle 50% of the data. Neither measure is affected by outliers, which are extreme values that can skew the mean.

Prevalence and 95% confidence intervals
Prevalence is the percentage of people in a population who have a specific outcome. Confidence intervals (CIs) estimate the range of values where the true prevalence of the outcome is likely to fall, with a 95% level of confidence.

Odds ratios
Logistic regression odds ratios (ORs) tell us how much the chances of a specific outcome change based on a certain factor. For example, the odds of probable post-traumatic stress disorder (PTSD) may increase or decrease depending on the level of exposure to PTEs. An OR greater than 1 means the group being compared has a higher chance of experiencing the outcome compared to the reference group. An OR lower than 1 suggests a lower chance of experiencing the outcome.

If the odds ratio is less than 1, you can convert it to a positive odds ratio by taking its inverse. To do this, divide 1 by the odds ratio. For example, dividing 1 by 0.18 is approximately 5.56. This conversion makes it easier to interpret the relationship between the groups.

An adjusted odds ratio (AOR) is an odds ratio that has been adjusted for other factors that may be related to the outcome. For example, an AOR for the relationship between PTE exposure and probable PTSD would control for other factors such as gender and length of service. Adjusted odds ratios are more reliable than unadjusted odds ratios because they account for other factors that may be influencing the relationship between the factor and the outcome.

The 95% confidence interval (CI) for an odds ratio is a measure of how precise the odds ratio is. It provides a range of values within which we can be 95% confident that the true odds ratio lies. If the range between the lower and upper 95% CI values includes the value of 1, it indicates that the odds ratio is not statistically significant. This means that the data is not strong enough to support the claim that there is a relationship between the factor and the outcome.

A significance level of $p < .05$ (*) means that there is a 5% or less chance that an observed result is due to chance.

Example:

Group		Odds ratios of Probable PTSD			
		Prevalence	Adjusted		
		%	AOR	(95% CI)	
PTE Exposure	Low	10.4%	1.00	ref	
	High	23.8%	2.63	(1.86-3.72)	***
Gender	Male	12.8%	1.00	ref	
	Female	11.4%	1.02	(0.62-1.70)	
Length of Service	Less than 12 Months	3.1%	0.18	(0.04-0.77)	*
	1-2 Years	6.6%	0.42	(0.19-0.94)	*
	3-5 Years	9.6%	0.54	(0.33-0.89)	*
	6-10 Years	12.9%	0.80	(0.53-1.22)	
	More than 10 Years	14.9%	1.00	ref	

Symbols: * Significance level p <.05, ** Significance level p <.01, *** Significance level p <.001

Individuals with high PTE exposure in the last month had 2.63 times the odds of screening positive for probable PTSD compared to those with low exposure, after accounting for gender and length of service.

The odds of screening positive for probable PTSD for females compared to males were 1.02, but the confidence interval (0.62-1.70) suggests that this difference could have occurred by chance.

Individuals with less than 12 months of service had significantly lower odds (0.18) of screening positive for PTSD compared to the reference group. If we calculate the inverse of the odds ratio, we find that the chances of screening positive for PTSD were about 5.56 times higher in the reference group than in individuals with less than 12 months of service.

TRAUMA EXPOSURE AT WORK

Trauma is an intense emotional or psychological response to a physically or emotionally harmful or distressing event that leads to long-lasting adverse effects on mental and physical health. Trauma can be caused by a single event or by repeated exposure to such events.

Measuring first responders' exposure to potentially traumatic events (PTEs) poses challenges. Existing measures, such as the Life Events Checklist (LEC-5), are lengthy and are designed for broader life contexts, focusing on single exposures rather than frequency. This survey focuses on PTE exposure in the workplace. The self-report for exposure to PTEs measure is based on the *DSM-5* criteria for trauma. According to the *DSM-5*, trauma requires exposure to "actual or threatened death, serious injury or sexual violence"[6]. These exposures can occur through various means:

1. **Direct exposure:** This refers to personal experiences of facing a life-threatening situation or sustaining a severe injury during an incident. It includes situations where there is a significant risk of serious injury or death, such as being involved in a near miss during a fire or other hazardous event.

2. **Witnessing exposure:** This occurs when first responders are present at an incident where someone died or was at risk of death, or where there was a serious injury or potential for one. Examples include responding to calls involving fatalities, out-of-hospital cardiac arrest, fire-related rescues, or severe motor vehicle accidents.

3. **Indirect exposure:** This occurs when personnel who are not in close physical proximity to an incident are still exposed to traumatic details of the incident, as part of their work. For instance, communication centre personnel receiving details of an infant's cardiac arrest or a fire investigator writing a report on a fire that led to serious injuries.

Survey respondents reported the number of times they responded to or were exposed to PTEs in the last month and the last 12 months, according to the criteria above. The upper quartile of responses indicated high exposure to PTEs, which equates to 5 or more PTE events in the last month or 20 or more PTE events in the last 12 months. This high threshold reflects the significant exposure to PTEs reported by Communications Centre respondents.

Additionally, almost all survey respondents (93%) consented to provide their K41 and K13 data, which were securely supplied by the organisation for analysis (63% of cases were linked). A K41 is a code transmitted to the communication centre by an appliance to indicate a fatality at the scene, and a K13 code indicates a potentially traumatic event.

Key findings

Almost all uniformed personnel (92.8%) and more than one-third (39.0%) of non-uniformed personnel reported at least one PTE exposure (direct, witnessed, or indirect) in the last 12 months with Fire and Emergency.

*   19.1% of uniformed firefighters and 8.1% of uniformed managers reported 5 or more PTE exposures in the last month. The median number of events in the last month was 3 for uniformed firefighters and 1 for uniformed managers.
*   40.1% of uniformed firefighters and 19.0% of uniformed managers were exposed to 20 or more PTEs in the last 12 months. The median number of events in the last month was 15.5 for uniformed firefighters and 3 for uniformed managers.
*   Uniformed communications centre staff reported the highest rate of high PTE exposure, both in the last month (74.5%) and in the last 12 months (81.8%). For these staff members, the median number of events in the last month (*Md* = 20) and the last 12 months (*Md* = 50) reached the highest bracket available in the survey, indicating a conservative estimate.

There is a weak alignment between self-reported PTE exposure and the administrative K41 and K13 system used to track events.

*   Administrative K41 and K13 codes were obtained for 1,013 survey respondents (95% of uniformed firefighter respondents). The median number of K41 and K13 codes recorded in the last 12 months was 6.
*   Only 36% of respondents who reported high PTE exposure in the last 12 months had corresponding high PTE exposure indicated by the administrative K41 and K13 codes. The K41 code captures actual fatalities, whereas the self-report PTE exposure captures actual and threatened death, and actual and threatened serious injury through direct, indirect, or witnessed exposure.

ORGANISATIONAL FACTORS

Organisational psychosocial factors play an important role in employees' experiences at work. These factors encompass a wide range of elements within an organisation that directly influence various aspects of employees' daily professional lives, including their job satisfaction, motivation, wellbeing, and overall engagement. Research conducted among first responder populations has demonstrated that organisational factors play a role in mitigating the negative effects of exposure to potentially traumatic events (PTEs) on mental ill health and turnover intention[7,8]. This section presents survey findings for organisational factors, such as organisational climate and performance, as well as attitudes towards the organisation and employee behaviours (e.g., presenteeism and extra-role performance).

Key findings

Despite some challenging perceptions of the organisation, survey respondents expressed a strong sense of pride in being a part of the organisation and belief in affective exchange ideology.

- Overall, nearly 3 in 4 survey respondents (72.2%) expressed a strong sense of pride in being a part of Fire and Emergency, however, this sense of pride appears to decline as length of service increases.
- Despite this strong sense of pride, less than 1 in 4 survey respondents (22.4%) expressed gratitude towards the organisation.
- A strong belief in affective exchange ideology was held by 4 in 5 survey respondents (80.3%), indicating the expectation that positive behaviours demonstrated by the organisation should be reciprocated with loyalty, pride, and respect from its employees.

Perceptions of support varied across different levels of the organisation, with the highest perceptions of support from co-workers and the lowest perceptions of support from the organisation.

- Overall, 13.2% of survey respondents felt supported by Fire and Emergency as an organisation, with even lower rates among uniformed firefighters (6.6%). Managers perceived higher levels of support from their personnel (79.9%) compared to the perceptions of support reported by personnel about their managers (42.2%). Additionally, perceived support between uniformed and non-uniformed staff was generally low.
- In contrast, positive perceptions of support from co-workers were relatively high across all role types (80.7%).
- The sense of feeling safe to bring up issues without reprisal was also low among survey respondents (30.1%), with the lowest rates reported by uniformed firefighters and communication centre employees.
- Overall, perceptions of organisational support and psychological safety declined with longer length of service.

Perceptions of organisational performance were lower among uniformed personnel than among managers.

- One in 4 survey respondents reported feeling prepared to serve their community (23.8%). Rates were highest among non-uniformed managers (44.6%) and uniformed managers (43.4%), and lowest among uniformed firefighters (19.0%).
- One in 10 survey respondents agreed that the organisation exhibited accountability for its actions (9.0%) and nearly 1 in 4 respondents held positive perceptions of organisational competence (23.8%).
- Overall, perceptions of organisational performance were more positive among managers than uniformed staff, and perceptions declined with longer length of service.

Positive perceptions of organisational support, accountability and competence were significantly associated with less cynical attitudes towards the organisation and greater extra-role performance, even when taking PTE exposure, gender, and length of service into account.

- Those who felt supported by Fire and Emergency as an organisation and held positive perceptions of organisational accountability and competence were between 5 and 12 times more likely to express a strong commitment to the organisation, and 2 and 5 times less likely to express an intention to leave the organisation.
- Cynical attitudes towards the organisation were between 2 and 4 times less likely among those who held positive perceptions of organisational support, accountability, and competence. High PTE exposure remained a significant predictor of high cynicism, even after adjusting for various organisational factors.
- Similarly, positive perceptions of organisational support, accountability, and competence were associated with between 2 and 6.5 times the likelihood of reporting extra-role performance.

Central Emotions

The emotional connection between employees and their workplace can significantly impact work attitudes and behaviours. This section presents survey findings on these emotional connections, including gratitude towards the organisation, affective exchange ideology, and pride in membership.

Gratitude towards the organisation

Employees who feel grateful to their organisation appreciate and recognise the organisation's support, opportunities, and positive contributions to their professional growth and wellbeing. This gratitude leads to greater positive emotions and pro-social traits, such as helping and supporting others and being less likely to exhibit negative emotions[9]. In turn, this creates a better working environment for all employees.

In this survey, gratitude towards the organisation was measured with a 6-item scale. Scores on the scale range from 1-7, with scores of 5 or higher indicating positive feelings of gratitude towards the organisation.

Survey findings:

- **Overall, 22.4% of survey respondents (15.5% uniformed firefighters) reported feeling thankful and appreciative of how Fire and Emergency have supported and treated them.** Gratitude towards the organisation was higher among females (31.4%) than males (20.7%).
- **Uniformed firefighters (15.5%) and uniformed communications centre staff (19.0%) reported the lowest rates of gratitude**, while around half of uniformed managers (54.2%) and non-uniformed managers (53.6%) expressed positive feelings of gratitude towards the organisation.
- **Feelings of gratitude towards the organisation declined with longer length of service.** While 38.9% of survey respondents with less than 12 months of service expressed gratitude, this percentage dropped to 20.5% after 3 years of service.

Affective exchange ideology

Affective exchange ideology recognises there is a reciprocal relationship between employees and their employers. Employees with strong affective exchange ideology believe that when an organisation demonstrates positive behaviours towards the employee, the employee should reciprocate with positive attitudes and behaviours, such as loyalty, pride, and respect.

In this survey, affective exchange ideology was measured with a 4-item scale. Scores on the scale range from 1-7, with scores of 5 or higher indicating stronger affective exchange ideology.

Survey findings:

- **Overall, 4 in 5 survey respondents (80.3%) agreed that employees should reciprocate when the organisation demonstrates positive behaviours towards employees,** with more males (81.7%) than females (74.9%) holding this belief.
- This belief was held across the organisation, with no clear differences by type of role or length of service.

Pride in membership

Pride in membership of an organisation reflects the sense of honour, satisfaction, and loyalty that employees feel towards their organisation. It symbolises a strong connection to its values, mission, and overall identity, and can provide valuable insights into employees' commitment and motivation within the workplace.

In this survey, pride in membership was measured with a 3-item scale. Scores on the scale range from 1 to 7, with scores of 5 or higher indicating strong pride in membership.

Survey findings:

- **Overall, nearly 3 in 4 survey respondents (72.2%) expressed pride in being part of Fire and Emergency,** with no notable difference between males and females.
- **Managers, both uniformed (88.0%) and non-uniformed (83.9%), reported the highest rates of pride in membership**. In contrast, while most uniformed firefighters (69.5%) are proud to be part of Fire and Emergency, they reported the lowest rate of all role types.
- **Pride in membership declined with longer length of service.** While 89.4% of survey respondents with less than 12 months of service reported pride in being a part of the organisation, this fell to below 70% of survey respondents who have been working for the organisation for 6 years or more.

Organisational Climate

The perception of the working environment and the overall culture of the organisation is defined as organisational climate. It can greatly influence employee behaviour[7]. In first responder roles, the organisational climate has been shown to play a crucial role in mitigating the demands of highly stressful work and buffering against distress from traumatic incidents[7,10]. This section presents an overview of survey respondents' perspectives of the organisational climate, such as peer and organisational support, as well as psychological safety.

Perceived organisational support

Perceived Organisational Support (POS) refers to how much an employee believes their organisation values their contributions and cares about their wellbeing[5]. Support from supervisors and managers can also help to reduce perceived stress levels among firefighters and mitigate higher turnover rates[11,12].

Peer support is unique in the fire service, as firefighters demonstrate a strong sense of camaraderie and loyalty, which can serve as a protective factor against mental ill health and burnout[13]. Support from co-workers has been shown to reduce suicidal thoughts among firefighters[14]. Perceptions of reciprocal support between operational and non-operational staff can also impact the organisational climate. For example, conflicts with administrators impact job satisfaction[15], while kindness and support lead to increased collaboration and a more positive work environment, resulting in greater commitment and improved outcomes[16].

In this survey, perceived support was measured at each of the following levels:

- Support from the organisation as a whole
- Support from managers (for personnel)
- Support from personnel (for managers)
- Support from co-workers
- Support from non-uniformed staff (towards uniformed employees)
- Support from uniformed staff (towards non-uniformed employees).

The survey employed questions from the POS scale for each of these levels. Scores on the scale range from 1-7, and scores of 5.0 or higher indicate positive perceptions of support.

Survey findings:

- **Only 13.2% of survey respondents (6.6% uniformed firefighters) reported positive perceptions of support from Fire and Emergency as an organisation**. Positive perceptions were higher among females (24.1%) than males (11.0%).
- Managers reported feeling supported by their personnel (79.9%), but team members' perceptions of support from their managers were much lower (42.2%).
- Most respondents reported positive perceptions of support from their co-workers (80.7%).
- **Perceptions of support between uniformed and non-uniformed staff were low.** Only 10.4% of uniformed staff felt supported by their non-uniformed colleagues, while 18.6% of non-uniformed staff felt supported by uniformed staff.
- **Uniformed firefighters reported the lowest rates of perceived managerial (35.2%), organisational (6.6%), and non-uniformed support (6.4%),** yet reported high perceived co-worker support (83.4%). Uniformed communication centre staff also reported low perceptions of support from managers (44.8%), the organisation (6.9%), and non-uniformed staff (12.1%).
- **Managers reported more positive perceptions of organisational support than most other role types** (38.6% and 51.8% for uniformed and non-uniformed, respectively). Perceptions of personnel support were higher among non-uniformed managers (96.4%) than uniformed managers (68.7%).
- **Perceptions of support from most levels declined with longer length of service.** Perceived managerial support, organisational support, and support between uniformed staff and non-uniformed staff were all highest in employees with less than 12 months of service and declined thereafter, while perceived co-worker support remained high regardless of the length of service.

Psychological safety

Psychological safety refers to the feeling of safety to express ideas, take risks, and ask questions without fear of reprisal in the workplace[17]. In teams with high psychological safety, employees are more engaged, perform better, and have a higher commitment to their organisation[18]. Teams with high psychological safety foster an environment where constructive conflict can occur, with respect for each other's competence and intentions[17,18].

Perceived psychological safety is strongly influenced by leader support, inclusiveness, trustworthiness, shared team rewards, and access to mentoring[18]. This is particularly important for first responders who are at a higher risk of work-related stress and mental ill health[19]. In the case of ambulance personnel, a higher level of psychological safety has been linked to increased employee wellbeing and lower levels of mental health disorders[20].

In this survey, psychological safety was measured by asking employees about the extent to which they felt they could bring up important issues without fear of reprisal. Scores on the scale range from 1-7, and scores of 5 or higher indicate positive perceptions of psychological safety.

Survey findings:

- **Overall, 30.1% of survey respondents (24.4% of uniformed firefighters) agreed that they could freely bring up issues without fear of reprisal.** Positive perceptions of psychological safety were higher among females (39.3%) than males (28.2%).
- **Non-uniformed managers (64.3%) reported the highest rates of perceived psychological safety, while uniformed firefighters (24.4%) and communications centre staff (25.9%) reported the lowest rates.**
- **Positive perceptions of psychological safety decreased in the first few years of service,** from 46.9% in employees with less than 12 months of service, to below 30% in those with 3 or more years of service.

Organisational Performance

Employee perceptions of organisational performance refer to the views, attitudes, and opinions that employees have about their organisation's ability to achieve its objectives. This section presents an overview of employee perceptions of the organisation's preparedness to serve the community, accountability, and competence.

Perceived preparedness to serve the community

Perceived preparedness to serve the community refers to an employee's sense of being adequately supported by their organisation to fulfil their role and serve the community. It encompasses the provision of necessary resources, equipment, and training to effectively carry out their work.

Studies have shown that training and equipment are critical factors in firefighters' perceived preparedness for their role and subsequent stress levels[13,21,22]. The previous 'Ready to Respond' report for Fire and Emergency highlighted areas where firefighters felt underprepared for serving their communities[13]. This included training for medical emergencies, working with diverse cultures, and dealing with highly distressed families when attending incidents. In other research, firefighters ranked substandard equipment and job skills as causing more distress than exposure to PTEs[22]. These feelings of under-preparedness can impact job performance, attitudes towards the organisation, and mental health.

In this survey, preparedness to serve the community was measured with a 2-item scale. Scores on the scale range from 1-7, with scores of 5 or higher indicating agreement that employees are well-equipped and trained to carry out their roles effectively.

Survey findings:
- **Overall, around 1 in 4 survey respondents (23.8%) agreed that they felt prepared to carry out their roles effectively.** More females (30.7%) felt prepared to serve than their male colleagues (22.4%).
- **Uniformed firefighters (19.0%) and uniformed communication centre employees (22.4%) reported the lowest rates of perceived preparedness across the role types,** compared with 43.4% of uniformed managers and 44.6% of non-uniformed managers.
- **Perceived preparedness was highest among employees with less than 12 months of service (54.9%) but fell to 24.3% after 1-2 years.** For employees with more than 3 years of service, perceived preparedness dropped below 25.0%.

Organisational accountability

Accountability is the responsibility of an organisation to take ownership of its actions and willingness to address mistakes or wrongdoing. Studies have demonstrated that organisations and leaders who exhibit accountability tend to foster positive attitudes and behaviours among employees, such as increased engagement and reduced turnover[23]. Additionally, research indicates that leaders who apologise for their mistakes can have a positive impact on both employee and leader wellbeing. On the other hand, a perceived lack of accountability can have negative effects on organisational perceptions, behaviours, and wellbeing[24].

In a first responder context, shared values and beliefs can serve as indicators for when individuals must hold themselves and others accountable to uphold the organisation's core values and standards[25]. This strongly influences employee expectations of their conduct and that of their team members[26].

In this survey, accountability was measured on a 4-item scale. Scores on the scale range from 1 to 7, and scores of 5 or higher indicate that employees agree that Fire and Emergency exhibit accountability.

Survey findings:

- **Overall, just 1 in 10 survey respondents (9.0%) agreed that Fire and Emergency exhibited accountability for its actions.** Perceptions of organisational accountability were higher among females (18.8%) than males (7.0%).
- **Uniformed firefighters (3.0%) and communication centre staff (6.9%) reported the lowest rates of perceived organisational accountability across the role types.** In contrast, nearly half of the non-uniformed managers (48.2%) felt the organisation exhibited accountability for its actions.
- **Perceptions of organisational accountability declined with longer length of service.** Employees with less than 12 months of service reported the highest rates of perceived organisational accountability (28.3%), while this fell to 10.7% after 1-2 years of service, and below 6% after 6 or more years.

Organisational competence

Organisational competence refers to the perception of an organisation's ability to carry out its role effectively. This perception influences employees' attitudes, behaviours, and performance towards their work[27]. When employees view their organisation as competent, they are more likely to be motivated, engaged, and committed, leading to higher levels of job satisfaction and performance.

For first responders who risk their safety to meet organisational goals, perceived competence is even more critical. Studies have shown that frontline military personnel trust highly competent leaders during training, and this trust transfers to a combat environment[28]. For soldiers going into the combat zone, the leader's perceived competence is their primary concern[28].

In this survey, perceptions of organisational competence were measured on a 6-item scale. Scores on the scale range from 1 to 7, and scores of 5 or higher indicate that employees perceive Fire and Emergency as being competent and capable.

Survey findings:

- **Overall, around 1 in 4 survey respondents (23.3%) agreed with statements about the competence of Fire and Emergency to carry out its role effectively.** Perceptions of organisational competence were higher among females (37.4%) than males (20.3%).
- **Managers, both uniformed (50.6%) and non-uniformed (55.4%), reported the highest rates of perceived organisational competence across the role types.** In contrast, just 14.1% of uniformed firefighters agreed with statements about the competence of the organisation.
- **Perceptions of organisational competence declined with longer length of service.** While 55.8% of survey respondents with less than 12 months of service perceive the organisation to be competent, this fell to just 18.0% after 3 years and remained low for employees serving more than 6 years.

Organisational attitudes

Employee attitudes towards the organisation range from positive, such as having an emotional attachment and loyalty towards the organisation, to negative, such as feelings of cynicism. This section provides an overview of employee attitudes towards the organisation, focusing on two key aspects: affective organisational commitment and cynicism towards the organisation and managers.

This section also presents the results of binary logistic regression models that investigated the predictors of organisational attitudes, adjusting for PTE exposure, gender, and length of service.

Affective organisational commitment

Affective organisational commitment refers to the emotional attachment and loyalty that employees feel towards their organisation. It represents a deep sense of belonging and positive connection, leading to a willingness to invest in their work and support the organisation's goals.

In this survey, affective organisational commitment was measured on a 6-item scale. Scores on the scale range from 1 to 7, and scores of 5 or higher indicate that employees have a strong commitment and attachment to the organisation.

Survey findings:
- **Overall, around 1 in 3 survey respondents (30.0%) expressed a strong commitment to the organisation,** with more uniformed (59.0%) and non-uniformed (57.1%) managers reporting a strong commitment than uniformed firefighters (25.3%).
- **Organisational commitment declined with longer length of service.** While 54.0% of survey respondents with less than 12 months of service reported strong commitment to the organisation, this decreased to 29.5% after 3 years and remained low for employees serving 6 or more years.

Organisational support and accountability are linked with a strong commitment to the organisation.

After adjusting for PTE exposure in the last month, gender, and length of service:
- **Those who viewed the organisation as supportive (AOR = 9.75) and accountable (AOR = 11.92) were nearly 10 and 12 times more likely, respectively, to feel a strong connection to the organisation.**
- Likewise, positive perceptions of organisational competence (AOR = 4.84), psychological safety (AOR = 3.05), and preparedness to serve the community (AOR = 3.13) were associated with high affective organisational commitment.
- Positive perceptions of co-worker support (AOR = 2.54) and managerial support (AOR = 1.96) were also associated with high affective organisational commitment.
- Notably, the level of PTE exposure was not associated with commitment to the organisation.

Cynicism

Cynicism in the workplace refers to a negative attitude and scepticism that employees hold towards their organisation or manager. It involves a lack of trust and belief in the organisation's intentions, actions, and decisions, leading to a sense of disillusionment and detachment. This can result in decreased employee engagement, motivation, and commitment. Cynicism arises when there is a perceived mismatch between what the organisation or manager says and what they do.

In this survey, organisational cynicism was measured on a 4-item scale while cynicism towards managers was measured on a 3-item scale. Scores on the scale range from 1 to 7, and scores of 5 or higher indicate that employees hold more cynical attitudes towards the organisation or their manager.

Survey findings:

- **Overall, 59.5% of survey respondents reported cynical attitudes towards the organisation**, with more cynicism observed among male employees (62.5%) than females (45.2%). In contrast, cynicism towards managers (19.7%) was much lower, with no difference between males and females.
- **Uniformed firefighters reported the highest rates of cynicism (67.3%)**, while the lowest rates of organisational cynicism were reported by non-uniformed managers (32.1%) and other non-uniformed employees (38.4%).
- **Organisational and manager cynicism increased with longer length of service.** Employees with less than 12 months of service reported the lowest rates of cynicism towards the organisation (19.5%) and towards their manager (2.9%). In contrast, cynicism towards the organisation increased to more than half of survey respondents after 1 or more years of service (51.0-67.9%(.

> **PTE exposure and organisational factors linked with cynicism towards the organisation.**
> After adjusting for PTE exposure in the last month, gender, and length of service:
> - **Those who perceived the organisation as supportive (AOR = 0.21) and accountable (AOR = 0.22) were over 4 times less likely to express cynical attitudes towards the organisation.**
> - **Perceived manager support was the most important predictor of cynicism towards managers**. Those who perceived high managerial support were 8 times less likely to report manager cynicism (AOR = 0.12) than those who perceived low managerial support.
> - Positive perceptions of organisational competence (AOR = 0.34), preparedness to serve the community (AOR = 0.35), psychological safety (AOR = 0.45), and manager support (AOR = 0.59) were associated with lower rates of organisational cynicism.
> - High PTE exposure remained a significant predictor of increased cynicism towards the organisation, even after adjusting for various organisational factors (AOR range 1.4-1.5).

Turnover intention

Turnover intention refers to an employee's inclination or desires to leave their current job or organisation.

In this survey, turnover intention was measured on a 3-item scale. Scores on the scale range from 1 to 7, and scores of 5 or higher indicate an intention to leave Fire and Emergency.

Survey findings:

- **Overall, just under 1 in 5 employees (18.3%) expressed an intention to leave the organisation,** with lower rates in uniformed firefighters (16.1%), and higher rates in other uniformed (27.9%) and non-uniformed employees (25.1%).
- **Turnover intention increased with the longer length of service.** While only 8.0% of survey respondents with less than 12 months of service reported an intention to leave, this increased to 22.7% after more than 10 years of service.

> **High perceived organisational support is associated with lower turnover intention.**
> After adjusting for PTE exposure in the last month, gender, and length of service:
> - **Those who perceived the organisation as supportive (AOR = 0.19) were 5 times less likely to express an intention to leave the organisation.**
> - Those with strong co-worker support (AOR = 0.28) and manager support (AOR = 0.55) were less likely to express an intention to leave the organisation.
> - Positive perceptions of organisational accountability (AOR = 0.26), organisational competence (AOR = 0.30), psychological safety (AOR = 0.30), and preparedness to serve the community (AOR = 0.47) were associated with lower rates of high turnover intention.
> - The association between PTE exposure and turnover intention was not significant in the models of perceptions of organisational support and psychological safety. However, exposure to PTEs remained a significant predictor when accounting for the other organisational factors (AOR range 1.4-1.5).

Behavioural outcomes

Employees with positive attitudes and perspectives towards the organisation are more likely to be engaged in their work. This means that they are more likely to be motivated, committed, proactive, and optimistic about their work. They are less likely to come to work when they are ill, and they are more likely to go above and beyond their job descriptions. This section provides an overview of two key employee behavioural outcomes: presenteeism and extra-role performance.

This section also presents the results of binary logistic regression models that investigated the predictors of behavioural outcomes, adjusting for PTE exposure, gender, and length of service.

Presenteeism

Presenteeism is when employees are physically present at work but not fully engaged or productive. It involves reduced performance due to health issues, personal problems, or distractions. This can have negative impacts on productivity, safety, and organisational effectiveness.

In this survey, presenteeism was measured on a 3-item scale. Scores on the scale range from 1 to 7, and scores of 5 or higher indicate that employees regularly turned up to work despite feeling physically or mentally unwell.

Survey findings

- **Around a third of survey respondents (33.0%) reported turning up to work when unwell, with uniformed communications centre staff (46.6%) and other uniformed employees (40.8%) reporting the highest rates of presenteeism.** Uniformed firefighters (32.1%) and other non-uniformed employees (26.9%) reported the lowest rates.
- **Presenteeism increased with increasing years of service.** While only 18.8% of survey respondents with less than 12 months of service reported turning up to work when unwell, this increased to 36.6% after more than 10 years of service.

> **High perceptions of manager and co-worker support are associated with lower rates of presenteeism.**
> After adjusting for PTE exposure in the last month, gender, and length of service:
> - **Employees with positive perceptions of manager support (AOR = 0.78) and co-worker support (AOR = 0.66) were less likely to report for duty when unwell.**
> - Positive perceptions of psychological safety (AOR = 0.70) and preparedness to serve the community (AOR = 0.67) were also associated with lower rates of presenteeism.
> - **Even after adjusting for a range of organisational factors, those who reported high PTE exposure in the last month were nearly twice as likely to report for duty when unwell (AOR = 1.8-1.9).**

Extra-role performance

Extra-role performance refers to voluntary actions by employees that go beyond their formal job requirements. These behaviours contribute to the organisation's effectiveness and success. Examples include helping colleagues, participating in initiatives, offering suggestions, and displaying proactive attitudes. When employees feel satisfied with their job and committed to the organisation, they are more likely to engage in voluntary behaviours that benefit the organisation.

This survey used a 6-item scale to assess extra-role performance. Participants were asked to rate their level of engagement in activities that go beyond their formal job requirements. Scores on the scale ranged from 1 to 7, with scores of 5 or greater indicating extra-role performance.

Survey findings:

- **More than half of survey respondents (69.3%) reported engaging in extra-role performance**, with females (77.6%) reporting higher rates than males (67.7%).
- Non-uniformed managers (100%) reported the highest rates of extra-role performance, whereas uniformed firefighters (61.7%) reported the lowest rates of going beyond their formal job requirements.
- Employees with 1-2 years of service (80.4%) reported the highest rates of extra-role performance but in general, there wasn't a clear trend relating to length of service and extra-role performance.

After adjusting for PTE exposure in the last month, gender, and length of service:

- **Those who perceived the organisation to be accountable were 6.5 times more likely to go beyond their formal job requirements (AOR = 6.50).**
- **Support from managers, co-workers, and the organisation were all associated with higher rates of extra-role performance.** Respondents with positive perceptions of support from managers (AOR = 1.57), co-workers (AOR = 4.43), and the organisation (AOR = 2.25), were more likely to engage in extra-role performance behaviours.
- Employees were also more likely to go above and beyond if they perceived the organisation to be competent (AOR = 2.47).
- High perceived psychological safety (AOR = 1.76) and preparedness to serve the community (AOR = 1.52) were also associated with higher rates of extra-role performance.

MENTAL HEALTH

Mental health is a state of wellbeing that allows individuals to manage stress, fulfil their responsibilities, work productively, and contribute to their communities[29]. Mental health is not just the absence of mental illness; it is a continuum that ranges from optimal mental health to severe mental ill health.

There is growing evidence that first responders are at increased risk of mental ill health, suicide, and use of maladaptive coping mechanisms than the general population[30,31]. However, research has also shown that first responders can experience positive mental health outcomes in response to stressful and traumatic events, such as post-traumatic growth[32].

This section presents survey findings for indicators of mental ill health (depression, anxiety, and PTSD), use of maladaptive coping mechanisms (alcohol use and emotional numbing), and positive mental health indicators (life satisfaction, job satisfaction, resilience, and post-traumatic growth).

Key findings

Uniformed firefighters reported significantly higher rates of mental ill health and use of maladaptive coping mechanisms than the general population.

- Almost one in three uniformed firefighters (29.8%) met the criteria for one or more mental ill health indicators, and 77.3% of uniformed firefighters reported the use of at least one maladaptive coping mechanism.
- Around one in four uniformed firefighters (24.2%) reported moderate-to-severe depressive symptoms, while 13.4% reported moderate-to-severe anxiety symptoms, and 13.4% met the criteria for probable PTSD.
- Communication centre staff had the highest rates of moderate-to-severe depressive symptoms (53.4%), anxiety symptoms (43.1%), and probable PTSD (30.9%) when compared to other roles within the organisation.
- In general, the prevalence of mental ill health indicators increased with length of service.
- These findings are consistent with international prevalence rates of depression, anxiety, and PTSD in firefighters and other first responders.

Survey respondents with high exposure to potentially traumatic events (PTEs) were at a significantly higher risk for mental ill health and the use of emotional numbing.

- Those who experienced high exposure to PTEs in the last month were more than twice as likely to report symptoms of probable PTSD, and more likely to report anxiety, depression, and high work-to-family conflict.
- High exposure to PTEs was also associated with higher rates of emotional numbing.

Survey respondents who held positive perceptions of organisational support were at a significantly lower risk for mental ill health and use of maladaptive coping mechanisms, even when taking PTE exposure, gender, and length of service into account.

- Those who felt supported by the organisation, managers, and co-workers, and who felt prepared to serve the community, were significantly less likely to report mental ill health.
- Those who held positive perceptions of psychological safety, organisational accountability, and organisational competence were also significantly less likely to report mental ill health.
- Notably, the association between some organisational factors and mental ill health exceeded the association of PTE exposure, highlighting the potential for improving employee mental health outcomes by enhancing workplace culture.
- Those who reported positive perceptions of organisational support, accountability, and competence were less likely to use maladaptive coping mechanisms, such as alcohol and emotional numbing.

Organisational support factors were significantly associated with positive wellbeing indicators, even when taking PTE exposure, gender, and length of service into account.

- Those with positive perceptions of organisational support, accountability, and competence, were more than twice as likely to report high levels of resilience and/or post-traumatic growth, even after adjusting for PTE exposure.

Mental ill health

Mental ill health refers to negative emotions and experiences that can have a significant impact on a person's life. Given the nature of their work, first responders are particularly vulnerable to mental ill health[30,31,33]. This section provides an overview of the prevalence of common mental ill health conditions such as depressive symptoms, anxiety, and PTSD, as well as work-family conflict in the survey sample. We compare our findings to previous research conducted on both general populations and other first responder groups where available.

- Overall, 31.0% of the sample (29.8% of uniformed firefighters) met the criteria for one or more mental ill health indicators (depressive symptoms, anxiety symptoms, and probable PTSD).
- Rates across all psychological indicators were highest among uniformed communication centre employees (Figure 1).
- A general trend of higher rates of depressive symptoms and probable PTSD is observed with increasing years of service (Figure 2).

Figure 1
Depression, anxiety and post-traumatic stress disorder indicators by role type
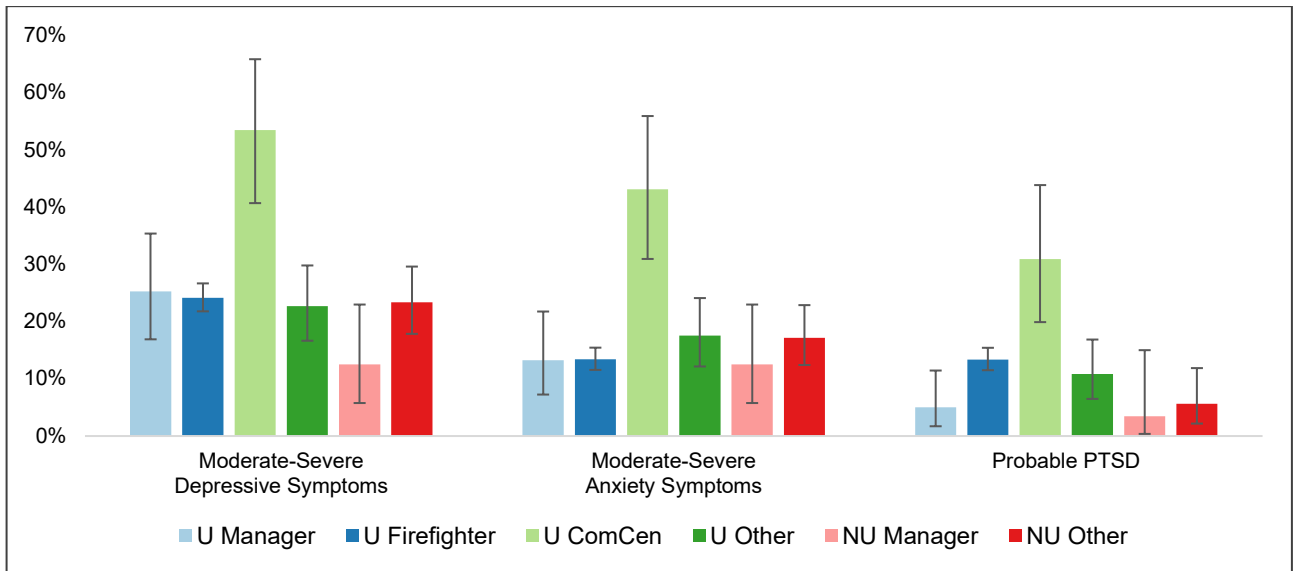
Figure 2
Depression, anxiety and post-traumatic stress disorder indicators by length of service
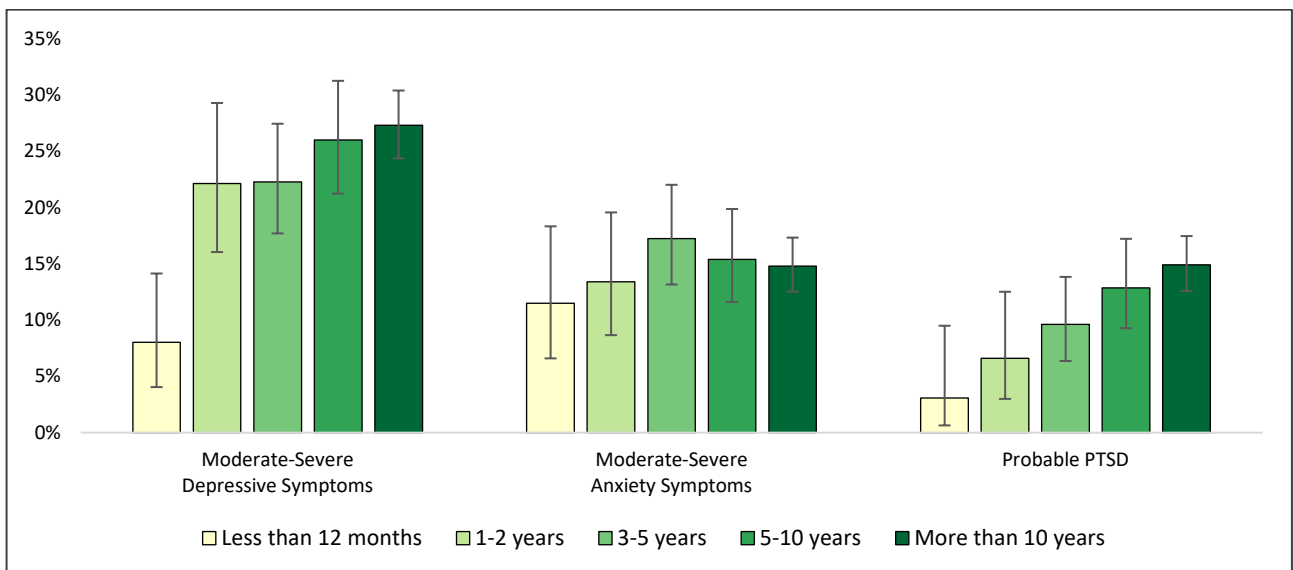
Depressive symptoms

Depression is a mental ill health condition that affects a person's mood, thoughts, and behaviour[34]. It is characterised by persistent feelings of sadness, hopelessness, and loss of interest in activities that one typically enjoys. An estimated 7.4% of adult Americans experienced moderate-to-severe depressive symptoms in 2017[35]. In New Zealand, an estimated 19.3% of the population are diagnosed with clinical depression at some point in their lives, and depression in more common in women, Māori, disabled adults, and young people[36].

International research has shown that first responders are more likely to experience depression than the general population. For instance, the Beyond Blue report revealed that Australian firefighters had more than double the rates of mental ill health than the general population[31]. Similarly, a 2018 survey of Canadian public safety personnel found that 20.2% of firefighters screened positive for major depressive disorder[37], and other studies report rates ranging from 22% to 37%[38]. Additionally, research has shown that firefighters are more likely to have suicidal thoughts than the general population[39].

The survey employed the Patient Health Questionnaire (PHQ-9), a 9-item scale, to assess the severity of depressive symptoms. The scores on this scale range from 0-27, with scores of 10 or higher indicating moderate-to-severe depressive symptoms.

Survey findings:

- The survey found that **24.5% of the sample (24.2% uniformed firefighters) reported moderate-to-severe depressive symptoms in the previous two weeks,** with comparable rates between males (23.9%) and females (26.4%). Notably, this rate is significantly higher than the estimated 7.4% of American adults who experienced moderate-to-severe depressive symptoms in 2017[35], but is comparable to the estimated 20.2% of Canadian firefighters reported in 2018[37].
- **Uniformed communication centre employees had the highest rate of moderate-to-severe depressive symptoms** (53.4%). After adjusting for gender and length of service, uniformed communication centre employees were 3.6 times more likely to report moderate-to-severe depressive symptoms than uniformed firefighters (AOR = 3.6). Canadian research has shown similarly high rates of depressive symptoms among call centre operators and dispatchers[37].
- **Employees with less than 12 months of service had the lowest rate of moderate-to-severe depressive symptoms** (8.0%). After adjusting for gender and type of role, employees with less than 12 months of service were 5 times less likely to report moderate-to-severe depressive symptoms than employees with more than 10 years in the organisation (AOR = 0.20).
- Of those with moderate-to-severe depressive symptoms, **31.0% said it was very-to-extremely difficult to do their work,** take care of things at home, or get along with other people.

Anxiety symptoms

Anxiety is a mental ill health condition characterised by apprehension and somatic symptoms of tension in which an individual anticipates impending danger, catastrophe, or misfortune[40]. In 2019, an estimated 6.1% of adult Americans experienced moderate-to-severe symptoms of anxiety in the previous two weeks[41]. In New Zealand, an estimated one in four people will experience an anxiety disorder at some stage in their lives[42], and anxiety is more common in younger people, women, and Māori[36].

The Beyond Blue[31] report indicated that first responders are at a higher risk of anxiety disorders than the general population. A 2018 survey of Canadian public safety personnel found that 11.7% of firefighters screened positive for generalised anxiety disorder[37], while more recent studies during the COVID-19 pandemic estimate 19-38% of first responders experience anxiety[38].

The survey employed the Generalised Anxiety Disorder (GAD-7), a 7-item scale, to measure the severity of anxiety symptoms. Scores on the scale range from 0-21, and scores of 10 or higher indicate moderate-to-severe symptoms of anxiety.

Survey findings:

- The survey found that **15.1% of the sample (13.4% uniformed firefighters) reported moderate-to-severe anxiety symptoms in the previous two weeks**, with higher rates among females (20.5%) than males (13.9%). Notably, this rate is substantially higher than the estimated 6.1% of American adults who experienced moderate-to-severe symptoms of anxiety in 2019[35], and is slightly higher than the estimated 11.7% of Canadian firefighters reported in 2018[37].
- **Uniformed communication centre employees had the highest rate of moderate-to-severe symptoms of anxiety** (43.1%). After adjusting for gender and length of service, uniformed communication centre employees were 3.8 times more likely to report moderate-to-severe symptoms of anxiety than uniformed firefighters (AOR = 3.8). Canadian call centre operators and dispatchers have also been shown to have higher rates of anxiety than firefighters[37].
- Of those with moderate-to-severe symptoms of anxiety, **38.0% said it was very-to-extremely difficult to do their work**, take care of things at home, or get along with other people.

Posttraumatic Stress Disorder (PTSD)

Post-traumatic stress disorder (PTSD) is a mental ill health condition that can develop in individuals who have directly or indirectly experienced or witnessed traumatic events. PTSD symptoms may arise after a single event or from repeated exposure and can persist long after the original exposure has occurred, affecting an individual's quality of life and ability to function. It is estimated that approximately 70% of the general population will experience a traumatic event at some point in their lifetime[43]. In the United States, around 5% of the general population is affected by PTSD each year, with women being more vulnerable than men[44]. In New Zealand, it is estimated that approximately 1 in 5 people who have experienced traumatic events suffer from PTSD symptoms[45].

