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Safety climate, occupational health and safety leadership and workers' engagement in safety: Comparison of survey responses in two unions

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De Cieri, H., Shea, T., Cooper, B., Sheehan, C., & Donohue, R. 2015. *Early indicators of workplace injuries and accidents: An analysis of leading indicators as predictors of workplace OHS outcomes in Australian workplaces*. ISCRR report no. 045-0415-R09. Monash University: Caulfield East VIC Australia.

De Cieri, H., Shea, T., Pettit, T., & Clarke, M. 2012. *Measuring the leading indicators of occupational health and safety: A snapshot review*. Report prepared for ISCRR and WSV, report no. 0612-045-R1. Monash University: Caulfield East VIC Australia.

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List of Definitions

Several terms used in this report may be unfamiliar to some readers so we have provided a list in the table below.

Table 1: List of definitions for terms used in both union member surveys

Term	Definition
Engagement in safety	Attitudes and behaviours that demonstrate a commitment to safety. This encompasses workers' safety compliance, safety control, safety motivation and safety participation.
Leading indicators of occupational health and safety (OHS)	"Measure actions, behaviours and processes, the things people actually do for safety, and not simply the safety-related failures typically tracked by trailing [lagging] measures." ^[1] (p29). Leading indicators of OHS are measures of the predictors, or root causes, of OHS performance in a workplace. ^[2]
Near misses	"Any unplanned incidents that occurred at the workplace which, although not resulting in any injury or disease, had the potential to do so." ^[3] (p6).
OHS leadership	"... the process of interaction between leaders and followers, through which leaders could exert their influence on followers to achieve organizational safety goals under the circumstances of organizational and individual factors." ^[4] (p28).
Remoteness classifications	<p>"The Remoteness Structure of the Australian Statistical Geography Standard (ASGS) ... divides each state and territory into several regions on the basis of their relative access to services."^[5] (p4). The remoteness scores range from 0 (high accessibility to services centres) to 15 (high remoteness from services centres).</p> <p>The remoteness index results in several remoteness categories: major city (e.g., Melbourne, Geelong); inner regional (e.g., Ballarat, Bendigo); outer regional (e.g., Horsham, Bairnsdale); remote (e.g., Cowangie, Bonang); and very remote (none in Victoria).^[5] Note that the towns named here are examples only; they do not reveal the location of survey respondents.</p>
Reported incidents	Occurrences of injury/disease which were reported to management by workers. ^[3]
Safety climate	<p>There are numerous definitions of safety climate. Some examples are "A specific form of organizational climate, which describes individual perceptions of the value of safety in the work environment."^[6] (p100).</p> <p>Factors that have been identified as being important components of safety climate include management values (e.g., management concern for employee well-being), management and organizational practices (e.g., adequacy of training, provision of safety equipment, quality of safety management systems), communication, and employee involvement in workplace health and safety.^[7]</p> <p>For a review of safety climate definitions, see http://www.iscrr.com.au/reports-pubs/research-reports/safety-culture-and-safety-climate-sys-review.pdf</p>
Safety compliance	<p>"Core safety activities that need to be carried out by individuals to maintain workplace safety."^[7] (p947).</p> <p>Examples of safety compliance activities could include but are not limited to lockout procedures and wearing personal protective equipment.^[8]</p>

Term	Definition
Safety control	"Safety control is a person's perception of the ability or opportunity to manage work situations to avoid injuries and accidents." ^[9] (p427).
Safety motivation	"An individual's willingness to exert effort to enact safety behaviours and the valence associated with those behaviours. Individuals should be motivated to comply with safe working practices and to participate in safety activities if they perceive that there is a positive safety climate in the workplace." ^[7] (p947).
Safety participation	"Behaviours such as participating in voluntary safety activities or attending safety meetings. These behaviours may not directly contribute to workplace safety, but they do help to develop an environment that supports safety." ^[8] (p349).
Supervisor support for OHS	The role of supervisors in helping employees to improve and maintain their health and safety. The role the supervisor plays to ensure that employee health and safety is not endangered by work, that health rules are enforced, that health and safety issues can be discussed with supervisors and the sympathy afforded by supervisors for health problems. ^[10]
Total incidents	Total incidents refers to the sum of all OHS incidents: incidents reported to management, incidents not reported to management and near misses.
Unreported incidents	A safety incident that was not reported to any company official. ^[11]

1. Executive Summary

1.1. Background and aims

This report compares the results of two **Occupational Health and Safety (OHS)** surveys. The first was conducted with the members of the Australian Nursing and Midwifery Federation (ANMF) (Victorian Branch: April-May 2014) and the second was conducted with members of the Australian Education Union (Victorian Branch: July and August 2014) by a Monash University research team.