First responders are at an increased risk of developing PTSD due to the nature of their work. In the 2018 survey of Canadian public safety personnel, 13.5% of firefighters screened positive for PTSD on the 20-item PCL-5 measure[37]. Similarly, recent surveys in New Zealand estimate 14% of police and 10% of military personnel reported symptoms of clinically relevant PTSD[46,47].

The survey employed the Short Post-Traumatic Stress Disorder Rating Interview (SPRINT), an 8-item scale, to assess the main symptoms of PTSD. Scores on the scale range from 0 to 32, and scores of 17 or higher suggest probable PTSD.

Survey findings:

- **The survey found that 12.7% of the sample (13.4% uniformed firefighters) met the threshold for probable PTSD**, with similar rates among both male (12.8%) and female (11.4%) participants. This finding aligns with other estimates of PTSD in first responders, such as 13.5% of Canadian firefighters[37], 14% of New Zealand police[46], and 10% of New Zealand military personnel[47].
- **Uniformed communication centre employees had the highest rate of probable PTSD**, with 30.9% screening positive for the condition, compared to 13.4% of uniformed firefighters and 5.0% of uniformed managers. After adjusting for gender and length of service, uniformed communication centre employees were 3.2 times more likely and uniformed managers were 3.4 times less likely to screen positive for probable PTSD than uniformed firefighters (AOR = 3.21 and 0.29, respectively). Call centre operators and dispatchers internationally also have higher rates of PTSD than firefighters[37].
- **The rate of probable PTSD increased with longer length of service**, with just 3.1% of employees with less than 12 months in the organisation screening positive for the condition compared to 14.9% of those with more than 10 years of service. Even after adjusting for gender and role type, employees with more than 10 years' service were 5.9 times more likely to screen positive for probable PTSD than employees with less than 12 months of service, and 1.9 times more likely than employees with 3-5 years in the organisation (AOR = 0.17 and 0.53, respectively).

Work-to-Family Conflict

Work-to-family conflict is a common inter-role conflict where the demands of work interfere with fulfilling family-related roles. Although there may be cultural variations, studies generally indicate that men report experiencing more work-to-family conflict than women[48]. First responders are at a high risk of experiencing work-related stress that can spill over into their personal lives. Studies have shown that work-

family conflict in firefighters is linked to higher levels of depressive symptoms and burnout[49-51]. Moreover, research indicates that first responders' work demands can also affect the mental health of their families[52].

The survey employed a 3-item subset of the work-family conflict scale. Scores on the scale range from 1 to 7, and scores of 6.3 or higher indicate high work-family conflict.

Survey findings:

- **Overall, 1 in 4 survey respondents (30.1% uniformed firefighters) reported high work-family conflict**, with higher rates among males (28.2%) than females (13.9%). However, after adjusting for role type and length of service, gender was no longer a significant predictor of high work-family conflict.
- **Uniformed managers (34.9%), uniformed communication centre employees (34.5%), and uniformed firefighters (30.1%) all reported high work-family conflict.** After adjusting for gender and length of service, the odds of reporting high work-family conflict were higher among uniformed firefighters than other non-uniformed (AOR = 0.29), non-uniformed managers (AOR = 0.33) and other uniformed employees (AOR = 0.39).
- **The rate of high work-family conflict increased with the length of service.** After adjusting for gender and role type, employees with less than 12 months of service were 12.5 times less likely to report high work-family conflict than employees with more than 10 years in the organisation (AOR = 0.08).

PTE exposure and mental ill health

International research provides compelling evidence that first responders face an increased risk of mental ill health, including PTSD, depression, and anxiety[30,33,37,46,53-55]. While mental ill health may not occur immediately after one or two traumatic events, prolonged exposure significantly increases the likelihood. Consequently, longer-serving first responders tend to experience higher rates of depression and PTSD compared to their newer counterparts[31,37,46,56].

While first responders' work inherently involves exposure to PTEs, organisations can actively address and improve organisational factors. Multiple studies have demonstrated that organisational factors have a stronger impact on first responders' mental health than direct exposure to trauma itself[7,31,33]. Protective factors, such as social and peer support, effective leadership, a supportive workplace culture, and accessible mental health services, can significantly reduce the risk of

mental ill health in first responders[7,31,33,46,57,58]. Notably, peer and organisational support play a vital role in effectively safeguarding firefighters from mental ill health, burnout, and suicidal thoughts, particularly following traumatic events[14,59]. While personal resilience, supportive relationships, and healthy behaviours are also important individual protective factors[46,47], organisations have limited influence in these areas. Indeed, McCreary's 2019 Movember review emphasised the excessive focus of organisations on individual resilience at the expense of a focus on the organisational stressors that have been shown to contribute to mental ill health, even after controlling for exposure to PTEs[30].

The following survey findings present the results of binary logistic regression models that investigated the predictors of mental ill health in the context of trauma exposure and organisational factors.

High exposure to PTEs linked to mental ill health.

After adjusting for gender and length of service, the findings indicate that **those who reported high exposure to PTEs in the last month were:**

- **nearly twice as likely to meet the criteria for at least one indicator of mental ill health (AOR = 1.83)**, including depression, anxiety, and PTSD, compared to those with low-moderate exposure. Notably, those with less than 12 months of service were four times less likely to meet the criteria for one or more mental ill health indicators than those with more than 10 years of service (AOR = 0.23). This suggests that cumulative exposure to potentially traumatic events (PTEs) may play a significant role.
- **more than twice as likely to screen positive for probable PTSD** compared to those with low-moderate exposure (AOR = 2.63).
- **more likely to report anxiety (AOR = 2.27) and depression (AOR = 1.71)** compared to those who reported low-moderate exposure.
- **more likely to experience high work-to-family conflict** (AOR = 1.86) compared to those with low-moderate exposure.

Organisational factors are independently associated with mental ill health in the context of PTE exposure.

After adjusting for exposure to PTEs in the last month, gender, and length of service:

- A strong link between high exposure to PTEs and mental ill health (AOR = 1.77) remained, while **employees who had a positive perception of support from the organisation were 2.8 times less likely to meet the criteria for at least one indicator of mental ill health** (AOR = 0.36) compared to those who felt unsupported.
- Receiving support from both managers (AOR = 0.67) and co-workers (AOR = 0.62), as well as positive perceptions of psychological safety (AOR = 0.50), played a protective role against mental ill health.
- Similarly, positive perceptions of feeling prepared to serve the community (AOR = 0.59), organisational accountability (AOR = 0.42), and organisational competence (AOR = 0.61) were all factors that helped protect against mental ill health.

Maladaptive Coping Mechanisms

Coping mechanisms are strategies that individuals use to manage stress and reduce anxiety. These can be conscious or unconscious and may be adaptive or maladaptive[60]. Adaptive coping mechanisms include getting regular physical exercise and talking with a therapist, while maladaptive coping mechanisms may include excessive alcohol consumption or emotional numbing. This section presents an overview of these maladaptive coping mechanisms in the survey sample. We compare our findings to previous research conducted on both general populations and other first responder groups where available.

Alcohol Use

Alcohol is one of the most widely consumed psychoactive drugs in the world. It is a common maladaptive coping mechanism during times of high stress or trauma. However, hazardous drinking patterns can pose various health risks, including chronic health conditions, injury, aggression, and psychological issues[61-63].

Cultural norms and lack of knowledge about safe drinking limits are important factors that influence alcohol behaviour[62]. In New Zealand, men are at greater risk of alcohol misuse, with 14.6% reporting heavy episodic drinking on at least a weekly basis, compared to 6.0% of women[36]. First responders, including firefighters, are also particularly vulnerable to alcohol misuse[64,65]. For example, research in the United States has found that 68% of career firefighters have engaged in binge drinking in the past month, and 17% have driven while intoxicated in the past 30 days[66]. Similarly, a report by Beyond Blue[31] in Australia found that nearly 50% of first responders consumed alcohol above levels that are considered harmful in the short and long term. In New Zealand, 18% of police and 54% of military personnel met the threshold for potentially hazardous drinking patterns[22,23].

To assess alcohol consumption patterns, the survey employed the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C), a 3-item scale. The scale's scores range from 0 to 12, and scores of 4 or higher for men and 3 or higher for women indicate potentially hazardous drinking patterns. The survey also reports rates of heavy episodic drinking (i.e., consuming six or more drinks on one occasion) on at least a monthly or weekly basis.

Survey findings:
- **The survey found that 64.1% of the sample (67.6% uniformed firefighters) reported potentially hazardous drinking patterns,** with comparable rates observed among both males (64.9%) and females (60.4%). These findings highlight a significantly higher rate of potentially hazardous drinking patterns than those reported among New Zealand police (18%) and a slightly higher rate than those among New Zealand military personnel (54%)[46,47].
- **Uniformed firefighters (67.6%) and uniformed managers (67.5%) had the highest rates of potentially hazardous drinking patterns**, while uniformed communication centre employees had the lowest rates (50.9%). After adjusting for gender and length of service, uniformed communication centre employees (AOR = 0.44), other non-uniformed employees (AOR = 0.50), and other uniformed employees (AOR = 0.62) were less likely to report potentially hazardous drinking patterns than uniformed firefighters.
- The prevalence of **heavy episodic drinking on at least a weekly basis was much higher among males** (16.5%) than females (4.0%). These rates are comparable to the prevalence observed in the New Zealand adult population, where 14.6% of males and 6.0% of females reported heavy episodic drinking on at least a weekly basis[36].
- The prevalence of **heavy episodic drinking on at least a monthly basis was much higher among males** (38.2%) than females (15.2%). However, these rates for males are substantially higher than the prevalence observed in the New Zealand adult population (26.2% males and 13.6% females)[36].

Emotional Numbing

Emotional numbing is a coping mechanism in which people detach from their emotions, both positive and negative, to deal with distress and trauma. It can be helpful in the short term, but it can lead to problems in the long term, such as difficulty processing emotions, increased risk of mental health problems, and reduced quality of life.

First responders are particularly susceptible to emotional numbing, especially those with PTSD[67]. Symptoms can worsen over time, especially after exposure to highly stressful events. For example, a study found that 15.6% of police officers reported experiencing emotional numbing 5-6 years after the World Trade Centre attacks, compared to 6.7% just 2-3 years after the event[68].

The survey employed 5 items from the general subscale of the Emotional Reactivity and Numbing Scale. Scores on the scale range from 0-7, and scores of 4.6 or higher indicate high levels of emotional numbing.

Survey findings:

- **Overall, 27.4% of survey respondents (32.7% uniformed firefighters) reported high emotional numbing**, with higher rates among males (30.8%) than females (9.3%). After adjusting for role type and length of service, females were 3 times less likely to report high emotional numbing compared with males (AOR = 0.33).
- **Uniformed firefighters (32.7%) and uniformed communication centre employees (31.0%) had the highest rates of high emotional numbing** across the role types. After adjusting for gender and length of service, non-uniformed managers (AOR = 0.14), uniformed managers (AOR = 0.36), other non-uniformed employees (AOR = 0.54), and other uniformed employees (AOR = 0.62) were less likely to report high emotional numbing than uniformed firefighters.
- **Rates of high emotional numbing increase with increasing years of service,** with just 11.5% of employees with less than 12 months of service, and 32.5% of employees with more than 10 years of service reporting high emotional numbing. Even after adjusting for gender and role type, employees with less than 12 months of service (AOR = 0.38) and 1-2 years of service (AOR = 0.60) were less likely to report high emotional numbing than employees with more than 10 years working in the organisation.

PTE exposure and maladaptive coping mechanisms

Failure to address trauma can have long-term consequences on first responders' mental health, including an increased risk of substance use disorders and suicidal thoughts[39]. Emotional numbing among first responders can also lead to increased alcohol consumption and the adoption of other maladaptive coping mechanisms such as smoking, gaming, and gambling, which exacerbate both professional and personal issues[7,54,66,69,70].

The following survey findings present the results of binary logistic regression models that investigated the predictors of maladaptive coping mechanisms in the context of trauma exposure and organisational factors.

> **PTE exposure is associated with increased emotional numbing.**
> After adjusting for gender and length of service, the findings indicate that employees who reported high exposure to PTEs in the last month were:
> - **no more or less likely to report the use of one or more maladaptive coping mechanisms** (95% CI AOR 0.94 – 1.79) compared to those with low-moderate exposure.
> - **no more or less likely to have potentially hazardous drinking patterns** (95% CI AOR 0.85 – 1.51) compared to those with low-moderate exposure.
> - **nearly twice as likely to engage in emotional numbing (AOR = 1.88)** compared to those with low-moderate exposure. Notably, females were three times less likely than males to engage in emotional numbing (AOR = 0.32).

Organisational support factors mitigate the use of maladaptive coping mechanisms.

After adjusting for PTE exposure in the last month, gender, and length of service:

- **Those who held a positive perception of support from the organisation were 2.0 times less likely to report using one or more maladaptive coping mechanisms** compared to those who felt unsupported (AOR = 0.50).
- Additionally, those who perceived support from their managers (AOR = 0.67) and had positive perceptions of psychological safety (AOR = 0.67) were less likely to engage in maladaptive coping mechanisms.
- Similarly, those who held positive perceptions of feeling prepared to serve the community (AOR = 0.68), organisational accountability (AOR = 0.50), and organisational competence (AOR = 0.61) were less likely to engage in maladaptive coping mechanisms.

Positive Wellbeing

Positive wellbeing refers to a state of optimal functioning and flourishing, encompassing positive evaluations of one's life, positive emotions, and effective functioning. It also includes personal resources that enable individuals to function optimally and cope with challenges. In this section, we present an overview of positive wellbeing indicators from our survey sample, such as life satisfaction, job satisfaction, resilience, and post-traumatic growth. We compare our findings to previous research conducted on both general populations and other first responder groups where available.

Life Satisfaction

Life satisfaction refers to the extent to which individuals positively evaluate their overall quality of life. According to the OECD Better Life Index, the average life satisfaction score across member countries is 6.7 out of 10[71]. Individuals with mental health challenges, particularly those with PTSD, tend to have lower levels of life satisfaction[72]. However, research on firefighters has produced mixed results, with some studies finding that firefighters have higher levels of life satisfaction than administrative staff in the same profession[73]. This may be due to firefighters' high levels of work engagement, which can help buffer against stress and increase job and life satisfaction[74].

The survey employed three questions from the Satisfaction with Life Scale. Scores on the scale range from 1-7, and scores of 6.0 or higher indicate high levels of job satisfaction.

Survey findings:
- Overall, **33.1% of survey respondents (32.3% uniformed firefighters) reported high life satisfaction**, with similar rates among males (32.7%) and females (35.6%).
- **Across role types, uniformed communication centre employees (19.0%) had the lowest rate of high life satisfaction** while non-uniformed managers (48.2%) had the highest rate. After adjusting for gender and length of service, uniformed communication centre employees (AOR = 0.43) were less likely to report high life satisfaction, and other uniformed employees (AOR = 1.44) were more likely to report high life satisfaction than uniformed firefighters.

Job Satisfaction

Job satisfaction is the extent to which employees experience positive or negative emotions related to their work. Several factors can influence job satisfaction, such as job security, positive workplace relationships, high autonomy, and low levels of work-related stress[75]. Globally, approximately 75% of people report being happy in their job[76], while nearly 90% of New Zealanders report high job satisfaction[75]. Women tend to report higher levels of job satisfaction than men and job satisfaction tends to increase with age[77]. However, the longer someone remains in a particular organisation, the more job satisfaction may decrease[78]. First responders, especially police and ambulance personnel, have been found to report lower levels of job satisfaction than individuals in other professions[79].

The survey employed three questions about job satisfaction. Scores on the scale range from 1-7, and scores of 6.0 or higher indicate high levels of job satisfaction.

Survey findings:
- Overall, **42.1% of survey respondents (44.7% uniformed firefighters) reported high levels of job satisfaction**, with similar rates among males (42.8%) and females (39.6%).
- **Among different role types, uniformed firefighters (44.7%) had the highest rate of high job satisfaction**, while other non-uniformed employees (32.3%) had the lowest rate. After adjusting for gender and length of service, other uniformed employees (AOR = 0.66) and other non-uniformed employees (AOR = 0.38) were less likely to report high job satisfaction than uniformed firefighters.
- **Rates of high job satisfaction decreased with increasing years of service**, with 59.3% of employees with less than 12 months of service and only 36.7% of employees with more than 10 years of service reporting high job satisfaction. After adjusting for gender and type of role, this effect remained, with employees with less than 12 months of service (AOR = 3.45) more likely to report high job satisfaction than employees with more than 10 years of service.

Resilience

Resilience refers to the ability to recover from stress and approach the next stressor with optimism[80]. Developing resilience requires mental, emotional, and behavioural flexibility[81]. Various socio-demographic factors, such as gender, age, education, income, and personality traits, have been shown to influence resilience.

The survey employed 3 items from the Brief Resilience Scale. Scores on the scale range from 0-7, and scores of 6 or higher indicate high levels of resilience.

Survey findings:

- **Overall, 32.7% of survey respondents (34.5% uniformed firefighters) reported high levels of resilience**, with slightly higher rates among males (33.8%) and females (28.1%). However, after adjusting for the type of role and length of service, no significant difference in resilience rates was found by gender.
- Among different role types, uniformed managers (38.6%) and non-uniformed managers (37.5%) reported the highest rates of high resilience. After adjusting for gender and length of service, uniformed firefighters were more likely to report high resilience than other uniformed employees (AOR = 1.67) and other non-uniformed employees (AOR = 1.59).
- **Employees with 3-5 years of service (28.4%) reported the lowest rates of high resilience**, while those with less than 12 months of service (39.8%) reported the highest rates. After adjusting for gender and type of role, employees with less than 12 months of service were 1.5 times more likely to report high resilience than employees with more than 10 years of service (AOR = 1.54).

Post-Traumatic Growth

Post-traumatic growth refers to the potential for positive change in individuals' lives following traumatic events or challenging life circumstances. While experiencing a traumatic event or struggling with challenging life circumstances can be very difficult for many people, it also has the potential to bring about positive change in people's lives. Post-traumatic growth can result in an increased appreciation of life, an improved sense of personal strength, an increased connection to spirituality, and positive changes in general[32]. Post-traumatic growth appears to be relatively common in first responders, with both recruits and longer-serving members reporting that they experienced positive changes in themselves after having experienced a traumatic event at work.

The survey employed 5 items from the Post-traumatic Growth Inventory. Scores on the scale range from 0-7, and scores of 5.4 or higher indicate high levels of post-traumatic growth.

Survey findings:

- Overall, **29.2% of survey respondents (25.6% uniformed firefighters) reported high levels of post-traumatic growth,** with higher rates among females (45.6%) than males (26.2%). After adjusting for the type of role and length of service, females were more likely to report post-traumatic growth than males (AOR= 1.92).
- Among different role types, **uniformed firefighters (25.6%) and communication centre employees (22.4%) reported the lowest rates of high post-traumatic growth.** After adjusting for gender and length of service, uniformed managers (AOR=1.88), were more likely to report high post-traumatic growth than uniformed firefighters.
- **Employees with more than 6 years of service reported the lowest rates of post-traumatic growth (<26%)**, while those with less than 2 years of service reported the highest rates (> 43%). After adjusting for gender and type of role, employees with less than 12 months (AOR = 1.68) or 1-2 years of service (AOR = 1.88) were more likely to report post-traumatic growth than employees with more than 10 years of service.

PTE exposure and positive wellbeing

While first responders face an increased risk of developing mental ill health, not all traumatic events result in a mental illness. Some individuals may undergo post-traumatic growth, a positive psychological transformation following trauma that fosters resilience and personal growth[32].

The following survey findings present the results of binary logistic regression models that investigated the predictors of positive wellbeing (resilience and post-traumatic growth) in the context of trauma exposure and organisational factors.

High exposure to PTEs is not associated with positive wellbeing indicators.

After adjusting for gender and length of service, the findings indicate that **employees who reported high exposure to PTEs in the last month were:**

- **no more or less likely to score 'high' on one or more positive wellbeing indicators,** such as resilience and post-traumatic growth, (95% CI AOR 0.66 – 1.16), than those with low-moderate exposure.

Organisational support factors linked to positive wellbeing indicators.

After adjusting for exposure to PTEs in the last month, gender, and length of service:

- **Those who held a positive perception of support from the organisation were 2.7 times more likely (AOR = 2.65) to exhibit high levels of resilience and/or experience post-traumatic growth** compared to those who felt unsupported.
- Additionally, those who perceived support from their co-workers (AOR = 2.07) and managers (AOR = 1.33) and held a positive perception of psychological safety (AOR = 1.64), were more likely to report positive wellbeing indicators.
- Similarly, those who held positive perceptions of feeling prepared to serve the community (AOR = 1.99), organisational accountability (AOR = 2.75), and organisational competence (AOR = 2.29), were more likely to report positive wellbeing indicators.

DEFINITIONS OF KEY TERMS

Adjusted Odds Ratio (AOR)	An adjusted odds ratio (AOR) is an odds ratio that has been adjusted for other factors that may be related to the outcome. *See Interpretation of the survey findings, page 7.*
K41 and K13 codes	K41 is a code transmitted to the communication centre by an appliance to indicate a fatality on scene. The suffix following K41 would indicate the number of fatalities (e.g., K41-3 indicates 3 fatalities on scene). K13 is a code transmitted to the communication centre by an appliance to indicate their attendance at a potentially traumatic event.
Odds Ratio (OR)	Logistic regression odds ratios (ORs) tell us how much the chances of a specific outcome change based on a certain factor. *See Interpretation of the survey findings, page 7.*
Potentially Traumatic Event (PTE)	An event that meets the diagnostic definition of a "trauma," as defined by the Diagnostic and Statistical Manual for Mental Disorders (5th Edition; DSM-5). Not all exposures to PTEs result in trauma. The DSM-5 definition of trauma requires "actual or threatened death, serious injury, or sexual violence" (p. 271)[6]. Exposure to actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways: 1. Directly experiencing the traumatic event(s). 2. Witnessing, in person, the event(s) as it occurred to others. 3. Learning that the traumatic event(s) occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental. 4. Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse)

REFERENCES

1. Movember. (2021). *Movember funds new projects to support mental health of vets & first responders*. Movember. https://ie.movember.com/story/movember-funds-new-projects-to-support-mental-health-of-vets-and-first-responders#:~:text=Based%20on%20the%20report%2C%20Movember,effectiveness%20through%20rigorous%20programme%20evaluation.

2. Nielsen, K., & Christensen, M. (2021). Positive participatory organizational interventions: A multilevel approach for creating healthy workplaces. *Frontiers in psychology*, *12*, 696245. https://doi.org/10.3389/fpsyg.2021.696245

3. Shanock, L. R., Shoss, M. K., Coyle-Shapiro, J., Shore, L. M., Zagenczyk, T. J., Buffardi, L. T., Caesens, G., Ford, M. T., Joo, M.-K., Karagonlar, G., Liu, Z., Mesdaghinia, S., Neves, P., Rousseau, D. M., Stinglhamber, F., Wen, X., Zhang, J., & Zheng, D. (2022). Remembering Robert W. Eisenberger: a tribute to his life and his work on perceived organizational support. *Group & Organization Management*, *47*(4), 872-888. https://doi.org/10.1177/10596011221110650

4. Bakker, A. B., & Demerouti, E. (2014). Job demands-resources theory. In P. Y. Chen & C. L. Cooper (Eds.), *Work and wellbeing* (pp. 37–64). https://doi.org/10.1002/9781118539415.wbwell019

5. Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology*, *71*(3), 500-507. https://doi.org/10.1037/0021-9010.71.3.500

6. American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders fifth edition*. American Psychiatric Association. https://doi.org/10.1176/appi.books.9780890425596

7. Back, C.-Y., Hyun, D.-S., Chang, S.-J., & Jeung, D.-Y. (2023). Trauma exposure and suicidal ideation among Korean male firefighters: examining the moderating roles of organizational climate. *Safety and Health at Work*, *14*(1), 71-77. https://doi.org/10.1016/j.shaw.2022.11.005

8. Ryu, H.-Y., Hyun, D.-S., Jeung, D.-Y., Kim, C.-S., & Chang, S.-J. (2020). Organizational climate effects on the relationship between emotional labor and turnover intention in Korean firefighters. *Safety and Health at Work*, *11*(4), 479-484. https://doi.org/10.1016/j.shaw.2020.08.007

9. McCullough, M. E., Emmons, R. A., & Tsang, J.-A. (2002). The grateful disposition: a conceptual and empirical topography. *Journal of Personality and Social Psychology*, *82*(1), 112-127. https://doi.org/10.1037/0022-3514.82.1.112

10. Meyer, E. C., Zimering, R., Daly, E., Knight, J., Kamholz, B. W., & Gulliver, S. B. (2012). Predictors of posttraumatic stress disorder and other psychological symptoms in trauma-exposed firefighters. *Psychological Services*, *9*(1), 1-15. https://doi.org/10.1037/a0026414

11. Maertz Jr, C. P., Griffeth, R. W., Campbell, N. S., & Allen, D. G. (2007). The effects of perceived organizational support and perceived supervisor support on employee turnover. *Journal of Organizational Behavior*, *28*(8), 1059-1075. https://doi.org/10.1002/job.472

12. Varvel, S. J., He, Y., Shannon, J. K., Tager, D., Bledman, R. A., Chaichanasakul, A., Mendoza, M. M., & Mallinckrodt, B. (2007). Multidimensional, threshold effects of social support in firefighters: Is more support invariably better? *Journal of Counseling Psychology*, *54*(4), 458-465. https://doi.org/10.1037/0022-0167.54.4.458

13. Adams, J., Asiasiga, L., McManus, V., & Dickinson, P. (2018). *Ready to respond: impact of illness, injury and death incidents on firefighter wellbeing*. https://fireandemergency.nz/assets/Documents/Files/Report-166-Ready-to-Respond-Firefighter-wellbeing.pdf

14. Carpenter, G. S. J., Carpenter, T. P., Kimbrel, N. A., Flynn, E. J., Pennington, M. L., Cammarata, C., Zimering, R. T., Kamholz, B. W., & Gulliver, S. B. (2015). Social support, stress, and suicidal ideation in professional firefighters. *American Journal of Health Behavior*, *39*(2), 191-196. https://doi.org/10.5993/AJHB.39.2.5

15. Beaton, R. D., & Murphy, S. A. (1993). Sources of occupational stress among firefighter/EMTs and firefighter/paramedics and correlations with job-related outcomes. *Prehospital and Disaster Medicine*, *8*(2), 140-150. https://doi.org/10.1017/S1049023X00040218

16. Qi, J. M., Wang, S., & Koerber, J., Michael A. (2020). When do frontline service employees feel more grateful? *European Journal of Marketing*, *54*(9), 2107-2137. https://doi.org/10.1108/EJM-06-2019-0496

17. Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, *44*, 350-383. https://doi.org/10.2307/2666999

18. Newman, A., Donohue, R., & Eva, N. (2017). Psychological safety: A systematic review of the literature. *Human resource management review*, *27*(3), 521-535. https://doi.org/10.1016/j.hrmr.2017.01.001

19. Darby, J. (2019). *Why we 360: an investigation of psychological distress, injury, and suicide within Fire and Emergency New Zealand*. https://www.nzpfu.org.nz/media/website_pages/news/an-investigation-of-psychological-distress-injury-and-suicide-within-fenz/media_download_1.pdf.

20. Petrie, K., Gayed, A., Bryan, B. T., Deady, M., Madan, I., Savic, A., Wooldridge, Z., Counson, I., Calvo, R. A., & Glozier, N. (2018). The importance of manager support for the mental health and well-being of ambulance personnel. *PLoS ONE*, *13*(5), e0197802. https://doi.org/10.1371/journal.pone.0197802

21. Bryant, R. A., & Harvey, A. G. (1996). Posttraumatic stress reactions in volunteer firefighters. *Journal of Traumatic Stress*, *9*(1), 51-62. https://doi.org/10.1007/bf02116833

22. Sattler, D. N., Boyd, B., & Kirsch, J. (2014). Trauma‐exposed firefighters: Relationships among posttraumatic growth, posttraumatic stress, resource availability, coping and critical incident stress debriefing experience. *Stress and Health*, *30*(5), 356-365. https://doi.org/10.1002/smi.2608

23. Bester, J., Stander, M. W., & Van Zyl, L. E. (2015). Leadership empowering behaviour, psychological empowerment, organisational citizenship behaviours and turnover intention in a manufacturing division. *SA Journal of Industrial Psychology*, *41*(1), 1-14. https://doi.org/10.4102/sajip.v41i1.1215

24. Byrne, A., Barling, J., & Dupré, K. E. (2014). Leader apologies and employee and leader well-being. *Journal of Business Ethics*, *121*, 91-106. https://doi.org/10.1007/s10551-013-1685-3

25. Sweeney, P., Matthews, M. D., Lester, P. D., Hannah, S., & Reed, B. (2022). *Leadership in dangerous situations: A handbook for the armed forces, emergency services and first responders*. Naval Institute Press.

26. Lester, P. (2011). *Leadership in dangerous situations: a handbook for the armed forces, emergency services and first responders*. Naval Institute Press.

27. Taatila, V. (2004). *The concept of organizational competence: a foundational analysis*. University of Jyväskylä. http://urn.fi/URN:ISBN:951-39-1718-5

28. Sweeney, P. J. (2010). Do soldiers reevaluate trust in their leaders prior to combat operations? *Military Psychology*, *22*(sup1), S70-S88. https://doi.org/10.1080/08995601003644312

29. World Health Organization. (2022). *Mental Health*. https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response

30. McCreary, D. (2019). *Veteran and first responder mental ill health and suicide prevention: a scoping review of prevention and early intervention programs used in Canada, Australia, New Zealand, Ireland, and the United Kingdom.* https://uk.movember.com/uploads/files/2020/VFR%20Grants/Movember%20Executive%20Summary%20-%20Veterans%20and%20First%20Responder%20Scoping%20Review.pdf.

31. Beyond Blue Ltd. (2018). *Answering the call national survey, national mental health and wellbeing study of police and emergency services – final report.* https://www.beyondblue.org.au/docs/default-source/resources/bl1898-pes-full-report_final.pdf

32. Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic Growth: conceptual foundations and empirical evidence. *Psychological Inquiry*, *15*(1), 1-18. https://doi.org/10.1207/s15327965pli1501_01

33. Sharp, M.-L., Harrison, V., Solomon, N., Fear, N., King, H., & Pike, G. (2020). *Assessing the mental health and wellbeing of the emergency responder community in the UK*. https://kcmhr.org/erreport2020-mentalhealth-wellbeing/

34. American Psychiatric Association. (2020). *What is depression?* Retrieved 25.04.23 from https://www.psychiatry.org/patients-families/depression/what-is-depression

35. Iranpour, S., Sabour, S., Koohi, F., & Saadati, H. M. (2022). The trend and pattern of depression prevalence in the US: Data from national health and nutrition examination survey (NHANES) 2005 to 2016. *Journal of Affective Disorders*, *298*, 508-515. https://doi.org/10.1016/j.jad.2021.11.027

36. Ministry of Health. (2022). *Annual Data Explorer 2021/22: New Zealand Health Survey [Data File]*. https://minhealthnz.shinyapps.io/nz-health-survey-2021-22-annual-data-explorer/

37. Carleton, R. N., Afifi, T. O., Turner, S., Taillieu, T., Duranceau, S., LeBouthillier, D. M., Sareen, J., Ricciardelli, R., MacPhee, R. S., & Groll, D. (2018). Mental disorder symptoms among public safety personnel in Canada. *The Canadian Journal of Psychiatry*, *63*(1), 54-64. https://doi.org/10.1177/0706743717723825

38. Huang, G., Chu, H., Chen, R., Liu, D., Banda, K. J., O'Brien, A. P., Jen, H.-J., Chiang, K.-J., Chiou, J.-F., & Chou, K.-R. (2022). Prevalence of depression, anxiety, and stress among first responders for medical emergencies during COVID-19 pandemic: a meta-analysis. *Journal of Global Health*, *12*. https://doi.org/10.7189/jogh.12.05028

39. Stanley, I. H., Hom, M. A., Hagan, C. R., & Joiner, T. E. (2015). Career prevalence and correlates of suicidal thoughts and behaviors among firefighters. *Journal of Affective Disorders*, *187*, 163-171. https://doi.org/10.1016/j.jad.2015.08.007

40. American Psychological Association. (n.d.). Anxiety. In *APA Dictionary of Psychology*. Retrieved May 29 2023, from https://dictionary.apa.org/anxiety

41. Terlizzi, E. P., & Villarroel, M. A. (2020). *Symptoms of generalized anxiety disorder among adults: United States, 2019*. US Department of Health and Human Services, Centers for Disease Control and Prevention. https://www.cdc.gov/nchs/data/databriefs/db378-H.pdf

42. Health Navigator New Zealand. (2019). *Anxiety | Mate māharahara*. Retrieved 25.04.23 from https://www.healthnavigator.org.nz/health-a-z/a/anxiety/

43. Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Benjet, C., Bromet, E. J., Cardoso, G., Degenhardt, L., de Girolamo, G., Dinolova, R. V., & Ferry, F. (2017). Trauma and PTSD in the WHO world mental health surveys. *European Journal of Psychotraumatology*, *8*(sup5), 1353383. https://doi.org/10.1080/20008198.2017.1353383

44. National Center for PTSD. (2023). *How common is PTSD in adults?* https://www.ptsd.va.gov/understand/common/common_adults.asp#:~:text=About%205%20out%20of%20every,some%20point%20in%20their%20life

45. Kazantzis, N., Flett, R. A., Long, N. R., MacDonald, C., Millar, M., & Clark, B. (2010). Traumatic events and mental health in the community: A New Zealand study. *International Journal of Social Psychiatry*, *56*(1), 35-49. https://doi.org/10.1177/0020764008095929

46. den Heyer, G. (2021). Risk and protective factors for post-traumatic stress among New Zealand police personnel: a cross sectional study. *Policing: An International Journal*, *44*(5), 909-925. https://doi.org/10.1108/PIJPSM-01-2021-0001

47. Richardson, A., Gurung, G., Samaranayaka, A., Gardner, D., deGraaf, B., Wyeth, E. H., Derrett, S., Shepherd, D., & McBride, D. (2020). Risk and protective factors for post-traumatic stress among New Zealand military personnel: a cross sectional study. *PLoS ONE*, *15*(4), e0231460. https://doi.org/10.1371/journal.pone.0231460

48. Mortazavi, S., Pedhiwala, N., Shafiro, M., & Hammer, L. (2009). Work–family conflict related to culture and gender. *Community, Work & Family*, *12*(2), 251-273. https://doi.org/10.1080/13668800902779023

49. Smith, T. D., DeJoy, D. M., Dyal, M.-A., & Huang, G. (2019). Impact of work pressure, work stress and work–family conflict on firefighter burnout. *Archives of environmental & occupational health*, *74*(4), 215-222. https://doi.org/10.1080/19338244.2017.1395789

50. Smith, T. D., Hughes, K., DeJoy, D. M., & Dyal, M.-A. (2018). Assessment of relationships between work stress, work-family conflict, burnout and firefighter safety behavior outcomes. *Safety science*, *103*, 287-292. https://doi.org/10.1016/j.ssci.2017.12.005

51. Yu, Y., Yang, F., Fu, M., Ahmed, F., Shahid, M., & Guo, J. (2023). Relationship Between Work-Family Conflict and Depressive Symptoms Among Male Firefighters in China: Job Types and Family Structure as Moderators. *Journal of Occupational and Environmental Medicine*, *65*(4), 337-343. https://doi.org/10.1097/JOM.0000000000002759

52. Sharp, M.-L., Solomon, N., Harrison, V., Gribble, R., Cramm, H., Pike, G., & Fear, N. T. (2022). The mental health and wellbeing of spouses, partners and children of emergency responders: A systematic review. *PLoS ONE*, *17*(6), e0269659. https://doi.org/10.1371

53. Geronazzo-Alman, L., Eisenberg, R., Shen, S., Duarte, C. S., Musa, G. J., Wicks, J., Fan, B., Doan, T., Guffanti, G., Bresnahan, M., & Hoven, C. W. (2017). Cumulative exposure to work-related traumatic events and current post-traumatic stress disorder in New York City's first responders. *Comprehensive Psychiatry*, *74*, 134-143. https://doi.org/10.1016/j.comppsych.2016.12.003

54. Skeffington, P. M., Rees, C. S., & Mazzucchelli, T. (2017). Trauma exposure and post‐traumatic stress disorder within fire and emergency services in Western Australia. *Australian Journal of Psychology*, *69*(1), 20-28. https://doi.org/10.1111/ajpy.12120

55. Carleton, R. N., Afifi, T. O., Taillieu, T., Turner, S., Krakauer, R., Anderson, G. S., MacPhee, R. S., Ricciardelli, R., Cramm, H. A., & Groll, D. (2019). Exposures to potentially traumatic events among public safety personnel in

Canada. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*, *51*(1), 37. https://doi.org/10.1037/cbs0000115

56. Regehr, C., Hill, J., Knott, T., & Sault, B. (2003). Social support, self‐efficacy and trauma in new recruits and experienced firefighters. *Stress and Health*, *19*, 189-193. https://doi.org/10.1002/smi.974

57. Chen, J., Li, J., Zhou, Y., Liu, X., & Xu, W. (2021). Enhancement from being present: dispositional mindfulness moderates the longitudinal relationship between perceived social support and posttraumatic growth in Chinese firefighters. *Journal of Affective Disorders*, *279*, 111-116. https://doi.org/10.1016/j.jad.2020.09.137

58. Carleton, R. N., Afifi, T. O., Taillieu, T., Turner, S., Mason, J. E., Ricciardelli, R., McCreary, D. R., Vaughan, A. D., Anderson, G. S., & Krakauer, R. L. (2020). Assessing the relative impact of diverse stressors among public safety personnel. *International journal of environmental research and public health*, *17*(4), 1234. https://doi.org/10.3390/ijerph17041234

59. Adams, J., Asiasiga, L., McManus, V., & Dickinson, P. (2018). *Ready to respond: impact of illness, injury and death incidents on firefighter wellbeing* (Fire and Emergency New Zealand Research Report Number 166, Issue. https://fireandemergency.nz/assets/Documents/Files/Report-166-Ready-to-Respond-Firefighter-wellbeing.pdf

60. American Psychological Association. (n.d.). Coping mechanism. In *APA Dictionary of Psychology*. Retrieved May 29 2023, from https://dictionary.apa.org/coping-mechanism

61. MacKillop, J., Agabio, R., Feldstein Ewing, S. W., Heilig, M., Kelly, J. F., Leggio, L., Lingford-Hughes, A., Palmer, A. A., Parry, C. D., & Ray, L. (2022). Hazardous drinking and alcohol use disorders. *Nature Reviews Disease Primers*, *8*(1), 80. https://doi.org/10.1038/s41572-022-00406-1

62. Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., & Monteiro, M. G. (2001). *The alcohol use disorders identification test: Guidelines for use in primary health care*. World Health Organization https://www.who.int/publications/i/item/WHO-MSD-MSB-01.6a

63. World Health Organization. (2018). *Global status report on alcohol and health 2018*. World Health Organization. https://books.google.co.nz/books?hl=en&lr=&id=qnOyDwAAQBAJ&oi=fnd&pg=PR7&dq=+WHO.+Global+status+report+on+alcohol+and++health+2018.+Geneva:+World+Health++Organization,+2019.+https://www.who.int/+substance_abuse/publications/global_alcohol_+report/en/+(accessed+April+1,+2020).&ots=a1srOHncel&sig=KZ8bRadYGk87ikFJOk8kMqxQVLU&redir_esc=y#v=onepage&q&f=false

64. Martin, C. E., Tran, J. K., & Buser, S. J. (2017). Correlates of suicidality in firefighter/EMS personnel. *Journal of Affective Disorders*, *208*, 177-183. https://doi.org/10.1016/j.jad.2016.08.078

65. Haddock, C. K., Jitnarin, N., Caetano, R., Jahnke, S. A., Hollerbach, B. S., Kaipust, C. M., & Poston, W. S. C. (2022). Norms about alcohol use among US firefighters. *Safety and Health at Work*, *13*, 387-393. https://doi.org/10.1016/j.shaw.2022.08.008

66. Haddock, C. K., Jahnke, S., Poston, W., Jitnarin, N., Kaipust, C., Tuley, B., & Hyder, M. L. (2012). Alcohol use among firefighters in the central United States. *Occupational Medicine*, *62*(8), 661-664. https://doi.org/10.1093/occmed/kqs162

67. Bryant, R. A. (2022). The nature of posttraumatic stress disorder in treatment-seeking first responders. *European Journal of Psychotraumatology*, *13*(1), 2011602. https://doi.org/10.1080/20008198.2021.2011602

68. Wesemann, U., Applewhite, B., & Himmerich, H. (2022). Investigating the impact of terrorist attacks on the mental health of emergency responders: systematic review. *BJPsych Open*, *8*(4), e107. https://doi.org/10.1192/bjo.2022.69

69. Bacharach, S. B., Bamberger, P. A., & Doveh, E. (2008). Firefighters, critical incidents, and drinking to cope: the adequacy of unit-level performance resources as a source of vulnerability and protection. *Journal of Applied Psychology*, *93*(1), 155. https://doi.org/10.1037/0021-9010.93.1.155

70. Paulus, D. J., Vujanovic, A. A., Schuhmann, B. B., Smith, L. J., & Tran, J. (2017). Main and interactive effects of depression and posttraumatic stress in relation to alcohol dependence among urban male firefighters. *Psychiatry Research*, *251*, 69-75. https://doi.org/10.1016/j.psychres.2017.02.011

71. OCED Better Life Index. (2023). *Life satisfaction* https://www.oecdbetterlifeindex.org/topics/life-satisfaction/

72. Karatzias, T., Chouliara, Z., Power, K., Brown, K., Begum, M., McGoldrick, T., & MacLean, R. (2013). Life satisfaction in people with post-traumatic stress disorder. *Journal of Mental Health*, *22*(6), 501-508. https://doi.org/10.3109/09638237.2013.819418

73. Turner, P. J., Siddall, A. G., Stevenson, R. D., Standage, M., & Bilzon, J. L. (2018). Lifestyle behaviours and perceived well-being in different fire service roles. *Occupational Medicine*, *68*(8), 537-543. https://doi.org/10.1093/occmed/kqy110

74. Liu, T., Zeng, X., Chen, M., & Lan, T. (2019). The harder you work, the higher your satisfaction with life? The influence of police work engagement on life satisfaction: a moderated mediation model. *Frontiers in psychology*, *10*, 826. https://doi.org/10.3389/fpsyg.2019.00826

75. Stats NZ. (2019). *Job satisfaction and wellbeing*. https://www.stats.govt.nz/reports/job-satisfaction-and-wellbeing

76. Broom, D. (2020). *What drives job satisfaction? Researchers think this is the answer*. World Economic Forum. https://www.weforum.org/agenda/2020/12/what-drives-job-satisfaction-research/

77. Redmond, P., & McGuinness, S. (2020). Explaining the gender gap in job satisfaction. *Applied Economics Letters*, *27*(17), 1415-1418. https://doi.org/10.1080/13504851.2019.1686111

78. Dobrow, S. R., Ganzach, Y., & Liu, Y. (2018). Time and job satisfaction: A longitudinal study of the differential roles of age and tenure. *Journal of Management*, *44*(7), 2558-2579. https://doi.org/10.1177/0149206315624962

79. Johnson, S., Cooper, C., Cartwright, S., Donald, I., Taylor, P., & Millet, C. (2005). The experience of work‐related stress across occupations. *Journal of managerial psychology*, *20*(2), 178-187. https://doi.org/10.1108/02683940510579803

80. Van Schrojenstein Lantman, M., Mackus, M., Otten, L. S., De Kruijff, D., van de Loo, A. J., Kraneveld, A. D., Garssen, J., & Verster, J. C. (2017). Mental resilience, perceived immune functioning, and health. *Journal of multidisciplinary healthcare*, 107-112. https://doi.org/10.2147/JMDH.S130432

81. American Psychological Association. (n.d.). Resilience. In *APA Dictionary of Psychology*. Retrieved May 29 2023, from https://dictionary.apa.org/resilience

APPENDICES

Appendix A: Sample Characteristics

Appendix B: Data Tables for Research Objective 1

To determine the current levels of perceived organisational support among uniformed and non-uniformed personnel and managers.

Appendix C: Data Tables for Research Objective 2

To determine the current levels of mental ill health (e.g., PTSD, depression, anxiety, resilience, posttraumatic growth) among uniformed and non-uniformed personnel and managers.

Appendix D: Data Tables for Research Objective 3

To determine the relationship between perceived organisational support and factors including mental ill health, behavioural outcomes (e.g., presenteeism, extra-role performance), and organisational attitudes (e.g., organisational commitment, cynicism, turnover intention), while controlling for other factors (e.g., demographic, occupational, exposure to potentially traumatic events).