The aim of this report is to present an analysis of key survey findings related to

1. safety climate;
2. OHS leadership; and
3. workers' engagement in safety.

This report will also explore whether patterns or differences can be identified in the survey responses with regard to gender and location of the survey respondents.

1.1. Research method

The survey was conducted with Victorian branch members of two unions: the Australian Nursing and Midwifery Federation (ANMF) and the Australian Education Union. In each union we gathered responses from members to questions about their respective workplaces. In all, data were gathered from 4,891 members of the ANMF (10 percent response rate) and 4,750 members of the AEU (7 percent response rate).

An online questionnaire was distributed to all members of both unions. In this questionnaire, respondents were asked to report on demographic details, the number of OHS incidents they had experienced in the past 12 months, as well as their perceptions, attitudes and behaviours related to OHS in the workplace.

1.2. Key findings

This comparison of the survey results from the AEU Victorian branch and ANMF Victorian branch members revealed the following:

1. **The profiles of AEU and ANMF respondents were similar in several respects:**
 - ▶ The majority of respondents to the AEU and ANMF surveys were women, aged between 46 and 65 years. Generally, members had worked in their respective profession for at least 11 years, were currently working full-time or part-time, and they were located in a major city.
2. **In each sample, respondents covered all member types but the dominant groups from each union were**
 - ▶ From a primary or secondary school with 75 percent AEU respondents reporting that they worked within primary or secondary schools.
 - ▶ From public hospitals with 54 percent of ANMF respondents reporting that they worked in a public hospital.
3. **Safety climate was operationalised using two scales: management commitment to safety and the Organizational Performance Metric (OPM-MU). Key findings for safety climate were**
 - ▶ AEU and ANMF members' views of safety climate (as measured by management commitment to safety) were very similar. AEU members rated OHS leading indicators lower than did the ANMF members.
 - ▶ In the ANMF sample, females had slightly more positive views of safety climate (management commitment to safety) and gave slightly higher ratings to OHS leading indicators in their workplaces than did males.
 - ▶ No significant differences were found for either AEU or ANMF members with regard to their geographic location (e.g., major city, inner regional).
 - ▶ In both unions, respondents in managerial or supervisory roles (e.g., principals; nursing unit managers) had more positive views of safety climate (management commitment to safety) and OHS leading indicators compared to other members (e.g., teachers, nurses).
4. **Leadership was operationalised using three scales: supervisor support for safety, OHS leadership (AEU only) and prioritisation of OHS (ANMF only). Key findings for OHS leadership were**
 - ▶ AEU members gave less positive ratings of their direct supervisor's support for OHS than did ANMF members.
 - ▶ In the AEU sample, women had slightly more positive views of their direct supervisor's support for OHS than did men.
 - ▶ ANMF members were asked to rate the extent to which OHS was a priority, compared with patient safety. Women in the ANMF were more likely than men to agree that OHS was prioritised in their workplaces. The ratings for prioritisation of

OHS were the lowest of any of the measures, suggesting that ANMF respondents consider OHS is unlikely to be treated as a priority in their workplaces.

- ▶ Managers and supervisors in the AEU were asked to rate their own OHS leadership. No differences were found by gender or geographic location.
5. **Workers' engagement in safety was operationalised using four scales: safety motivation, safety compliance, safety participation and safety control (AEU only). Key findings for workers' engagement in safety were**
- ▶ AEU members rated themselves lower than did the ANMF members with regard to their own safety compliance and safety participation, but higher on safety motivation.
 - ▶ AEU members were asked to rate the extent to which they had control over their safety at work; no significant differences were found for gender or geographic location.
 - ▶ In both unions, respondents rated their own engagement in safety at higher levels than they rated the safety climate (management commitment to safety) or their direct supervisor's support for OHS.
6. **Key findings for OHS outcomes were**
- ▶ Sixty percent of ANMF and 58 percent of AEU members had experienced at least one OHS incident in the past year.
 - ▶ On average, ANMF members experienced a significantly higher number of reported incidents and near misses than did the AEU members.
 - ▶ In the ANMF, men tended to experience more OHS incidents (reported incidents, unreported incidents and near misses) than did women on average. While this difference between males and females was found in the AEU sample, the difference was less pronounced in this latter group.