Table 1

Survey sample characteristics
March 2023

Group		Total	Male		Female	
		N	n	%	n	%
Total Sample		1736	1416	100%	303	100%
Age range	Under 20 years					
	20-29 years	167	121	9%	45	15%
	30-39 years	456	371	26%	83	28%
	40-49 years	483	393	28%	87	29%
	50-59 years	431	354	25%	71	24%
	60 years or older	192	177	13%	14	5%
Ethnicity	Māori	261	211	15%	45	15%
	Pacific peoples	81	69	5%	11	4%
	Asian	32	21	1%	10	3%
	European	1507	1242	88%	260	88%
	Other Ethnicity	221	174	12%	44	15%
	MELAA	14	10	1%	<5	1%
Role type	Uniformed Manager	83	75	5%	8	3%
	Uniformed Firefighter	1181	1090	77%	78	26%
	Uniformed Comcen	58	32	2%	25	8%
	Uniformed Other	154	126	9%	28	9%
	Non-Uniformed Tier 1-4 Manager	56	24	2%	31	10%
	Non-Uniformed Other	198	65	5%	131	44%
Region	Te Hiku (Region 1)	494	432	31%	58	20%
	Ngā Tai Ki Te Puku (Region 2)	234	201	14%	33	11%
	Te Ūpoko (Region 3)	393	346	25%	41	14%
	Te Ihu (Region 4)	228	191	14%	34	11%
	Te Kei (Region 5)	145	125	9%	19	6%
	Comms Centre	63	36	3%	26	9%
	National Headquarters	157	70	5%	86	29%
Length of	Less than 12 Months	113	67	5%	45	15%
	1-2 Years	149	92	7%	55	19%
	3-5 Years	278	197	14%	79	27%
	6-10 Years	293	238	17%	53	18%
	More than 10 Years	839	768	56%	63	21%
Non-Uniformed	Less than 12 Months	<5			<5	20%
	1-2 Years	<5			<5	20%
	3-5 Years	5	<5	13%	<5	40%
	6-10 Years	<5	<5	4%	<5	20%
	More than 10 Years	20	19	83%		
Volunteer	Currently a volunteer firefighter	171	146	10%	25	8%
	Previously been a volunteer firefighter	503	467	33%	33	11%
	Never been a volunteer firefighter	1061	802	57%	245	81%
Years as a	Less than 12 Months	31	27	5%	<5	7%
	1-2 Years	95	92	15%	<5	5%
	3-5 Years	219	200	34%	18	32%
	6-10 Years	148	132	22%	15	26%
	More than 10 Years	161	143	24%	17	30%

1. Participants were able to select more than one ethnic group in the survey, therefore the total counts of the ethnicity categories may be greater than the total number of survey

2. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Research Objective 1.

To determine the current levels of perceived organisational support among uniformed and non-uniformed personnel and managers.

List of tables

Table 1

Gratitude towards the organisation by occupational characteristics

March 2023

| Group | | Total | Total Score | | Gratitude Towards the Organisation[1] | | | |
| | | | | | Disagree | | Agree | |
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1736	3.8	(2.7-4.8)	77.6	(75.6-79.5)	22.4	(20.5-24.4)
Gender	Male	1416	3.8	(2.7-4.7)	79.3	(77.1-81.4)	20.7	(18.6-22.9)
	Female	303	4.2	(3.3-5.3)	68.6	(63.3-73.7)	31.4	(26.3-36.7)
Age Range	Under 20 years	0						
	20-29 years	167	3.8	(2.8-4.8)	76.0	(69.2-82.0)	24.0	(18.0-30.8)
	30-39 years	456	3.8	(2.7-4.7)	81.6	(77.8-84.9)	18.4	(15.1-22.2)
	40-49 years	483	4.0	(3.0-4.8)	79.5	(75.7-82.9)	20.5	(17.1-24.3)
	50-59 years	431	3.7	(2.5-4.8)	76.3	(72.2-80.2)	23.7	(19.8-27.8)
	60 years or older	192	4.1	(2.8-5.3)	67.2	(60.3-73.5)	32.8	(26.5-39.7)
Ethnicity	Māori	261	3.8	(2.7-4.8)	77.8	(72.4-82.5)	22.2	(17.5-27.6)
	Pacific peoples	81	3.7	(3.0-4.3)	86.4	(77.7-92.6)	13.6	(7.4-22.3)
	Asian	32	4.3	(3.6-4.8)	81.3	(65.4-91.8)	18.8	(8.2-34.6)
	European	1507	3.8	(2.8-4.8)	77.4	(75.2-79.4)	22.6	(20.6-24.8)
	Other Ethnicity	221	3.8	(2.8-4.8)	78.7	(73.0-83.7)	21.3	(16.3-27.0)
	MELAA[4]	14	4.0	(2.5-5.0)	S		S	(10.5-54.5)
Type of Role	Uniformed Manager	83	5.0	(4.0-6.0)	45.8	(35.4-56.5)	54.2	(43.5-64.6)
	Uniformed Firefighter	1181	3.5	(2.5-4.5)	84.5	(82.4-86.5)	15.5	(13.5-17.6)
	Uniformed Comcen	58	3.5	(2.5-4.7)	81.0	(69.6-89.5)	19.0	(10.5-30.4)
	Uniformed Other	154	4.3	(3.2-5.3)	69.5	(61.9-76.3)	30.5	(23.7-38.1)
	Non-Uniformed Manager	56	5.0	(3.9-6.0)	46.4	(33.8-59.4)	53.6	(40.6-66.2)
	Non-Uniformed Other	198	4.4	(3.5-5.5)	63.6	(56.8-70.1)	36.4	(29.9-43.2)
Region	Te Hiku (Region 1)	494	3.8	(2.7-4.7)	80.0	(76.3-83.3)	20.0	(16.7-23.7)
	Ngā Tai Ki Te Puku (Region 2)	234	3.8	(2.5-4.7)	79.5	(74.0-84.3)	20.5	(15.7-26.0)
	Te Ūpoko (Region 3)	393	3.7	(2.5-4.5)	81.7	(77.6-85.3)	18.3	(14.7-22.4)
	Te Ihu (Region 4)	228	3.8	(2.8-4.8)	80.7	(75.2-85.4)	19.3	(14.6-24.8)
	Te Kei (Region 5)	145	4.0	(3.0-5.0)	74.5	(67.0-81.0)	25.5	(19.0-33.0)
	Comms Centre	63	3.7	(2.7-5.0)	74.6	(62.9-84.1)	25.4	(15.9-37.1)
	National Headquarters	157	4.7	(3.7-5.7)	56.7	(48.9-64.3)	43.3	(35.7-51.1)
Length of Service	Less than 12 Months	113	4.5	(4.0-5.8)	61.1	(51.9-69.7)	38.9	(30.3-48.1)
	1-2 Years	149	4.2	(3.3-5.0)	68.5	(60.7-75.5)	31.5	(24.5-39.3)
	3-5 Years	278	3.8	(3.0-4.7)	79.5	(74.5-83.9)	20.5	(16.1-25.5)
	6-10 Years	293	3.8	(2.7-4.5)	81.6	(76.8-85.7)	18.4	(14.3-23.2)
	More than 10 Years	839	3.7	(2.5-4.7)	79.3	(76.4-81.9)	20.7	(18.1-23.6)
Volunteer Firefighter	Current or previous volunteer firefighter	674	3.8	(2.7-4.8)	75.8	(72.5-78.9)	24.2	(21.1-27.5)
	Never been volunteer firefighter	1061	3.8	(2.8-4.7)	78.7	(76.2-81.1)	21.3	(18.9-23.8)

1. Gratitude towards the organisation is evaluated through 6 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 6 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 6 items and a Cronbach's alpha of .916.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 2

Affective exchange ideology by occupational characteristics

March 2023

Group		Total	Total Score		Affective Exchange Ideology[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1736	6.0	(5.3-6.8)	19.7	(17.9-21.6)	80.3	(78.4-82.1)
Gender	Male	1416	6.0	(5.3-6.8)	18.3	(16.3-20.4)	81.7	(79.6-83.7)
	Female	303	6.0	(4.8-6.5)	25.1	(20.5-30.2)	74.9	(69.8-79.5)
Age Range	Under 20 years	0						
	20-29 years	167	6.0	(5.0-6.8)	23.4	(17.4-30.2)	76.6	(69.8-82.6)
	30-39 years	456	6.0	(5.3-6.8)	18.6	(15.3-22.4)	81.4	(77.6-84.7)
	40-49 years	483	6.0	(5.3-6.8)	18.4	(15.2-22.1)	81.6	(77.9-84.8)
	50-59 years	431	6.0	(5.0-6.8)	20.2	(16.6-24.2)	79.8	(75.8-83.4)
	60 years or older	192	6.0	(5.3-6.8)	19.8	(14.6-25.9)	80.2	(74.1-85.4)
Ethnicity	Māori	261	6.0	(5.0-7.0)	20.7	(16.1-25.9)	79.3	(74.1-83.9)
	Pacific peoples	81	6.0	(5.0-6.8)	24.7	(16.3-34.9)	75.3	(65.1-83.7)
	Asian	32	6.1	(5.5-7.0)	S		S	
	European	1507	6.0	(5.3-6.8)	19.0	(17.1-21.1)	81.0	(78.9-82.9)
	Other Ethnicity	221	6.0	(5.3-6.8)	21.3	(16.3-27.0)	78.7	(73.0-83.7)
	MELAA[4]	14	6.3	(5.5-6.8)	S		S	
Type of Role	Uniformed Manager	83	6.0	(5.3-7.0)	13.3	(7.3-21.8)	86.7	(78.2-92.7)
	Uniformed Firefighter	1181	6.0	(5.3-6.8)	18.3	(16.2-20.6)	81.7	(79.4-83.8)
	Uniformed Comcen	58	5.8	(4.8-6.3)	25.9	(16.0-38.1)	74.1	(61.9-84.0)
	Uniformed Other	154	6.0	(5.0-6.8)	22.1	(16.1-29.1)	77.9	(70.9-83.9)
	Non-Uniformed Manager	56	6.0	(4.8-6.8)	26.8	(16.6-39.3)	73.2	(60.7-83.4)
	Non-Uniformed Other	198	6.0	(5.0-6.5)	23.7	(18.2-30.0)	76.3	(70.0-81.8)
Region	Te Hiku (Region 1)	494	6.0	(5.3-7.0)	16.0	(13.0-19.4)	84.0	(80.6-87.0)
	Ngā Tai Ki Te Puku (Region 2)	234	6.0	(5.0-6.8)	21.4	(16.5-27.0)	78.6	(73.0-83.5)
	Te Ūpoko (Region 3)	393	6.0	(5.0-6.8)	21.9	(18.0-26.2)	78.1	(73.8-82.0)
	Te Ihu (Region 4)	228	6.0	(5.3-6.8)	18.9	(14.2-24.3)	81.1	(75.7-85.8)
	Te Kei (Region 5)	145	6.0	(5.3-6.5)	19.3	(13.5-26.3)	80.7	(73.7-86.5)
	Comms Centre	63	5.8	(5.0-6.3)	23.8	(14.6-35.3)	76.2	(64.7-85.4)
	National Headquarters	157	6.0	(5.0-6.8)	24.2	(18.0-31.3)	75.8	(68.7-82.0)
Length of Service	Less than 12 Months	113	6.0	(5.0-6.8)	20.4	(13.7-28.5)	79.6	(71.5-86.3)
	1-2 Years	149	6.0	(5.3-6.8)	19.5	(13.7-26.4)	80.5	(73.6-86.3)
	3-5 Years	278	6.0	(5.0-6.8)	22.3	(17.7-27.5)	77.7	(72.5-82.3)
	6-10 Years	293	6.0	(5.0-6.8)	20.8	(16.5-25.7)	79.2	(74.3-83.5)
	More than 10 Years	839	6.0	(5.3-7.0)	18.6	(16.1-21.3)	81.4	(78.7-83.9)
Volunteer Firefighter	Current or previous volunteer firefighter	674	6.0	(5.3-6.8)	18.7	(15.9-21.8)	81.3	(78.2-84.1)
	Never been volunteer firefighter	1061	6.0	(5.0-6.8)	20.4	(18.0-22.9)	79.6	(77.1-82.0)

1. Affective exchange ideology is evaluated through 4 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 4 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 4 items and a Cronbach's alpha of .916.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 3

Pride in membership by occupational characteristics
March 2023

Group		Total	Total Score		Pride in Membership[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1732	6.0	(4.7-7.0)	27.8	(25.8-30.0)	72.2	(70.0-74.2)
Gender	Male	1414	6.0	(4.7-7.0)	28.0	(25.7-30.4)	72.0	(69.6-74.3)
	Female	301	6.0	(5.0-7.0)	24.6	(20.0-29.7)	75.4	(70.3-80.0)
Age Range	Under 20 years	0						
	20-29 years	167	6.0	(4.7-7.0)	25.1	(19.0-32.1)	74.9	(67.9-81.0)
	30-39 years	454	5.7	(4.3-6.7)	29.5	(25.5-33.8)	70.5	(66.2-74.5)
	40-49 years	483	6.0	(4.3-6.7)	28.4	(24.5-32.5)	71.6	(67.5-75.5)
	50-59 years	430	6.0	(4.3-7.0)	28.8	(24.7-33.3)	71.2	(66.7-75.3)
	60 years or older	191	6.0	(5.0-7.0)	20.9	(15.6-27.1)	79.1	(72.9-84.4)
Ethnicity	Māori	261	5.7	(4.7-7.0)	25.3	(20.3-30.8)	74.7	(69.2-79.7)
	Pacific peoples	81	5.3	(4.0-6.0)	38.3	(28.2-49.1)	61.7	(50.9-71.8)
	Asian	32	5.8	(5.0-7.0)	15.6	(6.2-30.9)	84.4	(69.1-93.8)
	European	1503	6.0	(4.7-7.0)	26.8	(24.6-29.1)	73.2	(70.9-75.4)
	Other Ethnicity	220	5.8	(4.5-7.0)	28.6	(23.0-34.9)	71.4	(65.1-77.0)
	MELAA[4]	14	5.5	(3.0-7.0)	42.9	(20.3-68.1)	57.1	(31.9-79.7)
Type of Role	Uniformed Manager	83	6.3	(5.3-7.0)	12.0	(6.4-20.3)	88.0	(79.7-93.6)
	Uniformed Firefighter	1177	5.7	(4.3-6.7)	30.5	(27.9-33.2)	69.5	(66.8-72.1)
	Uniformed Comcen	58	6.3	(5.0-7.0)	20.7	(11.8-32.4)	79.3	(67.6-88.2)
	Uniformed Other	154	6.0	(4.7-7.0)	25.3	(19.0-32.6)	74.7	(67.4-81.0)
	Non-Uniformed Manager	56	6.2	(5.3-7.0)	16.1	(8.3-27.3)	83.9	(72.7-91.7)
	Non-Uniformed Other	198	6.0	(5.0-7.0)	24.2	(18.7-30.6)	75.8	(69.4-81.3)
Region	Te Hiku (Region 1)	493	6.0	(5.0-7.0)	24.9	(21.3-28.9)	75.1	(71.1-78.7)
	Ngā Tai Ki Te Puku (Region 2)	234	5.7	(4.3-6.3)	35.0	(29.1-41.3)	65.0	(58.7-70.9)
	Te Ūpoko (Region 3)	392	5.7	(4.3-6.7)	30.9	(26.4-35.6)	69.1	(64.4-73.6)
	Te Ihu (Region 4)	227	5.7	(4.3-6.7)	32.2	(26.3-38.4)	67.8	(61.6-73.7)
	Te Kei (Region 5)	144	6.0	(5.0-7.0)	22.2	(16.0-29.5)	77.8	(70.5-84.0)
	Comms Centre	63	6.7	(5.0-7.0)	20.6	(12.1-31.8)	79.4	(68.2-87.9)
	National Headquarters	157	6.0	(5.0-7.0)	19.7	(14.1-26.5)	80.3	(73.5-85.9)
Length of Service	Less than 12 Months	113	7.0	(6.0-7.0)	10.6	(5.9-17.3)	89.4	(82.7-94.1)
	1-2 Years	149	6.0	(5.0-7.0)	21.5	(15.5-28.6)	78.5	(71.4-84.5)
	3-5 Years	277	6.0	(5.0-7.0)	22.7	(18.1-27.9)	77.3	(72.1-81.9)
	6-10 Years	291	5.3	(4.3-6.3)	31.6	(26.5-37.1)	68.4	(62.9-73.5)
	More than 10 Years	838	5.7	(4.3-6.7)	31.3	(28.2-34.5)	68.7	(65.5-71.8)
Volunteer Firefighter	Current or previous volunteer firefighter	671	6.0	(4.7-7.0)	25.6	(22.4-29.0)	74.4	(71.0-77.6)
	Never been volunteer firefighter	1060	5.7	(4.3-7.0)	29.2	(26.5-31.9)	70.8	(68.1-73.5)

1. Pride in membership is evaluated through 3 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 3 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .961.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 4

Perceived organisational support by occupational characteristics
March 2023

Group		Total	Total Score		Perceived Organisational Support[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1735	2.9	(1.8-4.1)	86.8	(85.1-88.3)	13.2	(11.7-14.9)
Gender	Male	1415	2.8	(1.6-4.0)	89.0	(87.3-90.5)	11.0	(9.5-12.7)
	Female	303	3.8	(2.5-4.9)	75.9	(70.9-80.5)	24.1	(19.5-29.1)
Age Range	Under 20 years	0						
	20-29 years	167	2.9	(1.9-4.0)	92.2	(87.4-95.6)	7.8	(4.4-12.6)
	30-39 years	456	2.8	(1.6-4.0)	89.0	(85.9-91.7)	11.0	(8.3-14.1)
	40-49 years	482	2.9	(1.8-4.1)	86.1	(82.8-89.0)	13.9	(11.0-17.2)
	50-59 years	431	2.8	(1.8-4.1)	86.1	(82.6-89.1)	13.9	(10.9-17.4)
	60 years or older	192	3.4	(1.9-4.6)	80.2	(74.1-85.4)	19.8	(14.6-25.9)
Ethnicity	Māori	261	3.0	(1.8-4.1)	86.6	(82.1-90.3)	13.4	(9.7-17.9)
	Pacific peoples	81	3.1	(1.8-4.1)	88.9	(80.7-94.4)	11.1	(5.6-19.3)
	Asian	32	3.6	(2.6-5.1)	71.9	(54.9-85.1)	28.1	(14.9-45.1)
	European	1506	2.9	(1.8-4.1)	86.8	(85.0-88.4)	13.2	(11.6-15.0)
	Other Ethnicity	221	2.8	(1.8-4.0)	91.0	(86.6-94.2)	9.0	(5.8-13.4)
	MELAA[4]	14	2.9	(1.8-4.0)	S		S	
Type of Role	Uniformed Manager	83	4.4	(3.0-5.4)	61.4	(50.7-71.4)	38.6	(28.6-49.3)
	Uniformed Firefighter	1180	2.5	(1.5-3.8)	93.4	(91.9-94.7)	6.6	(5.3-8.1)
	Uniformed Comcen	58	2.6	(1.8-3.6)	S		S	
	Uniformed Other	154	3.5	(2.1-4.5)	81.2	(74.4-86.7)	18.8	(13.3-25.6)
	Non-Uniformed Manager	56	5.0	(4.1-5.6)	48.2	(35.5-61.1)	51.8	(38.9-64.5)
	Non-Uniformed Other	198	4.1	(2.9-5.1)	71.2	(64.6-77.2)	28.8	(22.8-35.4)
Region	Te Hiku (Region 1)	494	2.9	(1.6-4.1)	88.3	(85.2-90.9)	11.7	(9.1-14.8)
	Ngā Tai Ki Te Puku (Region 2)	233	2.5	(1.6-3.8)	89.3	(84.8-92.8)	10.7	(7.2-15.2)
	Te Ūpoko (Region 3)	393	2.6	(1.6-3.9)	90.8	(87.7-93.4)	9.2	(6.6-12.3)
	Te Ihu (Region 4)	228	2.8	(1.8-4.0)	91.2	(87.0-94.4)	8.8	(5.6-13.0)
	Te Kei (Region 5)	145	3.4	(2.1-4.3)	84.8	(78.3-90.0)	15.2	(10.0-21.7)
	Comms Centre	63	2.9	(1.9-4.0)	87.3	(77.5-93.8)	12.7	(6.2-22.5)
	National Headquarters	157	4.4	(3.3-5.5)	62.4	(54.7-69.7)	37.6	(30.3-45.3)
Length of Service	Less than 12 Months	113	4.4	(3.8-5.4)	61.1	(51.9-69.7)	38.9	(30.3-48.1)
	1-2 Years	149	3.8	(2.8-4.8)	79.9	(72.9-85.7)	20.1	(14.3-27.1)
	3-5 Years	278	2.8	(1.8-4.0)	87.8	(83.5-91.2)	12.2	(8.8-16.5)
	6-10 Years	293	2.6	(1.6-3.8)	92.5	(89.1-95.1)	7.5	(4.9-10.9)
	More than 10 Years	838	2.6	(1.6-4.0)	89.0	(86.8-91.0)	11.0	(9.0-13.2)
Volunteer Firefighter	Current or previous volunteer firefighter	674	2.9	(1.8-4.1)	87.4	(84.7-89.7)	12.6	(10.3-15.3)
	Never been volunteer firefighter	1060	2.9	(1.8-4.1)	86.4	(84.3-88.4)	13.6	(11.6-15.7)

1. Employee perceptions of organisational support is evaluated through 8 statements from the Perceived Organisational Support (POS) scale. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 8 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 8 items and a Cronbach's alpha of .953.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 5

Team member perceptions of manager support by occupational characteristics

March 2023

Group		Total	Total Score		TM Perceived Manager Support[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1596	4.6	(3.1-5.9)	57.8	(55.4-60.2)	42.2	(39.8-44.6)
Gender	Male	1316	4.5	(3.1-5.6)	60.7	(58.1-63.3)	39.3	(36.7-41.9)
	Female	264	5.6	(4.0-6.6)	41.7	(35.8-47.7)	58.3	(52.3-64.2)
Age Range	Under 20 years	0						
	20-29 years	167	4.5	(3.3-5.9)	60.5	(52.9-67.7)	39.5	(32.3-47.1)
	30-39 years	445	4.6	(3.4-5.9)	57.1	(52.4-61.6)	42.9	(38.4-47.6)
	40-49 years	443	4.5	(3.3-5.9)	58.7	(54.1-63.2)	41.3	(36.8-45.9)
	50-59 years	370	4.4	(2.8-5.8)	59.5	(54.4-64.4)	40.5	(35.6-45.6)
	60 years or older	166	4.9	(3.4-6.0)	50.0	(42.4-57.6)	50.0	(42.4-57.6)
Ethnicity	Māori	246	4.6	(3.3-5.9)	55.3	(49.0-61.4)	44.7	(38.6-51.0)
	Pacific peoples	80	4.5	(3.4-5.9)	57.5	(46.6-67.9)	42.5	(32.1-53.4)
	Asian	30	5.7	(4.0-6.6)	33.3	(18.6-51.1)	66.7	(48.9-81.4)
	European	1378	4.6	(3.1-5.9)	58.1	(55.5-60.7)	41.9	(39.3-44.5)
	Other Ethnicity	204	4.5	(3.1-5.8)	59.3	(52.5-65.9)	40.7	(34.1-47.5)
	MELAA[4]	12	4.9	(2.9-5.9)	50.0	(24.3-75.7)	50.0	(24.3-75.7)
Type of Role	Uniformed Manager							
	Uniformed Firefighter	1180	4.3	(3.0-5.5)	64.8	(62.1-67.5)	35.2	(32.5-37.9)
	Uniformed Comcen	58	4.8	(3.0-5.8)	55.2	(42.4-67.5)	44.8	(32.5-57.6)
	Uniformed Other	154	5.4	(3.8-6.3)	41.6	(34.0-49.4)	58.4	(50.6-66.0)
	Non-Uniformed Manager							
	Non-Uniformed Other	198	6.0	(4.5-6.9)	28.8	(22.8-35.4)	71.2	(64.6-77.2)
Region	Te Hiku (Region 1)	471	4.3	(2.9-5.3)	67.3	(63.0-71.4)	32.7	(28.6-37.0)
	Ngā Tai Ki Te Puku (Region 2)	215	5.3	(3.6-6.0)	45.6	(39.0-52.3)	54.4	(47.7-61.0)
	Te Ūpoko (Region 3)	372	4.3	(2.6-5.4)	65.3	(60.4-70.0)	34.7	(30.0-39.6)
	Te Ihu (Region 4)	213	4.3	(3.1-5.4)	64.8	(58.2-71.0)	35.2	(29.0-41.8)
	Te Kei (Region 5)	136	5.6	(4.5-6.3)	36.8	(29.0-45.1)	63.2	(54.9-71.0)
	Comms Centre	58	4.8	(3.0-5.8)	55.2	(42.4-67.5)	44.8	(32.5-57.6)
	National Headquarters	109	6.0	(4.6-6.9)	29.4	(21.4-38.4)	70.6	(61.6-78.6)
Length of Service	Less than 12 Months	104	5.7	(4.2-6.8)	35.6	(26.9-45.1)	64.4	(54.9-73.1)
	1-2 Years	134	5.5	(4.3-6.5)	38.8	(30.9-47.2)	61.2	(52.8-69.1)
	3-5 Years	264	4.5	(3.3-5.8)	59.1	(53.1-64.9)	40.9	(35.1-46.9)
	6-10 Years	279	4.4	(3.1-5.8)	60.9	(55.1-66.5)	39.1	(33.5-44.9)
	More than 10 Years	754	4.4	(2.9-5.6)	61.9	(58.4-65.4)	38.1	(34.6-41.6)
Volunteer Firefighter	Current or previous volunteer firefighter	611	4.6	(3.1-5.9)	57.4	(53.5-61.3)	42.6	(38.7-46.5)
	Never been volunteer firefighter	984	4.5	(3.3-5.9)	58.0	(54.9-61.1)	42.0	(38.9-45.1)

1. Team member (non-manager) perceptions of their manager support is evaluated through 8 statements from the Perceived Organisational Support (POS) scale. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 4 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 8 items and a Cronbach's alpha of .971.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile).

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 6

Manager perceptions of personnel support by occupational characteristics

March 2023

Group		Total	Total Score		M Perceived Personnel Support[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		139	5.8	(5.2-6.3)	20.1	(14.1-27.4)	79.9	(72.6-85.9)
Gender	Male	99	5.7	(5.0-6.2)	23.2	(15.8-32.2)	76.8	(67.8-84.2)
	Female	39	6.0	(5.8-6.7)	12.8	(5.1-25.8)	87.2	(74.2-94.9)
Age Range	Under 20 years	0						
	20-29 years	<5	S		S		S	
	30-39 years	11	5.8	(5.7-6.0)	S		S	
	40-49 years	39	5.7	(5.0-6.2)	23.1	(12.1-37.9)	76.9	(62.1-87.9)
	50-59 years	61	6.0	(5.3-6.5)	16.4	(8.8-27.1)	83.6	(72.9-91.2)
	60 years or older	26	5.7	(4.8-6.3)	34.6	(18.7-53.7)	65.4	(46.3-81.3)
Ethnicity	Māori	15	5.7	(5.0-6.3)	20.0	(6.0-44.4)	80.0	(55.6-94.0)
	Pacific peoples	<5	S		S		S	
	Asian	<5	S		S		S	
	European	128	5.8	(5.2-6.4)	21.1	(14.7-28.8)	78.9	(71.2-85.3)
	Other Ethnicity	17	5.7	(5.3-6.3)	11.8	(2.5-32.7)	88.2	(67.3-97.5)
	MELAA[4]	<5	S		S		S	
Type of Role	Uniformed Manager	83	5.3	(4.8-5.8)	31.3	(22.1-41.8)	68.7	(58.2-77.9)
	Uniformed Firefighter							
	Uniformed Comcen							
	Uniformed Other							
	Non-Uniformed Manager	56	6.3	(6.0-6.8)	3.6	(0.7-11.0)	96.4	(89.0-99.3)
	Non-Uniformed Other							
Region	Te Hiku (Region 1)	23	5.7	(4.8-6.0)	30.4	(14.8-50.7)	69.6	(49.3-85.2)
	Ngā Tai Ki Te Puku (Region 2)	18	5.7	(4.5-6.3)	27.8	(11.5-50.6)	72.2	(49.4-88.5)
	Te Ūpoko (Region 3)	21	5.5	(4.7-6.3)	28.6	(12.9-49.7)	71.4	(50.3-87.1)
	Te Ihu (Region 4)	15	5.2	(4.8-6.0)	33.3	(14.0-58.4)	66.7	(41.6-86.0)
	Te Kei (Region 5)	9	5.3	(5.2-5.8)	11.1	(1.2-41.4)	88.9	(58.6-98.8)
	Comms Centre	5	5.8	(5.3-5.8)	S		S	
	National Headquarters	48	6.2	(5.8-6.7)	6.3	(1.8-15.7)	93.8	(84.3-98.2)
Length of Service	Less than 12 Months	9	5.8	(5.5-6.7)	11.1	(1.2-41.4)	88.9	(58.6-98.8)
	1-2 Years	15	6.0	(5.7-6.5)	S		S	
	3-5 Years	14	6.0	(6.0-6.3)	S		S	
	6-10 Years	14	6.2	(5.0-6.7)	21.4	(6.4-46.9)	78.6	(53.1-93.6)
	More than 10 Years	84	5.7	(4.8-6.2)	27.4	(18.7-37.6)	72.6	(62.4-81.3)
Volunteer Firefighter	Current or previous volunteer firefighter	63	5.3	(4.8-5.8)	31.7	(21.3-43.9)	68.3	(56.1-78.7)
	Never been volunteer firefighter	76	6.2	(5.7-6.7)	10.5	(5.1-18.9)	89.5	(81.1-94.9)

1. Manager perceptions of their personnel support is evaluated through 6 statements from the Perceived Organisational Support (POS) scale. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 6 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 6 items and a Cronbach's alpha of .865.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 7

Perceived co-worker support by occupational characteristics

March 2023

Group		Total	Total Score		Perceived Co-Worker Support[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1735	6.0	(5.3-6.7)	19.3	(17.5-21.2)	80.7	(78.8-82.5)
Gender	Male	1415	6.0	(5.3-6.7)	18.4	(16.5-20.5)	81.6	(79.5-83.5)
	Female	303	6.2	(5.2-6.8)	21.8	(17.4-26.7)	78.2	(73.3-82.6)
Age Range	Under 20 years	0						
	20-29 years	167	6.2	(5.7-6.8)	13.2	(8.7-18.9)	86.8	(81.1-91.3)
	30-39 years	456	6.3	(5.7-6.8)	11.8	(9.1-15.0)	88.2	(85.0-90.9)
	40-49 years	483	6.0	(5.2-6.5)	20.5	(17.1-24.3)	79.5	(75.7-82.9)
	50-59 years	430	5.8	(4.8-6.5)	27.7	(23.6-32.0)	72.3	(68.0-76.4)
	60 years or older	192	6.0	(5.2-6.7)	20.3	(15.1-26.4)	79.7	(73.6-84.9)
Ethnicity	Māori	261	6.0	(5.3-6.7)	16.1	(12.0-20.9)	83.9	(79.1-88.0)
	Pacific peoples	81	6.2	(5.5-7.0)	14.8	(8.4-23.7)	85.2	(76.3-91.6)
	Asian	32	6.2	(5.8-6.9)	S		S	
	European	1506	6.0	(5.3-6.7)	19.0	(17.1-21.0)	81.0	(79.0-82.9)
	Other Ethnicity	221	6.0	(5.2-6.7)	22.6	(17.5-28.5)	77.4	(71.5-82.5)
	MELAA[4]	14	5.9	(5.3-6.8)	S		S	
Type of Role	Uniformed Manager	83	5.8	(4.8-6.5)	26.5	(17.9-36.7)	73.5	(63.3-82.1)
	Uniformed Firefighter	1181	6.0	(5.5-6.7)	16.6	(14.6-18.8)	83.4	(81.2-85.4)
	Uniformed Comcen	58	6.0	(5.0-6.5)	22.4	(13.2-34.3)	77.6	(65.7-86.8)
	Uniformed Other	154	5.5	(4.5-6.3)	33.1	(26.1-40.8)	66.9	(59.2-73.9)
	Non-Uniformed Manager	56	6.0	(5.6-6.8)	12.5	(5.8-23.0)	87.5	(77.0-94.2)
	Non-Uniformed Other	197	6.2	(5.2-6.8)	21.8	(16.5-28.0)	78.2	(72.0-83.5)
Region	Te Hiku (Region 1)	494	6.0	(5.5-6.7)	13.2	(10.4-16.4)	86.8	(83.6-89.6)
	Ngā Tai Ki Te Puku (Region 2)	234	5.8	(4.8-6.5)	27.8	(22.3-33.8)	72.2	(66.2-77.7)
	Te Ūpoko (Region 3)	393	6.0	(5.0-6.7)	23.4	(19.4-27.8)	76.6	(72.2-80.6)
	Te Ihu (Region 4)	228	6.2	(5.5-6.8)	16.7	(12.3-21.9)	83.3	(78.1-87.7)
	Te Kei (Region 5)	145	6.0	(5.3-6.8)	15.9	(10.6-22.5)	84.1	(77.5-89.4)
	Comms Centre	63	6.0	(5.2-6.7)	20.6	(12.1-31.8)	79.4	(68.2-87.9)
	National Headquarters	156	6.2	(5.3-6.8)	19.2	(13.6-25.9)	80.8	(74.1-86.4)
Length of Service	Less than 12 Months	113	6.5	(5.8-7.0)	14.2	(8.7-21.5)	85.8	(78.5-91.3)
	1-2 Years	149	6.3	(5.7-6.8)	10.1	(6.0-15.7)	89.9	(84.3-94.0)
	3-5 Years	278	6.2	(5.5-6.8)	15.5	(11.6-20.1)	84.5	(79.9-88.4)
	6-10 Years	293	6.0	(5.5-6.7)	17.1	(13.1-21.7)	82.9	(78.3-86.9)
	More than 10 Years	838	6.0	(5.0-6.5)	22.3	(19.6-25.2)	77.7	(74.8-80.4)
Volunteer Firefighter	Current or previous volunteer firefighter	673	6.0	(5.2-6.7)	21.4	(18.4-24.6)	78.6	(75.4-81.6)
	Never been volunteer firefighter	1061	6.0	(5.3-6.7)	17.9	(15.7-20.3)	82.1	(79.7-84.3)

1. Manager and non-manager perceptions of their co-worker support is evaluated through 6 statements from the Perceived Organisational Support (POS) scale. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 6 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 6 items and a Cronbach's alpha of .947.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 8

Uniformed perceptions of support from non-uniformed staff by occupational characteristics
March 2023

| Group | | Total | Total Score | | U Perceptions Non-Uniformed Support[1] | | | |
| | | | | | Disagree | | Agree | |
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1470	2.0	(1.0-4.0)	89.6	(88.0-91.1)	10.4	(8.9-12.0)
Gender	Male	1318	2.0	(1.0-4.0)	90.3	(88.6-91.8)	9.7	(8.2-11.4)
	Female	138	2.8	(1.5-4.0)	81.9	(74.8-87.6)	18.1	(12.4-25.2)
Age Range	Under 20 years	0						
	20-29 years	142	2.8	(1.0-4.0)	89.4	(83.6-93.7)	10.6	(6.3-16.4)
	30-39 years	403	2.0	(1.0-4.0)	91.8	(88.8-94.2)	8.2	(5.8-11.2)
	40-49 years	406	2.0	(1.0-3.5)	92.1	(89.2-94.4)	7.9	(5.6-10.8)
	50-59 years	348	2.0	(1.0-4.0)	87.4	(83.6-90.5)	12.6	(9.5-16.4)
	60 years or older	167	2.5	(1.0-4.0)	82.6	(76.4-87.8)	17.4	(12.2-23.6)
Ethnicity	Māori	232	2.0	(1.0-4.0)	88.8	(84.3-92.4)	11.2	(7.6-15.7)
	Pacific peoples	77	2.0	(1.0-4.0)	88.3	(79.8-94.1)	11.7	(5.9-20.2)
	Asian	22	2.0	(1.0-4.0)	S		S	(4.0-32.1)
	European	1274	2.0	(1.0-4.0)	89.7	(88.0-91.3)	10.3	(8.7-12.0)
	Other Ethnicity	176	2.0	(1.0-3.5)	93.2	(88.7-96.2)	6.8	(3.8-11.3)
	MELAA[4]	10	4.0	(1.5-4.5)	S		S	
Type of Role	Uniformed Manager	83	4.0	(2.5-5.0)	66.3	(55.7-75.7)	33.7	(24.3-44.3)
	Uniformed Firefighter	1171	2.0	(1.0-3.0)	93.6	(92.1-94.9)	6.4	(5.1-7.9)
	Uniformed Comcen	58	3.0	(1.5-4.0)	87.9	(77.8-94.4)	12.1	(5.6-22.2)
	Uniformed Other	153	4.0	(2.0-5.0)	71.9	(64.4-78.6)	28.1	(21.4-35.6)
	Non-Uniformed Manager							
	Non-Uniformed Other							
Region	Te Hiku (Region 1)	458	2.0	(1.0-4.0)	88.2	(85.0-90.9)	11.8	(9.1-15.0)
	Ngā Tai Ki Te Puku (Region 2)	207	2.0	(1.0-4.0)	91.3	(86.9-94.6)	8.7	(5.4-13.1)
	Te Ūpoko (Region 3)	368	2.0	(1.0-3.5)	90.5	(87.2-93.2)	9.5	(6.8-12.8)
	Te Ihu (Region 4)	205	2.0	(1.0-3.0)	91.2	(86.8-94.5)	8.8	(5.5-13.2)
	Te Kei (Region 5)	129	2.0	(1.0-3.0)	92.2	(86.7-95.9)	7.8	(4.1-13.3)
	Comms Centre	63	3.0	(2.0-4.0)	85.7	(75.6-92.7)	14.3	(7.3-24.4)
	National Headquarters	24	4.0	(3.0-5.3)	62.5	(42.6-79.6)	37.5	(20.4-57.4)
Length of Service	Less than 12 Months	69	4.0	(3.5-5.0)	69.6	(58.1-79.5)	30.4	(20.5-41.9)
	1-2 Years	85	3.0	(2.0-4.0)	90.6	(83.0-95.4)	9.4	(4.6-17.0)
	3-5 Years	214	2.0	(1.0-4.0)	91.1	(86.8-94.4)	8.9	(5.6-13.2)
	6-10 Years	256	2.0	(1.0-3.3)	93.0	(89.3-95.6)	7.0	(4.4-10.7)
	More than 10 Years	789	2.0	(1.0-3.5)	89.5	(87.2-91.5)	10.5	(8.5-12.8)
Volunteer Firefighter	Current or previous volunteer firefighter	630	2.0	(1.0-4.0)	87.9	(85.2-90.3)	12.1	(9.7-14.8)
	Never been volunteer firefighter	839	2.0	(1.0-4.0)	90.8	(88.7-92.6)	9.2	(7.4-11.3)

1. Uniformed employees' perceptions of support from non-uniformed employees is evaluated through 2 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 2 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 2 items and a Cronbach's alpha of .929.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 9

Non-uniformed perception of support from uniformed staff by occupational characteristics

March 2023

Group		Total	Total Score		NU Perceptions Uniformed Support[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		253	2.5	(1.5-4.0)	81.4	(76.3-85.8)	18.6	(14.2-23.7)
Gender	Male	87	3.0	(1.5-4.0)	80.5	(71.2-87.7)	19.5	(12.3-28.8)
	Female	163	2.5	(1.5-4.0)	82.2	(75.8-87.5)	17.8	(12.5-24.2)
Age Range	Under 20 years	0						
	20-29 years	25	2.0	(1.5-2.5)	S		S	(0.4-17.2)
	30-39 years	50	3.0	(1.5-4.0)	84.0	(72.1-92.1)	16.0	(7.9-27.9)
	40-49 years	71	3.0	(1.5-4.0)	78.9	(68.3-87.1)	21.1	(12.9-31.7)
	50-59 years	79	2.5	(1.0-4.0)	78.5	(68.5-86.4)	21.5	(13.6-31.5)
	60 years or older	25	3.0	(1.5-4.0)	76.0	(57.1-89.3)	24.0	(10.7-42.9)
Ethnicity	Māori	26	3.0	(2.0-4.0)	80.8	(62.9-92.3)	19.2	(7.7-37.1)
	Pacific peoples	<5	S		S		S	
	Asian	9	4.0	(3.0-4.5)	S		S	(4.9-54.4)
	European	225	2.5	(1.5-4.0)	80.9	(75.4-85.6)	19.1	(14.4-24.6)
	Other Ethnicity	42	3.0	(1.5-4.0)	78.6	(64.5-88.8)	21.4	(11.2-35.5)
	MELAA[4]	<5	S		S		S	
Type of Role	Uniformed Manager							
	Uniformed Firefighter							
	Uniformed Comcen							
	Uniformed Other							
	Non-Uniformed Manager	56	2.0	(1.5-4.0)	78.6	(66.6-87.7)	21.4	(12.3-33.4)
	Non-Uniformed Other	196	2.5	(1.5-4.0)	82.1	(76.3-87.0)	17.9	(13.0-23.7)
Region	Te Hiku (Region 1)	29	3.0	(2.0-4.5)	79.3	(62.2-90.9)	20.7	(9.1-37.8)
	Ngā Tai Ki Te Puku (Region 2)	24	3.0	(2.0-4.8)	75.0	(55.5-88.8)	25.0	(11.2-44.5)
	Te Ūpoko (Region 3)	25	2.0	(1.0-4.0)	S		S	
	Te Ihu (Region 4)	22	2.3	(1.5-4.0)	77.3	(57.1-90.8)	22.7	(9.2-42.9)
	Te Kei (Region 5)	16	1.8	(1.0-3.0)	S		S	
	Comms Centre							
	National Headquarters	132	2.5	(1.5-4.0)	82.6	(75.4-88.3)	17.4	(11.7-24.6)
Length of Service	Less than 12 Months	42	3.5	(2.0-5.0)	71.4	(56.7-83.3)	28.6	(16.7-43.3)
	1-2 Years	64	2.8	(1.5-4.0)	84.4	(74.1-91.7)	15.6	(8.3-25.9)
	3-5 Years	61	2.5	(1.5-4.0)	82.0	(71.0-90.0)	18.0	(10.0-29.0)
	6-10 Years	36	2.0	(1.0-3.0)	86.1	(72.2-94.5)	13.9	(5.5-27.8)
	More than 10 Years	44	2.5	(1.3-4.0)	81.8	(68.6-91.0)	18.2	(9.0-31.4)
Volunteer Firefighter	Current or previous volunteer firefighter	40	3.0	(1.8-4.0)	82.5	(68.7-91.8)	17.5	(8.2-31.3)
	Never been volunteer firefighter	213	2.5	(1.5-4.0)	81.2	(75.6-86.0)	18.8	(14.0-24.4)

1. Non-uniformed employees' perceptions of support from uniformed employees is evaluated through 2 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 2 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0). The scale showed high internal consistency with an average score of 2 items and a Cronbach's alpha of .939.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 10

Perceived psychological safety by occupational characteristics

March 2023

Group		Total	Total Score		Perceived Psychological Safety[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1733	3.0	(2.0-5.0)	69.9	(67.7-72.1)	30.1	(27.9-32.3)
Gender	Male	1413	3.0	(2.0-5.0)	71.8	(69.4-74.1)	28.2	(25.9-30.6)
	Female	303	4.0	(2.0-5.0)	60.7	(55.1-66.1)	39.3	(33.9-44.9)
Age Range	Under 20 years	0						
	20-29 years	167	3.0	(2.0-5.0)	73.1	(66.0-79.3)	26.9	(20.7-34.0)
	30-39 years	456	3.0	(2.0-5.0)	71.3	(67.0-75.3)	28.7	(24.7-33.0)
	40-49 years	482	3.0	(2.0-5.0)	70.3	(66.1-74.3)	29.7	(25.7-33.9)
	50-59 years	429	3.0	(2.0-5.0)	71.1	(66.7-75.2)	28.9	(24.8-33.3)
	60 years or older	192	4.0	(2.0-6.0)	60.9	(53.9-67.6)	39.1	(32.4-46.1)
Ethnicity	Māori	261	3.0	(2.0-5.0)	73.9	(68.4-79.0)	26.1	(21.0-31.6)
	Pacific peoples	81	3.0	(2.0-4.0)	81.5	(72.0-88.8)	18.5	(11.2-28.0)
	Asian	32	3.0	(1.0-5.0)	68.8	(51.6-82.7)	31.3	(17.3-48.4)
	European	1504	3.0	(2.0-5.0)	69.3	(67.0-71.6)	30.7	(28.4-33.0)
	Other Ethnicity	220	3.0	(2.0-5.0)	70.9	(64.7-76.6)	29.1	(23.4-35.3)
	MELAA[4]	14	3.5	(2.0-5.0)	57.1	(31.9-79.7)	42.9	(20.3-68.1)
Type of Role	Uniformed Manager	83	5.0	(3.0-6.0)	43.4	(33.1-54.1)	56.6	(45.9-66.9)
	Uniformed Firefighter	1178	3.0	(2.0-4.0)	75.6	(73.0-77.9)	24.4	(22.1-27.0)
	Uniformed Comcen	58	3.0	(2.0-5.0)	74.1	(61.9-84.0)	25.9	(16.0-38.1)
	Uniformed Other	154	3.0	(1.0-5.0)	70.1	(62.6-76.9)	29.9	(23.1-37.4)
	Non-Uniformed Manager	56	5.0	(4.0-6.0)	35.7	(24.1-48.7)	64.3	(51.3-75.9)
	Non-Uniformed Other	198	4.0	(2.0-6.0)	55.6	(48.6-62.4)	44.4	(37.6-51.4)
Region	Te Hiku (Region 1)	493	3.0	(2.0-5.0)	74.2	(70.2-77.9)	25.8	(22.1-29.8)
	Ngā Tai Ki Te Puku (Region 2)	234	3.0	(2.0-5.0)	73.1	(67.1-78.5)	26.9	(21.5-32.9)
	Te Ūpoko (Region 3)	392	3.0	(2.0-5.0)	71.9	(67.3-76.2)	28.1	(23.8-32.7)
	Te Ihu (Region 4)	228	3.0	(2.0-5.0)	71.1	(64.9-76.6)	28.9	(23.4-35.1)
	Te Kei (Region 5)	144	4.0	(2.0-5.0)	67.4	(59.4-74.6)	32.6	(25.4-40.6)
	Comms Centre	63	3.0	(2.0-5.0)	69.8	(57.8-80.1)	30.2	(19.9-42.2)
	National Headquarters	157	5.0	(3.0-6.0)	44.6	(37.0-52.4)	55.4	(47.6-63.0)
Length of Service	Less than 12 Months	113	4.0	(4.0-6.0)	53.1	(43.9-62.1)	46.9	(37.9-56.1)
	1-2 Years	149	4.0	(3.0-5.0)	59.7	(51.7-67.4)	40.3	(32.6-48.3)
	3-5 Years	278	3.0	(2.0-5.0)	71.2	(65.7-76.3)	28.8	(23.7-34.3)
	6-10 Years	291	3.0	(2.0-5.0)	73.5	(68.3-78.4)	26.5	(21.6-31.7)
	More than 10 Years	839	3.0	(2.0-5.0)	72.0	(68.9-74.9)	28.0	(25.1-31.1)
Volunteer Firefighter	Current or previous volunteer firefighter	672	3.0	(2.0-5.0)	71.4	(67.9-74.7)	28.6	(25.3-32.1)
	Never been volunteer firefighter	1060	3.0	(2.0-5.0)	69.0	(66.1-71.7)	31.0	(28.3-33.9)

1. Perceived psychological safety is evaluated through 1 statement. Respondents rated their level of agreement to the statements on a 7-point scale, with the score ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 11

Perceived preparedness to serve the community by occupational characteristics

March 2023

Group		Total	Total Score		Perceived Preparedness to Serve[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1733	3.0	(2.0-4.5)	76.2	(74.2-78.2)	23.8	(21.8-25.8)
Gender	Male	1413	3.0	(2.0-4.5)	77.6	(75.4-79.8)	22.4	(20.2-24.6)
	Female	303	3.5	(2.0-5.0)	69.3	(63.9-74.3)	30.7	(25.7-36.1)
Age Range	Under 20 years	0						
	20-29 years	166	3.0	(2.0-4.0)	83.7	(77.6-88.7)	16.3	(11.3-22.4)
	30-39 years	456	3.0	(2.0-4.5)	81.1	(77.4-84.5)	18.9	(15.5-22.6)
	40-49 years	482	3.0	(2.0-4.5)	75.9	(72.0-79.6)	24.1	(20.4-28.0)
	50-59 years	430	3.0	(2.0-4.5)	75.1	(70.9-79.0)	24.9	(21.0-29.1)
	60 years or older	192	3.5	(2.0-5.5)	62.5	(55.5-69.1)	37.5	(30.9-44.5)
Ethnicity	Māori	260	3.0	(2.0-4.5)	75.8	(70.3-80.7)	24.2	(19.3-29.7)
	Pacific peoples	81	3.0	(2.0-5.0)	74.1	(63.8-82.7)	25.9	(17.3-36.2)
	Asian	32	3.5	(2.0-5.3)	71.9	(54.9-85.1)	28.1	(14.9-45.1)
	European	1504	3.0	(2.0-4.5)	76.4	(74.2-78.5)	23.6	(21.5-25.8)
	Other Ethnicity	221	3.0	(2.0-4.5)	78.7	(73.0-83.7)	21.3	(16.3-27.0)
	MELAA[4]	14	3.0	(2.0-4.5)	S		S	
Type of Role	Uniformed Manager	83	4.5	(3.0-5.0)	56.6	(45.9-66.9)	43.4	(33.1-54.1)
	Uniformed Firefighter	1178	3.0	(1.5-4.0)	81.0	(78.7-83.1)	19.0	(16.9-21.3)
	Uniformed Comcen	58	3.0	(2.0-4.5)	77.6	(65.7-86.8)	22.4	(13.2-34.3)
	Uniformed Other	154	3.5	(2.0-5.0)	70.8	(63.3-77.5)	29.2	(22.5-36.7)
	Non-Uniformed Manager	56	4.3	(2.3-6.0)	55.4	(42.3-67.8)	44.6	(32.2-57.7)
	Non-Uniformed Other	198	3.5	(2.5-5.5)	65.2	(58.3-71.5)	34.8	(28.5-41.7)
Region	Te Hiku (Region 1)	493	3.0	(2.0-4.5)	77.3	(73.4-80.8)	22.7	(19.2-26.6)
	Ngā Tai Ki Te Puku (Region 2)	233	3.5	(2.0-5.0)	73.8	(67.9-79.1)	26.2	(20.9-32.1)
	Te Ūpoko (Region 3)	393	2.5	(1.5-4.5)	79.4	(75.2-83.2)	20.6	(16.8-24.8)
	Te Ihu (Region 4)	228	3.0	(2.0-4.5)	80.3	(74.7-85.0)	19.7	(15.0-25.3)
	Te Kei (Region 5)	144	3.0	(2.0-4.0)	79.9	(72.8-85.8)	20.1	(14.2-27.2)
	Comms Centre	63	3.0	(2.0-5.0)	73.0	(61.2-82.8)	27.0	(17.2-38.8)
	National Headquarters	157	4.0	(2.5-5.5)	59.2	(51.4-66.7)	40.8	(33.3-48.6)
Length of Service	Less than 12 Months	113	5.0	(3.5-6.0)	45.1	(36.2-54.3)	54.9	(45.7-63.8)
	1-2 Years	148	3.0	(2.0-4.5)	75.7	(68.3-82.0)	24.3	(18.0-31.7)
	3-5 Years	278	3.0	(2.0-4.0)	82.4	(77.6-86.5)	17.6	(13.5-22.4)
	6-10 Years	293	3.0	(1.5-4.0)	81.2	(76.5-85.4)	18.8	(14.6-23.5)
	More than 10 Years	838	3.0	(1.5-4.5)	76.7	(73.8-79.5)	23.3	(20.5-26.2)
Volunteer Firefighter	Current or previous volunteer firefighter	673	3.0	(1.5-4.5)	76.4	(73.1-79.5)	23.6	(20.5-26.9)
	Never been volunteer firefighter	1059	3.0	(2.0-4.5)	76.1	(73.5-78.6)	23.9	(21.4-26.5)

1. Perceived preparedness to serve the community is evaluated through 2 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 2 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 2 items and a Cronbach's alpha of .801.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 12

Perceived organisational competence by occupational characteristics

March 2023

Group		Total	Total Score		Perceived Organisational Competence[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1735	3.7	(2.5-4.8)	76.7	(74.6-78.6)	23.3	(21.4-25.4)
Gender	Male	1416	3.5	(2.3-4.7)	79.7	(77.5-81.7)	20.3	(18.3-22.5)
	Female	302	4.3	(3.3-5.5)	62.6	(57.0-67.9)	37.4	(32.1-43.0)
Age Range	Under 20 years	0						
	20-29 years	167	3.3	(2.3-4.5)	82.0	(75.7-87.3)	18.0	(12.7-24.3)
	30-39 years	455	3.3	(2.2-4.3)	84.6	(81.1-87.7)	15.4	(12.3-18.9)
	40-49 years	483	3.7	(2.5-4.8)	77.6	(73.8-81.2)	22.4	(18.8-26.2)
	50-59 years	431	3.8	(2.7-5.0)	71.5	(67.1-75.6)	28.5	(24.4-32.9)
	60 years or older	192	4.2	(3.0-5.7)	63.0	(56.0-69.6)	37.0	(30.4-44.0)
Ethnicity	Māori	261	3.7	(2.3-4.7)	76.2	(70.8-81.1)	23.8	(18.9-29.2)
	Pacific peoples	81	3.3	(1.8-4.3)	87.7	(79.2-93.5)	12.3	(6.5-20.8)
	Asian	32	3.9	(3.0-4.8)	75.0	(58.3-87.4)	25.0	(12.6-41.7)
	European	1506	3.7	(2.5-4.8)	76.8	(74.6-78.8)	23.2	(21.2-25.4)
	Other Ethnicity	221	3.5	(2.5-4.7)	78.7	(73.0-83.7)	21.3	(16.3-27.0)
	MELAA[4]	14	3.6	(2.3-5.7)	S		S	
Type of Role	Uniformed Manager	83	5.0	(3.7-5.7)	49.4	(38.8-60.0)	50.6	(40.0-61.2)
	Uniformed Firefighter	1180	3.2	(2.2-4.2)	85.9	(83.9-87.8)	14.1	(12.2-16.1)
	Uniformed Comcen	58	3.9	(2.7-4.8)	75.9	(63.8-85.4)	24.1	(14.6-36.2)
	Uniformed Other	154	4.2	(3.0-5.5)	63.0	(55.2-70.3)	37.0	(29.7-44.8)
	Non-Uniformed Manager	56	5.0	(4.2-6.0)	44.6	(32.2-57.7)	55.4	(42.3-67.8)
	Non-Uniformed Other	198	4.8	(3.7-5.8)	52.0	(45.1-58.9)	48.0	(41.1-54.9)
Region	Te Hiku (Region 1)	494	3.5	(2.3-4.7)	79.8	(76.0-83.1)	20.2	(16.9-24.0)
	Ngā Tai Ki Te Puku (Region 2)	234	3.4	(2.3-4.8)	78.2	(72.6-83.1)	21.8	(16.9-27.4)
	Te Ūpoko (Region 3)	392	3.5	(2.3-4.5)	81.4	(77.3-85.0)	18.6	(15.0-22.7)
	Te Ihu (Region 4)	228	3.3	(2.5-4.5)	79.8	(74.3-84.6)	20.2	(15.4-25.7)
	Te Kei (Region 5)	145	3.8	(3.0-4.8)	75.2	(67.7-81.7)	24.8	(18.3-32.3)
	Comms Centre	63	4.0	(2.8-5.2)	71.4	(59.5-81.4)	28.6	(18.6-40.5)
	National Headquarters	157	5.0	(3.7-5.8)	49.0	(41.3-56.8)	51.0	(43.2-58.7)
Length of Service	Less than 12 Months	113	5.3	(4.0-6.0)	44.2	(35.3-53.5)	55.8	(46.5-64.7)
	1-2 Years	149	3.8	(3.0-5.3)	69.8	(62.1-76.7)	30.2	(23.3-37.9)
	3-5 Years	278	3.5	(2.2-4.5)	82.0	(77.2-86.2)	18.0	(13.8-22.8)
	6-10 Years	292	3.3	(2.3-4.3)	83.2	(78.6-87.2)	16.8	(12.8-21.4)
	More than 10 Years	839	3.5	(2.3-4.7)	78.8	(75.9-81.4)	21.2	(18.6-24.1)
Volunteer Firefighter	Current or previous volunteer firefighter	673	3.5	(2.5-4.7)	76.8	(73.5-79.9)	23.2	(20.1-26.5)
	Never been volunteer firefighter	1061	3.7	(2.5-4.8)	76.5	(73.9-79.0)	23.5	(21.0-26.1)

1. Perceived organisational competence is evaluated through 6 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 6 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 6 items and a Cronbach's alpha of .923.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 13

Perceived organisational accountability by occupational characteristics

March 2023

Group		Total	Total Score		Perceived Organisational Accountability[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1736	2.0	(1.0-3.5)	91.0	(89.5-92.2)	9.0	(7.8-10.5)
Gender	Male	1416	2.0	(1.0-3.3)	93.0	(91.6-94.2)	7.0	(5.8-8.4)
	Female	303	3.3	(2.0-4.5)	81.2	(76.5-85.3)	18.8	(14.7-23.5)
Age Range	Under 20 years	0						
	20-29 years	167	2.3	(1.3-3.5)	94.0	(89.6-96.9)	6.0	(3.1-10.4)
	30-39 years	456	2.0	(1.0-3.5)	93.0	(90.4-95.1)	7.0	(4.9-9.6)
	40-49 years	483	2.0	(1.0-3.5)	91.7	(89.0-93.9)	8.3	(6.1-11.0)
	50-59 years	431	2.3	(1.3-3.8)	90.0	(86.9-92.6)	10.0	(7.4-13.1)
	60 years or older	192	2.3	(1.3-3.9)	84.4	(78.7-89.0)	15.6	(11.0-21.3)
Ethnicity	Māori	261	2.0	(1.0-3.5)	92.7	(89.1-95.4)	7.3	(4.6-10.9)
	Pacific peoples	81	1.3	(1.0-3.0)	S		S	
	Asian	32	3.0	(1.3-4.0)	84.4	(69.1-93.8)	15.6	(6.2-30.9)
	European	1507	2.0	(1.0-3.5)	90.9	(89.4-92.3)	9.1	(7.7-10.6)
	Other Ethnicity	221	2.0	(1.0-3.0)	92.8	(88.8-95.6)	7.2	(4.4-11.2)
	MELAA[4]	14	2.6	(1.0-4.0)	S		S	
Type of Role	Uniformed Manager	83	4.0	(2.5-5.0)	72.3	(62.0-81.0)	27.7	(19.0-38.0)
	Uniformed Firefighter	1181	1.8	(1.0-3.0)	97.0	(96.0-97.9)	3.0	(2.1-4.0)
	Uniformed Comcen	58	2.0	(1.0-3.5)	93.1	(84.4-97.6)	6.9	(2.4-15.6)
	Uniformed Other	154	3.0	(1.8-4.0)	84.4	(78.1-89.5)	15.6	(10.5-21.9)
	Non-Uniformed Manager	56	4.5	(3.1-5.6)	51.8	(38.9-64.5)	48.2	(35.5-61.1)
	Non-Uniformed Other	198	4.0	(2.8-4.8)	77.8	(71.6-83.1)	22.2	(16.9-28.4)
Region	Te Hiku (Region 1)	494	2.0	(1.0-3.3)	93.5	(91.1-95.4)	6.5	(4.6-8.9)
	Ngā Tai Ki Te Puku (Region 2)	234	2.0	(1.0-3.3)	92.7	(88.9-95.5)	7.3	(4.5-11.1)
	Te Ūpoko (Region 3)	393	2.0	(1.0-3.3)	94.7	(92.1-96.6)	5.3	(3.4-7.9)
	Te Ihu (Region 4)	228	2.0	(1.0-3.0)	92.5	(88.6-95.4)	7.5	(4.6-11.4)
	Te Kei (Region 5)	145	2.5	(1.3-3.8)	91.7	(86.4-95.4)	8.3	(4.6-13.6)
	Comms Centre	63	2.0	(1.0-3.8)	87.3	(77.5-93.8)	12.7	(6.2-22.5)
	National Headquarters	157	4.0	(2.8-5.3)	69.4	(61.9-76.2)	30.6	(23.8-38.1)
Length of Service	Less than 12 Months	113	4.0	(3.3-5.0)	71.7	(62.9-79.4)	28.3	(20.6-37.1)
	1-2 Years	149	3.0	(2.0-4.0)	89.3	(83.5-93.5)	10.7	(6.5-16.5)
	3-5 Years	278	2.0	(1.0-3.8)	89.2	(85.2-92.4)	10.8	(7.6-14.8)
	6-10 Years	293	1.8	(1.0-3.0)	94.2	(91.1-96.5)	5.8	(3.5-8.9)
	More than 10 Years	839	2.0	(1.0-3.3)	93.1	(91.2-94.7)	6.9	(5.3-8.8)
Volunteer Firefighter	Current or previous volunteer firefighter	674	2.0	(1.0-3.5)	91.5	(89.3-93.5)	8.5	(6.5-10.7)
	Never been volunteer firefighter	1061	2.3	(1.0-3.8)	90.6	(88.7-92.2)	9.4	(7.8-11.3)

1. Perceived organisational accountability is evaluated through 4 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 4 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 4 items and a Cronbach's alpha of .946.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 14

Affective organisational commitment by occupational characteristics

March 2023

Group		Total	Total Score		Affective Organisational Commitment[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1736	4.2	(3.3-5.2)	70.0	(67.9-72.2)	30.0	(27.8-32.1)
Gender	Male	1416	4.2	(3.3-5.2)	70.3	(67.8-72.6)	29.7	(27.4-32.2)
	Female	303	4.3	(3.3-5.3)	68.0	(62.6-73.0)	32.0	(27.0-37.4)
Age Range	Under 20 years	0						
	20-29 years	167	4.3	(3.7-5.3)	65.3	(57.8-72.2)	34.7	(27.8-42.2)
	30-39 years	456	4.2	(3.3-5.0)	73.5	(69.3-77.4)	26.5	(22.6-30.7)
	40-49 years	483	4.2	(3.3-5.0)	72.7	(68.6-76.5)	27.3	(23.5-31.4)
	50-59 years	431	4.2	(3.2-5.2)	69.8	(65.4-74.0)	30.2	(26.0-34.6)
	60 years or older	192	4.5	(3.5-5.7)	59.4	(52.3-66.1)	40.6	(33.9-47.7)
Ethnicity	Māori	261	4.2	(3.5-5.2)	70.9	(65.2-76.1)	29.1	(23.9-34.8)
	Pacific peoples	81	4.2	(3.5-4.8)	76.5	(66.5-84.7)	23.5	(15.3-33.5)
	Asian	32	4.3	(3.3-5.3)	68.8	(51.6-82.7)	31.3	(17.3-48.4)
	European	1507	4.3	(3.3-5.2)	69.5	(67.2-71.8)	30.5	(28.2-32.8)
	Other Ethnicity	221	4.0	(3.2-5.0)	72.9	(66.7-78.4)	27.1	(21.6-33.3)
	MELAA[4]	14	3.9	(2.8-4.8)	S		S	
Type of Role	Uniformed Manager	83	5.3	(4.7-6.0)	41.0	(30.8-51.7)	59.0	(48.3-69.2)
	Uniformed Firefighter	1181	4.2	(3.3-5.0)	74.7	(72.1-77.1)	25.3	(22.9-27.9)
	Uniformed Comcen	58	4.3	(3.2-5.7)	63.8	(51.0-75.3)	36.2	(24.7-49.0)
	Uniformed Other	154	4.4	(3.7-5.5)	67.5	(59.9-74.5)	32.5	(25.5-40.1)
	Non-Uniformed Manager	56	5.3	(3.9-6.3)	42.9	(30.5-55.9)	57.1	(44.1-69.5)
	Non-Uniformed Other	198	4.3	(3.3-5.2)	65.7	(58.9-72.0)	34.3	(28.0-41.1)
Region	Te Hiku (Region 1)	494	4.3	(3.5-5.2)	67.4	(63.2-71.4)	32.6	(28.6-36.8)
	Ngā Tai Ki Te Puku (Region 2)	234	4.2	(3.3-4.8)	77.4	(71.7-82.4)	22.6	(17.6-28.3)
	Te Ūpoko (Region 3)	393	4.2	(3.3-5.0)	73.8	(69.3-78.0)	26.2	(22.0-30.7)
	Te Ihu (Region 4)	228	4.2	(3.3-5.0)	70.2	(64.0-75.8)	29.8	(24.2-36.0)
	Te Kei (Region 5)	145	4.2	(3.3-5.0)	73.1	(65.5-79.8)	26.9	(20.2-34.5)
	Comms Centre	63	4.3	(3.3-5.8)	61.9	(49.6-73.1)	38.1	(26.9-50.4)
	National Headquarters	157	4.7	(3.2-5.7)	56.7	(48.9-64.3)	43.3	(35.7-51.1)
Length of Service	Less than 12 Months	113	5.2	(4.0-5.7)	46.0	(37.0-55.2)	54.0	(44.8-63.0)
	1-2 Years	149	4.5	(3.7-5.5)	60.4	(52.4-68.0)	39.6	(32.0-47.6)
	3-5 Years	278	4.3	(3.3-5.0)	70.5	(65.0-75.6)	29.5	(24.4-35.0)
	6-10 Years	293	4.0	(3.3-4.8)	77.1	(72.1-81.7)	22.9	(18.3-27.9)
	More than 10 Years	839	4.2	(3.2-5.0)	71.9	(68.8-74.8)	28.1	(25.2-31.2)
Volunteer Firefighter	Current or previous volunteer firefighter	674	4.3	(3.5-5.3)	66.0	(62.4-69.5)	34.0	(30.5-37.6)
	Never been volunteer firefighter	1061	4.2	(3.3-5.0)	72.6	(69.8-75.2)	27.4	(24.8-30.2)

1. Affective organisation commitment is evaluated through 6 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. After reverse coding 3 negatively-worded statements, the total score is calculated as the average of the 6 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 6 items and a Cronbach's alpha of .824.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 15

Organisational cynicism by occupational characteristics

March 2023

Group		Total	Total Score		Organisational Cynicism[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1736	5.0	(4.3-6.3)	40.5	(38.2-42.8)	59.5	(57.2-61.8)
Gender	Male	1416	5.3	(4.3-6.3)	37.5	(35.0-40.0)	62.5	(60.0-65.0)
	Female	303	4.7	(4.0-5.7)	54.8	(49.2-60.3)	45.2	(39.7-50.8)
Age Range	Under 20 years	0						
	20-29 years	167	5.0	(4.3-6.0)	38.9	(31.8-46.5)	61.1	(53.5-68.2)
	30-39 years	456	5.3	(4.3-6.3)	39.3	(34.9-43.8)	60.7	(56.2-65.1)
	40-49 years	483	5.0	(4.3-6.3)	39.1	(34.9-43.5)	60.9	(56.5-65.1)
	50-59 years	431	5.0	(4.3-6.3)	39.9	(35.4-44.6)	60.1	(55.4-64.6)
	60 years or older	192	5.0	(4.0-6.0)	48.4	(41.4-55.5)	51.6	(44.5-58.6)
Ethnicity	Māori	261	5.3	(4.3-6.3)	35.6	(30.0-41.6)	64.4	(58.4-70.0)
	Pacific peoples	81	5.0	(4.3-6.7)	40.7	(30.5-51.6)	59.3	(48.4-69.5)
	Asian	32	4.8	(4.0-5.8)	50.0	(33.3-66.7)	50.0	(33.3-66.7)
	European	1507	5.0	(4.3-6.3)	40.3	(37.8-42.8)	59.7	(57.2-62.2)
	Other Ethnicity	221	5.3	(4.3-6.3)	37.1	(30.9-43.6)	62.9	(56.4-69.1)
	MELAA[4]	14	4.7	(4.3-6.3)	57.1	(31.9-79.7)	42.9	(20.3-68.1)
Type of Role	Uniformed Manager	83	4.7	(3.7-5.7)	59.0	(48.3-69.2)	41.0	(30.8-51.7)
	Uniformed Firefighter	1181	5.7	(4.7-6.7)	32.7	(30.1-35.4)	67.3	(64.6-69.9)
	Uniformed Comcen	58	5.0	(4.3-6.3)	46.6	(34.1-59.3)	53.4	(40.7-65.9)
	Uniformed Other	154	4.7	(4.0-5.7)	51.3	(43.4-59.1)	48.7	(40.9-56.6)
	Non-Uniformed Manager	56	4.3	(3.5-5.3)	67.9	(55.0-79.0)	32.1	(21.0-45.0)
	Non-Uniformed Other	198	4.7	(4.0-5.3)	61.6	(54.7-68.2)	38.4	(31.8-45.3)
Region	Te Hiku (Region 1)	494	5.3	(4.3-6.3)	40.1	(35.8-44.5)	59.9	(55.5-64.2)
	Ngā Tai Ki Te Puku (Region 2)	234	5.3	(4.3-6.3)	39.3	(33.2-45.7)	60.7	(54.3-66.8)
	Te Ūpoko (Region 3)	393	5.3	(4.3-6.3)	36.6	(32.0-41.5)	63.4	(58.5-68.0)
	Te Ihu (Region 4)	228	5.7	(4.7-6.7)	30.3	(24.6-36.4)	69.7	(63.6-75.4)
	Te Kei (Region 5)	145	5.0	(4.0-6.0)	40.7	(32.9-48.8)	59.3	(51.2-67.1)
	Comms Centre	63	5.0	(4.0-6.3)	49.2	(37.1-61.4)	50.8	(38.6-62.9)
	National Headquarters	157	4.3	(3.7-5.3)	64.3	(56.6-71.5)	35.7	(28.5-43.4)
Length of Service	Less than 12 Months	113	4.0	(3.7-4.7)	80.5	(72.5-87.0)	19.5	(13.0-27.5)
	1-2 Years	149	5.0	(4.3-5.7)	49.0	(41.1-57.0)	51.0	(43.0-58.9)
	3-5 Years	278	5.0	(4.3-6.3)	41.0	(35.3-46.9)	59.0	(53.1-64.7)
	6-10 Years	293	5.3	(4.7-6.7)	32.1	(26.9-37.6)	67.9	(62.4-73.1)
	More than 10 Years	839	5.3	(4.3-6.3)	36.0	(32.8-39.3)	64.0	(60.7-67.2)
Volunteer Firefighter	Current or previous volunteer firefighter	674	5.3	(4.3-6.3)	36.5	(32.9-40.2)	63.5	(59.8-67.1)
	Never been volunteer firefighter	1061	5.0	(4.3-6.0)	43.1	(40.1-46.1)	56.9	(53.9-59.9)

1. Organisational cynicism is evaluated through 3 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. After reverse coding 1 negatively-worded statement, the total score is calculated as the average of the 3 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed average internal consistency with an average score of 3 items and a Cronbach's alpha of .559.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 16

Manager cynicism by occupational characteristics
March 2023

Group		Total	Total Score		Manager Cynicism[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1596	3.7	(2.7-4.3)	80.3	(78.3-82.2)	19.7	(17.8-21.7)
Gender	Male	1316	3.7	(2.7-4.3)	80.1	(77.9-82.2)	19.9	(17.8-22.1)
	Female	264	3.7	(2.0-4.3)	81.4	(76.4-85.8)	18.6	(14.2-23.6)
Age Range	Under 20 years	0						
	20-29 years	167	4.0	(3.0-4.3)	81.4	(75.0-86.8)	18.6	(13.2-25.0)
	30-39 years	445	3.7	(2.7-4.3)	83.8	(80.2-87.0)	16.2	(13.0-19.8)
	40-49 years	443	3.7	(2.3-4.7)	80.8	(77.0-84.3)	19.2	(15.7-23.0)
	50-59 years	370	3.8	(3.0-5.0)	74.9	(70.3-79.1)	25.1	(20.9-29.7)
	60 years or older	166	4.0	(3.0-4.3)	79.5	(72.9-85.1)	20.5	(14.9-27.1)
Ethnicity	Māori	246	4.0	(3.0-4.7)	78.9	(73.4-83.6)	21.1	(16.4-26.6)
	Pacific peoples	80	4.0	(3.3-4.7)	81.3	(71.7-88.6)	18.8	(11.4-28.3)
	Asian	30	4.0	(3.0-4.7)	76.7	(59.6-88.9)	23.3	(11.1-40.4)
	European	1378	3.7	(2.7-4.3)	80.4	(78.2-82.4)	19.6	(17.6-21.8)
	Other Ethnicity	204	3.7	(2.7-4.7)	80.9	(75.1-85.8)	19.1	(14.2-24.9)
	MELAA[4]	12	3.8	(3.2-5.0)	S		S	
Type of Role	Uniformed Manager							
	Uniformed Firefighter	1180	4.0	(3.0-4.7)	79.9	(77.6-82.1)	20.1	(17.9-22.4)
	Uniformed Comcen	58	4.0	(2.7-4.7)	79.3	(67.6-88.2)	20.7	(11.8-32.4)
	Uniformed Other	154	3.3	(2.7-4.7)	77.3	(70.2-83.3)	22.7	(16.7-29.8)
	Non-Uniformed Manager							
	Non-Uniformed Other	198	3.0	(2.0-4.3)	85.9	(80.5-90.2)	14.1	(9.8-19.5)
Region	Te Hiku (Region 1)	471	4.0	(3.0-4.7)	79.2	(75.4-82.7)	20.8	(17.3-24.6)
	Ngā Tai Ki Te Puku (Region 2)	216	3.3	(2.3-4.3)	84.7	(79.5-89.0)	15.3	(11.0-20.5)
	Te Ūpoko (Region 3)	371	4.0	(3.3-4.7)	79.5	(75.2-83.4)	20.5	(16.6-24.8)
	Te Ihu (Region 4)	213	3.7	(2.7-5.0)	70.4	(64.0-76.2)	29.6	(23.8-36.0)
	Te Kei (Region 5)	136	3.0	(1.8-4.0)	90.4	(84.7-94.5)	9.6	(5.5-15.3)
	Comms Centre	58	4.0	(2.7-4.7)	79.3	(67.6-88.2)	20.7	(11.8-32.4)
	National Headquarters	109	2.7	(1.7-4.0)	87.2	(79.9-92.4)	12.8	(7.6-20.1)
Length of Service	Less than 12 Months	104	3.5	(2.3-4.0)	S		S	
	1-2 Years	134	3.3	(2.0-4.0)	88.8	(82.7-93.3)	11.2	(6.7-17.3)
	3-5 Years	264	3.7	(2.2-4.3)	81.8	(76.8-86.1)	18.2	(13.9-23.2)
	6-10 Years	278	3.7	(2.7-4.7)	80.2	(75.2-84.6)	19.8	(15.4-24.8)
	More than 10 Years	755	4.0	(3.0-4.7)	75.5	(72.3-78.5)	24.5	(21.5-27.7)
Volunteer Firefighter	Current or previous volunteer firefighter	611	3.7	(3.0-4.7)	77.7	(74.3-80.9)	22.3	(19.1-25.7)
	Never been volunteer firefighter	984	3.7	(2.7-4.3)	81.9	(79.4-84.2)	18.1	(15.8-20.6)

1. Manager cynicism (of non-managers) is evaluated through 3 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. After reverse coding 1 negatively-worded statement, the total score is calculated as the average of the 3 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed good internal consistency with an average score of 3 items and a Cronbach's alpha of .725.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

  S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 17

Turnover intention by occupational characteristics

March 2023

Group		Total	Total Score		Turnover Intention[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1731	3.0	(1.7-4.3)	81.7	(79.8-83.5)	18.3	(16.5-20.2)
Gender	Male	1413	3.0	(1.7-4.3)	82.4	(80.3-84.3)	17.6	(15.7-19.7)
	Female	302	3.3	(1.7-4.7)	79.5	(74.6-83.7)	20.5	(16.3-25.4)
Age Range	Under 20 years	0						
	20-29 years	166	2.3	(1.0-4.0)	86.1	(80.3-90.8)	13.9	(9.2-19.7)
	30-39 years	456	2.7	(1.0-4.3)	86.0	(82.6-88.9)	14.0	(11.1-17.4)
	40-49 years	482	3.3	(1.7-4.3)	82.8	(79.2-85.9)	17.2	(14.1-20.8)
	50-59 years	429	3.7	(2.0-4.7)	77.2	(73.0-80.9)	22.8	(19.1-27.0)
	60 years or older	191	3.7	(1.7-4.7)	75.9	(69.5-81.6)	24.1	(18.4-30.5)
Ethnicity	Māori	259	3.0	(1.7-4.3)	82.6	(77.7-86.9)	17.4	(13.1-22.3)
	Pacific peoples	81	3.0	(1.7-4.0)	91.4	(83.8-96.1)	8.6	(3.9-16.2)
	Asian	32	2.5	(1.7-4.3)	S		S	
	European	1504	3.0	(1.7-4.3)	81.8	(79.8-83.7)	18.2	(16.3-20.2)
	Other Ethnicity	220	3.5	(2.0-4.7)	80.9	(75.3-85.7)	19.1	(14.3-24.7)
	MELAA[4]	14	4.5	(3.0-5.0)	64.3	(38.5-84.9)	35.7	(15.1-61.5)
Type of Role	Uniformed Manager	83	3.0	(1.7-4.0)	88.0	(79.7-93.6)	12.0	(6.4-20.3)
	Uniformed Firefighter	1179	3.0	(1.3-4.3)	83.9	(81.7-85.9)	16.1	(14.1-18.3)
	Uniformed Comcen	58	3.5	(2.3-4.7)	79.3	(67.6-88.2)	20.7	(11.8-32.4)
	Uniformed Other	154	3.7	(2.0-5.0)	72.1	(64.6-78.7)	27.9	(21.3-35.4)
	Non-Uniformed Manager	56	3.5	(1.0-4.3)	83.9	(72.7-91.7)	16.1	(8.3-27.3)
	Non-Uniformed Other	195	3.7	(1.7-5.0)	74.9	(68.4-80.6)	25.1	(19.4-31.6)
Region	Te Hiku (Region 1)	493	2.7	(1.3-4.3)	86.4	(83.2-89.2)	13.6	(10.8-16.8)
	Ngā Tai Ki Te Puku (Region 2)	234	3.3	(2.0-4.7)	76.9	(71.2-82.0)	23.1	(18.0-28.8)
	Te Ūpoko (Region 3)	392	3.0	(1.7-4.7)	80.4	(76.2-84.1)	19.6	(15.9-23.8)
	Te Ihu (Region 4)	227	3.0	(1.3-4.3)	80.6	(75.1-85.4)	19.4	(14.6-24.9)
	Te Kei (Region 5)	145	2.3	(1.0-4.0)	84.8	(78.3-90.0)	15.2	(10.0-21.7)
	Comms Centre	63	3.7	(2.3-4.7)	81.0	(70.0-89.1)	19.0	(10.9-30.0)
	National Headquarters	156	3.7	(1.7-4.7)	77.6	(70.6-83.6)	22.4	(16.4-29.4)
Length of Service	Less than 12 Months	112	1.0	(1.0-2.7)	92.0	(85.8-95.9)	8.0	(4.1-14.2)
	1-2 Years	149	2.0	(1.0-4.0)	86.6	(80.4-91.3)	13.4	(8.7-19.6)
	3-5 Years	278	2.7	(1.3-4.3)	84.9	(80.3-88.7)	15.1	(11.3-19.7)
	6-10 Years	291	3.0	(1.7-4.0)	85.9	(81.6-89.5)	14.1	(10.5-18.4)
	More than 10 Years	837	3.7	(2.0-4.7)	77.3	(74.4-80.0)	22.7	(20.0-25.6)
Volunteer Firefighter	Current or previous volunteer firefighter	672	3.0	(1.7-4.3)	81.5	(78.5-84.3)	18.5	(15.7-21.5)
	Never been volunteer firefighter	1058	3.0	(1.7-4.3)	81.8	(79.3-84.0)	18.2	(16.0-20.7)

1. Turnover intention is evaluated through 3 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 3 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .878.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 18

Presenteeism by occupational characteristics

March 2023

Group		Total	Total Score		Presenteeism[1]			
					Never-Sometimes		Often-Always	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1726	3.0	(2.3-4.0)	67.0	(64.7-69.2)	33.0	(30.8-35.3)
Gender	Male	1407	3.0	(2.3-4.0)	67.2	(64.7-69.6)	32.8	(30.4-35.3)
	Female	302	3.3	(2.3-4.3)	67.2	(61.8-72.3)	32.8	(27.7-38.2)
Age Range	Under 20 years	0						
	20-29 years	167	3.0	(2.0-4.0)	71.9	(64.7-78.3)	28.1	(21.7-35.3)
	30-39 years	455	3.0	(2.3-4.0)	69.2	(64.9-73.3)	30.8	(26.7-35.1)
	40-49 years	480	3.3	(2.7-4.3)	66.0	(61.7-70.2)	34.0	(29.8-38.3)
	50-59 years	426	3.3	(2.3-4.3)	65.3	(60.6-69.7)	34.7	(30.3-39.4)
	60 years or older	191	3.0	(2.0-4.3)	63.4	(56.4-69.9)	36.6	(30.1-43.6)
Ethnicity	Māori	261	3.3	(2.7-4.3)	65.1	(59.2-70.7)	34.9	(29.3-40.8)
	Pacific peoples	81	3.7	(2.7-4.3)	61.7	(50.9-71.8)	38.3	(28.2-49.1)
	Asian	32	3.2	(2.7-3.8)	75.0	(58.3-87.4)	25.0	(12.6-41.7)
	European	1498	3.0	(2.3-4.0)	68.3	(65.9-70.6)	31.7	(29.4-34.1)
	Other Ethnicity	219	3.3	(2.3-4.3)	61.2	(54.6-67.5)	38.8	(32.5-45.4)
	MELAA[4]	14	4.3	(2.7-5.0)	42.9	(20.3-68.1)	57.1	(31.9-79.7)
Type of Role	Uniformed Manager	83	3.3	(2.7-4.7)	62.7	(52.0-72.5)	37.3	(27.5-48.0)
	Uniformed Firefighter	1174	3.0	(2.3-4.0)	67.9	(65.2-70.5)	32.1	(29.5-34.8)
	Uniformed Comcen	58	3.5	(3.0-5.0)	53.4	(40.7-65.9)	46.6	(34.1-59.3)
	Uniformed Other	152	3.3	(2.7-4.3)	59.2	(51.3-66.8)	40.8	(33.2-48.7)
	Non-Uniformed Manager	56	3.0	(1.2-4.7)	66.1	(53.1-77.4)	33.9	(22.6-46.9)
	Non-Uniformed Other	197	3.3	(2.3-4.0)	73.1	(66.6-78.9)	26.9	(21.1-33.4)
Region	Te Hiku (Region 1)	488	3.0	(2.0-4.0)	70.3	(66.1-74.2)	29.7	(25.8-33.9)
	Ngā Tai Ki Te Puku (Region 2)	233	3.3	(2.7-4.3)	63.5	(57.2-69.5)	36.5	(30.5-42.8)
	Te Ūpoko (Region 3)	390	3.3	(2.3-4.3)	62.3	(57.4-67.0)	37.7	(33.0-42.6)
	Te Ihu (Region 4)	228	3.0	(2.0-4.0)	69.3	(63.1-75.0)	30.7	(25.0-36.9)
	Te Kei (Region 5)	145	3.0	(2.3-4.0)	73.1	(65.5-79.8)	26.9	(20.2-34.5)
	Comms Centre	63	3.3	(3.0-5.0)	54.0	(41.7-65.9)	46.0	(34.1-58.3)
	National Headquarters	157	3.3	(2.0-4.0)	71.3	(63.9-78.0)	28.7	(22.0-36.1)
Length of Service	Less than 12 Months	112	2.7	(1.3-3.7)	81.3	(73.3-87.6)	18.8	(12.4-26.7)
	1-2 Years	149	3.0	(2.3-4.3)	70.5	(62.8-77.3)	29.5	(22.7-37.2)
	3-5 Years	278	3.0	(2.3-4.3)	67.3	(61.6-72.6)	32.7	(27.4-38.4)
	6-10 Years	292	3.0	(2.3-4.0)	69.2	(63.7-74.3)	30.8	(25.7-36.3)
	More than 10 Years	833	3.3	(2.3-4.3)	63.4	(60.1-66.6)	36.6	(33.4-39.9)
Volunteer Firefighter	Current or previous volunteer firefighter	670	3.3	(2.3-4.3)	64.0	(60.3-67.6)	36.0	(32.4-39.7)
	Never been volunteer firefighter	1055	3.0	(2.3-4.0)	68.9	(66.1-71.6)	31.1	(28.4-33.9)

1. Presenteeism is evaluated through 3 statements. Respondents rated their frequency of presenteeism behaviours on a 7-point scale, with scores ranging from 0 to 6. The total score is the average of the 3 statements, ranging from 0 to 6. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .837.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

  S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 19

Extra role performance by occupational characeristics

March 2023

Group		Total	Total Score		Extra Role Performance[1]			
					Disagree		Agree	
		N	Median	(IQR)[2]	%	(95% CI)	%	(95% CI)[3]
Total Sample		1734	5.3	(4.7-6.0)	30.7	(28.5-32.9)	69.3	(67.1-71.5)
Gender	Male	1414	5.3	(4.7-6.0)	32.3	(29.9-34.8)	67.7	(65.2-70.1)
	Female	303	5.7	(5.0-6.3)	22.4	(18.0-27.4)	77.6	(72.6-82.0)
Age Range	Under 20 years	0						
	20-29 years	166	5.3	(4.7-6.0)	31.3	(24.6-38.7)	68.7	(61.3-75.4)
	30-39 years	456	5.2	(4.7-6.0)	37.1	(32.7-41.6)	62.9	(58.4-67.3)
	40-49 years	483	5.5	(4.8-6.0)	29.2	(25.3-33.4)	70.8	(66.6-74.7)
	50-59 years	430	5.5	(4.8-6.3)	27.9	(23.8-32.3)	72.1	(67.7-76.2)
	60 years or older	192	5.7	(5.0-6.3)	24.5	(18.8-30.9)	75.5	(69.1-81.2)
Ethnicity	Māori	261	5.3	(4.7-6.2)	36.0	(30.4-42.0)	64.0	(58.0-69.6)
	Pacific peoples	81	5.0	(4.5-5.5)	46.9	(36.3-57.7)	53.1	(42.3-63.7)
	Asian	32	5.4	(5.0-6.1)	21.9	(10.4-38.2)	78.1	(61.8-89.6)
	European	1505	5.5	(4.8-6.0)	29.4	(27.2-31.8)	70.6	(68.2-72.8)
	Other Ethnicity	220	5.7	(4.7-6.2)	30.0	(24.2-36.3)	70.0	(63.7-75.8)
	MELAA[4]	14	6.0	(5.7-6.3)	S		S	
Type of Role	Uniformed Manager	83	6.2	(5.5-6.5)	15.7	(9.1-24.6)	84.3	(75.4-90.9)
	Uniformed Firefighter	1179	5.2	(4.5-5.8)	38.3	(35.6-41.1)	61.7	(58.9-64.4)
	Uniformed Comcen	58	5.7	(5.0-6.0)	20.7	(11.8-32.4)	79.3	(67.6-88.2)
	Uniformed Other	154	5.8	(5.3-6.3)	14.9	(10.0-21.2)	85.1	(78.8-90.0)
	Non-Uniformed Manager	56	6.4	(5.9-6.8)		(0.0-0.0)	100.0	(0.0-0.0)
	Non-Uniformed Other	198	5.8	(5.2-6.3)	14.1	(9.8-19.5)	85.9	(80.5-90.2)
Region	Te Hiku (Region 1)	494	5.3	(4.5-6.0)	36.2	(32.1-40.5)	63.8	(59.5-67.9)
	Ngā Tai Ki Te Puku (Region 2)	233	5.2	(4.7-6.0)	35.6	(29.7-41.9)	64.4	(58.1-70.3)
	Te Ūpoko (Region 3)	393	5.3	(4.7-6.0)	32.6	(28.1-37.3)	67.4	(62.7-71.9)
	Te Ihu (Region 4)	228	5.5	(4.7-6.2)	28.9	(23.4-35.1)	71.1	(64.9-76.6)
	Te Kei (Region 5)	144	5.6	(4.9-6.2)	25.0	(18.5-32.5)	75.0	(67.5-81.5)
	Comms Centre	63	5.7	(5.0-6.2)	20.6	(12.1-31.8)	79.4	(68.2-87.9)
	National Headquarters	157	6.0	(5.5-6.7)	10.8	(6.7-16.4)	89.2	(83.6-93.3)
Length of Service	Less than 12 Months	113	5.7	(4.8-6.2)	29.2	(21.4-38.0)	70.8	(62.0-78.6)
	1-2 Years	148	5.7	(5.0-6.3)	19.6	(13.8-26.5)	80.4	(73.5-86.2)
	3-5 Years	278	5.3	(4.8-6.0)	30.6	(25.4-36.2)	69.4	(63.8-74.6)
	6-10 Years	292	5.3	(4.7-6.0)	36.0	(30.6-41.6)	64.0	(58.4-69.4)
	More than 10 Years	839	5.5	(4.7-6.2)	30.5	(27.5-33.7)	69.5	(66.3-72.5)
Volunteer Firefighter	Current or previous volunteer firefighter	673	5.5	(4.8-6.2)	27.3	(24.1-30.8)	72.7	(69.2-75.9)
	Never been volunteer firefighter	1060	5.3	(4.7-6.0)	32.7	(30.0-35.6)	67.3	(64.4-70.0)