This report is part of a larger study investigating leading indicators of OHS. Several other reports are available on this project and we recommend that this report be viewed as a companion piece to the other reports, which are available at <http://ohsleadindicators.org> and on the ISCRRI website (www.iscrr.com.au). Overall, this research will contribute to understanding of OHS leading indicators and OHS performance in Australian workplaces.

2. Introduction

This report compares the results of two **Occupational Health and Safety (OHS)** surveys conducted with the members of the Australian Nursing and Midwifery Federation (ANMF) (Victorian Branch: April-May 2014) and the Australian Education Union (Victorian Branch: July and August 2014) by a Monash University research team.

Nationally and internationally, regulators, researchers and practitioners in occupational health and safety (OHS) have a shared interest in understanding the links between workplace factors and OHS outcomes. There are substantial changes evident in workplaces and workforces due to influences such as economic pressures, demographic changes, technological innovation and changes in employment patterns.^[12, 13] Research has shown that these changes are associated with OHS matters such as safety climate, safety leadership and workers' engagement in safety.

The aim of this report is to present an analysis of key findings, from surveys conducted with the members of two unions, on issues related to

1. safety climate;
2. OHS leadership; and
3. workers' engagement in safety.

Acknowledging that the two unions (ANMF and AEU) have a high representation of women in their membership and that these unions span Victoria (metropolitan, regional, and rural locations), this analysis will also explore whether patterns or differences can be identified in the survey responses with regard to gender and location of the survey respondents.

2.1. Safety culture and safety climate

Over the past thirty years, there has been increasing interest in the concepts of safety culture and safety climate and their relationships with work-related illnesses and injuries.^[14-16] We note that, while there is a substantial body of academic research and information about safety culture and safety climate, there is no universally recognised or widely adopted definition or framework.^[17, 18]

Safety culture and safety climate are concepts that are often used interchangeably. In this report, however, they are considered as two distinct but related constructs. This approach is consistent with scholars such as Flin, Mearns, O'Connor and Bryden^[19] and Lingard, Cooke and Blismas.^[20] Most researchers agree that safety culture is intangible and difficult to measure and that safety climate is a more tangible, measurable construct. Therefore, for the purposes of measurement in a survey, our focus is on safety climate.

For the purposes of this report, the following definitions of safety culture and safety climate are used:

[Safety culture is] the product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's health and safety management. Safety culture is not separate or different from organisational culture.^[21]

Safety climate is the temporal state measure of safety culture, subject to commonalities among individual perceptions of the organisation. It is therefore situationally based, refers to the perceived state of safety at a particular place at a particular time, is relatively unstable, and subject to change depending on the features of the current environment or prevailing conditions.^[22]

2.2. Safety climate and OHS leading indicators

Many tools have been developed to measure safety climate. While some measures are comprehensive and capture multiple dimensions of safety climate, other measures are relatively simple and focused. For example, Australian researchers Andrew Neal and Mark Griffin have developed a three-item measure of safety climate that is focused on management's commitment to safety.^[7, 8]

In this report we have operationalised safety climate using two scales: management commitment to safety; and the OPM-MU (a measure of OHS leading indicators). The use of these two scales provides a practical and comprehensive approach to the measurement of safety climate. The inclusion of a measure of leading indicators of OHS incorporates the positive performance indicators that capture the leadership demonstrated in a workplace and the overall climate with regard to safety. Leading indicators have been defined as "a metric that attempts to measure some variable that is believed to be an indicator or precursor of future safety performance."^[23] Leading indicators can provide effective early warnings, by enabling risks or risk increases to be detected and mitigated, before a health and safety incident occurs or a hazardous state is reached.^[24] Recent research in North America and Australia has tested a measure of OHS leading indicators: the Institute for Work and Health Organizational Performance Metric (IWH-OPM). This project has tested an adapted version of the IWH-OPM that has been named the Organizational Performance Metric-Monash University (OPM-MU)^[25] to differentiate it from the original scale. The OPM-MU provides a measure of employees' perceptions regarding the value of, and emphasis given to, OHS in their workplace. This eight-item scale has been shown to be a reliable and valid measure of OHS leading indicators in Australian workplaces.^[26, 27]

2.3. OHS Leadership

Research has shown that leadership in an organisation is an important determinant of OHS outcomes.^[28-30] Overall, leadership that shows support for OHS has been shown to be positively linked to OHS performance; in other words, OHS leadership is expected to help prevent workplace injuries and illnesses.