1. Extra role performance is evaluated through 6 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 6 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 6 items and a Cronbach's alpha of .848.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 1

Survey sample characteristics
March 2023

Group		Total	Male		Female	
		N	n	%	n	%
Total Sample		1736	1416	100%	303	100%
Age range	Under 20 years					
	20-29 years	167	121	9%	45	15%
	30-39 years	456	371	26%	83	28%
	40-49 years	483	393	28%	87	29%
	50-59 years	431	354	25%	71	24%
	60 years or older	192	177	13%	14	5%
Ethnicity	Māori	261	211	15%	45	15%
	Pacific peoples	81	69	5%	11	4%
	Asian	32	21	1%	10	3%
	European	1507	1242	88%	260	88%
	Other Ethnicity	221	174	12%	44	15%
	MELAA	14	10	1%	<5	1%
Role type	Uniformed Manager	83	75	5%	8	3%
	Uniformed Firefighter	1181	1090	77%	78	26%
	Uniformed Comcen	58	32	2%	25	8%
	Uniformed Other	154	126	9%	28	9%
	Non-Uniformed Tier 1-4 Manager	56	24	2%	31	10%
	Non-Uniformed Other	198	65	5%	131	44%
Region	Te Hiku (Region 1)	494	432	31%	58	20%
	Ngā Tai Ki Te Puku (Region 2)	234	201	14%	33	11%
	Te Ūpoko (Region 3)	393	346	25%	41	14%
	Te Ihu (Region 4)	228	191	14%	34	11%
	Te Kei (Region 5)	145	125	9%	19	6%
	Comms Centre	63	36	3%	26	9%
	National Headquarters	157	70	5%	86	29%
Length of	Less than 12 Months	113	67	5%	45	15%
	1-2 Years	149	92	7%	55	19%
	3-5 Years	278	197	14%	79	27%
	6-10 Years	293	238	17%	53	18%
	More than 10 Years	839	768	56%	63	21%
Non-Uniformed	Less than 12 Months	<5			<5	20%
	1-2 Years	<5			<5	20%
	3-5 Years	5	<5	13%	<5	40%
	6-10 Years	<5	<5	4%	<5	20%
	More than 10 Years	20	19	83%		
Volunteer	Currently a volunteer firefighter	171	146	10%	25	8%
	Previously been a volunteer firefighter	503	467	33%	33	11%
	Never been a volunteer firefighter	1061	802	57%	245	81%
Years as a	Less than 12 Months	31	27	5%	<5	7%
	1-2 Years	95	92	15%	<5	5%
	3-5 Years	219	200	34%	18	32%
	6-10 Years	148	132	22%	15	26%
	More than 10 Years	161	143	24%	17	30%

1. Participants were able to select more than one ethnic group in the survey, therefore the total counts of the ethnicity categories may be greater than the total number of survey

2. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 20

Odds ratios of organisational attitudes and behavioural outcomes by organisational climate and performance factors
March 2023

Group		Odds ratios of High Affective Commitment Unadjusted OR (95% CI)			Odds ratios of High Cynicism related to Overall Organisation Unadjusted OR (95% CI)			Odds ratios of High Organisational Cynicism related to Management Unadjusted OR (95% CI)			Odds ratios of High Turnover Intention Unadjusted OR (95% CI)			Odds ratios of High Presenteeism Unadjusted OR (95% CI)			Odds ratios of High Extra Role Performance Unadjusted OR (95% CI)		
Team Member Perceived Manager Support	Low	1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref	
	High	2.31	(1.85-2.89)	***	0.10	(0.07-0.15)	***	0.10	(0.07-0.15)	***	0.51	(0.39-0.67)	***	0.81	(0.65-1.00)		1.67	(1.34-2.08)	***
Manager Perceived Personnel Support	Low	1.00	ref		1.00	ref					1.00	ref		1.00	ref		1.00	ref	
	High	1.52	(0.66-3.50)		0.75	(0.32-1.75)					0.28	(0.10-0.77)	*	1.52	(0.62-3.76)		5.83	(1.78-19.11)	**
Perceived Co-Worker Support	Low	1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref	
	High	2.80	(2.03-3.84)	***	0.77	(0.60-0.99)	*	0.49	(0.37-0.66)	***	0.28	(0.21-0.37)	***	0.65	(0.51-0.84)	***	1.36	(1.06-1.75)	*
Perceived Organisational Support	Low	1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref	
	High	8.39	(6.14-11.46)	***	0.14	(0.10-0.20)	***	0.37	(0.21-0.64)	***	0.14	(0.07-0.29)	***	0.63	(0.46-0.86)	**	3.78	(2.50-5.73)	***
Uniformed Perceptions of Non-Uniformed Support	Low	1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref	
	High	3.98	(2.82-5.60)	***	0.34	(0.24-0.47)	***	0.76	(0.47-1.24)		0.52	(0.31-0.89)	*	0.76	(0.52-1.10)		1.98	(1.33-2.96)	***
Non-Uniformed Perceptions of Uniformed Support	Low	1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref	
	High	3.06	(1.59-5.90)	***	0.66	(0.33-1.30)		1.06	(0.37-3.03)		0.63	(0.28-1.44)		1.43	(0.72-2.82)		3.39	(0.78-14.81)	
Perceived Psychological Safety	Low	1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref	
	High	3.06	(2.46-3.81)	***	0.40	(0.32-0.49)	***	0.38	(0.27-0.53)	***	0.33	(0.23-0.46)	***	0.66	(0.53-0.83)	***	1.94	(1.53-2.47)	***
Perceived Preparedness to Serve	Low	1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref	
	High	3.47	(2.75-4.37)	***	0.29	(0.23-0.37)	***	0.45	(0.32-0.65)	***	0.39	(0.27-0.56)	***	0.59	(0.46-0.76)	***	1.55	(1.20-1.99)	***
Perceived Organisational Accountability	Low	1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref	
	High	7.40	(5.13-10.67)	***	0.15	(0.10-0.23)	***	0.31	(0.15-0.65)	**	0.25	(0.13-0.50)	***	0.89	(0.63-1.27)		4.62	(2.68-7.94)	***
Perceived Organisational Competence	Low	1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref		1.00	ref	
	High	4.71	(3.72-5.97)	***	0.25	(0.20-0.32)	***	0.45	(0.31-0.64)	***	0.36	(0.25-0.53)	***	0.83	(0.65-1.05)		2.72	(2.04-3.62)	***

Symbols

*   Significance level p <.05

**   Significance level p <.01

***   Significance level p <.001

Source. 2023 Whanaungatanga Wellbeing Survey

Research Objective 2.
To determine the current levels of mental health (e.g., PTSD, depression, anxiety, resilience, posttraumatic growth) among uniformed and non-uniformed personnel and managers.

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Table 1

Prevalence of depressive symptoms by occupational characteristics

March 2023

Group		Total	Total Score		Severity of Depressive Symptoms[1]			
					Normal-Minimal		Moderate-Severe	
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1733	5.0	(2.0-9.0)	75.5	(73.4-77.5)	24.5	(22.5-26.6)
Gender	Male	1413	5.0	(2.0-9.0)	76.1	(73.8-78.2)	23.9	(21.8-26.2)
	Female	303	5.0	(3.0-10.0)	73.6	(68.4-78.3)	26.4	(21.7-31.6)
Age Range	Under 20 years	0						
	20-29 years	166	6.0	(3.0-10.0)	73.5	(66.4-79.8)	26.5	(20.2-33.6)
	30-39 years	456	5.0	(3.0-9.0)	77.2	(73.2-80.9)	22.8	(19.1-26.8)
	40-49 years	482	6.0	(3.0-10.0)	72.2	(68.1-76.1)	27.8	(23.9-31.9)
	50-59 years	430	5.0	(2.0-10.0)	73.5	(69.2-77.5)	26.5	(22.5-30.8)
	60 years or older	192	4.0	(1.0-7.0)	84.9	(79.3-89.4)	15.1	(10.6-20.7)
Ethnicity	Māori	259	5.0	(2.0-9.0)	76.4	(71.0-81.3)	23.6	(18.7-29.0)
	Pacific peoples	81	7.0	(3.0-10.0)	71.6	(61.2-80.5)	28.4	(19.5-38.8)
	Asian	32	5.0	(2.5-8.5)	81.3	(65.4-91.8)	18.8	(8.2-34.6)
	European	1504	5.0	(2.0-9.0)	75.9	(73.7-78.0)	24.1	(22.0-26.3)
	Other Ethnicity	220	5.0	(3.0-10.0)	72.3	(66.1-77.9)	27.7	(22.1-33.9)
	MELAA[4]	14	4.5	(2.0-13.0)	64.3	(38.5-84.9)	35.7	(15.1-61.5)
Type of Role	Uniformed Manager	83	5.0	(2.0-10.0)	74.7	(64.6-83.1)	25.3	(16.9-35.4)
	Uniformed Firefighter	1179	5.0	(3.0-9.0)	75.8	(73.3-78.2)	24.2	(21.8-26.7)
	Uniformed Comcen	58	10.0	(6.0-14.0)	46.6	(34.1-59.3)	53.4	(40.7-65.9)
	Uniformed Other	154	5.0	(2.0-9.0)	77.3	(70.2-83.3)	22.7	(16.7-29.8)
	Non-Uniformed Manager	56	4.0	(1.5-6.0)	87.5	(77.0-94.2)	12.5	(5.8-23.0)
	Non-Uniformed Other	197	5.0	(2.0-9.0)	76.6	(70.4-82.1)	23.4	(17.9-29.6)
Region	Te Hiku (Region 1)	493	5.0	(3.0-9.0)	75.5	(71.5-79.1)	24.5	(20.9-28.5)
	Ngā Tai Ki Te Puku (Region 2)	234	5.0	(3.0-10.0)	73.5	(67.6-78.8)	26.5	(21.2-32.4)
	Te Ūpoko (Region 3)	393	6.0	(3.0-9.0)	75.8	(71.4-79.9)	24.2	(20.1-28.6)
	Te Ihu (Region 4)	228	4.0	(2.0-8.0)	81.1	(75.7-85.8)	18.9	(14.2-24.3)
	Te Kei (Region 5)	144	5.0	(2.0-8.0)	81.3	(74.3-87.0)	18.8	(13.0-25.7)
	Comms Centre	63	10.0	(6.0-14.0)	49.2	(37.1-61.4)	50.8	(38.6-62.9)
	National Headquarters	157	5.0	(2.0-8.0)	77.7	(70.7-83.7)	22.3	(16.3-29.3)
Length of Service	Less than 12 Months	112	3.0	(1.0-6.0)	92.0	(85.8-95.9)	8.0	(4.1-14.2)
	1-2 Years	149	5.0	(2.0-9.0)	77.9	(70.7-83.9)	22.1	(16.1-29.3)
	3-5 Years	278	5.0	(3.0-9.0)	77.7	(72.5-82.3)	22.3	(17.7-27.5)
	6-10 Years	292	6.0	(3.0-10.0)	74.0	(68.7-78.8)	26.0	(21.2-31.3)
	More than 10 Years	838	6.0	(3.0-10.0)	72.7	(69.6-75.6)	27.3	(24.4-30.4)
Volunteer Firefighter	Current or previous volunteer firefighter	672	6.0	(3.0-10.0)	73.5	(70.1-76.7)	26.5	(23.3-29.9)
	Never been volunteer firefighter	1060	5.0	(2.0-9.0)	76.7	(74.1-79.2)	23.3	(20.8-25.9)

1. The PHQ-9 is a standardised tool used to assess the severity of depression symptoms. It consists of nine questions that ask about the frequency of depressive symptoms experienced over the past two weeks. Each question is scored from 0 to 3, with a maximum score of 27. Total scores are summarised into no, minimal, or mild (values 0-9), or moderate, severe, or very severe (values 10-27) depressive symptoms. The PHQ-9 score showed high internal consistency with an average score of 9 items and a Cronbach's alpha of .881.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile).

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 2

Prevalence of anxiety symptoms by occupational characteristics
March 2023

Group		Total	Total Score		Severity of Anxiety Symptoms[1]			
					Normal-Minimal		Moderate-Severe	
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1733	4.0	(1.0-7.0)	84.9	(83.1-86.5)	15.1	(13.5-16.9)
Gender	Male	1413	4.0	(1.0-7.0)	86.1	(84.3-87.9)	13.9	(12.1-15.7)
	Female	303	4.0	(2.0-8.0)	79.5	(74.7-83.8)	20.5	(16.2-25.3)
Age Range	Under 20 years	0						
	20-29 years	167	5.0	(2.0-9.0)	77.8	(71.1-83.6)	22.2	(16.4-28.9)
	30-39 years	456	4.0	(2.0-8.0)	83.1	(79.5-86.3)	16.9	(13.7-20.5)
	40-49 years	482	4.0	(2.0-7.0)	84.6	(81.2-87.7)	15.4	(12.3-18.8)
	50-59 years	429	3.0	(1.0-7.0)	86.2	(82.7-89.3)	13.8	(10.7-17.3)
	60 years or older	192	2.0	(0.0-5.0)	92.2	(87.8-95.4)	7.8	(4.6-12.2)
Ethnicity	Māori	260	3.0	(1.0-7.0)	89.2	(85.0-92.6)	10.8	(7.4-15.0)
	Pacific peoples	81	4.0	(2.0-7.0)	84.0	(74.8-90.7)	16.0	(9.3-25.2)
	Asian	32	3.0	(1.0-6.5)	S	(73.0-95.6)	S	(4.4-27.0)
	European	1504	4.0	(1.0-7.0)	84.8	(82.9-86.5)	15.2	(13.5-17.1)
	Other Ethnicity	220	4.0	(2.0-7.0)	83.6	(78.3-88.1)	16.4	(11.9-21.7)
	MELAA[4]	14	6.0	(2.0-14.0)	S	(45.5-89.5)	S	(10.5-54.5)
Type of Role	Uniformed Manager	83	3.0	(1.0-6.0)	86.7	(78.2-92.7)	13.3	(7.3-21.8)
	Uniformed Firefighter	1178	4.0	(1.0-7.0)	86.6	(84.6-88.4)	13.4	(11.6-15.4)
	Uniformed Comcen	58	7.0	(2.0-13.0)	56.9	(44.1-69.0)	43.1	(31.0-55.9)
	Uniformed Other	154	3.0	(1.0-7.0)	82.5	(75.9-87.8)	17.5	(12.2-24.1)
	Non-Uniformed Manager	56	3.0	(1.0-6.0)	87.5	(77.0-94.2)	12.5	(5.8-23.0)
	Non-Uniformed Other	198	4.0	(1.0-7.0)	82.8	(77.1-87.6)	17.2	(12.4-22.9)
Region	Te Hiku (Region 1)	493	4.0	(1.0-7.0)	86.2	(83.0-89.0)	13.8	(11.0-17.0)
	Ngā Tai Ki Te Puku (Region 2)	233	3.0	(2.0-7.0)	85.0	(80.0-89.1)	15.0	(10.9-20.0)
	Te Ūpoko (Region 3)	393	4.0	(1.0-7.0)	87.0	(83.4-90.1)	13.0	(9.9-16.6)
	Te Ihu (Region 4)	228	3.0	(1.0-7.0)	87.7	(83.0-91.5)	12.3	(8.5-17.0)
	Te Kei (Region 5)	144	4.0	(1.0-6.0)	84.7	(78.2-89.9)	15.3	(10.1-21.8)
	Comms Centre	63	6.0	(2.0-13.0)	58.7	(46.4-70.3)	41.3	(29.7-53.6)
	National Headquarters	157	4.0	(1.0-7.0)	82.2	(75.6-87.5)	17.8	(12.5-24.4)
Length of Service	Less than 12 Months	113	2.0	(0.0-5.0)	88.5	(81.7-93.4)	11.5	(6.6-18.3)
	1-2 Years	149	3.0	(1.0-6.0)	86.6	(80.4-91.3)	13.4	(8.7-19.6)
	3-5 Years	278	4.0	(2.0-7.0)	82.7	(78.0-86.8)	17.3	(13.2-22.0)
	6-10 Years	292	4.0	(1.0-7.0)	84.6	(80.1-88.4)	15.4	(11.6-19.9)
	More than 10 Years	837	4.0	(1.0-7.0)	85.2	(82.7-87.5)	14.8	(12.5-17.3)
Volunteer Firefighter	Current or previous volunteer firefighter	672	4.0	(1.0-7.0)	85.6	(82.8-88.1)	14.4	(11.9-17.2)
	Never been volunteer firefighter	1060	4.0	(1.0-7.0)	84.4	(82.2-86.5)	15.6	(13.5-17.8)

1. The GAD-7 is a standardised tool used to assess the severity of anxiety symptoms. It consists of seven questions that ask about the frequency of anxiety symptoms experienced over the past two weeks. Each question is scored from 0 to 3, with a maximum score of 21. Total scores are summarised into no, minimal, or mild (values 0-9), or moderate or severe (values 10-21) symptoms of anxiety. The GAD-7 score showed high internal consistency with an average score of 7 items and a Cronbach's alpha of .910.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 3

Prevalence of probable post-traumatic stress disorder by occupational characteristics

March 2023

Group		Total	Total Score		Post-Traumatic Stress Disorder[1]			
					Unlikely-Possible		Probable PTSD	
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1556	7.0	(3.0-12.0)	87.3	(85.6-88.9)	12.7	(11.1-14.4)
Gender	Male	1337	7.0	(3.0-12.0)	87.2	(85.3-88.9)	12.8	(11.1-14.7)
	Female	202	5.0	(2.0-11.0)	88.6	(83.7-92.4)	11.4	(7.6-16.3)
Age Range	Under 20 years	0						
	20-29 years	152	6.0	(3.0-12.0)	88.2	(82.3-92.6)	11.8	(7.4-17.7)
	30-39 years	413	7.0	(3.0-11.0)	89.6	(86.4-92.3)	10.4	(7.7-13.6)
	40-49 years	432	7.0	(4.0-13.0)	86.3	(82.9-89.3)	13.7	(10.7-17.1)
	50-59 years	380	7.0	(3.0-13.0)	85.3	(81.4-88.6)	14.7	(11.4-18.6)
	60 years or older	175	6.0	(3.0-11.0)	88.0	(82.6-92.2)	12.0	(7.8-17.4)
Ethnicity	Māori	243	7.0	(3.0-13.0)	88.9	(84.5-92.4)	11.1	(7.6-15.5)
	Pacific peoples	77	9.0	(5.0-14.0)	77.9	(67.7-86.1)	22.1	(13.9-32.3)
	Asian	22	6.5	(4.0-12.0)	S	(73.9-98.1)	S	(1.9-26.1)
	European	1347	7.0	(3.0-12.0)	87.4	(85.5-89.1)	12.6	(10.9-14.5)
	Other Ethnicity	188	7.0	(3.0-13.0)	85.6	(80.1-90.1)	14.4	(9.9-19.9)
	MELAA[4]	10	11.0	(2.0-21.0)	S	(39.4-90.7)	S	(9.3-60.6)
Type of Role	Uniformed Manager	80	5.0	(2.0-9.0)	S	(88.6-98.3)	S	(1.7-11.4)
	Uniformed Firefighter	1159	7.0	(4.0-13.0)	86.6	(84.6-88.5)	13.4	(11.5-15.4)
	Uniformed Comcen	55	11.0	(6.0-17.0)	69.1	(56.1-80.1)	30.9	(19.9-43.9)
	Uniformed Other	138	5.0	(2.0-11.0)	89.1	(83.1-93.5)	10.9	(6.5-16.9)
	Non-Uniformed Manager	29	4.0	(2.0-7.0)	S	(85.0-99.6)	S	(0.4-15.0)
	Non-Uniformed Other	89	5.0	(1.0-9.0)	94.4	(88.1-97.8)	5.6	(2.2-11.9)
Region	Te Hiku (Region 1)	474	7.0	(3.0-12.0)	86.5	(83.2-89.3)	13.5	(10.7-16.8)
	Ngā Tai Ki Te Puku (Region 2)	210	7.0	(4.0-11.0)	85.7	(80.5-89.9)	14.3	(10.1-19.5)
	Te Ūpoko (Region 3)	371	7.0	(3.0-13.0)	87.6	(84.0-90.7)	12.4	(9.3-16.0)
	Te Ihu (Region 4)	217	6.0	(3.0-11.0)	93.1	(89.1-95.9)	6.9	(4.1-10.9)
	Te Kei (Region 5)	126	6.0	(3.0-11.0)	88.9	(82.5-93.5)	11.1	(6.5-17.5)
	Comms Centre	60	11.0	(5.0-17.0)	70.0	(57.7-80.5)	30.0	(19.5-42.3)
	National Headquarters	81	4.0	(1.0-8.0)	S	(88.7-98.3)	S	(1.7-11.3)
Length of Service	Less than 12 Months	65	3.0	(1.0-6.0)	S	(90.5-99.4)	S	(0.6-9.5)
	1-2 Years	106	4.5	(2.0-10.0)	93.4	(87.5-97.0)	6.6	(3.0-12.5)
	3-5 Years	239	6.0	(3.0-12.0)	90.4	(86.2-93.6)	9.6	(6.4-13.8)
	6-10 Years	272	7.0	(3.0-11.0)	87.1	(82.8-90.7)	12.9	(9.3-17.2)
	More than 10 Years	818	8.0	(3.0-13.0)	85.1	(82.5-87.4)	14.9	(12.6-17.5)
Volunteer Firefighter	Current or previous volunteer firefighter	657	7.0	(3.0-12.0)	89.3	(86.8-91.5)	10.7	(8.5-13.2)
	Never been volunteer firefighter	898	7.0	(3.0-12.0)	86.0	(83.6-88.1)	14.0	(11.9-16.4)

1. The SPRINT is a standardised tool used to assess the core symptoms of post-traumatic stress disorder related to traumatic work experiences in the past week. It consists of eight questions that ask about the frequency of PTSD symptoms experienced over the past week. Each question is scored from 0 to 4, with a maximum score of 32. Total scores are summarised into unlikely to possible PTSD (0-16) or probable PTSD (17-32). The SPRINT score showed high internal consistency with an average score of 8 items and a Cronbach's alpha of .905.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 4

Prevalence of work-family conflict by occupational characteristics

March 2023

Group		Total	Total Score		Work-Family Conflict[1]			
					Low-Moderate		High	
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1734	5.3	(4.0-6.3)	74.2	(72.1-76.2)	25.8	(23.8-27.9)
Gender	Male	1414	5.3	(4.3-6.3)	71.8	(69.4-74.1)	28.2	(25.9-30.6)
	Female	303	4.3	(3.0-5.7)	86.1	(81.9-89.7)	13.9	(10.3-18.1)
Age Range	Under 20 years	0						
	20-29 years	167	5.3	(4.0-6.3)	74.9	(67.9-81.0)	25.1	(19.0-32.1)
	30-39 years	455	5.3	(4.0-6.3)	73.6	(69.4-77.5)	26.4	(22.5-30.6)
	40-49 years	483	5.3	(4.3-6.3)	72.3	(68.1-76.1)	27.7	(23.9-31.9)
	50-59 years	430	5.3	(4.0-6.3)	74.7	(70.4-78.6)	25.3	(21.4-29.6)
	60 years or older	192	5.0	(3.7-6.0)	78.1	(71.9-83.5)	21.9	(16.5-28.1)
Ethnicity	Māori	261	5.3	(4.3-6.3)	73.9	(68.4-79.0)	26.1	(21.0-31.6)
	Pacific peoples	81	5.0	(4.0-6.0)	77.8	(67.9-85.8)	22.2	(14.2-32.1)
	Asian	31	4.3	(3.0-5.3)	S	(76.4-97.2)	S	(2.8-23.6)
	European	1506	5.3	(4.0-6.3)	74.1	(71.8-76.3)	25.9	(23.7-28.2)
	Other Ethnicity	220	5.3	(4.0-6.3)	74.5	(68.5-80.0)	25.5	(20.0-31.5)
	MELAA[4]	14	4.8	(3.0-6.0)	S	(53.1-93.6)	S	(6.4-46.9)
Type of Role	Uniformed Manager	83	5.7	(4.7-6.3)	65.1	(54.4-74.7)	34.9	(25.3-45.6)
	Uniformed Firefighter	1179	5.3	(4.7-6.3)	69.9	(67.2-72.5)	30.1	(27.5-32.8)
	Uniformed Comcen	58	6.0	(5.0-6.7)	65.5	(52.8-76.8)	34.5	(23.2-47.2)
	Uniformed Other	154	4.7	(3.7-5.7)	85.7	(79.5-90.6)	14.3	(9.4-20.5)
	Non-Uniformed Manager	56	4.3	(2.3-5.3)	91.1	(81.5-96.5)	8.9	(3.5-18.5)
	Non-Uniformed Other	198	3.3	(2.0-5.0)	91.4	(86.9-94.7)	8.6	(5.3-13.1)
Region	Te Hiku (Region 1)	493	5.3	(4.0-6.3)	71.2	(67.1-75.1)	28.8	(24.9-32.9)
	Ngā Tai Ki Te Puku (Region 2)	233	5.3	(4.3-6.0)	77.3	(71.6-82.3)	22.7	(17.7-28.4)
	Te Ūpoko (Region 3)	393	5.3	(4.3-6.3)	73.0	(68.5-77.2)	27.0	(22.8-31.5)
	Te Ihu (Region 4)	228	5.3	(4.3-6.3)	71.9	(65.8-77.5)	28.1	(22.5-34.2)
	Te Kei (Region 5)	145	5.3	(4.3-6.3)	73.1	(65.5-79.8)	26.9	(20.2-34.5)
	Comms Centre	63	5.7	(4.7-6.7)	68.3	(56.1-78.7)	31.7	(21.3-43.9)
	National Headquarters	157	3.7	(2.0-5.3)	87.3	(81.4-91.8)	12.7	(8.2-18.6)
Length of Service	Less than 12 Months	113	3.7	(2.0-4.7)	S	(93.1-99.2)	S	(0.8-6.9)
	1-2 Years	149	4.7	(3.0-6.0)	82.6	(75.9-88.0)	17.4	(12.0-24.1)
	3-5 Years	277	5.3	(3.7-6.0)	75.1	(69.8-79.9)	24.9	(20.1-30.2)
	6-10 Years	293	5.0	(4.3-6.0)	76.1	(71.0-80.7)	23.9	(19.3-29.0)
	More than 10 Years	838	5.7	(4.7-6.3)	68.4	(65.2-71.5)	31.6	(28.5-34.8)
Volunteer Firefighter	Current or previous volunteer firefighter	673	5.3	(4.3-6.3)	70.9	(67.4-74.2)	29.1	(25.8-32.6)
	Never been volunteer firefighter	1060	5.0	(3.7-6.0)	76.2	(73.6-78.7)	23.8	(21.3-26.4)

1. The Work-Family scale assesses the experience of work-to-family conflict, where work demands interfere with family responsibilities. It consists of three questions, scored from 1 to 7 based on agreement level. The scores for each item are then averaged into a total score, ranging from 1 to 7. The total score is categorised as low-moderate (values < 6.3) or high (values ≥ 6.3) work-family conflict, based on the upper quartile values for the entire sample.The Work-Family conflict score showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .922.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 5

Prevalence of potentially hazardous drinking patterns by occupational characteristics
March 2023

Group		Total	Total Score		Alcohol Use[1]			
					Low-Moderate		Potentially Hazardous Pattern	
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1736	4.0	(2.0-6.0)	35.9	(33.7-38.2)	64.1	(61.8-66.3)
Gender	Male	1416	4.0	(3.0-6.0)	35.1	(32.6-37.6)	64.9	(62.4-67.4)
	Female	303	3.0	(2.0-5.0)	39.6	(34.2-45.2)	60.4	(54.8-65.8)
Age Range	Under 20 years	0						
	20-29 years	167	4.0	(3.0-6.0)	34.3	(27.4-41.8)	65.7	(58.2-72.6)
	30-39 years	456	4.0	(3.0-6.0)	37.0	(32.7-41.5)	63.0	(58.5-67.3)
	40-49 years	483	4.0	(2.0-6.0)	36.7	(32.4-41.0)	63.3	(59.0-67.6)
	50-59 years	431	5.0	(3.0-6.0)	32.9	(28.6-37.5)	67.1	(62.5-71.4)
	60 years or older	192	4.0	(2.0-6.0)	39.3	(32.5-46.3)	60.7	(53.7-67.5)
Ethnicity	Māori	261	4.0	(3.0-6.0)	37.1	(31.4-43.1)	62.9	(56.9-68.6)
	Pacific peoples	81	5.0	(3.0-7.0)	27.5	(18.6-38.0)	72.5	(62.0-81.4)
	Asian	32	2.0	(1.0-4.0)	67.7	(50.3-82.1)	32.3	(17.9-49.7)
	European	1507	4.0	(3.0-6.0)	34.9	(32.5-37.3)	65.1	(62.7-67.5)
	Other Ethnicity	221	4.0	(2.0-6.0)	39.4	(33.1-46.0)	60.6	(54.0-66.9)
	MELAA[4]	14	1.5	(0.0-3.0)	S	(45.5-89.5)	S	(10.5-54.5)
Type of Role	Uniformed Manager	83	5.0	(3.0-6.0)	32.5	(23.2-43.1)	67.5	(56.9-76.8)
	Uniformed Firefighter	1181	5.0	(3.0-6.0)	32.4	(29.8-35.2)	67.6	(64.8-70.2)
	Uniformed Comcen	58	3.0	(1.0-5.0)	49.1	(36.5-61.9)	50.9	(38.1-63.5)
	Uniformed Other	154	4.0	(2.0-5.0)	43.5	(35.9-51.4)	56.5	(48.6-64.1)
	Non-Uniformed Manager	56	4.0	(2.0-5.0)	36.4	(24.6-49.5)	63.6	(50.5-75.4)
	Non-Uniformed Other	198	3.0	(2.0-5.0)	47.4	(40.5-54.4)	52.6	(45.6-59.5)
Region	Te Hiku (Region 1)	494	4.0	(3.0-6.0)	33.1	(29.0-37.3)	66.9	(62.7-71.0)
	Ngā Tai Ki Te Puku (Region 2)	234	4.0	(3.0-6.0)	36.3	(30.4-42.6)	63.7	(57.4-69.6)
	Te Ūpoko (Region 3)	393	5.0	(3.0-6.0)	32.3	(27.8-37.1)	67.7	(62.9-72.2)
	Te Ihu (Region 4)	228	4.0	(2.0-6.0)	40.4	(34.2-46.9)	59.6	(53.1-65.8)
	Te Kei (Region 5)	145	4.0	(3.0-6.0)	33.3	(26.0-41.3)	66.7	(58.7-74.0)
	Comms Centre	63	3.0	(1.0-5.0)	51.6	(39.3-63.7)	48.4	(36.3-60.7)
	National Headquarters	157	3.0	(2.0-5.0)	44.2	(36.6-52.1)	55.8	(47.9-63.4)
Length of Service	Less than 12 Months	113	4.0	(2.0-6.0)	37.5	(28.9-46.7)	62.5	(53.3-71.1)
	1-2 Years	149	3.0	(2.0-5.0)	40.8	(33.1-48.9)	59.2	(51.1-66.9)
	3-5 Years	278	4.0	(2.0-6.0)	39.1	(33.5-45.0)	60.9	(55.0-66.5)
	6-10 Years	293	4.0	(2.0-6.0)	38.5	(33.0-44.2)	61.5	(55.8-67.0)
	More than 10 Years	839	4.0	(3.0-6.0)	33.1	(30.0-36.3)	66.9	(63.7-70.0)
Volunteer Firefighter	Current or previous volunteer firefighter	674	4.0	(3.0-6.0)	34.1	(30.6-37.8)	65.9	(62.2-69.4)
	Never been volunteer firefighter	1061	4.0	(2.0-6.0)	37.1	(34.2-40.0)	62.9	(60.0-65.8)

1. The AUDIT-C scale is a screening tool used to identify potentially harmful alcohol use. Respondents are asked three questions about their typical alcohol use, including frequency, amount, and frequency of heavy drinking. Each response is scored from 0 to 4, and the scores are added together to obtain the total score, ranging from 0 to 12. A score of ≥ 3 for women and a score of ≥ 4 for men is considered indicative of potentially hazardous drinking.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 6

Prevalence of high emotional numbing by occupational characteristics
March 2023

Group		Total	Total Score		Emotional Numbing[1]			
					Low-Moderate		High	
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1733	3.4	(1.8-4.6)	72.6	(70.5-74.7)	27.4	(25.3-29.5)
Gender	Male	1414	3.6	(2.0-4.8)	69.2	(66.8-71.6)	30.8	(28.4-33.2)
	Female	302	2.0	(1.0-3.2)	90.7	(87.1-93.6)	9.3	(6.4-12.9)
Age Range	Under 20 years	0						
	20-29 years	167	3.4	(2.0-4.6)	73.7	(66.6-79.9)	26.3	(20.1-33.4)
	30-39 years	455	3.6	(2.0-4.8)	70.8	(66.5-74.8)	29.2	(25.2-33.5)
	40-49 years	483	3.4	(1.8-4.6)	72.9	(68.8-76.7)	27.1	(23.3-31.2)
	50-59 years	429	3.2	(1.8-4.6)	71.6	(67.2-75.7)	28.4	(24.3-32.8)
	60 years or older	192	3.0	(1.6-4.2)	78.6	(72.4-84.0)	21.4	(16.0-27.6)
Ethnicity	Māori	261	3.6	(2.0-4.6)	71.3	(65.6-76.5)	28.7	(23.5-34.4)
	Pacific peoples	81	4.0	(2.6-5.0)	63.0	(52.1-72.9)	37.0	(27.1-47.9)
	Asian	32	2.6	(2.0-3.8)	S	(73.0-95.6)	S	(4.4-27.0)
	European	1504	3.4	(1.8-4.6)	72.8	(70.5-75.0)	27.2	(25.0-29.5)
	Other Ethnicity	219	3.2	(2.0-4.6)	74.9	(68.8-80.3)	25.1	(19.7-31.2)
	MELAA[4]	14	3.2	(2.0-4.6)	S	(45.5-89.5)	S	(10.5-54.5)
Type of Role	Uniformed Manager	83	2.6	(1.6-4.0)	84.3	(75.4-90.9)	15.7	(9.1-24.6)
	Uniformed Firefighter	1178	3.8	(2.2-4.8)	67.3	(64.6-70.0)	32.7	(30.0-35.4)
	Uniformed Comcen	58	3.4	(2.0-5.0)	69.0	(56.4-79.7)	31.0	(20.3-43.6)
	Uniformed Other	154	2.8	(1.2-4.2)	79.2	(72.3-85.0)	20.8	(15.0-27.7)
	Non-Uniformed Manager	56	1.5	(1.0-2.9)	S	(86.4-98.5)	S	(1.5-13.6)
	Non-Uniformed Other	198	1.7	(1.0-3.2)	89.4	(84.5-93.1)	10.6	(6.9-15.5)
Region	Te Hiku (Region 1)	494	3.8	(2.2-4.8)	68.6	(64.4-72.6)	31.4	(27.4-35.6)
	Ngā Tai Ki Te Puku (Region 2)	234	3.4	(1.8-4.8)	70.9	(64.9-76.5)	29.1	(23.5-35.1)
	Te Ūpoko (Region 3)	392	3.6	(2.0-4.8)	69.6	(65.0-74.0)	30.4	(26.0-35.0)
	Te Ihu (Region 4)	227	3.2	(2.0-4.8)	73.6	(67.6-79.0)	26.4	(21.0-32.4)
	Te Kei (Region 5)	144	3.2	(1.6-4.4)	77.8	(70.5-84.0)	22.2	(16.0-29.5)
	Comms Centre	63	3.4	(2.0-5.0)	69.8	(57.8-80.1)	30.2	(19.9-42.2)
	National Headquarters	157	2.0	(1.0-3.6)	90.4	(85.1-94.3)	9.6	(5.7-14.9)
Length of Service	Less than 12 Months	113	2.2	(1.2-3.6)	88.5	(81.7-93.4)	11.5	(6.6-18.3)
	1-2 Years	148	2.4	(1.2-4.2)	82.4	(75.7-87.9)	17.6	(12.1-24.3)
	3-5 Years	278	2.9	(1.6-4.4)	76.6	(71.4-81.3)	23.4	(18.7-28.6)
	6-10 Years	292	3.6	(2.0-4.6)	72.9	(67.6-77.8)	27.1	(22.2-32.4)
	More than 10 Years	839	3.8	(2.0-5.0)	67.5	(64.2-70.6)	32.5	(29.4-35.8)
Volunteer Firefighter	Current or previous volunteer firefighter	672	3.6	(2.0-4.8)	68.5	(64.9-71.9)	31.5	(28.1-35.1)
	Never been volunteer firefighter	1060	3.1	(1.6-4.4)	75.3	(72.6-77.8)	24.7	(22.2-27.4)

1. The Emotional Reactivity and Numbing Scale assesses symptoms of emotional numbing. The selected subscale consisted of five questions, scored from 1 to 7 based on agreement level. The scores are then averaged to into a total score, ranging from 1 to 7. The total score is categorised as low-moderate (values < 4.6) or high (values ≥ 4.6) emotional numbing, based on the upper quartile values for the entire sample. The emotional numbing score showed high internal consistency with an average score of 5 items and a Cronbach's alpha of .926.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 7

Prevalence of high life satisfaction by occupational characteristics
March 2023

Group		Total	Total Score		Life Satisfaction[1]			
					Low-Moderate		High	
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1736	5.0	(4.0-6.0)	66.9	(64.7-69.1)	33.1	(30.9-35.3)
Gender	Male	1416	5.0	(3.7-6.0)	67.3	(64.8-69.7)	32.7	(30.3-35.2)
	Female	303	5.0	(4.0-6.0)	64.4	(58.8-69.6)	35.6	(30.4-41.2)
Age Range	Under 20 years	0						
	20-29 years	167	5.0	(4.0-6.0)	71.3	(64.1-77.7)	28.7	(22.3-35.9)
	30-39 years	456	5.0	(4.0-6.0)	69.5	(65.2-73.6)	30.5	(26.4-34.8)
	40-49 years	483	5.0	(3.7-6.0)	68.3	(64.1-72.4)	31.7	(27.6-35.9)
	50-59 years	431	5.0	(3.7-6.0)	64.7	(60.1-69.1)	35.3	(30.9-39.9)
	60 years or older	192	5.7	(4.3-6.0)	58.3	(51.3-65.1)	41.7	(34.9-48.7)
Ethnicity	Māori	261	5.0	(3.7-6.0)	70.1	(64.4-75.4)	29.9	(24.6-35.6)
	Pacific peoples	81	5.0	(4.0-6.0)	71.6	(61.2-80.5)	28.4	(19.5-38.8)
	Asian	32	5.0	(4.7-6.0)	65.6	(48.4-80.2)	34.4	(19.8-51.6)
	European	1507	5.0	(4.0-6.0)	66.2	(63.8-68.6)	33.8	(31.4-36.2)
	Other Ethnicity	221	5.0	(4.0-6.0)	67.4	(61.0-73.3)	32.6	(26.7-39.0)
	MELAA[4]	14	4.5	(4.0-5.7)	S	(53.1-93.6)	S	(6.4-46.9)
Type of Role	Uniformed Manager	83	5.3	(4.3-6.0)	63.9	(53.2-73.6)	36.1	(26.4-46.8)
	Uniformed Firefighter	1181	5.0	(3.7-6.0)	67.7	(65.0-70.4)	32.3	(29.6-35.0)
	Uniformed Comcen	58	4.3	(2.7-5.3)	81.0	(69.6-89.5)	19.0	(10.5-30.4)
	Uniformed Other	154	5.5	(4.3-6.0)	59.7	(51.9-67.2)	40.3	(32.8-48.1)
	Non-Uniformed Manager	56	5.7	(5.0-6.0)	51.8	(38.9-64.5)	48.2	(35.5-61.1)
	Non-Uniformed Other	198	5.0	(4.0-6.0)	69.2	(62.5-75.3)	30.8	(24.7-37.5)
Region	Te Hiku (Region 1)	494	5.0	(4.0-6.0)	66.0	(61.7-70.1)	34.0	(29.9-38.3)
	Ngā Tai Ki Te Puku (Region 2)	234	5.0	(3.7-6.0)	70.1	(64.0-75.7)	29.9	(24.3-36.0)
	Te Ūpoko (Region 3)	393	5.0	(3.7-6.0)	65.4	(60.6-70.0)	34.6	(30.0-39.4)
	Te Ihu (Region 4)	228	5.3	(4.2-6.0)	62.7	(56.3-68.8)	37.3	(31.2-43.7)
	Te Kei (Region 5)	145	5.3	(4.0-6.0)	66.2	(58.2-73.5)	33.8	(26.5-41.8)
	Comms Centre	63	4.7	(2.7-5.7)	79.4	(68.2-87.9)	20.6	(12.1-31.8)
	National Headquarters	157	5.3	(4.0-6.0)	66.9	(59.3-73.9)	33.1	(26.1-40.7)
Length of Service	Less than 12 Months	113	5.3	(4.3-6.0)	61.9	(52.8-70.5)	38.1	(29.5-47.2)
	1-2 Years	149	5.3	(4.3-6.0)	60.4	(52.4-68.0)	39.6	(32.0-47.6)
	3-5 Years	278	5.0	(4.0-6.0)	69.1	(63.5-74.3)	30.9	(25.7-36.5)
	6-10 Years	293	5.0	(3.7-6.0)	70.0	(64.5-75.0)	30.0	(25.0-35.5)
	More than 10 Years	839	5.0	(3.7-6.0)	66.6	(63.4-69.8)	33.4	(30.2-36.6)
Volunteer Firefighter	Current or previous volunteer firefighter	674	5.0	(4.0-6.0)	65.9	(62.2-69.4)	34.1	(30.6-37.8)
	Never been volunteer firefighter	1061	5.0	(4.0-6.0)	67.6	(64.7-70.3)	32.4	(29.7-35.3)

1. The Satisfaction with Life Scale measures a person's overall subjective evaluation of their life. Respondents rated their level of agreement to a subset of three questions on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the three items, ranging from 1 to 7. The total score is then categorised as low-moderate (values < 6.0) or high (values ≥ 6.0) life satisfaction, based on the upper quartile values for the entire sample. The life satisfaction score showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .915.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 8

Prevalence of high job satisfaction by occupational characteristics
March 2023

Group		Total	Total Score		Job Satisfaction[1]			
					Low-Moderate		High	
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1736	5.3	(4.3-6.0)	57.9	(55.6-60.2)	42.1	(39.8-44.4)
Gender	Male	1416	5.7	(4.3-6.0)	57.2	(54.6-59.8)	42.8	(40.2-45.4)
	Female	303	5.3	(4.0-6.0)	60.4	(54.8-65.8)	39.6	(34.2-45.2)
Age Range	Under 20 years	0						
	20-29 years	167	5.7	(5.0-6.3)	53.3	(45.7-60.7)	46.7	(39.3-54.3)
	30-39 years	456	5.7	(5.0-6.3)	53.1	(48.5-57.6)	46.9	(42.4-51.5)
	40-49 years	483	5.3	(4.0-6.0)	61.5	(57.1-65.8)	38.5	(34.2-42.9)
	50-59 years	431	5.3	(3.7-6.0)	61.9	(57.3-66.4)	38.1	(33.6-42.7)
	60 years or older	192	5.7	(4.7-6.3)	54.7	(47.6-61.6)	45.3	(38.4-52.4)
Ethnicity	Māori	261	5.7	(4.3-6.0)	57.5	(51.4-63.4)	42.5	(36.6-48.6)
	Pacific peoples	81	6.0	(5.0-6.3)	45.7	(35.1-56.5)	54.3	(43.5-64.9)
	Asian	32	5.7	(4.8-6.2)	53.1	(36.2-69.5)	46.9	(30.5-63.8)
	European	1507	5.3	(4.3-6.0)	58.9	(56.4-61.3)	41.1	(38.7-43.6)
	Other Ethnicity	221	5.3	(4.3-6.0)	59.7	(53.2-66.0)	40.3	(34.0-46.8)
	MELAA[4]	14	5.2	(4.0-6.0)	57.1	(31.9-79.7)	42.9	(20.3-68.1)
Type of Role	Uniformed Manager	83	5.3	(4.3-6.0)	57.8	(47.1-68.0)	42.2	(32.0-52.9)
	Uniformed Firefighter	1181	5.7	(4.3-6.3)	55.3	(52.4-58.1)	44.7	(41.9-47.6)
	Uniformed Comcen	58	5.3	(3.7-6.0)	60.3	(47.5-72.2)	39.7	(27.8-52.5)
	Uniformed Other	154	5.3	(4.3-6.0)	63.6	(55.8-70.9)	36.4	(29.1-44.2)
	Non-Uniformed Manager	56	5.7	(5.0-6.3)	57.1	(44.1-69.5)	42.9	(30.5-55.9)
	Non-Uniformed Other	198	5.0	(3.7-6.0)	67.7	(60.9-73.9)	32.3	(26.1-39.1)
Region	Te Hiku (Region 1)	494	5.7	(5.0-6.3)	50.4	(46.0-54.8)	49.6	(45.2-54.0)
	Ngā Tai Ki Te Puku (Region 2)	234	5.0	(4.0-6.0)	69.2	(63.1-74.9)	30.8	(25.1-36.9)
	Te Ūpoko (Region 3)	393	5.3	(4.0-6.0)	60.8	(55.9-65.5)	39.2	(34.5-44.1)
	Te Ihu (Region 4)	228	5.7	(4.3-6.0)	53.5	(47.0-59.9)	46.5	(40.1-53.0)
	Te Kei (Region 5)	145	5.7	(4.3-6.3)	55.2	(47.0-63.1)	44.8	(36.9-53.0)
	Comms Centre	63	5.3	(4.0-6.0)	60.3	(48.0-71.7)	39.7	(28.3-52.0)
	National Headquarters	157	5.3	(3.7-6.0)	62.4	(54.7-69.7)	37.6	(30.3-45.3)
Length of Service	Less than 12 Months	113	6.0	(5.0-7.0)	40.7	(32.0-49.9)	59.3	(50.1-68.0)
	1-2 Years	149	6.0	(5.0-6.3)	42.3	(34.6-50.3)	57.7	(49.7-65.4)
	3-5 Years	278	5.7	(4.7-6.3)	54.3	(48.4-60.1)	45.7	(39.9-51.6)
	6-10 Years	293	5.7	(4.3-6.0)	58.7	(53.0-64.2)	41.3	(35.8-47.0)
	More than 10 Years	839	5.3	(4.0-6.0)	63.3	(60.0-66.5)	36.7	(33.5-40.0)
Volunteer Firefighter	Current or previous volunteer firefighter	674	5.7	(4.3-6.0)	56.2	(52.5-59.9)	43.8	(40.1-47.5)
	Never been volunteer firefighter	1061	5.3	(4.3-6.0)	58.9	(55.9-61.8)	41.1	(38.2-44.1)

1. The Job Satisfaction Scale is a three-item survey that measures positive emotions resulting from an individual's job appraisal. Respondents rate their level of agreement on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the three items, ranging from 1 to 7. The total score is then categorised as low-moderate (values < 6.0) or high (values ≥ 6.0) job satisfaction, based on the upper quartile values for the entire sample. The job satisfaction score showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .933.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 9

Prevalence of high resilience by occupational characteristics

March 2023

Group		Total	Total Score		Prevalence of Resilience[1]			
					Low-Moderate		High	
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1736	5.0	(4.0-6.0)	67.3	(65.1-69.5)	32.7	(30.5-34.9)
Gender	Male	1416	5.0	(4.0-6.0)	66.2	(63.7-68.6)	33.8	(31.4-36.3)
	Female	303	5.0	(3.7-6.0)	71.9	(66.7-76.8)	28.1	(23.2-33.3)
Age Range	Under 20 years	0						
	20-29 years	167	5.0	(4.0-6.0)	70.7	(63.4-77.2)	29.3	(22.8-36.6)
	30-39 years	456	5.0	(4.0-6.0)	67.5	(63.1-71.7)	32.5	(28.3-36.9)
	40-49 years	483	5.0	(3.7-6.0)	69.6	(65.4-73.5)	30.4	(26.5-34.6)
	50-59 years	431	5.0	(3.7-6.0)	66.8	(62.3-71.1)	33.2	(28.9-37.7)
	60 years or older	192	5.3	(4.0-6.0)	60.4	(53.4-67.1)	39.6	(32.9-46.6)
Ethnicity	Māori	261	5.0	(4.0-6.0)	63.2	(57.2-68.9)	36.8	(31.1-42.8)
	Pacific peoples	81	5.0	(4.3-6.0)	66.7	(56.0-76.2)	33.3	(23.8-44.0)
	Asian	32	5.2	(4.0-6.0)	71.9	(54.9-85.1)	28.1	(14.9-45.1)
	European	1507	5.0	(3.7-6.0)	67.7	(65.3-70.0)	32.3	(30.0-34.7)
	Other Ethnicity	221	5.0	(3.7-6.0)	67.9	(61.5-73.8)	32.1	(26.2-38.5)
	MELAA[4]	14	3.8	(3.0-5.3)	S	(61.5-96.9)	S	(3.1-38.5)
Type of Role	Uniformed Manager	83	5.0	(4.3-6.0)	61.4	(50.7-71.4)	38.6	(28.6-49.3)
	Uniformed Firefighter	1181	5.0	(4.0-6.0)	65.5	(62.7-68.1)	34.5	(31.9-37.3)
	Uniformed Comcen	58	5.0	(3.0-6.0)	74.1	(61.9-84.0)	25.9	(16.0-38.1)
	Uniformed Other	154	4.8	(3.0-6.0)	74.7	(67.4-81.0)	25.3	(19.0-32.6)
	Non-Uniformed Manager	56	5.7	(4.7-6.3)	62.5	(49.5-74.3)	37.5	(25.7-50.5)
	Non-Uniformed Other	198	5.0	(3.3-6.0)	74.7	(68.4-80.4)	25.3	(19.6-31.6)
Region	Te Hiku (Region 1)	494	5.3	(4.3-6.0)	65.6	(61.3-69.7)	34.4	(30.3-38.7)
	Ngā Tai Ki Te Puku (Region 2)	234	5.0	(3.7-6.0)	70.5	(64.4-76.1)	29.5	(23.9-35.6)
	Te Ūpoko (Region 3)	393	5.0	(3.7-6.0)	65.4	(60.6-70.0)	34.6	(30.0-39.4)
	Te Ihu (Region 4)	228	5.0	(4.0-6.0)	63.6	(57.2-69.6)	36.4	(30.4-42.8)
	Te Kei (Region 5)	145	5.0	(4.0-6.0)	69.7	(61.8-76.7)	30.3	(23.3-38.2)
	Comms Centre	63	5.0	(3.0-6.0)	73.0	(61.2-82.8)	27.0	(17.2-38.8)
	National Headquarters	157	5.0	(3.7-6.0)	72.0	(64.6-78.6)	28.0	(21.4-35.4)
Length of Service	Less than 12 Months	113	5.3	(4.0-6.0)	60.2	(51.0-68.9)	39.8	(31.1-49.0)
	1-2 Years	149	5.3	(4.3-6.0)	63.8	(55.8-71.2)	36.2	(28.8-44.2)
	3-5 Years	278	5.0	(4.0-6.0)	71.6	(66.1-76.6)	28.4	(23.4-33.9)
	6-10 Years	293	5.0	(4.0-6.0)	67.9	(62.4-73.1)	32.1	(26.9-37.6)
	More than 10 Years	839	5.0	(3.7-6.0)	66.6	(63.4-69.8)	33.4	(30.2-36.6)
Volunteer Firefighter	Current or previous volunteer firefighter	674	5.0	(4.0-6.0)	68.1	(64.5-71.5)	31.9	(28.5-35.5)
	Never been volunteer firefighter	1061	5.0	(3.7-6.0)	66.8	(63.9-69.6)	33.2	(30.4-36.1)

1. The Brief Resilience Scale (BRS) is a self-report measure that evaluates an individual's ability to recover from stress or adversity. Respondents rated their level of agreement to a subset of three questions on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the three items, ranging from 1 to 7. The total score is then categorised as low-moderate (values < 6.0) or high (values ≥ 6.0) resilience, based on the upper quartile values for the entire sample. The resilience score showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .926

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 10

Prevalence of high post-traumatic growth by occupational characteristics

March 2023

| Group | | Total | Total Score | | Prevalence of Post-Traumatic Growth[1] | | | |
| | | | | | Low-Moderate | | High | |
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1444	4.6	(4.0-5.4)	70.8	(68.4-73.1)	29.2	(26.9-31.6)
Gender	Male	1190	4.6	(4.0-5.4)	73.8	(71.2-76.2)	26.2	(23.8-28.8)
	Female	241	5.0	(4.4-6.0)	54.4	(48.0-60.6)	45.6	(39.4-52.0)
Age Range	Under 20 years	0						
	20-29 years	136	5.0	(4.2-5.6)	64.7	(56.4-72.4)	35.3	(27.6-43.6)
	30-39 years	357	4.8	(4.0-5.4)	72.0	(67.2-76.5)	28.0	(23.5-32.8)
	40-49 years	409	4.6	(4.0-5.4)	72.6	(68.1-76.8)	27.4	(23.2-31.9)
	50-59 years	370	4.6	(4.0-5.4)	72.4	(67.7-76.8)	27.6	(23.2-32.3)
	60 years or older	168	5.0	(4.2-5.8)	64.3	(56.8-71.2)	35.7	(28.8-43.2)
Ethnicity	Māori	228	5.0	(4.4-5.8)	61.8	(55.4-68.0)	38.2	(32.0-44.6)
	Pacific peoples	68	5.0	(4.4-6.0)	54.4	(42.6-65.9)	45.6	(34.1-57.4)
	Asian	21	5.0	(4.4-5.8)	66.7	(45.4-83.7)	33.3	(16.3-54.6)
	European	1249	4.6	(4.0-5.4)	72.9	(70.4-75.3)	27.1	(24.7-29.6)
	Other Ethnicity	185	4.6	(4.0-5.4)	74.6	(68.0-80.5)	25.4	(19.5-32.0)
	MELAA[4]	11	5.4	(4.6-6.0)	45.5	(20.0-73.0)	54.5	(27.0-80.0)
Type of Role	Uniformed Manager	73	4.8	(4.2-5.8)	61.6	(50.2-72.2)	38.4	(27.8-49.8)
	Uniformed Firefighter	997	4.6	(4.0-5.4)	74.4	(71.6-77.1)	25.6	(22.9-28.4)
	Uniformed Comcen	49	4.6	(4.0-5.2)	77.6	(64.5-87.4)	22.4	(12.6-35.5)
	Uniformed Other	129	4.8	(4.4-5.8)	67.4	(59.0-75.1)	32.6	(24.9-41.0)
	Non-Uniformed Manager	44	5.0	(4.4-5.9)	59.1	(44.4-72.7)	40.9	(27.3-55.6)
	Non-Uniformed Other	146	5.0	(4.2-5.8)	54.8	(46.7-62.7)	45.2	(37.3-53.3)
Region	Te Hiku (Region 1)	412	4.8	(4.0-5.5)	69.9	(65.3-74.2)	30.1	(25.8-34.7)
	Ngā Tai Ki Te Puku (Region 2)	206	4.6	(4.2-5.4)	74.3	(68.0-79.9)	25.7	(20.1-32.0)
	Te Ūpoko (Region 3)	325	4.8	(4.0-5.4)	69.8	(64.7-74.6)	30.2	(25.4-35.3)
	Te Ihu (Region 4)	185	4.6	(4.0-5.4)	71.4	(64.5-77.5)	28.6	(22.5-35.5)
	Te Kei (Region 5)	120	4.6	(3.8-5.2)	75.8	(67.6-82.8)	24.2	(17.2-32.4)
	Comms Centre	54	4.6	(4.0-5.2)	75.9	(63.4-85.8)	24.1	(14.2-36.6)
	National Headquarters	125	4.8	(4.2-5.8)	61.6	(52.9-69.8)	38.4	(30.2-47.1)
Length of Service	Less than 12 Months	83	5.2	(4.6-6.0)	56.6	(45.9-66.9)	43.4	(33.1-54.1)
	1-2 Years	110	5.2	(4.4-5.8)	55.5	(46.1-64.5)	44.5	(35.5-53.9)
	3-5 Years	221	4.8	(4.2-5.6)	69.2	(62.9-75.0)	30.8	(25.0-37.1)
	6-10 Years	239	4.6	(4.0-5.4)	74.5	(68.7-79.7)	25.5	(20.3-31.3)
	More than 10 Years	731	4.6	(4.0-5.4)	74.1	(70.9-77.2)	25.9	(22.8-29.1)
Volunteer Firefighter	Current or previous volunteer firefighter	575	4.6	(4.2-5.4)	73.0	(69.3-76.5)	27.0	(23.5-30.7)
	Never been volunteer firefighter	868	4.8	(4.0-5.6)	69.2	(66.1-72.2)	30.8	(27.8-33.9)

1. The Posttraumatic Growth Inventory (PGI) assesses positive changes and personal growth due to traumatic experiences. Five items from each domain of the PGI were used, and respondents were asked to rate their level of agreement on a 7-point Likert scale. Scores for each item were averaged into a total score, ranging from 1 to 7. The total score was categorised as low-moderate (values < 5.4) or high (values ≥ 5.4) posttraumatic growth based on the upper quartile values for the entire sample. The post-traumatic growth score showed high internal consistency with an average score of 5 items and a Cronbach's alpha of .926.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

 S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 11

Prevalence of multiple mental ill health, coping mechanisms, and positive wellbeing indicators by role type

March 2023

Mental Health Indicator		Total		Uniformed Manager		Uniformed Firefighter		Uniformed ComCen		Uniformed Other		Non-Uniformed Manager		Non-Uniformed Other	
		%	(95% CI)[1]	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Mental ill health[2]	0	69.0	(66.6-71.2)	72.5	(62.0-81.4)	70.2	(67.5-72.8)	36.4	(24.6-49.5)	69.6	(61.5-76.8)	75.9	(58.4-88.5)	64.8	(54.4-74.1)
	1	14.6	(12.9-16.4)	15.0	(8.5-24.0)	14.2	(12.3-16.3)	21.8	(12.5-34.0)	13.0	(8.2-19.4)	10.3	(3.0-25.1)	20.5	(13.1-29.8)
	2	10.0	(8.6-11.5)	8.8	(4.0-16.4)	9.6	(8.0-11.4)	14.5	(7.1-25.6)	10.9	(6.5-16.9)	10.3	(3.0-25.1)	12.5	(6.8-20.6)
	3	6.4	(5.3-7.7)	3.8	(1.1-9.7)	6.1	(4.8-7.5)	27.3	(16.9-40.0)	6.5	(3.3-11.6)	3.4	(0.4-15.0)	2.3	(0.5-7.1)
Coping Mechanisms[3]	0	27.4	(25.4-29.6)	31.3	(22.1-41.8)	22.7	(20.4-25.2)	29.8	(19.2-42.5)	37.7	(30.3-45.5)	36.4	(24.6-49.5)	42.3	(35.6-49.3)
	1	54.0	(51.7-56.4)	54.2	(43.5-64.6)	54.7	(51.8-57.5)	57.9	(45.0-70.1)	47.4	(39.6-55.3)	60.0	(46.8-72.2)	52.6	(45.6-59.5)
	2	18.5	(16.7-20.4)	14.5	(8.2-23.2)	22.6	(20.2-25.0)	12.3	(5.7-22.6)	14.9	(10.0-21.2)	3.6	(0.8-11.2)	5.1	(2.7-8.9)
Positive Wellbeing[4]	0	52.1	(49.5-54.6)	50.7	(39.4-61.9)	52.6	(49.5-55.6)	59.2	(45.2-72.1)	53.5	(44.9-61.9)	43.2	(29.4-57.9)	48.6	(40.6-56.7)
	1	34.6	(32.1-37.0)	24.7	(15.9-35.4)	35.5	(32.6-38.5)	36.7	(24.3-50.7)	33.3	(25.6-41.8)	34.1	(21.4-48.8)	33.6	(26.3-41.5)
	2	13.4	(11.7-15.2)	24.7	(15.9-35.4)	11.9	(10.0-14.1)	4.1	(0.9-12.5)	13.2	(8.2-19.8)	22.7	(12.3-36.6)	17.8	(12.3-24.6)

1. 95% Confidence Interval

2. Total number of postive screens for mental ill health indicators (moderate-to-severe depressive symptoms, moderate-to-severe anxiety symptoms, and probable PTSD).

3. Total number of postive screens for coping mechanisms (potentially hazardous alcohol use, high emotional numbing).

4. Total number of postive screens for positive wellbeing indicators (high resilience, high post-traumatic growth).

Note. Small counts <5 have been suppressed.

Table 12

Odds ratios of moderate-severe depressive symptoms by gender, type of role, and length of service

March 2023

Group		Prevalence	Odds ratios of Moderate-Severe Depressive Symptoms[1]					
			Unadjusted[2]			Adjusted[3]		
		%	OR	(95% CI)		AOR	(95% CI)	
Gender	Male	23.9	1.00	ref		1.00	ref	
	Female	26.4	1.14	(0.86-1.51)		1.37	(0.96-1.97)	
Type of Role	Uniformed Manager	25.3	1.06	(0.64-1.77)		0.97	(0.57-1.63)	
	Uniformed Firefighter	24.2	1.00	ref		1.00	ref	
	Uniformed Comcen	53.4	3.60	(2.11-6.14)	***	3.55	(2.00-6.30)	***
	Uniformed Other	22.7	0.92	(0.62-1.38)		0.89	(0.58-1.35)	
	Non-Uniformed Manager	12.5	0.45	(0.20-1.00)		0.42	(0.17-1.02)	
	Non-Uniformed Other	23.4	0.96	(0.67-1.36)		1.02	(0.66-1.59)	
Length of Service	Less than 12 Months	8.0	0.23	(0.12-0.47)	***	0.20	(0.10-0.42)	***
	1-2 Years	22.1	0.76	(0.50-1.15)		0.70	(0.44-1.09)	
	3-5 Years	22.3	0.76	(0.55-1.05)		0.70	(0.50-0.98)	*
	6-10 Years	26.0	0.94	(0.69-1.27)		0.89	(0.65-1.21)	
	More than 10 Years	27.3	1.00	ref		1.00	ref	

1. The PHQ-9 is a standardised tool used to assess the severity of depression symptoms. It consists of nine questions that ask about the frequency of depressive symptoms experienced over the past two weeks. Each question is scored from 0 to 3, with a maximum score of 27. Total scores are summarised into no, minimal, or mild (values 0-9), or moderate, severe, or very severe (values 10-27) depressive symptoms. The PHQ-9 score showed high internal consistency with an average score of 9 items and a Cronbach's alpha of .881.

2. Separate unadjusted logistic regression models make predictions about the odds ratios of moderate-to-severe depressive symptoms based on the respondent's (i) gender, (ii) type of role, and (iii) their length of service.

3. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of moderate-to-severe depressive symptoms, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 55.73, df = 10, n = 1650, p < .001, correctly classified cases = 76.1%) and explained 3.3% to 5.0% of the variance in the outcome.

Symbols

*   Significance level p <.05

**   Significance level p <.01

***   Significance level p <.001

Table 13

Odds ratios of moderate-severe anxiety symptoms by gender, type of role, and length of service
March 2023

Group		Prevalence	Unadjusted[2]			Adjusted[3]		
		%	OR	(95% CI)		AOR	(95% CI)	
Gender	Male	13.9	1.00	ref		1.00	ref	
	Female	20.5	1.60	(1.16-2.19)	**	1.53	(1.03-2.28)	*
Type of Role	Uniformed Manager	13.3	0.99	(0.51-1.90)		0.99	(0.51-1.93)	
	Uniformed Firefighter	13.4	1.00	ref		1.00	ref	
	Uniformed Comcen	43.1	4.89	(2.83-8.44)	***	3.81	(2.12-6.86)	***
	Uniformed Other	17.5	1.37	(0.88-2.15)		1.36	(0.86-2.17)	
	Non-Uniformed Manager	12.5	0.92	(0.41-2.07)		0.86	(0.37-2.00)	
	Non-Uniformed Other	17.2	1.34	(0.89-2.01)		1.06	(0.64-1.77)	
Length of Service	Less than 12 Months	11.5	0.75	(0.41-1.37)		0.63	(0.33-1.20)	
	1-2 Years	13.4	0.89	(0.54-1.48)		0.80	(0.47-1.38)	
	3-5 Years	17.3	1.20	(0.83-1.73)		1.06	(0.72-1.57)	
	6-10 Years	15.4	1.05	(0.72-1.52)		0.98	(0.66-1.44)	
	More than 10 Years	14.8	1.00	ref		1.00	ref	

1. The GAD-7 is a standardised tool used to assess the severity of anxiety symptoms. It consists of seven questions that ask about the frequency of anxiety symptoms experienced over the past two weeks. Each question is scored from 0 to 3, with a maximum score of 21. Total scores are summarised into no, minimal, or mild (values 0-9), or moderate or severe (values 10-21) symptoms of anxiety. The GAD-7 score showed high internal consistency with an average score of 7 items and a Cronbach's alpha of .910.

2. Separate unadjusted logistic regression models make predictions about the Odds ratios of moderate-to-severe anxiety based on the respondent's (i) gender, (ii) type of role, and (iii) their length of service.

3. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of moderate-to-severe anxiety, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 31.45, df = 10, n = 1650, p < .001, correctly classified cases = 85.1%) and explained 1.9% to 3.3% of the variance in the outcome.

Symbols

*   Significance level p <.05

**   Significance level p <.01

*** Significance level p <.001

Table 14

Odds ratios of probable post-traumatic stress disorder by gender, type of role, and length of service

March 2023

Group		Prevalence	Unadjusted[2]			Adjusted[3]		
		%	OR	(95% CI)		AOR	(95% CI)	
Gender	Male	12.8	1.00	ref		1.00	ref	
	Female	11.4	0.88	(0.55-1.39)		1.12	(0.65-1.92)	
Type of Role	Uniformed Manager	S	0.34	(0.12-0.95)	*	0.29	(0.10-0.81)	*
	Uniformed Firefighter	13.4	1.00	ref		1.00	ref	
	Uniformed Comcen	30.9	2.90	(1.60-5.26)	***	3.21	(1.67-6.20)	***
	Uniformed Other	10.9	0.79	(0.45-1.39)		0.68	(0.37-1.25)	
	Non-Uniformed Manager	S	0.23	(0.03-1.71)		0.29	(0.04-2.17)	
	Non-Uniformed Other	5.6	0.39	(0.15-0.97)	*	0.50	(0.19-1.32)	
Length of Service	Less than 12 Months	S	0.18	(0.04-0.75)	*	0.17	(0.04-0.70)	*
	1-2 Years	6.6	0.40	(0.18-0.89)	*	0.40	(0.18-0.90)	*
	3-5 Years	9.6	0.61	(0.38-0.97)	*	0.53	(0.32-0.87)	*
	6-10 Years	12.9	0.84	(0.56-1.26)		0.77	(0.51-1.16)	
	More than 10 Years	14.9	1.00	ref		1.00	ref	

The header above spans: Odds ratios of Probable PTSD[1]

1. The SPRINT is a standardised tool used to assess the core symptoms of post-traumatic stress disorder related to traumatic work experiences in the past week. It consists of eight questions that ask about the frequency of PTSD symptoms experienced over the past week. Each question is scored from 0 to 4, with a maximum score of 32. Total scores are summarised into unlikely to possible PTSD (0-16) or probable PTSD (17-32). The SPRINT score showed high internal consistency with an average score of 8 items and a Cronbach's alpha of .905.

2. Separate unadjusted logistic regression models make predictions about the Odds ratios of probable PTSD based on the respondent's (i) gender, (ii) type of role, and (iii) their length of service.

3. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of probable PTSD, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 43.96, df = 10, n = 1481, p < .001, correctly classified cases = 87.4%) and explained 2.9% to 5.5% of the variance in the outcome.

Symbols

S   Small counts <5 have been suppressed.

*   Significance level p <.05

**   Significance level p <.01

*** Significance level p <.001

Table 15

Odds ratios of potentially hazardous drinking patterns by gender, type of role, and length of service

March 2023

Group		Prevalence	Unadjusted[2]			Adjusted[3]		
		%	OR	(95% CI)		AOR	(95% CI)	
Gender	Male	64.9	1.00	ref		1.00	ref	
	Female	60.4	0.83	(0.64-1.06)		1.28	(0.93-1.76)	
Type of Role	Uniformed Manager	67.5	1.00	(0.62-1.60)		0.95	(0.58-1.55)	
	Uniformed Firefighter	67.6	1.00	ref		1.00	ref	
	Uniformed Comcen	50.9	0.50	(0.29-0.85)	*	0.44	(0.25-0.76)	**
	Uniformed Other	56.5	0.62	(0.44-0.88)	**	0.62	(0.44-0.89)	*
	Non-Uniformed Manager	63.6	0.84	(0.48-1.48)		0.77	(0.43-1.39)	
	Non-Uniformed Other	52.6	0.53	(0.39-0.72)	***	0.50	(0.34-0.73)	***
Length of Service	Less than 12 Months	62.5	0.82	(0.55-1.24)		0.92	(0.60-1.42)	
	1-2 Years	59.2	0.72	(0.50-1.03)		0.82	(0.56-1.20)	
	3-5 Years	60.9	0.77	(0.58-1.02)		0.81	(0.60-1.09)	
	6-10 Years	61.5	0.79	(0.60-1.04)		0.79	(0.60-1.05)	
	More than 10 Years	66.9	1.00	ref		1.00	ref	

1. The AUDIT-C scale is a screening tool used to identify potentially harmful alcohol use. Respondents are asked three questions about their typical alcohol use, including frequency, amount, and frequency of heavy drinking. Each response is scored from 0 to 4, and the scores are added together to obtain the total score, ranging from 0 to 12. A score of ≥ 3 for women and a score of ≥ 4 for men is considered indicative of potentially hazardous drinking.

2. Separate unadjusted logistic regression models make predictions about the Odds ratios of potentially hazardous drinking based on the respondent's (i) gender, (ii) type of role, and (iii) their length of service.

3. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of potentially hazardous drinking, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 28.76, df = 10, n = 1653, p = .001, correctly classified cases = 64.5%) and explained 1.7% to 2.4% of the variance in the outcome.

Symbols

*   Significance level p <.05

**   Significance level p <.01

***   Significance level p <.001

Table 16

Odds ratios of High Work-Family Conflict by gender, type of role, and length of service

March 2023

Group		Prevalence	Unadjusted[2]			Adjusted[3]		
		%	OR	(95% CI)		AOR	(95% CI)	
Gender	Male	28.2	1.00	ref		1.00	ref	
	Female	13.9	0.41	(0.29-0.58)	***	0.77	(0.51-1.16)	
Type of Role	Uniformed Manager	34.9	1.25	(0.78-1.99)		1.06	(0.65-1.71)	
	Uniformed Firefighter	30.1	1.00	ref		1.00	ref	
	Uniformed Comcen	34.5	1.22	(0.70-2.13)		1.47	(0.81-2.68)	
	Uniformed Other	14.3	0.39	(0.24-0.62)	***	0.39	(0.24-0.63)	***
	Non-Uniformed Manager	8.9	0.23	(0.09-0.58)	**	0.33	(0.13-0.85)	*
	Non-Uniformed Other	8.6	0.22	(0.13-0.36)	***	0.29	(0.16-0.53)	***
Length of Service	Less than 12 Months	S	0.06	(0.02-0.19)	***	0.08	(0.03-0.25)	***
	1-2 Years	17.4	0.46	(0.29-0.72)	***	0.65	(0.40-1.05)	
	3-5 Years	24.9	0.72	(0.53-0.98)	*	0.86	(0.62-1.19)	
	6-10 Years	23.9	0.68	(0.50-0.92)	*	0.70	(0.51-0.96)	*
	More than 10 Years	31.6	1.00	ref		1.00	ref	

1. The Work-Family scale assesses the experience of work-to-family conflict, where work demands interfere with family responsibilities. It consists of three questions, scored from 1 to 7 based on agreement level. The scores for each item are then averaged into a total score, ranging from 1 to 7. The total score is categorised as low-moderate (values < 6.3) or high (values ≥ 6.3) work-family conflict, based on the upper quartile values for the entire sample.The Work-Family conflict score showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .922.

2. Separate unadjusted logistic regression models make predictions about the Odds ratios of high work-family conflict based on the respondent's (i) gender, (ii) type of role, and (iii) their length of service.

3. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of high work-to-family conflict, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 122.26, df = 10, n = 1651, p < .001, correctly classified cases = 74.5%) and explained 7.1% to 10.5% of the variance in the outcome.

Symbols

S   Small counts <5 have been suppressed.

*   Significance level p <.05

**   Significance level p <.01

***   Significance level p <.001

Table 17

Odds ratios of high emotional numbing by gender, type of role, and length of service

March 2023

Group		Prevalence	Unadjusted[2]			Adjusted[3]		
		%	OR	(95% CI)		AOR	(95% CI)	
Gender	Male	30.8	1.00	ref		1.00	ref	
	Female	9.3	0.23	(0.15-0.35)	***	0.33	(0.21-0.53)	***
Type of Role	Uniformed Manager	15.7	0.38	(0.21-0.70)	**	0.36	(0.20-0.67)	**
	Uniformed Firefighter	32.7	1.00	ref		1.00	ref	
	Uniformed Comcen	31.0	0.93	(0.52-1.64)		1.44	(0.78-2.69)	
	Uniformed Other	20.8	0.54	(0.36-0.81)	**	0.62	(0.40-0.95)	*
	Non-Uniformed Manager	S	0.12	(0.04-0.38)	***	0.14	(0.03-0.59)	**
	Non-Uniformed Other	10.6	0.24	(0.15-0.39)	***	0.54	(0.31-0.92)	*
Length of Service	Less than 12 Months	11.5	0.27	(0.15-0.49)	***	0.38	(0.21-0.71)	**
	1-2 Years	17.6	0.44	(0.28-0.69)	***	0.60	(0.37-0.98)	*
	3-5 Years	23.4	0.63	(0.46-0.87)	**	0.74	(0.53-1.03)	
	6-10 Years	27.1	0.77	(0.57-1.03)		0.82	(0.60-1.11)	
	More than 10 Years	32.5	1.00	ref		1.00	ref	

1. The Emotional Reactivity and Numbing Scale assesses symptoms of emotional numbing. The selected subscale consisted of five questions, scored from 1 to 7 based on agreement level. The scores are then averaged to into a total score, ranging from 1 to 7. The total score is categorised as low-moderate (values < 4.6) or high (values ≥ 4.6) emotional numbing, based on the upper quartile values for the entire sample. The emotional numbing score showed high internal consistency with an average score of 5 items and a Cronbach's alpha of .926.

2. Separate unadjusted logistic regression models make predictions about the Odds ratios of high emotional numbing based on the respondent's (i) gender, (ii) type of role, and (iii) their length of service.

3. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of high emotional numbing, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 121.56, df = 10, n = 1651, p < .001, correctly classified cases = 73.0%) and explained 7.1% to 10.3% of the variance in the outcome.

Symbols

S   Small counts <5 have been suppressed.

*   Significance level p <.05

**   Significance level p <.01

***   Significance level p <.001

Table 18

Odds ratios of high life satisfaction by gender, type of role, and length of service

March 2023

Group		Prevalence	Odds ratios of High Life Satisfaction[1]					
			Unadjusted[2]			Adjusted[3]		
		%	OR	(95% CI)		AOR	(95% CI)	
Gender	Male	32.7	1.00	ref		1.00	ref	
	Female	35.6	1.14	(0.88-1.48)		1.17	(0.84-1.62)	
Type of Role	Uniformed Manager	36.1	1.19	(0.75-1.89)		1.22	(0.76-1.97)	
	Uniformed Firefighter	32.3	1.00	ref		1.00	ref	
	Uniformed Comcen	19.0	0.49	(0.25-0.96)	*	0.43	(0.21-0.87)	*
	Uniformed Other	40.3	1.42	(1.00-2.00)	*	1.44	(1.01-2.06)	*
	Non-Uniformed Manager	48.2	1.96	(1.14-3.35)	*	1.64	(0.92-2.92)	
	Non-Uniformed Other	30.8	0.94	(0.68-1.30)		0.76	(0.51-1.13)	
Length of Service	Less than 12 Months	38.1	1.23	(0.82-1.84)		1.29	(0.84-1.98)	
	1-2 Years	39.6	1.31	(0.92-1.87)		1.39	(0.94-2.04)	
	3-5 Years	30.9	0.89	(0.67-1.20)		0.94	(0.69-1.28)	
	6-10 Years	30.0	0.86	(0.64-1.14)		0.88	(0.66-1.19)	
	More than 10 Years	33.4	1.00	ref		1.00	ref	

1. The Satisfaction with Life Scale measures a person's overall subjective evaluation of their life. Respondents rated their level of agreement to a subset three questions on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the three items, ranging from 1 to 7. The total score is then categorised as low-moderate (values < 6.0) or high (values ≥ 6.0) life satisfaction, based on the upper quartile values for the entire sample. The life satisfaction score showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .915.

2. Separate unadjusted logistic regression models make predictions about the Odds ratios of high life satisfaction based on the respondent's (i) gender, (ii) type of role, and (iii) their length of service.

3. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of high life satisfaction, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 24.0, df = 10, n = 1653, p = .008, correctly classified cases = 66.5%) and explained 1.4% to 2.0% of the variance in the outcome.

Symbols

* Significance level p <.05

** Significance level p <.01

*** Significance level p <.001

Table 19

Odds ratios of high job satisfaction by gender, type of role, and length of service

March 2023

Group		Prevalence	Unadjusted[2]			Adjusted[3]		
		%	OR	(95% CI)		AOR	(95% CI)	
Gender	Male	42.8	1.00	ref		1.00	ref	
	Female	39.6	0.88	(0.68-1.13)		0.93	(0.67-1.28)	
Type of Role	Uniformed Manager	42.2	0.90	(0.58-1.42)		1.09	(0.69-1.74)	
	Uniformed Firefighter	44.7	1.00	ref		1.00	ref	
	Uniformed Comcen	39.7	0.81	(0.47-1.39)		0.68	(0.38-1.21)	
	Uniformed Other	36.4	0.71	(0.50-1.00)		0.66	(0.46-0.96)	*
	Non-Uniformed Manager	42.9	0.93	(0.54-1.59)		0.62	(0.34-1.12)	
	Non-Uniformed Other	32.3	0.59	(0.43-0.81)	**	0.38	(0.25-0.57)	***
Length of Service	Less than 12 Months	59.3	2.51	(1.68-3.75)	***	3.45	(2.24-5.33)	***
	1-2 Years	57.7	2.35	(1.65-3.35)	***	3.50	(2.36-5.18)	***
	3-5 Years	45.7	1.45	(1.10-1.91)	**	1.74	(1.30-2.32)	***
	6-10 Years	41.3	1.21	(0.92-1.59)		1.29	(0.97-1.70)	
	More than 10 Years	36.7	1.00	ref		1.00	ref	

1. The Job Satisfaction Scale is a three-item survey that measures positive emotions resulting from an individual's job appraisal. Respondents rate their level of agreement on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the three items, ranging from 1 to 7. The total score is then categorised as low-moderate (values < 6.0) or high (values ≥ 6.0) job satisfaction, based on the upper quartile values for the entire sample. The job satisfaction score showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .933.

2. Separate unadjusted logistic regression models make predictions about the Odds ratios of high job satisfaction based on the respondent's (i) gender, (ii) type of role, and (iii) their length of service.

3. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of high job satisfaction, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 78.64, df = 10, n =1653, p < .001, correctly classified cases = 63.0%) and explained 4.6% to 6.2% of the variance in the outcome.

Symbols

* Significance level p <.05

** Significance level p <.01

*** Significance level p <.001

Table 20

Odds ratios of high resilience by gender, type of role, and length of service

March 2023

Group		Prevalence	Unadjusted[2]			Adjusted[3]		
		%	OR	(95% CI)		AOR	(95% CI)	
Gender	Male	33.8	1.00	ref		1.00	ref	
	Female	28.1	0.76	(0.58-1.00)		0.90	(0.64-1.26)	
Type of Role	Uniformed Manager	38.6	1.19	(0.75-1.88)		1.17	(0.73-1.87)	
	Uniformed Firefighter	34.5	1.00	ref		1.00	ref	
	Uniformed Comcen	25.9	0.66	(0.36-1.20)		0.72	(0.39-1.33)	
	Uniformed Other	25.3	0.64	(0.44-0.94)	*	0.60	(0.40-0.89)	*
	Non-Uniformed Manager	37.5	1.14	(0.65-1.98)		1.13	(0.63-2.04)	
	Non-Uniformed Other	25.3	0.64	(0.46-0.90)	*	0.63	(0.42-0.95)	*
Length of Service	Less than 12 Months	39.8	1.32	(0.88-1.98)		1.54	(1.01-2.35)	*
	1-2 Years	36.2	1.14	(0.79-1.63)		1.33	(0.90-1.97)	
	3-5 Years	28.4	0.79	(0.59-1.07)		0.85	(0.62-1.15)	
	6-10 Years	32.1	0.94	(0.71-1.25)		0.94	(0.70-1.26)	
	More than 10 Years	33.4	1.00	ref		1.00	ref	

Odds ratios of High Resilience[1]

1. The Brief Resilience Scale (BRS) is a self-report measure that evaluates an individual's ability to recover from stress or adversity. Respondents rated their level of agreement to a subset of three questions on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the three items, ranging from 1 to 7. The total score is then categorised as low-moderate (values < 6.0) or high (values ≥ 6.0) resilience, based on the upper quartile values for the entire sample. The resilience score showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .926

2. Separate unadjusted logistic regression models make predictions about the Odds ratios of high resilience based on the respondent's (i) gender, (ii) type of role, and (iii) their length of service.

3. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of high resilience, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 23.05, df = 10, n = 1653, p = .011, correctly classified cases = 66.9%) and explained 1.4% to 1.9% of the variance in the outcome.

Symbols

*   Significance level p <.05

**   Significance level p <.01

***   Significance level p <.001

Table 21

Odds ratios of high post-traumatic growth by gender, type of role, and length of service

March 2023

Group		Prevalence	Unadjusted[2]			Adjusted[3]		
		%	OR	(95% CI)		AOR	(95% CI)	
Gender	Male	26.2	1.00	ref		1.00	ref	
	Female	45.6	2.36	(1.78-3.14)	***	1.92	(1.34-2.76)	***
Type of Role	Uniformed Manager	38.4	1.81	(1.11-2.96)	*	1.88	(1.13-3.13)	*
	Uniformed Firefighter	25.6	1.00	ref		1.00	ref	
	Uniformed Comcen	22.4	0.84	(0.42-1.67)		0.59	(0.28-1.25)	
	Uniformed Other	32.6	1.41	(0.95-2.09)		1.27	(0.83-1.93)	
	Non-Uniformed Manager	40.9	2.01	(1.09-3.74)	*	1.21	(0.62-2.38)	
	Non-Uniformed Other	45.2	2.40	(1.68-3.43)	***	1.35	(0.87-2.10)	
Length of Service	Less than 12 Months	43.4	2.20	(1.38-3.50)	***	1.68	(1.02-2.77)	*
	1-2 Years	44.5	2.30	(1.53-3.47)	***	1.88	(1.20-2.93)	**
	3-5 Years	30.8	1.28	(0.92-1.77)		1.10	(0.77-1.56)	
	6-10 Years	25.5	0.98	(0.70-1.37)		0.96	(0.68-1.36)	
	More than 10 Years	25.9	1.00	ref		1.00	ref	

1. The Posttraumatic Growth Inventory (PGI) assesses positive changes and personal growth due to traumatic experiences. Five items from each domain of the PGI were used, and respondents were asked to rate their level of agreement on a 7-point Likert scale. Scores for each item were averaged into a total score, ranging from 1 to 7. The total score was categorised as low-moderate (values < 5.4) or high (values ≥ 5.4) posttraumatic growth based on the upper quartile values for the entire sample. The post-traumatic growth score showed high internal consistency with an average score of 5 items and a Cronbach's alpha of .926.
2. Separate unadjusted logistic regression models make predictions about the Odds ratios of high emotional numbing based on the respondent's (i) gender, (ii) type of role, and (iii) their length of service.
3. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of high post-traumatic growth, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 57.59, df = 10, n =1369, p < .001, correctly classified cases = 71.4%) and explained 4.1% to 5.9% of the variance in the outcome.

Symbols

* Significance level p <.05

** Significance level p <.01

*** Significance level p <.001

Table 22

Adjusted odds ratios for mental health indicators by gender, type of role, and length of service

March 2023

Group		Scoring 'High' on one or more mental ill health indicator(1)				Scoring 'High' on one or more coping mechanism indicator[2]				Scoring 'High' one or more positive wellbeing indicator[3]			
		Prevalence	Adjusted			Prevalence	Adjusted			Prevalence	Adjusted		
		%	OR	(95% CI)		%	OR	(95% CI)		%	OR	(95% CI)	
Gender	Male	29.4	1.00	ref		74.0	1.00	ref		46.2	1.00	ref	
	Female	40.6	1.84	(1.27-2.65)	**	65.6	1.10	(0.79-1.53)		57.7	1.64	(1.16-2.33)	**
Type of Role	Uniformed Manager	27.5	0.80	(0.47-1.34)		68.7	0.61	(0.37-1.00)		49.3	1.09	(0.67-1.77)	
	Uniformed Firefighter	29.8	1.00	ref		77.3	1.00	ref		47.4	1.00	ref	
	Uniformed Comcen	63.6	3.43	(1.88-6.24)	***	70.2	0.67	(0.36-1.21)		40.8	0.62	(0.33-1.16)	
	Uniformed Other	30.4	0.96	(0.64-1.44)		62.3	0.49	(0.34-0.71)	***	46.5	0.91	(0.62-1.35)	
	Non-Uniformed Manager	24.1	0.59	(0.23-1.51)		63.6	0.52	(0.29-0.95)	*	56.8	1.00	(0.52-1.93)	
	Non-Uniformed Other	35.2	1.09	(0.65-1.83)		57.7	0.43	(0.29-0.63)	***	51.4	0.74	(0.48-1.14)	
Length of Service	Less than 12 Months	12.5	0.22	(0.10-0.48)	***	67.0	0.77	(0.49-1.21)		63.9	1.89	(1.15-3.12)	*
	1-2 Years	27.4	0.63	(0.39-1.02)		65.8	0.76	(0.50-1.14)		59.1	1.65	(1.07-2.55)	*
	3-5 Years	31.4	0.78	(0.57-1.09)		71.0	0.84	(0.61-1.16)		47.1	0.96	(0.70-1.32)	
	6-10 Years	31.3	0.83	(0.61-1.13)		69.7	0.72	(0.53-0.98)	*	44.8	0.89	(0.66-1.21)	
	More than 10 Years	33.1	1.00	ref		75.8	1.00	ref		46.4	1.00	ref	

1. mental ill health indicators include moderate-to-severe depressive symptoms, moderate-to-severe anxiety symptoms, and probable PTSD.

2. Coping mechanism indicators include potentially hazardous alcohol use and high emotional numbing.

3. Positive wellbeing indicators include high resilience and high post-traumatic growth.

4. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of scoring high on one or more mental ill health indicator, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 51.03, df = 10, n =1478, p < .001, correctly classified cases = 69.9%) and explained 3.4% to 4.8% of the variance in the outcome.

5. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of scoring high on one or more coping indicator, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 44.40, df = 10, n = 1651, p < .001, correctly classified cases = 72.5%) and explained 2.7% to 3.8% of the variance in the outcome.