OHS leadership can be measured in several different ways. First, numerous researchers have developed measures that ask employees to rate their direct supervisor's attitudes and behaviours that signal support for OHS.^[31] Supervisor support for OHS represents the extent to which supervisors encourage healthy and safe working practices among their subordinates. Studies have found that a supervisor's support for OHS can influence employees' behaviour and help to reduce negative OHS outcomes.^[32] Direct supervisors are the primary contact point for most employees and for that reason they have been the focus of much of the OHS leadership research.

Second, and particularly in a healthcare sector, OHS leadership might be measured by comparing employee perceptions of whether OHS is treated as a priority in their organisation relative to another important priority such as patient safety.

A third type of tool designed to measure OHS leadership requires managers and supervisors to report on their own assessment of their leadership with regard to OHS. A recent review of the OHS leadership literature investigated the impact of leadership styles on safety climate and on workers' engagement in safety, measured in terms of safety participation and safety compliance.^[28] The analysis of 103 studies established a positive association between transformational leadership (e.g., managers with a clear vision for OHS) and both perceived safety climate and safety participation. Active transactional leadership (e.g., day-to-day demonstration of managers' commitment to OHS) also had a positive association with perceived safety climate, safety participation and safety compliance. A combination of both transformational and transactional styles is considered to be the most effective in establishing OHS outcomes.

Overall, OHS leadership is important when considering workplace factors that impact on OHS outcomes.

2.4. Workers' engagement in safety

Understanding workers' engagement in safety can be helpful for organizations seeking to develop and manage OHS policies and practices to create a healthy and safe work environment. Safety culture and climate, and OHS leadership, both impact on workers' attitudes and behaviours and can positively influence workers' engagement in safety. In combination, a more positive safety climate, OHS leadership, and workers' engagement in safety, should lead to improved OHS outcomes (i.e., fewer OHS incidents).

Workers' engagement in safety is used in this report as an umbrella term that covers safety compliance, safety control, safety motivation and safety participation:

- ▶ Safety compliance refers to "Core safety activities that need to be carried out by individuals to maintain workplace safety."^[7] (p947). Examples of safety compliance activities could include but are not limited to lockout procedures and wearing personal protective equipment.^[8]
- ▶ Safety control is defined as "a person's perception of the ability or opportunity to manage work situations to avoid injuries and accidents."^[9] (p427).

- ▶ Safety motivation is “an individual’s willingness to exert effort to enact safety behaviours and the valence associated with those behaviours. Individuals should be motivated to comply with safe working practices and to participate in safety activities if they perceive that there is a positive safety climate in the workplace.”^[7] (p947).
- ▶ Safety participation refers to: “Behaviours such as participating in voluntary safety activities or attending safety meetings. These behaviours may not directly contribute to workplace safety, but they do help to develop an environment that supports safety.”^[8] (p349).

2.5. OHS Outcomes

As discussed above, OHS leading indicators can be thought of as precursors to harm, or inputs that provide an idea of how to improve future OHS performance. In contrast, OHS lagging indicators are measures of harm that measure events or outcomes that have already happened.^[33] Lagging indicators are measures of OHS outcomes and provide a way of gauging past performance.^[34] OHS outcomes are tangible events or results, such as accidents, injuries, or fatalities.^[14]

Examples of OHS outcomes that can be assessed by asking individuals such as union members to self-report include

- ▶ OHS incidents that are reported to management;
- ▶ OHS incidents that are not reported to management; and
- ▶ near-misses.

In a survey of individual union members, it is not feasible to collect OHS outcomes at a workplace level, such as

- ▶ lost time injury frequency rate (LTIFR);
- ▶ medical treatment injury frequency rate (MTIFR); and
- ▶ WorkCover claims.