6. The adjusted logistic regression model takes into account the combined effects of gender, type of role, and length of service on the Odds ratios of scoring high on one or more positive wellbeing indicator, providing a more accurate estimation of the relationship between these factors and the outcome. The adjusted model was statistically significant (χ^2 = 26.97, df = 10, n = 1369, p = .003, correctly classified cases = 55.8%) and explained 2.0% to 2.6% of the variance in the outcome.
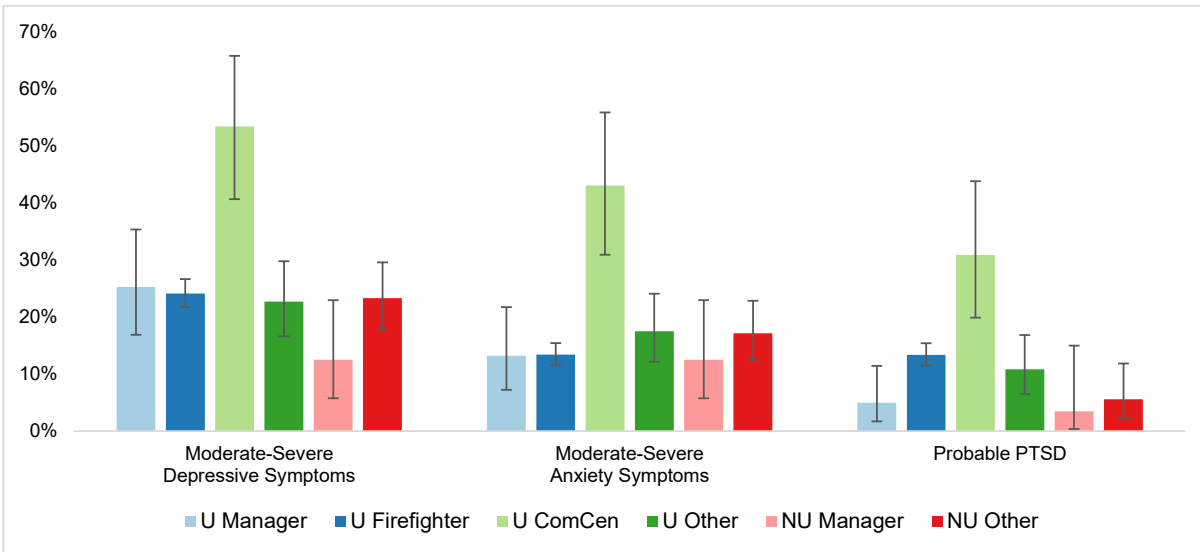
Symbols

*   Significance level p <.05

**   Significance level p <.01

***   Significance level p <.001
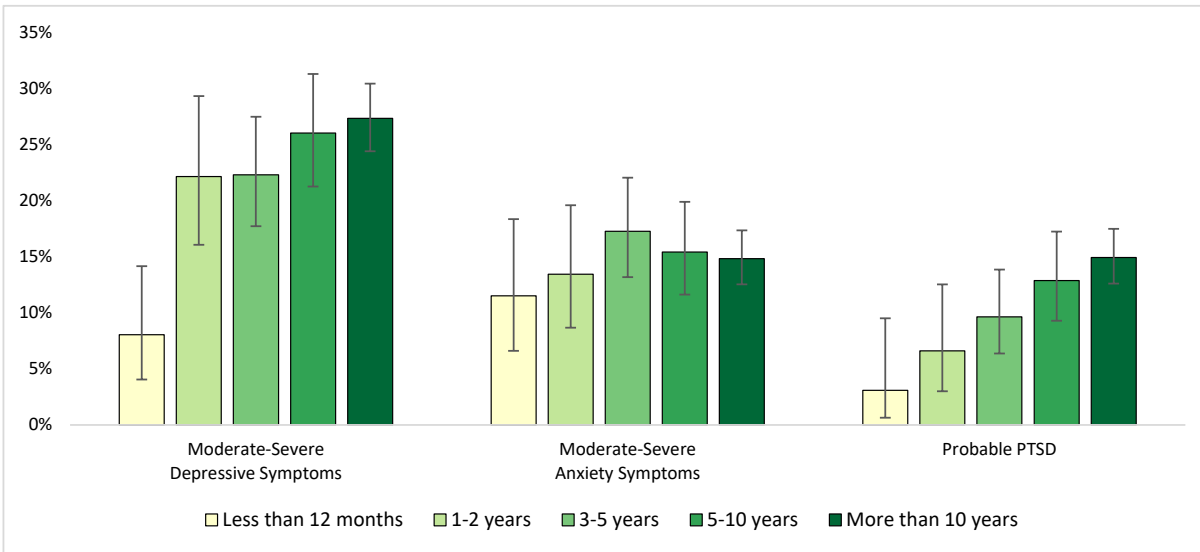
Figure 1

Depression, anxiety and post-traumatic stress disorder indicators by role type
March 2023

1. The PHQ-9 is a standardised tool used to assess the severity of depression symptoms. It consists of nine questions that ask about the frequency of depressive symptoms experienced over the past two weeks. Each question is scored from 0 to 3, with a maximum score of 27. Total scores are summarised into no, minimal, or mild (values 0-9), or moderate, severe, or very severe (values 10-27) depressive symptoms. The PHQ-9 score showed high internal consistency with an average score of 9 items and a Cronbach's alpha of .881.

2. The GAD-7 is a standardised tool used to assess the severity of anxiety symptoms. It consists of seven questions that ask about the frequency of anxiety symptoms experienced over the past two weeks. Each question is scored from 0 to 3, with a maximum score of 21. Total scores are summarised into no, minimal, or mild (values 0-9), or moderate or severe (values 10-21) symptoms of anxiety. The GAD-7 score showed high internal consistency with an average score of 7 items and a Cronbach's alpha of .910.

3. The SPRINT is a standardised tool used to assess the core symptoms of post-traumatic stress disorder related to traumatic work experiences in the past week. It consists of eight questions that ask about the frequency of PTSD symptoms experienced over the past week. Each question is scored from 0 to 4, with a maximum score of 32. Total scores are summarised into unlikely to possible PTSD (0-16) or probable PTSD (17-32). The SPRINT score showed high internal consistency with an average score of 8 items and a Cronbach's alpha of .905.

Figure 2

Depression, anxiety and post-traumatic stress disorder indicators by length of service
March 2023

1. The PHQ-9 is a standardised tool used to assess the severity of depression symptoms. It consists of nine questions that ask about the frequency of depressive symptoms experienced over the past two weeks. Each question is scored from 0 to 3, with a maximum score of 27. Total scores are summarised into no, minimal, or mild (values 0-9), or moderate, severe, or very severe (values 10-27) depressive symptoms. The PHQ-9 score showed high internal consistency with an average score of 9 items and a Cronbach's alpha of .881.

2. The GAD-7 is a standardised tool used to assess the severity of anxiety symptoms. It consists of seven questions that ask about the frequency of anxiety symptoms experienced over the past two weeks. Each question is scored from 0 to 3, with a maximum score of 21. Total scores are summarised into no, minimal, or mild (values 0-9), or moderate or severe (values 10-21) symptoms of anxiety. The GAD-7 score showed high internal consistency with an average score of 7 items and a Cronbach's alpha of .910.

3. The SPRINT is a standardised tool used to assess the core symptoms of post-traumatic stress disorder related to traumatic work experiences in the past week. It consists of eight questions that ask about the frequency of PTSD symptoms experienced over the past week. Each question is scored from 0 to 4, with a maximum score of 32. Total scores are summarised into unlikely to possible PTSD (0-16) or probable PTSD (17-32). The SPRINT score showed high internal consistency with an average score of 8 items and a Cronbach's alpha of .905.

Research Objective 3.

To determine the relationship between perceived organisational support and factors including mental ill health, behavioural outcomes (e.g., absenteeism/presenteeism/quitting), organisational attitudes (e.g., cynicism, turnover commitment), while controlling for other factors (e.g., demographic, occupational, PTE exposure).

List of tables

Table 1

Prevalence of self-reported exposure to potentially traumatic events in the last month
March 2023

Group		Total	Number PTEs Last Month		Last Month PTE Exposure[1]			
					Low		High	
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1466	3.0	(1.0-5.0)	81.1	(79.0-83.0)	18.9	(17.0-21.0)
Gender	Male	1258	3.0	(1.0-5.0)	81.9	(79.7-83.9)	18.1	(16.1-20.3)
	Female	192	2.0	(1.0-5.0)	77.1	(70.8-82.6)	22.9	(17.4-29.2)
Age Range	Under 20 years	0						
	20-29 years	149	3.0	(1.0-5.0)	77.2	(70.0-83.4)	22.8	(16.6-30.0)
	30-39 years	400	3.0	(1.0-5.0)	81.0	(76.9-84.6)	19.0	(15.4-23.1)
	40-49 years	403	3.0	(1.0-5.0)	81.4	(77.4-85.0)	18.6	(15.0-22.6)
	50-59 years	354	2.0	(1.0-5.0)	82.2	(78.0-85.9)	17.8	(14.1-22.0)
	60 years or older	157	2.0	(0.0-4.0)	82.2	(75.6-87.5)	17.8	(12.5-24.4)
Ethnicity	Māori	227	3.0	(1.0-5.0)	78.9	(73.2-83.8)	21.1	(16.2-26.8)
	Pacific peoples	74	3.0	(2.0-5.0)	79.7	(69.5-87.6)	20.3	(12.4-30.5)
	Asian	21	2.0	(1.0-4.0)	S		S	
	European	1274	3.0	(1.0-5.0)	81.2	(78.9-83.2)	18.8	(16.8-21.1)
	Other Ethnicity	183	2.0	(1.0-5.0)	82.5	(76.5-87.5)	17.5	(12.5-23.5)
	MELAA[4]	10	1.0	(0.0-2.0)	S		S	
Type of Role	Uniformed Manager	74	1.0	(0.0-3.0)	91.9	(84.1-96.5)	8.1	(3.5-15.9)
	Uniformed Firefighter	1085	3.0	(2.0-5.0)	80.9	(78.5-83.2)	19.1	(16.8-21.5)
	Uniformed Comcen	55	20.0	(5.0-20.0)	25.5	(15.4-38.0)	74.5	(62.0-84.6)
	Uniformed Other	133	1.0	(0.0-2.0)	92.5	(87.1-96.1)	7.5	(3.9-12.9)
	Non-Uniformed Manager	29	1.0	(0.0-2.0)	S		S	
	Non-Uniformed Other	85	1.0	(0.0-2.0)	89.4	(81.6-94.6)	10.6	(5.4-18.4)
Region	Te Hiku (Region 1)	441	3.0	(1.0-5.0)	80.0	(76.1-83.6)	20.0	(16.4-23.9)
	Ngā Tai Ki Te Puku (Region 2)	200	3.0	(2.0-5.0)	81.0	(75.1-86.0)	19.0	(14.0-24.9)
	Te Ūpoko (Region 3)	349	2.0	(1.0-4.0)	84.5	(80.5-88.0)	15.5	(12.0-19.5)
	Te Ihu (Region 4)	207	3.0	(1.0-5.0)	82.6	(77.0-87.3)	17.4	(12.7-23.0)
	Te Kei (Region 5)	118	2.0	(1.0-3.0)	91.5	(85.5-95.6)	8.5	(4.4-14.5)
	Comms Centre	59	15.0	(5.0-20.0)	27.1	(17.1-39.4)	72.9	(60.6-82.9)
	National Headquarters	79	1.0	(0.0-2.0)	S		S	
Length of Service	Less than 12 Months	64	2.0	(1.0-4.0)	85.9	(75.9-92.8)	14.1	(7.2-24.1)
	1-2 Years	104	3.0	(1.0-4.0)	85.6	(77.9-91.3)	14.4	(8.7-22.1)
	3-5 Years	233	2.0	(1.0-5.0)	81.5	(76.2-86.1)	18.5	(13.9-23.8)
	6-10 Years	260	3.0	(1.0-5.0)	81.2	(76.1-85.5)	18.8	(14.5-23.9)
	More than 10 Years	758	3.0	(1.0-5.0)	80.1	(77.1-82.8)	19.9	(17.2-22.9)
Volunteer Firefighter	Current or previous volunteer firefighter	619	2.0	(1.0-5.0)	81.9	(78.7-84.8)	18.1	(15.2-21.3)
	Never been volunteer firefighter	846	3.0	(1.0-5.0)	80.6	(77.8-83.2)	19.4	(16.8-22.2)

1. Respondents self-reported the number of times they had responded or been exposed to a potentially traumatic event (PTE) in the last month (direct, witnessed, or indirect exposure). Response options ranged from 0 to 20 or more. Last month PTE exposure is summarised into low (0-4 events) and high (≥ 5 events), based on the upper quartile values.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 2

Prevalence of self-reported exposure to potentially traumatic events in the last 12 months

March 2023

Group		Total	Number PTEs Last 12 Months		Last 12 Months PTE Exposure[1]			
					Low-Moderate		High	
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1549	15.5	(8.0-25.5)	64.3	(61.9-66.7)	35.7	(33.3-38.1)
Gender	Male	1332	15.5	(8.0-25.5)	63.5	(60.9-66.1)	36.5	(33.9-39.1)
	Female	200	8.0	(3.0-25.5)	70.5	(63.9-76.5)	29.5	(23.5-36.1)
Age Range	Under 20 years	0						
	20-29 years	151	15.5	(8.0-25.5)	63.6	(55.7-70.9)	36.4	(29.1-44.3)
	30-39 years	413	15.5	(8.0-25.5)	62.5	(57.7-67.0)	37.5	(33.0-42.3)
	40-49 years	427	15.5	(8.0-25.5)	62.1	(57.4-66.6)	37.9	(33.4-42.6)
	50-59 years	381	15.5	(3.0-25.5)	66.4	(61.6-71.0)	33.6	(29.0-38.4)
	60 years or older	173	8.0	(3.0-25.5)	71.1	(64.0-77.5)	28.9	(22.5-36.0)
Ethnicity	Māori	241	15.5	(8.0-25.5)	58.5	(52.2-64.6)	41.5	(35.4-47.8)
	Pacific peoples	77	15.5	(8.0-25.5)	64.9	(53.9-74.9)	35.1	(25.1-46.1)
	Asian	22	8.0	(8.0-25.5)	63.6	(42.9-81.1)	36.4	(18.9-57.1)
	European	1341	15.5	(8.0-25.5)	64.4	(61.8-66.9)	35.6	(33.1-38.2)
	Other Ethnicity	188	15.5	(3.0-25.5)	66.5	(59.5-72.9)	33.5	(27.1-40.5)
	MELAA[4]	10	5.5	(3.0-15.5)	S		S	
Type of Role	Uniformed Manager	79	3.0	(3.0-15.5)	81.0	(71.3-88.5)	19.0	(11.5-28.7)
	Uniformed Firefighter	1153	15.5	(8.0-25.5)	59.9	(57.1-62.7)	40.1	(37.3-42.9)
	Uniformed Comcen	55	50.0	(25.5-50.0)	18.2	(9.7-29.9)	81.8	(70.1-90.3)
	Uniformed Other	138	3.0	(3.0-8.0)	88.4	(82.3-92.9)	11.6	(7.1-17.7)
	Non-Uniformed Manager	29	3.0	(3.0-15.5)	S		S	
	Non-Uniformed Other	89	3.0	(3.0-8.0)	87.6	(79.6-93.3)	12.4	(6.7-20.4)
Region	Te Hiku (Region 1)	470	15.5	(8.0-25.5)	65.3	(60.9-69.5)	34.7	(30.5-39.1)
	Ngā Tai Ki Te Puku (Region 2)	208	15.5	(8.0-35.5)	54.8	(48.0-61.5)	45.2	(38.5-52.0)
	Te Ūpoko (Region 3)	371	15.5	(8.0-25.5)	65.0	(60.0-69.7)	35.0	(30.3-40.0)
	Te Ihu (Region 4)	217	15.5	(3.0-25.5)	62.7	(56.1-68.9)	37.3	(31.1-43.9)
	Te Kei (Region 5)	127	8.0	(3.0-15.5)	82.7	(75.4-88.5)	17.3	(11.5-24.6)
	Comms Centre	60	50.0	(25.5-50.0)	21.7	(12.7-33.3)	78.3	(66.7-87.3)
	National Headquarters	81	3.0	(3.0-15.5)	87.7	(79.2-93.5)	12.3	(6.5-20.8)
Length of Service	Less than 12 Months	65	3.0	(3.0-8.0)	87.7	(78.1-94.0)	12.3	(6.0-21.9)
	1-2 Years	106	15.5	(8.0-25.5)	74.5	(65.7-82.1)	25.5	(17.9-34.3)
	3-5 Years	239	15.5	(8.0-25.5)	67.4	(61.2-73.1)	32.6	(26.9-38.8)
	6-10 Years	271	15.5	(8.0-25.5)	59.4	(53.5-65.1)	40.6	(34.9-46.5)
	More than 10 Years	812	15.5	(8.0-25.5)	61.7	(58.3-65.0)	38.3	(35.0-41.7)
Volunteer Firefighter	Current or previous volunteer firefighter	657	15.5	(3.0-25.5)	61.2	(57.4-64.9)	38.8	(35.1-42.6)
	Never been volunteer firefighter	891	15.5	(8.0-25.5)	66.7	(63.5-69.7)	33.3	(30.3-36.5)

1. Respondents self-reported the number of times they had responded or been exposed to a potentially traumatic event (PTE) in the last 12 months (direct, witnessed, or indirect exposure). Response band options were 0, 1-5, 6-10, 11-20, 21-30, 31-40, 41-50 and more than 50. Last 12 month PTE exposure is summarised into low (0-20 events) and high (≥ 21 events), based on the upper quartile values.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 3

Prevalence of K41 and K13 records of exposure to potentially traumatic events in the last 12 months
March 2023

Group		Total	Number K41+K13 Codes Last 12 Months		Last 12 Months K41+K13 Codes[1]			
					Low-Moderate		High	
		N	Median	(IQR)[2]	%	(95% CI)[3]	%	(95% CI)
Total Sample		1013	6.0	(3.0-9.0)	74.0	(71.3-76.7)	26.0	(23.3-28.7)
Gender	Male	934	6.0	(3.0-9.0)	74.0	(71.1-76.7)	26.0	(23.3-28.9)
	Female	69	5.0	(3.0-8.0)	75.4	(64.3-84.3)	24.6	(15.7-35.7)
Age Range	Under 20 years	0						
	20-29 years	104	5.0	(3.5-8.0)	76.9	(68.2-84.2)	23.1	(15.8-31.8)
	30-39 years	325	5.0	(3.0-9.0)	72.9	(67.9-77.5)	27.1	(22.5-32.1)
	40-49 years	287	6.0	(3.0-9.0)	74.6	(69.3-79.3)	25.4	(20.7-30.7)
	50-59 years	208	6.0	(3.0-9.0)	73.6	(67.3-79.2)	26.4	(20.8-32.7)
	60 years or older	86	6.0	(3.0-9.0)	74.4	(64.5-82.7)	25.6	(17.3-35.5)
Ethnicity	Māori	169	5.0	(3.0-9.0)	74.6	(67.6-80.7)	25.4	(19.3-32.4)
	Pacific peoples	60	5.0	(3.0-8.0)	81.7	(70.5-89.8)	18.3	(10.2-29.5)
	Asian	16	7.5	(3.0-11.5)	68.8	(44.4-86.9)	31.3	(13.1-55.6)
	European	871	6.0	(3.0-9.0)	75.0	(72.0-77.8)	25.0	(22.2-28.0)
	Other Ethnicity	121	5.0	(3.0-9.0)	72.7	(64.3-80.1)	27.3	(19.9-35.7)
	MELAA[4]	<5	S		S		S	
Type of Role	Uniformed Manager	7	3.0	(1.0-6.0)	S		S	
	Uniformed Firefighter	966	6.0	(3.0-9.0)	73.5	(70.6-76.2)	26.5	(23.8-29.4)
	Uniformed Comcen	<5	S		S		S	
	Uniformed Other	28	2.5	(1.0-4.0)	S		S	
	Non-Uniformed Manager	<5	S		S		S	
	Non-Uniformed Other	<5	S		S		S	
Region	Te Hiku (Region 1)	337	5.0	(3.0-8.0)	76.6	(71.8-80.8)	23.4	(19.2-28.2)
	Ngā Tai Ki Te Puku (Region 2)	145	7.0	(4.0-10.0)	63.4	(55.4-71.0)	36.6	(29.0-44.6)
	Te Ūpoko (Region 3)	269	5.0	(3.0-8.0)	75.5	(70.1-80.3)	24.5	(19.7-29.9)
	Te Ihu (Region 4)	156	6.0	(4.0-9.0)	71.8	(64.4-78.4)	28.2	(21.6-35.6)
	Te Kei (Region 5)	91	5.0	(3.0-8.0)	81.3	(72.4-88.3)	18.7	(11.7-27.6)
	Comms Centre	<5	S		S		S	
	National Headquarters	5	3.0	(1.0-4.0)	S		S	
Length of Service	Less than 12 Months	41	3.0	(2.0-5.0)	S		S	
	1-2 Years	72	5.0	(3.0-8.5)	75.0	(64.2-83.9)	25.0	(16.1-35.8)
	3-5 Years	170	5.5	(3.0-9.0)	73.5	(66.5-79.7)	26.5	(20.3-33.5)
	6-10 Years	195	6.0	(4.0-9.0)	70.3	(63.6-76.3)	29.7	(23.7-36.4)
	More than 10 Years	502	6.0	(3.0-9.0)	74.7	(70.8-78.4)	25.3	(21.6-29.2)
Volunteer Firefighter	Current or previous volunteer firefighter	414	6.0	(3.0-9.0)	74.6	(70.3-78.6)	25.4	(21.4-29.7)
	Never been volunteer firefighter	598	6.0	(3.0-9.0)	73.6	(69.9-77.0)	26.4	(23.0-30.1)

1. A K41 code is transmitted to the communication centre by firefighters at an incident involving one or more fatalities.
   A K13 code is transmitted to the communication centre by firefighters at an incident that involves a potentially traumatic event. Transmitted K41 and K13 codes are logged in the employee records of all employees attending the incident. These records were obtained for all respondents who consented to the provision of their administrative data, for the 12 month period to 31 March 2023.

2. Interquartile range: lower quartile (25% percentile)-upper quartile (75% percentile)

3. 95% Confidence Interval

4. MELAA = Middle Easter, Latin American, African

Symbols.

S Small counts <5 have been suppressed.

Source. 2023 Whanaungatanga Wellbeing Survey

Table 4

Adjusted odds ratios of mental ill health indicators by PTE exposure, gender, and length of service
March 2023

Group		Odds ratios of Scoring 'High' on one or more Mental Ill Health Indicator[1]				Odds ratios of Moderate-to-Severe Depressive Symptoms[2]				Odds of ratios Moderate-to-Severe Anxiety Symptoms[3]				Odds ratios of Probable PTSD[4]			
		Prevalence	Adjusted			Prevalence	Adjusted			Prevalence	Adjusted			Prevalence	Adjusted		
		%	AOR	(95% CI)		%	AOR	(95% CI)		%	AOR	(95% CI)		%	AOR	(95% CI)	
PTE exposure	Low	28.8%	1.00	ref		23.9%	1.00	ref		13.0%	1.00	ref		10.4%	1.00	ref	
	High	44.6%	1.83	(1.38-2.42)	***	36.5%	1.71	(1.28-2.28)	***	26.4%	2.27	(1.64-3.16)	***	23.8%	2.63	(1.86-3.72)	***
Gender	Male	29.4%	1.00	ref		23.9%	1.00	ref		13.9%	1.00	ref		12.8%	1.00	ref	
	Female	40.6%	1.99	(1.43-2.79)	***	26.4%	1.78	(1.26-2.53)	**	20.5%	1.86	(1.25-2.78)	**	11.4%	1.02	(0.62-1.70)	
Length of Service	Less than 12 Months	12.5%	0.23	(0.10-0.49)	***	8.0%	0.22	(0.09-0.53)	***	11.5%	0.48	(0.20-1.16)		3.1%	0.18	(0.04-0.77)	*
	1-2 Years	27.4%	0.64	(0.40-1.03)		22.1%	0.66	(0.40-1.08)		13.4%	0.60	(0.31-1.17)		6.6%	0.42	(0.19-0.94)	*
	3-5 Years	31.4%	0.77	(0.55-1.06)		22.3%	0.73	(0.51-1.03)		17.3%	1.11	(0.74-1.66)		9.6%	0.54	(0.33-0.89)	*
	6-10 Years	31.3%	0.83	(0.61-1.13)		26.0%	0.83	(0.60-1.15)		15.4%	0.95	(0.64-1.41)		12.9%	0.80	(0.53-1.22)	
	More than 10 Years	33.1%	1.00	ref		27.3%	1.00	ref		14.8%	1.00	ref		14.9%	1.00	ref	

1. Mental ill health indicators include moderate-to-severe depressive symptoms, moderate-to-severe anxiety symptoms, and probable PTSD.
   The adjusted logistic regression model, which took into account PTE exposure, gender, and length of service, was statistically significant (χ^2 = 49.94, df = 6, n = 1401, p < .001, correctly classified cases = 68.5%) and explained 3.5% to 4.9% of the variance in the outcome.

2. The PHQ-9 is a standardised tool used to assess the severity of depression symptoms. It consists of nine questions that ask about the frequency of depressive symptoms experienced over the past two weeks. Each question is scored from 0 to 3, with a maximum score of 27. Total scores are summarised into no, minimal, or mild (values 0-9), or moderate, severe, or very severe (values 10-27) depressive symptoms. The PHQ-9 score showed high internal consistency with an average score of 9 items and a Cronbach's alpha of .881.
   The adjusted logistic regression model, which took into account PTE exposure, gender, and length of service, was statistically significant (χ^2 = 37.95, df = 6, n = 1402, p < .001, correctly classified cases = 73.6%) and explained 2.7% to 3.9% of the variance in the outcome.

3. The GAD-7 is a standardised tool used to assess the severity of anxiety symptoms. It consists of seven questions that ask about the frequency of anxiety symptoms experienced over the past two weeks. Each question is scored from 0 to 3, with a maximum score of 21. Total scores are summarised into no, minimal, or mild (values 0-9), or moderate or severe (values 10-21) symptoms of anxiety. The GAD-7 score showed high internal consistency with an average score of 7 items and a Cronbach's alpha of .910.
   The adjusted logistic regression model, which took into account PTE exposure, gender, and length of service, was statistically significant (χ^2 = 39.10, df = 6, n = 1402, p < .001, correctly classified cases = 84.5%) and explained 2.7% to 4.6% of the variance in the outcome.

4. The SPRINT is a standardised tool used to assess the core symptoms of post-traumatic stress disorder related to traumatic work experiences in the past week. It consists of eight questions that ask about the frequency of PTSD symptoms experienced over the past week. Each question is scored from 0 to 4, with a maximum score of 32. Total scores are summarised into unlikely to possible PTSD (0-16) or probable PTSD (17-32). The SPRINT score showed high internal consistency with an average score of 8 items and a Cronbach's alpha of .905.
   The adjusted logistic regression model, which took into account PTE exposure, gender, and length of service, was statistically significant (χ^2 = 47.13, df = 6, n = 1403, p < .001, correctly classified cases = 87.2%) and explained 3.3% to 6.2% of the variance in the outcome.

Symbols.

*   Significance level p <.05

**   Significance level p <.01

***   Significance level p <.001

Table 5

Adjusted odds ratios of coping indicators by PTE exposure, gender, and length of service
March 2023

Group		Odds ratios of Scoring 'High' on one or more Maladaptive Coping Indicator[1]		Odds ratios of Potentially Hazardous Drinking Patterns[2]		Odds ratios of High Emotional Numbing[3]	
		Prevalence	Adjusted	Prevalence	Adjusted	Prevalence	Adjusted
		%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
PTE exposure	Low	72.6%	1.00 ref	63.8%	1.00 ref	27.3%	1.00 ref
	High	77.9%	1.30 (0.94-1.79)	67.6%	1.14 (0.85-1.51)	39.7%	1.88 (1.41-2.50) ***
Gender	Male	74.0%	1.00 ref	64.9%	1.00 ref	30.8%	1.00 ref
	Female	65.6%	0.78 (0.55-1.10)	60.4%	0.93 (0.67-1.29)	9.3%	0.32 (0.20-0.51) ***
Length of Service	Less than 12 Months	67.0%	0.64 (0.37-1.12)	62.5%	0.77 (0.45-1.31)	11.5%	0.45 (0.22-0.94) *
	1-2 Years	65.8%	0.73 (0.46-1.15)	59.2%	0.78 (0.51-1.20)	17.6%	0.61 (0.36-1.03)
	3-5 Years	71.0%	0.83 (0.59-1.16)	60.9%	0.73 (0.53-0.99) *	23.4%	0.85 (0.61-1.20)
	6-10 Years	69.7%	0.83 (0.60-1.15)	61.5%	0.85 (0.63-1.14)	27.1%	0.87 (0.63-1.19)
	More than 10 Years	75.8%	1.00 ref	66.9%	1.00 ref	32.5%	1.00 ref

1. Coping mechanism indicators include potentially hazardous alcohol use and high emotional numbing.
   The adjusted logistic regression model, which took into account PTE exposure, gender, and length of service, was not statistically significant (χ^2 = 11.17, df = 6, n = 1402, p = .083, correctly classified cases = 73.5%) and explained 0.8% to 1.2% of the variance in the outcome.

2. The AUDIT-C scale is a screening tool used to identify potentially harmful alcohol use. Respondents are asked three questions about their typical alcohol use, including frequency, amount, and frequency of heavy drinking. Each response is scored from 0 to 4, and the scores are added together to obtain the total score, ranging from 0 to 12. A score of ≥ 3 for women and a score of ≥ 4 for men is considered indicative of potentially hazardous drinking.
   The adjusted logistic regression model, which took into account PTE exposure, gender, and length of service, was not statistically significant (χ^2 = 7.03, df = 6, n = 1401, p = .318, correctly classified cases = 64.3%) and explained 0.5% to 0.7% of the variance in the outcome.

3. The Emotional Reactivity and Numbing Scale assesses symptoms of emotional numbing. The selected subscale consisted of five questions, scored from 1 to 7 based on agreement level. The scores are then averaged to into a total score, ranging from 1 to 7. The total score is categorised as low-moderate (values < 4.6) or high (values ≥ 4.6) emotional numbing, based on the upper quartile values for the entire sample. The emotional numbing score showed high internal consistency with an average score of 5 items and a Cronbach's alpha of .926.
   The adjusted logistic regression model, which took into account PTE exposure, gender, and length of service, was statistically significant (χ^2 =63.23, df = 6, n = 1402, p < .001, correctly classified cases = 70.7%) and explained 4.4% to 6.3% of the variance in the outcome.

Symbols

*   Significance level p <.05

**   Significance level p <.01

***   Significance level p <.001

Table 6

Adjusted odds ratios of positive wellbeing indicators by PTE exposure, gender, and length of service

March 2023

Group		Odds ratios of Scoring 'High' on one or more Positive Wellbeing Indicator[1]		Odds ratios of High Resilience[2]		Odds ratios of High Post-Traumatic Growth[3]	
		Prevalence	Adjusted	Prevalence	Adjusted	Prevalence	Adjusted
		%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
PTE exposure	Low	48.4%	1.00 ref	34.7%	1.00 ref	27.4%	1.00 ref
	High	44.9%	0.87 (0.66-1.16)	28.5%	0.80 (0.59-1.07)	30.3%	1.15 (0.84-1.57)
Gender	Male	46.2%	1.00 ref	33.8%	1.00 ref	26.2%	1.00 ref
	Female	57.7%	1.38 (0.97-1.98)	28.1%	0.71 (0.50-1.01)	45.6%	1.98 (1.38-2.85) ***
Length of Service	Less than 12 Months	63.9%	2.28 (1.22-4.24) *	39.8%	2.36 (1.39-4.02) **	43.4%	1.61 (0.88-2.94)
	1-2 Years	59.1%	2.04 (1.23-3.38) **	36.2%	1.29 (0.83-1.98)	44.5%	2.21 (1.35-3.63) **
	3-5 Years	47.1%	0.93 (0.66-1.29)	28.4%	0.81 (0.58-1.13)	30.8%	1.00 (0.69-1.45)
	6-10 Years	44.8%	0.91 (0.67-1.25)	32.1%	1.01 (0.74-1.36)	25.5%	0.93 (0.65-1.32)
	More than 10 Years	46.4%	1.00 ref	33.4%	1.00 ref	25.9%	1.00 ref

1. Positive wellbeing indicators include high resilience and high post-traumatic growth.
   The adjusted logistic regression model, which took into account PTE exposure, gender, and length of service, was statistically significant (χ^2 = 23.79, df = 6, n = 1194, p < .001, correctly classified cases = 56.1%) and explained 2.0% to 2.6% of the variance in the outcome.

2. The Brief Resilience Scale (BRS) is a self-report measure that evaluates an individual's ability to recover from stress or adversity. Respondents rated their level of agreement to a subset of three questions on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the three items, ranging from 1 to 7. The total score is then categorised as low-moderate (values < 6.0) or high (values ≥ 6.0) resilience, based on the upper quartile values for the entire sample. The resilience score showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .926.
   The adjusted logistic regression model, which took into account PTE exposure, gender, and length of service, was statistically significant (χ^2 = 20.00, df = 6, n = 1404, p = .003, correctly classified cases = 66.5%) and explained 1.4% to 1.9% of the variance in the outcome.

3. The Posttraumatic Growth Inventory (PGI) assesses positive changes and personal growth due to traumatic experiences. Five items from each domain of the PGI were used, and respondents were asked to rate their level of agreement on a 7-point Likert scale. Scores for each item were averaged into a total score, ranging from 1 to 7. The total score was categorised as low-moderate (values < 5.4) or high (values ≥ 5.4) posttraumatic growth based on the upper quartile values for the entire sample. The post-traumatic growth score showed high internal consistency with an average score of 5 items and a Cronbach's alpha of .926.
   The adjusted logistic regression model, which took into account PTE exposure, gender, and length of service, was statistically significant (χ^2 = 32.25, df = 6, n = 1404, p < .001, correctly classified cases = 72.4%) and explained 2.7% to 3.8% of the variance in the outcome.

Symbols

*   Significance level p <.05

**   Significance level p <.01

***   Significance level p <.001

Table 7

Summary table of relationship between organisational factors and key outcomes, adjusting for PTE exposure, gender and length of service
March 2023

Group	Odds ratios of scoring High on one or more Mental Ill Health indicator[2]	Odds ratios of Scoring 'High' on one or more Maladaptive Coping Indicator[3]	Odds ratios of Scoring 'High' on one or more Positive Wellbeing Indicator[4]	Odds ratios of High Affective Organisational Commitment[5]	Odds ratios of High Organisational Cynicism[6]	Odds ratios of High Manager Cynicism[7]	Odds ratios of High Turnover Intention[8]	Odds ratios of High Presenteeism[9]	Odds ratios of High Extra Role Performance[10]
	Adjusted[1]	Adjusted[1]	Adjusted[1]	Adjusted[1]	Adjusted[1]	Adjusted[1]	Adjusted[1]	Adjusted[1]	Adjusted[1]
	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
High Perceived Co-Worker Support	0.62 ** (0.47-0.83)	1.17 (0.86-1.59)	2.07 *** (1.52-2.82)	2.54 *** (1.76-3.65)	0.85 (0.63-1.13)	0.55 *** (0.40-0.76)	0.28 *** (0.21-0.39)	0.66 ** (0.50-0.87)	4.13 *** (2.44-6.98)
High Perceived Manager Support	0.67 ** (0.53-0.87)	0.67 ** (0.52-0.87)	1.33 * (1.04-1.71)	1.96 *** (1.52-2.53)	0.59 *** (0.47-0.75)	0.12 *** (0.08-0.18)	0.55 *** (0.40-0.76)	0.78 * (0.61-0.99)	1.57 *** (1.23-2.00)
High Perceived Organisational Support	0.36 *** (0.22-0.57)	0.50 *** (0.35-0.72)	2.65 *** (1.74-4.04)	9.75 *** (6.50-14.62)	0.21 *** (0.14-0.31)	0.65 (0.36-1.18)	0.19 *** (0.09-0.42)	0.80 (0.54-1.17)	2.25 *** (1.41-3.59)
High Perceived Psychological Safety	0.50 *** (0.38-0.66)	0.67 ** (1.26-2.13)	1.64 *** (1.26-2.13)	3.05 *** (2.37-3.93)	0.45 *** (0.35-0.57)	0.46 *** (0.32-0.66)	0.30 *** (0.20-0.45)	0.70 ** (0.54-0.90)	1.76 *** (1.34-2.31)
High Preparedness to Serve the Community	0.59 *** (0.44-0.81)	0.68 ** (0.51-0.91)	1.99 *** (1.48-2.68)	3.13 *** (2.37-4.12)	0.35 *** (0.27-0.46)	0.56 ** (0.38-0.83)	0.47 *** (0.32-0.71)	0.67 ** (0.50-0.90)	1.52 ** (1.13-2.04)
High Organisational Accountability	0.42 ** (0.24-0.73)	0.50 ** (0.33-0.77)	2.75 *** (1.64-4.59)	11.92 *** (7.05-20.16)	0.22 *** (0.14-0.35)	0.59 (0.27-1.26)	0.26 ** (0.11-0.62)	1.14 (0.73-1.77)	6.50 *** (2.98-14.20)
High Organisational Competence	0.61 ** (0.45-0.84)	0.61 ** (0.45-0.84)	2.29 *** (1.67-3.14)	4.84 *** (3.63-6.47)	0.34 *** (0.25-0.45)	0.68 (0.45-1.02)	0.30 *** (0.18-0.49)	0.95 (0.71-1.28)	2.47 *** (1.75-3.48)

1. The adjusted logistic regression model takes into account the combined effects of PTE exposure, gender, and length of service on the Odds ratios.

2. Mental ill health indicators include moderate-to-severe depressive symptoms, moderate-to-severe anxiety symptoms, and probable PTSD.

3. Coping mechanism indicators include potentially hazardous alcohol use and high emotional numbing.

4. Positive wellbeing indicators include high resilience and high post-traumatic growth.

5. Affective organisation commitment is evaluated through 6 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. After reverse coding 3 negatively-worded statements, the total score is calculated as the average of the 6 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 6 items and a Cronbach's alpha of .824.

6. Organisational cynicism is evaluated through 3 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. After reverse coding 1 negatively-worded statement, the total score is calculated as the average of the 3 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed average internal consistency with an average score of 3 items and a Cronbach's alpha of .559.

7. Manager cynicism (of non-managers) is evaluated through 3 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. After reverse coding 1 negatively-worded statement, the total score is calculated as the average of the 3 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed good internal consistency with an average score of 3 items and a Cronbach's alpha of .725.

8. Turnover intention is evaluated through 3 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 3 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .878.

9. Presenteeism is evaluated through 3 statements. Respondents rated their frequency of presenteeism behaviours on a 7-point scale, with scores ranging from 0 to 6. The total score is the average of the 3 statements, ranging from 0 to 6. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 3 items and a Cronbach's alpha of .837.

10. Extra role performance is evaluated through 6 statements. Respondents rated their level of agreement to the statements on a 7-point scale, with scores ranging from 1 to 7. The total score is the average of the 6 statements, ranging from 1 to 7. Total scores are summarised into Disagree (strongly disagree, moderately disagree, slightly disagree, neutral; values <5) and Agree (slightly agree, moderately agree, strongly agree; values ≥ 5.0).The scale showed high internal consistency with an average score of 6 items and a Cronbach's alpha of .848.

Symbols

* Significance level p <.05

** Significance level p <.01

*** Significance level p <.001

Table 8

Adjusted odds ratios of mental ill health, organisational attitudes, and behavioural outcomes by perceived co-worker support

March 2023

Group		Odds ratios of scoring High on one or more Mental Ill Health Indicator[2]		Odds ratios of Scoring 'High' on one or more Maladaptive Coping Indicator[3]		Odds ratios of Scoring 'High' on one or more Positive Wellbeing Indicator[4]		Odds ratios of High Affective Organisational Commitment[5]	
		Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
		%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
Perceived Co-Worker Support	Low	41.1%	1.00 ref	70.2%	1.00 Ref	32.5%	1.00 Ref	15.2%	1.00 ref
	High	28.7%	0.62 (0.47-0.83) **	73.1%	1.17 (0.86-1.59)	51.8%	2.07 (1.52-2.82) ***	33.4%	2.54 (1.76-3.65) ***
PTE exposure	Low	28.8%	1.00 ref	72.6%	1.00 Ref	48.4%	1.00 Ref	29.5%	1.00 ref
	High	44.6%	1.86 (1.40-2.46) ***	77.9%	1.30 (0.94-1.78)	44.9%	0.86 (0.64-1.14)	26.0%	0.84 (0.62-1.14)
Gender	Male	29.4%	1.00 ref	74.0%	1.00 Ref	46.2%	1.00 Ref	29.7%	1.00 ref
	Female	40.6%	1.90 (1.35-2.67) ***	65.6%	0.79 (0.56-1.12)	57.7%	1.48 (1.03-2.14) *	32.0%	1.04 (0.73-1.49)
Length of Service	Less than 12 Months	12.5%	0.24 (0.11-0.53) ***	67.0%	0.63 (0.36-1.09)	63.9%	2.03 (1.08-3.80) *	54.0%	3.33 (1.93-5.72) ***
	1-2 Years	27.4%	0.70 (0.44-1.13)	65.8%	0.71 (0.45-1.13)	59.1%	1.80 (1.08-2.99) *	39.6%	1.34 (0.86-2.09)
	3-5 Years	31.4%	0.79 (0.57-1.10)	71.0%	0.82 (0.58-1.15)	47.1%	0.89 (0.63-1.24)	29.5%	0.98 (0.70-1.37)
	6-10 Years	31.3%	0.86 (0.63-1.17)	69.7%	0.82 (0.60-1.14)	44.8%	0.88 (0.64-1.20)	22.9%	0.76 (0.54-1.06)
	More than 10 Years	33.1%	1.00 ref	75.8%	1.00 Ref	46.4%	1.00 Ref	28.1%	1.00 ref

1. The adjusted logistic regression model takes into account the combined effects of PTE exposure, gender, and length of service on the Odds ratios.

2. The adjusted logistic regression model for mental ill health was statistically significant (χ^2 = 60.41, df = 7, n = 1400, p < .001, correctly classified cases = 68.4%) and explained 4.2% to 5.9% of the variance in the outcome.

3. The adjusted logistic regression model for maladaptive coping was not statistically significant (χ^2 = 12.16, df = 7, n = 1401, p = .096, correctly classified cases = 73.4%) and explained 0.9% to1.3% of the variance in the outcome.

4. The adjusted logistic regression model for positive wellbeing was statistically significant (χ^2 = 45.81, df = 7, n = 1193, p < .001, correctly classified cases = 58.2%) and explained 3.8% to 5.0% of the variance in the outcome.

5. The adjusted logistic regression model for high affective organisational commitment was statistically significant (χ^2 = 61.25, df = 7, n = 1403, p < .001, correctly classified cases = 71.8%) and explained 4.3% to 6.1% of the variance in the outcome.

6. The adjusted logistic regression model for high organisational cynicism was statistically significant (χ^2 = 52.83, df = 7, n = 1403, p < .001, correctly classified cases = 65.7%) and explained 3.7% to 5.1% of the variance in the outcome.

7. The adjusted logistic regression model for high manager cynicism was statistically significant (χ^2 = 48.53, df = 7, n = 1302, p < .001, correctly classified cases = 79.4%) and explained 3.7% to 5.7% of the variance in the outcome.

8. The adjusted logistic regression mode for high turnover intention was statistically significant (χ^2 = 108.54, df = 7, n = 1399, p < .001, correctly classified cases = 81.9%) and explained 7.5% to 12.3% of the variance in the outcome.

9. The adjusted logistic regression model for high presenteeism was statistically significant (χ^2 = 41.08, df = 7, n = 1396, p < .001, correctly classified cases = 66.1%) and explained 2.9% to 4.0% of the variance in the outcome.

10. The adjusted logistic regression model for high extra role performance was statistically significant (χ^2 = 18.63, df = 7, n = 1401, p = .009, correctly classified cases = 68.0%) and explained 1.3% to 1.8% of the variance in the outcome.

Symbols

*   Significance level p <.05

**   Significance level p <.01

***   Significance level p <.001

Odds ratios of High Organisational Cynicism[6]		Odds ratios of High Manager Cynicism[7]		Odds ratios of High Turnover Intention[8]		Odds ratios of High Presenteeism[9]		Odds ratios of High Extra Role Performance[10]	
Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
64.5%	1.00 ref	29.8%	1.00 ref	36.7%	1.00 ref	40.9%	1.00 ref	63.9%	1.00 ref
58.3%	0.85 (0.63-1.13)	17.4%	0.55 (0.40-0.76) ***	13.9%	0.28 (0.21-0.39) ***	31.2%	0.66 (0.50-0.87) **	70.6%	4.13 (2.44-6.98) ***
62.1%	1.00 ref	19.1%	1.00 ref	16.8%	1.00 ref	31.5%	1.00 ref	67.1%	1.00 ref
69.7%	1.51 (1.12-2.03) **	26.4%	1.50 (1.09-2.08) *	23.5%	1.53 (1.09-2.16) *	44.9%	1.83 (1.39-2.42) ***	71.5%	1.39 (1.03-1.89) *
62.5%	1.00 ref	19.9%	1.00 ref	17.6%	1.00 ref	32.8%	1.00 ref	67.7%	1.00 ref
45.2%	0.68 (0.49-0.94) *	18.6%	1.13 (0.73-1.75)	20.5%	1.72 (1.13-2.62) *	32.8%	1.43 (1.03-2.01) *	77.6%	1.36 (0.94-1.97)
19.5%	0.25 (0.14-0.44) ***	2.9%	0.11 (0.03-0.46) **	8.0%	0.23 (0.08-0.66) **	18.8%	0.47 (0.25-0.88) *	70.8%	0.82 (0.45-1.49)
51.0%	0.83 (0.54-1.28)	11.2%	0.43 (0.22-0.83) *	13.4%	0.36 (0.17-0.75) **	29.5%	0.73 (0.46-1.16)	80.4%	1.11 (0.69-1.78)
59.0%	0.97 (0.71-1.33)	18.2%	0.67 (0.45-0.99) *	15.1%	0.53 (0.34-0.81) **	32.7%	0.81 (0.58-1.11)	69.4%	1.02 (0.74-1.42)
67.9%	1.34 (0.98-1.82)	19.8%	0.73 (0.50-1.05)	14.1%	0.48 (0.31-0.73) ***	30.8%	0.79 (0.58-1.08)	64.0%	0.76 (0.56-1.03)
64.0%	1.00 ref	24.5%	1.00 ref	22.7%	1.00 ref ***	36.6%	1.00 ref	69.5%	1.00 ref

Table 9

Adjusted odds ratios of mental ill health, organisational attitudes, and behavioural outcomes by perceived manager support

March 2023

Group		Odds ratios of scoring High on one or more Mental Ill Health Indicator[2]		Odds ratios of Scoring 'High' on one or more Maladaptive Coping Indicator[3]		Odds ratios of Scoring 'High' on one or more Positive Wellbeing Indicator[4]		Odds ratios of High Affective Organisational Commitment[5]	
		Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
		%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
Perceived Manager Support	Low	34.4%	1.00 ref	76.8%	1.00 Ref	43.5%	1.00 Ref	20.4%	1.00 ref
	High	26.8%	0.67 (0.53-0.87) **	68.2%	0.67 (0.52-0.87) **	53.1%	1.33 (1.04-1.71) *	37.1%	1.96 (1.52-2.53) ***
PTE exposure	Low	28.8%	1.00 ref	72.6%	1.00 Ref	48.4%	1.00 Ref	29.5%	1.00 ref
	High	44.6%	1.80 (1.35-2.39) ***	77.9%	1.25 (0.90-1.74)	44.9%	0.88 (0.66-1.18)	26.0%	0.95 (0.69-1.32)
Gender	Male	29.4%	1.00 ref	74.0%	1.00 Ref	46.2%	1.00 Ref	29.7%	1.00 ref
	Female	40.6%	2.34 (1.63-3.34) ***	65.6%	0.86 (0.59-1.24)	57.7%	1.19 (0.82-1.74)	32.0%	0.81 (0.55-1.20)
Length of Service	Less than 12 Months	12.5%	0.25 (0.11-0.55) ***	67.0%	0.69 (0.39-1.24)	63.9%	2.07 (1.10-3.91) *	54.0%	3.97 (2.26-6.99) ***
	1-2 Years	27.4%	0.67 (0.41-1.10)	65.8%	0.77 (0.47-1.24)	59.1%	1.93 (1.15-3.23) *	39.6%	1.91 (1.20-3.02) **
	3-5 Years	31.4%	0.72 (0.51-1.00)	71.0%	0.83 (0.58-1.17)	47.1%	1.03 (0.73-1.45)	29.5%	1.33 (0.93-1.88)
	6-10 Years	31.3%	0.82 (0.60-1.13)	69.7%	0.82 (0.59-1.14)	44.8%	0.94 (0.68-1.30)	22.9%	0.96 (0.67-1.36)
	More than 10 Years	33.1%	1.00 ref	75.8%	1.00 Ref	46.4%	1.00 Ref	28.1%	1.00 ref

1. The adjusted logistic regression model takes into account the combined effects of PTE exposure, gender, and length of service on the Odds ratios.

2. The adjusted logistic regression model for mental ill health was statistically significant (χ^2 = 60.15, df = 7, n = 1300, p < .001, correctly classified cases = 67.9%) and explained 4.5% to 6.3% of the variance in the outcome.

3. he adjusted logistic regression model for maladaptive coping was statistically significant (χ^2 = 61.25, df = 7, n = 1301, p = .012, correctly classified cases = 74.2%) and explained 4.3% to 6.1% of the ariance in the outcome.

4. The adjusted logistic regression model for positive wellbeing was statistically significant (χ^2 = 23.69, df = 7, n = 1108, p = .001, correctly classified cases = 56.0%) and explained 2.1% to 2.8% of the variance in the outcome.

5. The adjusted logistic regression model for high affective organisational commitment was statistically significant (χ^2 = 64.26, df = 7, n = 1303, p < .001, correctly classified cases = 74.2%) and explained 4.8% to 7.0% of the variance in the outcome.

6. The adjusted logistic regression model for high organisational cynicism was statistically significant (χ^2 = 65.06, df = 7, n = 1303, p < .001, correctly classified cases = 67.9%) and explained 4.9% to 6.7% of the variance in the outcome.

7. The adjusted logistic regression model for high manager cynicism was statistically significant (χ^2 = 178.60, df = 7, n = 1302, p < .001, correctly classified cases =79.6%) and explained 12.8% to 20.1% of the variance in the outcome.

8. The adjusted logistic regression mode for high turnover intention was statistically significant (χ^2 = 71.24, df = 7, n = 1299, p < .001, correctly classified cases = 81.5%) and explained 5.3% to 8.7% of the variance in the outcome.

9. The adjusted logistic regression model for high presenteeism was statistically significant (χ^2 = 37.22, df = 7, n = 1296, p < .001, correctly classified cases = 66.0%) and explained 2.8% to 3.9% of the variance in the outcome.

10. The adjusted logistic regression model for high extra role performance was statistically significant (χ^2 = 25.80, df = 7, n = 1301, p < .001, correctly classified cases = 66.5%) and explained 2.0% to 2.7% of the variance in the outcome.

Symbols

* Significance level p <.05

** Significance level p <.01

*** Significance level p <.001

Odds ratios of High Organisational Cynicism[6]		Odds ratios of High Manager Cynicism[7]		Odds ratios of High Turnover Intention[8]		Odds ratios of High Presenteeism[9]		Odds ratios of High Extra Role Performance[10]	
Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
68.6%	1.00 ref	31.0%	1.00 ref	22.8%	1.00 ref	34.7%	1.00 ref	62.8%	1.00 ref
51.7%	0.59 (0.47-0.75) ***	4.3%	0.12 (0.08-0.18) ***	13.1%	0.55 (0.40-0.76) ***	30.1%	0.78 (0.61-0.99) *	73.8%	1.57 (1.23-2.00) ***
62.1%	1.00 ref	19.1%	1.00 ref	16.8%	1.00 ref	31.5%	1.00 ref	67.1%	1.00 ref
69.7%	1.43 (1.05-1.94) *	26.4%	1.50 (1.06-2.11) *	23.5%	1.43 (1.02-2.01) *	44.9%	1.88 (1.42-2.49) ***	71.5%	1.43 (1.05-1.94) *
62.5%	1.00 ref	19.9%	1.00 ref	17.6%	1.00 ref	32.8%	1.00 ref	67.7%	1.00 ref
45.2%	0.80 (0.56-1.14)	18.6%	1.50 (0.94-2.38)	20.5%	2.16 (1.40-3.33) ***	32.8%	1.60 (1.13-2.28) **	77.6%	1.25 (0.86-1.82)
19.5%	0.25 (0.14-0.45) ***	2.9%	0.14 (0.03-0.58) **	8.0%	0.21 (0.07-0.59) **	18.8%	0.51 (0.27-0.98) *	70.8%	0.96 (0.53-1.74)
51.0%	0.76 (0.49-1.19)	11.2%	0.46 (0.23-0.90) *	13.4%	0.23 (0.10-0.51) ***	29.5%	0.70 (0.43-1.13)	80.4%	1.08 (0.67-1.75)
59.0%	0.83 (0.60-1.15)	18.2%	0.60 (0.40-0.90) *	15.1%	0.46 (0.30-0.70) ***	32.7%	0.79 (0.57-1.10)	69.4%	1.07 (0.76-1.48)
67.9%	1.25 (0.90-1.73)	19.8%	0.68 (0.46-0.99) *	14.1%	0.38 (0.25-0.59) ***	30.8%	0.79 (0.57-1.08)	64.0%	0.76 (0.56-1.03)
64.0%	1.00 ref	24.5%	1.00 ref *	22.7%	1.00 ref ***	36.6%	1.00 ref	69.5%	1.00 ref

Table 10

Adjusted odds ratios of mental ill health, organisational attitudes, and behavioural outcomes by perceived organisational support

March 2023

Group		Odds ratios of scoring High on one or more Mental Ill Health Indicator[2]		Odds ratios of Scoring 'High' on one or more Maladaptive Coping Indicator[3]		Odds ratios of Scoring 'High' on one or more Positive Wellbeing Indicator[4]		Odds ratios of High Affective Organisational Commitment[5]	
		Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
		%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
Perceived Organisational Support	Low	33.0%	1.00 ref	74.5%	1.00 Ref	44.8%	1.00 Ref	23.5%	1.00 ref
	High	14.1%	0.36 (0.22-0.57) ***	60.3%	0.50 (0.35-0.72) ***	70.5%	2.65 (1.74-4.04) ***	72.1%	9.75 (6.50-14.62) ***
PTE exposure	Low	28.8%	1.00 ref	72.6%	1.00 Ref	48.4%	1.00 Ref	29.5%	1.00 ref
	High	44.6%	1.77 (1.33-2.34) ***	77.9%	1.25 (0.91-1.72)	44.9%	0.91 (0.68-1.22)	26.0%	0.96 (0.70-1.33)
Gender	Male	29.4%	1.00 ref	74.0%	1.00 Ref	46.2%	1.00 Ref	29.7%	1.00 ref
	Female	40.6%	2.18 (1.54-3.07) ***	65.6%	0.82 (0.58-1.16)	57.7%	1.28 (0.89-1.84)	32.0%	0.76 (0.52-1.12)
Length of Service	Less than 12 Months	12.5%	0.26 (0.12-0.56) ***	67.0%	0.73 (0.42-1.29)	63.9%	1.87 (0.99-3.54)	54.0%	2.94 (1.63-5.32) ***
	1-2 Years	27.4%	0.65 (0.40-1.04)	65.8%	0.73 (0.46-1.16)	59.1%	2.09 (1.26-3.48) **	39.6%	1.59 (0.99-2.54)
	3-5 Years	31.4%	0.73 (0.52-1.01)	71.0%	0.79 (0.56-1.11)	47.1%	0.97 (0.69-1.35)	29.5%	1.21 (0.85-1.72)
	6-10 Years	31.3%	0.80 (0.58-1.09)	69.7%	0.80 (0.58-1.10)	44.8%	0.95 (0.69-1.30)	22.9%	0.89 (0.63-1.26)
	More than 10 Years	33.1%	1.00 ref	75.8%	1.00 Ref	46.4%	1.00 Ref	28.1%	1.00 ref

1. The adjusted logistic regression model takes into account the combined effects of PTE exposure, gender, and length of service on the Odds ratios.

2. The adjusted logistic regression model for mental ill health was statistically significant ($\chi^2 = 71.57$, df = 7, n = 1400, p < .001, correctly classified cases = 67.8%) and explained 5.0% to 7.0% of the variance in the outcome.

3. The adjusted logistic regression model for maladaptive coping was statistically significant ($\chi^2 = 24.97$, df = 7, n = 1401, p < .001, correctly classified cases = 73.5%) and explained 1.8% to 2.6% of the variance in the outcome.

4. The adjusted logistic regression model for positive wellbeing was statistically significant ($\chi^2 = 46.11$, df = 7, n = 1193, p < .001, correctly classified cases = 57.6%) and explained 3.8% to 5.1% of the variance in the outcome.

5. The adjusted logistic regression model for high affective organisational commitment was statistically significant ($\chi^2 = 177.07$, df = 7, n = 1403, p < .001, correctly classified cases = 76.3%) and explained 11.9% to 16.9% of the variance in the outcome.

6. The adjusted logistic regression model for high organisational cynicism was statistically significant ($\chi^2 = 122.49$, df = 7, n = 1403, p < .001, correctly classified cases = 69.3%) and explained 8.4% to 11.4% of the variance in the outcome.

7. The adjusted logistic regression model for high manager cynicism was statistically significant ($\chi^2 = 38.38$, df = 7, n = 1302, p < .001, correctly classified cases = 79.4%) and explained 2.9% to 4.6% of the variance in the outcome.

8. The adjusted logistic regression mode for high turnover intention was statistically significant ($\chi^2 = 75.87$, df = 7, n = 1399, p < .001, correctly classified cases = 82.1%) and explained 5.3% to 8.7% of the variance in the outcome.

9. The adjusted logistic regression model for high presenteeism was statistically significant ($\chi^2 = 34.04$, df = 7, n = 1396, p < .001, correctly classified cases = 66.0%) and explained 2.4% to 3.3% of the variance in the outcome.

10. The adjusted logistic regression model for high extra role performance was statistically significant ($\chi^2 = 50.82$, df = 7, n = 1401, p < .001, correctly classified cases = 68.0%) and explained 3.6% to 5.0% of the variance in the outcome.

Symbols

*   Significance level p <.05

**   Significance level p <.01

*** Significance level p <.001

Odds ratios of High Organisational Cynicism[6]		Odds ratios of High Manager Cynicism[7]		Odds ratios of High Turnover Intention[8]		Odds ratios of High Presenteeism[9]		Odds ratios of High Extra Role Performance[10]	
Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
65.3%	1.00 ref	21.0%	1.00 ref	20.6%	1.00 ref	34.3%	1.00 ref	66.4%	1.00 ref
21.4%	0.21 (0.14-0.31) ***	8.9%	0.65 (0.36-1.18)	3.5%	0.19 (0.09-0.42) ***	24.7%	0.80 (0.54-1.17)	88.2%	2.25 (1.41-3.59) ***
62.1%	1.00 ref	19.1%	1.00 ref	16.8%	1.00 ref	31.5%	1.00 ref	67.1%	1.00 ref
69.7%	1.41 (1.04-1.90) *	26.4%	1.46 (1.06-2.02) *	23.5%	1.37 (0.98-1.92)	44.9%	1.79 (1.36-2.36) ***	71.5%	1.40 (1.03-1.91) *
62.5%	1.00 ref	19.9%	1.00 ref	17.6%	1.00 ref	32.8%	1.00 ref	67.7%	1.00 ref
45.2%	0.77 (0.55-1.08)	18.6%	1.24 (0.81-1.91)	20.5%	2.20 (1.46-3.33) ***	32.8%	1.53 (1.09-2.13) *	77.6%	1.01 (0.67-1.52)
19.5%	0.29 (0.16-0.52) ***	2.9%	0.11 (0.03-0.46) **	8.0%	0.22 (0.08-0.63) **	18.8%	0.46 (0.24-0.86) *	70.8%	0.81 (0.43-1.54)
51.0%	0.80 (0.51-1.25)	11.2%	0.39 (0.20-0.76) **	13.4%	0.28 (0.14-0.58) ***	29.5%	0.68 (0.43-1.07)	80.4%	1.01 (0.61-1.66)
59.0%	0.87 (0.63-1.20)	18.2%	0.63 (0.43-0.93) *	15.1%	0.45 (0.30-0.69) ***	32.7%	0.77 (0.56-1.06)	69.4%	0.94 (0.67-1.31)
67.9%	1.23 (0.90-1.69)	19.8%	0.69 (0.48-1.00) *	14.1%	0.42 (0.28-0.64) ***	30.8%	0.77 (0.56-1.04)	64.0%	0.75 (0.55-1.01)
64.0%	1.00 ref	24.5%	1.00 ref *	22.7%	1.00 ref ***	36.6%	1.00 ref	69.5%	1.00 ref

Table 11

Adjusted odds ratios of mental ill health, organisational attitudes, and behavioural outcomes by perceived psychological safety

March 2023

Group		Odds ratios of scoring High on one or more Mental Ill Health Indicator[2]		Odds ratios of Scoring 'High' on one or more Maladaptive Coping Indicator[3]		Odds ratios of Scoring 'High' on one or more Positive Wellbeing Indicator[4]		Odds ratios of High Affective Organisational Commitment[5]	
		Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
		%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
Perceived Psychological Safety	Low	35.1%	1.00 ref	74.9%	1.00 Ref	44.2%	1.00 Ref	22.6%	1.00 ref
	High	20.2%	0.50 (0.38-0.66) ***	66.9%	0.67 (0.52-0.87) **	57.8%	1.64 (1.26-2.13) ***	47.2%	3.05 (2.37-3.93) ***
PTE exposure	Low	28.8%	1.00 ref	72.6%	1.00 Ref	48.4%	1.00 Ref	29.5%	1.00 ref
	High	44.6%	1.78 (1.34-2.36) ***	77.9%	1.27 (0.92-1.75)	44.9%	0.90 (0.67-1.20)	26.0%	0.92 (0.67-1.25)
Gender	Male	29.4%	1.00 ref	74.0%	1.00 Ref	46.2%	1.00 Ref	29.7%	1.00 ref
	Female	40.6%	2.07 (1.47-2.91) ***	65.6%	0.79 (0.56-1.12)	57.7%	1.36 (0.95-1.95)	32.0%	0.91 (0.63-1.31)
Length of Service	Less than 12 Months	12.5%	0.24 (0.11-0.54) ***	67.0%	0.69 (0.39-1.21)	63.9%	2.03 (1.08-3.81) *	54.0%	3.23 (1.85-5.63) ***
	1-2 Years	27.4%	0.67 (0.41-1.08)	65.8%	0.74 (0.47-1.18)	59.1%	2.02 (1.22-3.36) **	39.6%	1.46 (0.93-2.30)
	3-5 Years	31.4%	0.74 (0.53-1.04)	71.0%	0.81 (0.58-1.14)	47.1%	0.95 (0.68-1.32)	29.5%	1.09 (0.78-1.54)
	6-10 Years	31.3%	0.82 (0.60-1.12)	69.7%	0.82 (0.59-1.13)	44.8%	0.95 (0.70-1.31)	22.9%	0.82 (0.58-1.15)
	More than 10 Years	33.1%	1.00 ref	75.8%	1.00 Ref	46.4%	1.00 Ref	28.1%	1.00 ref

1. The adjusted logistic regression model takes into account the combined effects of PTE exposure, gender, and length of service on the Odds ratios.

2. The adjusted logistic regression model for mental ill health was statistically significant (χ^2 = 74.92, df = 7, n = 1400, p < .001, correctly classified cases = 68.1%) and explained 5.2% to 7.3% of the variance in the outcome.

3. The adjusted logistic regression model for maladaptive coping was statistically significant (χ^2 = 19.93, df = 7, n = 1401, p = .006, correctly classified cases = 73.4%) and explained 1.4% to 2.1% of the variance in the outcome.

4. The adjusted logistic regression model for positive wellbeing was statistically significant (χ^2 =36.85, df = 7, n = 1192, p < .001, correctly classified cases = 58.1%) and explained 3.0% to 4.1% of the variance in the outcome.

5. The adjusted logistic regression model for high affective organisational commitment was statistically significant (χ^2 = 107.41, df = 7, n = 1402, p < .001, correctly classified cases = 71.3%) and explained 7.4% to 10.5% of the variance in the outcome.

6. The adjusted logistic regression model for high organisational cynicism was statistically significant (χ^2 = 93.97, df = 7, n = 1402, p < .001, correctly classified cases = 66.5%) and explained 6.5% to 8.9% of the variance in the outcome.

7. The adjusted logistic regression model for high manager cynicism was statistically significant (χ^2 = 55.61, df = 7, n = 1302, p < .001, correctly classified cases = 79.4%) and explained 4.2% to 6.6% of the variance in the outcome.

8. The adjusted logistic regression mode for high turnover intention was statistically significant (χ^2 = 91.14, df = 7, n = 1398, p < .001, correctly classified cases = 82.2%) and explained 6.3% to 10.4% of the variance in the outcome.

9. The adjusted logistic regression model for high presenteeism was statistically significant (χ^2 = 39.97, df = 7, n = 1395, p < .001, correctly classified cases = 65.9%) and explained 2.8% to 3.9% of the variance in the outcome.

10. The adjusted logistic regression model for high extra role performance was statistically significant (χ^2 = 31.40, df = 7, n = 1401, p < .001, correctly classified cases = 68.0%) and explained 2.2% to 3.1% of the variance in the outcome.

Symbols

* Significance level p <.05

** Significance level p <.01

*** Significance level p <.001

Odds ratios of High Organisational Cynicism[6]		Odds ratios of High Manager Cynicism[7]		Odds ratios of High Turnover Intention[8]		Odds ratios of High Presenteeism[9]		Odds ratios of High Extra Role Performance[10]	
Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
66.3%	1.00 ref	23.4%	1.00 ref	22.4%	1.00 ref	35.7%	1.00 ref	65.3%	1.00 ref
43.8%	0.45 (0.35-0.57) ***	10.3%	0.46 (0.32-0.66) ***	8.7%	0.30 (0.20-0.45) ***	26.9%	0.70 (0.54-0.90) **	78.5%	1.76 (1.34-2.31) ***
62.1%	1.00 ref	19.1%	1.00 ref	16.8%	1.00 ref	31.5%	1.00 ref	67.1%	1.00 ref
69.7%	1.43 (1.06-1.93) *	26.4%	1.45 (1.05-2.00) *	23.5%	1.38 (0.98-1.93)	44.9%	1.77 (1.34-2.33) ***	71.5%	1.37 (1.01-1.85) *
62.5%	1.00 ref	19.9%	1.00 ref	17.6%	1.00 ref	32.8%	1.00 ref	67.7%	1.00 ref
45.2%	0.70 (0.50-0.98) *	18.6%	1.24 (0.80-1.91)	20.5%	2.11 (1.39-3.18) ***	32.8%	1.52 (1.09-2.12) *	77.6%	1.45 (1.00-2.08) *
19.5%	0.26 (0.15-0.48) ***	2.9%	0.12 (0.03-0.48) **	8.0%	0.21 (0.07-0.60) **	18.8%	0.47 (0.25-0.88) *	70.8%	0.93 (0.52-1.67)
51.0%	0.84 (0.54-1.30)	11.2%	0.41 (0.21-0.79) **	13.4%	0.29 (0.14-0.60) ***	29.5%	0.69 (0.43-1.10)	80.4%	1.08 (0.67-1.73)
59.0%	0.93 (0.67-1.27)	18.2%	0.62 (0.42-0.93) *	15.1%	0.46 (0.30-0.71) ***	32.7%	0.77 (0.56-1.06)	69.4%	0.99 (0.71-1.37)
67.9%	1.34 (0.98-1.84)	19.8%	0.70 (0.48-1.01)	14.1%	0.41 (0.27-0.63) ***	30.8%	0.78 (0.57-1.06)	64.0%	0.73 (0.54-0.98) *
64.0%	1.00 ref	24.5%	1.00 ref	22.7%	1.00 ref ***	36.6%	1.00 ref	69.5%	1.00 ref

Table 12

Adjusted odds ratios of mental ill health, organisational attitudes, and behavioural outcomes by preparedness to serve the community

March 2023

Group		Odds ratios of scoring High on one or more Mental Ill Health Indicator[2]		Odds ratios of Scoring 'High' on one or more Maladaptive Coping Indicator[3]		Odds ratios of Scoring 'High' on one or more Positive Wellbeing Indicator[4]		Odds ratios of High Affective Organisational Commitment[5]	
		Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
		%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
Perceived Preparedness to Serve the Community	Low	33.4%	1.00 ref	74.5%	1.00 Ref	44.2%	1.00 Ref	23.2%	1.00 ref
	High	22.3%	0.59 (0.44-0.81) ***	66.5%	0.68 (0.51-0.91) **	60.4%	1.99 (1.48-2.68) ***	51.2%	3.13 (2.37-4.12) ***
PTE exposure	Low	28.8%	1.00 ref	72.6%	1.00 Ref	48.4%	1.00 Ref	29.5%	1.00 ref
	High	44.6%	1.81 (1.37-2.40) ***	77.9%	1.28 (0.93-1.76)	44.9%	0.89 (0.66-1.18)	26.0%	0.88 (0.65-1.21)
Gender	Male	29.4%	1.00 ref	74.0%	1.00 Ref	46.2%	1.00 Ref'	29.7%	1.00 ref
	Female	40.6%	2.04 (1.46-2.87) ***	65.6%	0.79 (0.56-1.11)	57.7%	1.34 (0.93-1.92)	32.0%	0.90 (0.63-1.30)
Length of Service	Less than 12 Months	12.5%	0.26 (0.12-0.56) ***	67.0%	0.71 (0.40-1.25)	63.9%	1.89 (1.00-3.56) *	54.0%	2.90 (1.66-5.07) ***
	1-2 Years	27.4%	0.63 (0.39-1.01)	65.8%	0.73 (0.46-1.16)	59.1%	2.13 (1.28-3.55) **	39.6%	1.68 (1.07-2.64) *
	3-5 Years	31.4%	0.72 (0.52-1.00)	71.0%	0.78 (0.56-1.10)	47.1%	1.01 (0.72-1.41)	29.5%	1.23 (0.87-1.73)
	6-10 Years	31.3%	0.80 (0.59-1.10)	69.7%	0.81 (0.58-1.11)	44.8%	0.96 (0.70-1.32)	22.9%	0.86 (0.61-1.20)
	More than 10 Years	33.1%	1.00 ref	75.8%	1.00 Ref	46.4%	1.00 Ref	28.1%	1.00 ref

1. The adjusted logistic regression model takes into account the combined effects of PTE exposure, gender, and length of service on the Odds ratios.

2. The adjusted logistic regression model for mental ill health was statistically significant (χ^2 = 61.4, df = 7, n = 1399, p < .001, correctly classified cases = 67.8%) and explained 4.3% to 6.0% of the variance in the outcome.

3. The adjusted logistic regression model for maladaptive coping was statistically significant (χ^2 = 17.71, df = 7, n = 1400, p = .013, correctly classified cases = 73.6%) and explained 1.3% to 1.8% of the variance in the outcome.

4. The adjusted logistic regression model for positive wellbeing was statistically significant (χ^2 = 44.58, df = 7, n = 1192, p < .001, correctly classified cases = 58.5%) and explained 3.7% to 4.9% of the variance in the outcome.

5. The adjusted logistic regression model for high affective organisational commitment was statistically significant (χ^2 = 96.90, df = 7, n = 1402, p < .001, correctly classified cases = 71.8%) and explained 6.7% to 9.5% of the variance in the outcome.

6. The adjusted logistic regression model for high organisational cynicism was statistically significant (χ^2 = 109.32, df = 7, n = 1402, p < .001, correctly classified cases = 68.0%) and explained 7.5% to 10.3% of the variance in the outcome.

7. The adjusted logistic regression model for high manager cynicism was statistically significant (χ^2 = 44.93, df = 7, n = 1301, p < .001, correctly classified cases = 79.4%) and explained 3.4% to 5.3% of the variance in the outcome.

8. The adjusted logistic regression mode for high turnover intention was statistically significant (χ^2 = 63.72, df = 7, n = 1398, p < .001, correctly classified cases = 82.1%) and explained 4.5% to 7.3% of the variance in the outcome.

9. The adjusted logistic regression model for high presenteeism was statistically significant (χ^2 = 40.61, df = 7, n = 1395, p < .001, correctly classified cases =66.0%) and explained 2.9% to 4.0% of the variance in the outcome.

10. The adjusted logistic regression model for high extra role performance was statistically significant (χ^2 = 21.30, df = 7, n = 1400, p = .003, correctly classified cases = 68.0%) and explained 1.5% to 2.1% of the variance in the outcome.

Symbols

* Significance level p <.05

** Significance level p <.01

*** Significance level p <.001

Odds ratios of High Organisational Cynicism[6]		Odds ratios of High Manager Cynicism[7]		Odds ratios of High Turnover Intention[8]		Odds ratios of High Presenteeism[9]		Odds ratios of High Extra Role Performance[10]	
Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
66.6%	1.00 ref	22.1%	1.00 ref	21.1%	1.00 ref	35.6%	1.00 ref	67.2%	1.00 ref
36.9%	0.35 (0.27-0.46) ***	11.4%	0.56 (0.38-0.83) **	9.5%	0.47 (0.32-0.71) ***	24.7%	0.67 (0.50-0.90) **	76.0%	1.52 (1.13-2.04) **
62.1%	1.00 ref	19.1%	1.00 ref	16.8%	1.00 ref	31.5%	1.00 ref	67.1%	1.00 ref
69.7%	1.48 (1.09-2.00) *	26.4%	1.46 (1.06-2.02) *	23.5%	1.42 (1.02-1.99) *	44.9%	1.80 (1.36-2.37) ***	71.5%	1.34 (0.99-1.81)
62.5%	1.00 ref	19.9%	1.00 ref	17.6%	1.00 ref	32.8%	1.00 ref	67.7%	1.00 ref
45.2%	0.71 (0.51-1.00) *	18.6%	1.24 (0.81-1.91)	20.5%	2.02 (1.34-3.03) ***	32.8%	1.54 (1.10-2.15) *	77.6%	1.44 (1.00-2.08) *
19.5%	0.29 (0.16-0.53) ***	2.9%	0.12 (0.03-0.49) **	8.0%	0.22 (0.08-0.64) **	18.8%	0.49 (0.26-0.92) *	70.8%	0.93 (0.52-1.67)
51.0%	0.75 (0.48-1.16)	11.2%	0.38 (0.20-0.73) **	13.4%	0.27 (0.13-0.56) ***	29.5%	0.63 (0.40-1.01)	80.4%	1.14 (0.71-1.82)
59.0%	0.82 (0.60-1.14)	18.2%	0.60 (0.40-0.89) *	15.1%	0.45 (0.29-0.68) ***	32.7%	0.74 (0.54-1.03)	69.4%	1.02 (0.73-1.41)
67.9%	1.24 (0.90-1.71)	19.8%	0.68 (0.47-0.98) *	14.1%	0.43 (0.28-0.65) ***	30.8%	0.75 (0.55-1.02)	64.0%	0.75 (0.55-1.01)
64.0%	1.00 ref	24.5%	1.00 ref *	22.7%	1.00 ref ***	36.6%	1.00 ref	69.5%	1.00 ref

Table 13

Adjusted odds ratios of mental ill health, organisational attitudes, and behavioural outcomes by organisational accountability

March 2023

Group		Odds ratios of scoring High on one or more Mental Ill Health Indicator[2]		Odds ratios of Scoring 'High' on one or more Maladaptive Coping Indicator[3]		Odds ratios of Scoring 'High' on one or more Positive Wellbeing Indicator[4]		Odds ratios of High Affective Organisational Commitment[5]	
		Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
		%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
Organisational Accountability	Low	32.0%	1.00 ref	73.8%	1.00 Ref	46.2%	1.00 Ref	25.8%	1.00 ref
	High	17.6%	0.42 (0.24-0.73) **	60.3%	0.50 (0.33-0.77) **	67.2%	2.75 (1.64-4.59) ***	72.0%	11.92 (7.05-20.16) ***
PTE exposure	Low	28.8%	1.00 ref	72.6%	1.00 Ref	48.4%	1.00 Ref	29.5%	1.00 ref
	High	44.6%	1.81 (1.36-2.39) ***	77.9%	1.28 (0.93-1.76)	44.9%	0.89 (0.67-1.19)	26.0%	0.90 (0.65-1.24)
Gender	Male	29.4%	1.00 ref	74.0%	1.00 Ref	46.2%	1.00 Ref	29.7%	1.00 ref
	Female	40.6%	2.13 (1.52-3.00) ***	65.6%	0.82 (0.58-1.16)	57.7%	1.27 (0.88-1.83)	32.0%	0.76 (0.52-1.12)
Length of Service	Less than 12 Months	12.5%	0.24 (0.11-0.52) ***	67.0%	0.70 (0.40-1.22)	63.9%	2.07 (1.10-3.90) *	54.0%	3.34 (1.89-5.92) ***
	1-2 Years	27.4%	0.63 (0.39-1.02)	65.8%	0.72 (0.45-1.14)	59.1%	2.09 (1.26-3.47) **	39.6%	1.66 (1.05-2.61) *
	3-5 Years	31.4%	0.76 (0.54-1.05)	71.0%	0.82 (0.58-1.15)	47.1%	0.94 (0.67-1.32)	29.5%	1.08 (0.76-1.53)
	6-10 Years	31.3%	0.82 (0.60-1.11)	69.7%	0.82 (0.59-1.13)	44.8%	0.93 (0.68-1.28)	22.9%	0.84 (0.59-1.18)
	More than 10 Years	33.1%	1.00 ref	75.8%	1.00 Ref	46.4%	1.00 Ref	28.1%	1.00 ref

1. The adjusted logistic regression model takes into account the combined effects of PTE exposure, gender, and length of service on the Odds ratios.

2. The adjusted logistic regression model for mental ill health was statistically significant (χ^2 = 61.05, df = 7, n = 1401, p < .001, correctly classified cases = 68.5%) and explained 4.3% to 6.0% of the variance in the outcome.

3. The adjusted logistic regression model for maladaptive coping was statistically significant (χ^2 = 20.85, df = 7, n = 1402, p = .004, correctly classified cases = 73.5%) and explained 1.5% to 2.2% of the variance in the outcome.

4. The adjusted logistic regression model for positive wellbeing was statistically significant (χ^2 = 40.14, df = 7, n = 1194, p < .001, correctly classified cases = 57.2%) and explained 3.3% to 4.4% of the variance in the outcome.

5. The adjusted logistic regression model for high affective organisational commitment was statistically significant (χ^2 = 144.69, df = 7, n = 1404, p < .001, correctly classified cases = 75.0%) and explained 9.8% to 14.0% of the variance in the outcome.

6. The adjusted logistic regression model for high organisational cynicism was statistically significant (χ^2 = 97.45, df = 7, n = 1404, p < .001, correctly classified cases = 68.2%) and explained 6.7% to 9.2% of the variance in the outcome.

7. The adjusted logistic regression model for high manager cynicism was statistically significant (χ^2 = 38.21, df = 7, n = 1303, p < .001, correctly classified cases = 79.4%) and explained 2.9% to 4.5% of the variance in the outcome.

8. The adjusted logistic regression mode for high turnover intention was statistically significant (χ^2 = 62.33, df = 7, n = 1400, p < .001, correctly classified cases = 82.1%) and explained 4.4% to 7.2% of the variance in the outcome.

9. The adjusted logistic regression model for high presenteeism was statistically significant (χ^2 = 33.02, df = 7, n = 1397, p < .001, correctly classified cases = 66.0%) and explained 2.3% to 3.2% of the variance in the outcome.

10. The adjusted logistic regression model for high extra role performance was statistically significant (χ^2 = 49.23, df = 7, n = 1402, p < .001, correctly classified cases = 68.0%) and explained 3.5% to 4.8% of the variance in the outcome.

Symbols

* Significance level p <.05

** Significance level p <.01

*** Significance level p <.001

Odds ratios of High Organisational Cynicism[6]		Odds ratios of High Manager Cynicism[7]		Odds ratios of High Turnover Intention[8]		Odds ratios of High Presenteeism[9]		Odds ratios of High Extra Role Performance[10]	
Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
63.3%	1.00 ref	20.6%	1.00 ref	19.6%	1.00 ref	33.2%	1.00 ref	67.2%	1.00 ref
21.0%	0.22 (0.14-0.35) ***	7.5%	0.59 (0.27-1.26)	5.8%	0.26 (0.11-0.62) **	30.8%	1.14 (0.73-1.77)	90.4%	6.50 (2.98-14.20) ***
62.1%	1.00 ref	19.1%	1.00 ref	16.8%	1.00 ref	31.5%	1.00 ref	67.1%	1.00 ref
69.7%	1.47 (1.08-1.98) *	26.4%	1.47 (1.07-2.03) *	23.5%	1.42 (1.01-1.98) *	44.9%	1.82 (1.38-2.39) ***	71.5%	1.36 (1.01-1.84) *
62.5%	1.00 ref	19.9%	1.00 ref	17.6%	1.00 ref	32.8%	1.00 ref	67.7%	1.00 ref
45.2%	0.76 (0.54-1.07)	18.6%	1.24 (0.81-1.91)	20.5%	2.14 (1.42-3.23) ***	32.8%	1.48 (1.06-2.07) *	77.6%	1.35 (0.93-1.95)
19.5%	0.26 (0.15-0.47) ***	2.9%	0.11 (0.03-0.45) **	8.0%	0.20 (0.07-0.57) **	18.8%	0.43 (0.23-0.81) **	70.8%	0.89 (0.49-1.62)
51.0%	0.78 (0.50-1.21)	11.2%	0.39 (0.20-0.75) **	13.4%	0.27 (0.13-0.56) ***	29.5%	0.68 (0.43-1.07)	80.4%	1.14 (0.71-1.82)
59.0%	0.93 (0.68-1.28)	18.2%	0.64 (0.43-0.94) *	15.1%	0.48 (0.31-0.73) ***	32.7%	0.78 (0.57-1.08)	69.4%	0.98 (0.71-1.36)
67.9%	1.28 (0.94-1.76)	19.8%	0.70 (0.48-1.00)	14.1%	0.44 (0.29-0.66) ***	30.8%	0.78 (0.57-1.06)	64.0%	0.74 (0.55-1.00)
64.0%	1.00 ref	24.5%	1.00 ref	22.7%	1.00 ref ***	36.6%	1.00 ref	69.5%	1.00 ref

Table 14

Adjusted odds ratios of mental ill health, organisational attitudes, and behavioural outcomes by organisational competence

March 2023

Group		Odds ratios of scoring High on one or more Mental Ill Health Indicator[2]		Odds ratios of Scoring 'High' on one or more Maladaptive Coping Indicator[3]		Odds ratios of Scoring 'High' on one or more Positive Wellbeing Indicator[4]		Odds ratios of High Affective Organisational Commitment[5]	
		Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
		%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
Organisational Competence	Low	33.3%	1.00 ref	74.9%	1.00 Ref	43.5%	1.00 Ref	21.8%	1.00 ref
	High	21.8%	0.61 (0.45-0.84) **	64.8%	0.61 (0.45-0.82) ***	63.7%	2.29 (1.67-3.14) ***	56.8%	4.84 (3.63-6.47) ***
PTE exposure	Low	28.8%	1.00 ref	72.6%	1.00 Ref	48.4%	1.00 Ref	29.5%	1.00 ref
	High	44.6%	1.81 (1.36-2.39) ***	77.9%	1.28 (0.93-1.76)	44.9%	0.89 (0.67-1.20)	26.0%	0.88 (0.64-1.22)
Gender	Male	29.4%	1.00 ref	74.0%	1.00 Ref	46.2%	1.00 Ref	29.7%	1.00 ref
	Female	40.6%	2.07 (1.47-2.92) ***	65.6%	0.82 (0.58-1.16)	57.7%	1.30 (0.90-1.87)	32.0%	0.79 (0.54-1.15)
Length of Service	Less than 12 Months	12.5%	0.26 (0.12-0.56) ***	67.0%	0.74 (0.42-1.30)	63.9%	1.76 (0.93-3.33)	54.0%	2.72 (1.53-4.83) ***
	1-2 Years	27.4%	0.64 (0.40-1.03)	65.8%	0.72 (0.45-1.14)	59.1%	2.16 (1.30-3.60) **	39.6%	1.68 (1.06-2.67) *
	3-5 Years	31.4%	0.73 (0.53-1.02)	71.0%	0.78 (0.56-1.10)	47.1%	0.99 (0.71-1.38)	29.5%	1.25 (0.88-1.77)
	6-10 Years	31.3%	0.80 (0.59-1.09)	69.7%	0.80 (0.58-1.10)	44.8%	0.97 (0.71-1.33)	22.9%	0.90 (0.64-1.27)
	More than 10 Years	33.1%	1.00 ref	75.8%	1.00 Ref	46.4%	1.00 Ref	28.1%	1.00 ref

1. The adjusted logistic regression model takes into account the combined effects of PTE exposure, gender, and length of service on the Odds ratios.

2. The adjusted logistic regression model for mental ill health was statistically significant (χ^2 = 58.34, df = 7, n = 1400, p < .001, correctly classified cases = 68.6%) and explained 4.1% to 5.7% of the variance in the outcome.

3. The adjusted logistic regression model for maladaptive coping was statistically significant (χ^2 = 21.89, df = 7, n = 1401, p = .003, correctly classified cases = 73.4%) and explained 1.6% to 2.3% of the variance in the outcome.

4. The adjusted logistic regression model for positive wellbeing was statistically significant (χ^2 = 51.37, df = 7, n = 1193, p < .001, correctly classified cases = 59.3%) and explained 4.2% to 5.6% of the variance in the outcome.

5. The adjusted logistic regression model for high affective organisational commitment was statistically significant (χ^2 = 148.76, df = 7, n = 1403, p < .001, correctly classified cases = 74.1%) and explained 10.1% to 14.3% of the variance in the outcome.

6. The adjusted logistic regression model for high organisational cynicism was statistically significant (χ^2 = 109.23, df = 7, n = 1403, p < .001, correctly classified cases = 68.1%) and explained 7.5% to 10.3% of the variance in the outcome.

7. The adjusted logistic regression model for high manager cynicism was statistically significant (χ^2 = 39.28, df = 7, n = 1302, p < .001, correctly classified cases = 79.5%) and explained 3.0% to 4.7% of the variance in the outcome.

8. The adjusted logistic regression mode for high turnover intention was statistically significant (χ^2 = 78.48, df = 7, n = 1399, p < .001, correctly classified cases = 82.2%) and explained 5.5% to 9.0% of the variance in the outcome.

9. The adjusted logistic regression model for high presenteeism was statistically significant (χ^2 = 33.42, df = 7, n = 1396, p < .001, correctly classified cases = 66.0%) and explained 2.4% to 3.3% of the variance in the outcome.

10. The adjusted logistic regression model for high extra role performance was statistically significant (χ^2 = 43.54, df = 7, n = 1401, p < .001, correctly classified cases = 68.0%) and explained 3.1% to 4.3% of the variance in the outcome.

Symbols

*   Significance level p <.05

**   Significance level p <.01

***   Significance level p <.001

Odds ratios of High Organisational Cynicism[6]		Odds ratios of High Manager Cynicism[7]		Odds ratios of High Turnover Intention[8]		Odds ratios of High Presenteeism[9]		Odds ratios of High Extra Role Performance[10]	
Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]	Prevalence	Adjusted[1]
%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)	%	AOR (95% CI)
67.2%	1.00 ref	21.9%	1.00 ref	21.1%	1.00 ref	34.0%	1.00 ref	65.0%	1.00 ref
34.1%	0.34 (0.25-0.45) ***	11.1%	0.68 (0.45-1.02)	8.9%	0.30 (0.18-0.49) ***	29.8%	0.95 (0.71-1.28)	83.5%	2.47 (1.75-3.48) ***
62.1%	1.00 ref	19.1%	1.00 ref	16.8%	1.00 ref	31.5%	1.00 ref	67.1%	1.00 ref
69.7%	1.48 (1.09-2.00) *	26.4%	1.46 (1.06-2.01) *	23.5%	1.39 (0.99-1.95)	44.9%	1.82 (1.38-2.40) ***	71.5%	1.34 (0.99-1.82)
62.5%	1.00 ref	19.9%	1.00 ref	17.6%	1.00 ref	32.8%	1.00 ref	67.7%	1.00 ref
45.2%	0.76 (0.54-1.06)	18.6%	1.21 (0.78-1.86)	20.5%	2.10 (1.39-3.18) ***	32.8%	1.52 (1.09-2.13) *	77.6%	1.34 (0.93-1.94)
19.5%	0.30 (0.16-0.54) ***	2.9%	0.11 (0.03-0.48) **	8.0%	0.25 (0.09-0.71) **	18.8%	0.44 (0.24-0.84) *	70.8%	0.82 (0.45-1.49)
51.0%	0.77 (0.50-1.19)	11.2%	0.39 (0.20-0.76) **	13.4%	0.28 (0.14-0.57) ***	29.5%	0.67 (0.43-1.07)	80.4%	1.15 (0.72-1.85)
59.0%	0.85 (0.62-1.17)	18.2%	0.63 (0.42-0.93) *	15.1%	0.44 (0.29-0.68) ***	32.7%	0.78 (0.56-1.07)	69.4%	1.04 (0.75-1.45)
67.9%	1.22 (0.89-1.68)	19.8%	0.68 (0.47-0.98) *	14.1%	0.41 (0.27-0.62) ***	30.8%	0.78 (0.57-1.06)	64.0%	0.76 (0.56-1.03)
64.0%	1.00 ref	24.5%	1.00 ref *	22.7%	1.00 ref ***	36.6%	1.00 ref	69.5%	1.00 ref