Given the high costs in human, social, economic and financial terms related to OHS outcomes it is important to understand how OHS leading indicators and various workplace contextual and working conditions may influence workplace health and safety.^[14] It would generally be expected that more positive OHS leading indicators and a greater presence of health and safety features in the workplace would be negatively associated with OHS outcomes such as OHS incidents or WorkCover claims. Previous research has advised investigation of a range of lagging indicators, including micro-accidents (such as near misses).^[35]

While lagging indicators are valid measures of past OHS performance, their reliability as predictors of future OHS performance is open to debate.^[36] Despite their benefits, lagging indicators have limitations or problems, as evidenced in several studies:^[37, 38]

- ▶ by definition, these indicators lag after the OHS event, and therefore do not allow for prevention (at least of the initial event);
- ▶ lagging indicators are of limited use in the diagnosis of OHS problems because they typically do not assist with identification of the cause of an OHS event;
- ▶ outcomes focused on reportable injuries and illnesses may have very low levels of reporting and therefore low variation. These measures may not be sensitive enough to identify differences in OHS performance between two units; and
- ▶ a focus on lagging indicators may be counter-productive, as it may not guarantee that workplace hazards and risks are being monitored or controlled.

3. Method

3.1. Sample

The sample for this report was drawn from data collected in two separate surveys conducted in 2014. These surveys were administered in April and May to members of the ANMF (Victorian Branch) and in July and August to members of the AEU (Victorian Branch). In each union we gathered data from members about their respective workplaces or worksites. In all, data were gathered from 4,891 members of the ANMF (10 percent response rate) and 4,750 members of the AEU (7 percent response rate). The online survey was administered to all members of both unions.

3.2. Measures

Demographic and workplace details were collected along with several perceptual measures. Demographic measures included gender and age. Workplace details captured in the surveys included employment status, workplace tenure, career tenure, workplace location, and membership type. Due to the differing workplace contexts and priorities of each union, the questionnaires were not identical.

This report focuses on several workplace safety issues: safety climate (as measured by management commitment to safety and OHS leading indicators) OHS leadership, and workers' engagement in safety.

Table 2 shows the multi-item measures used in the surveys to measure safety climate, OHS leadership, and workers' engagement in safety. For each measure, respondents were asked to rate their agreement with each item on a five-point response scale ranging from 1 = strongly disagree to 5 = strongly agree. The scores for the items were then summed to obtain the respondent's overall rating on each measure. For example, the possible range of scores for a measure with three items is between 3 and 15.

It should be noted that there were three measures that were not in both surveys. The 12-item measure of 'OHS leadership' was answered only by respondents in the AEU who were in a managerial or supervisory position, such as school principals and assistant principals. This is a measure of the manager's or supervisor's perception of his/her own OHS leadership attitudes and behaviours. The three-item measure of safety control was answered by respondents in the AEU survey only and the three item measure of prioritisation of OHS was answered by respondents in the ANMF survey only.

For each multi-item measure, we calculated Cronbach's alpha (α), which is commonly used to assess the reliability or internal consistency of a multi-item measure. Internal consistency tells us the degree to which the items in the scale measure the same idea. Ideally Cronbach's alpha will be above 0.7;^[39] as shown in the table below, all measures were reliable. Cronbach's alpha is noted as 'not applicable' if the corresponding measure was not used in that survey.

Table 2: Measures of safety climate, OHS leadership & workers' engagement in safety

Measure	AEU α	ANMF α	Items	Score range (Min-Max)	Example item
Measures of safety climate					
Safety climate (management commitment to safety)	.95	.95	3	3-15	Management places a strong emphasis on workplace health and safety ^[7]
OPM-MU (OHS leading indicators)	.91	.91	8	8-40	Workers and supervisors have the information they need to work safely ^[27, 40]
Measures of OHS leadership					
Supervisor support for OHS	.95	.96	3	3-15	My supervisor places a strong emphasis on health and safety ^[31]
OHS leadership¹	.91	NA	12	12-60	I follow management plans for health and safety ^[41]
Prioritisation of OHS²	NA	.97	3	3-15	Management applies different standards of health and safety to staff compared to patients
Workers' engagement in safety					
Safety compliance	.91	.92	3	3-15	I use the correct health and safety procedures for carrying out my job ^[7]
Safety control³	.75	NA	3	3-15	I am comfortable talking about health and safety issues ^[9]
Safety motivation	.83	.84	3	3-15	I feel that it is important to maintain health and safety at all times ^[7]
Safety participation	.87	.86	3	3-15	I put in extra effort to improve the health and safety of the workplace ^[7]

¹ AEU managers and supervisors only.

² ANMF survey only.

³ AEU member survey only.

Table 3 below shows the measures of OHS outcomes. The wording of questions was tailored to suit the work context for each union.

Table 3: Measures of OHS outcomes

Measure	Items
Total incidents	Total incidents refer to the sum of all OHS incidents: incidents reported to management, incidents not reported to management and near misses.
Reported incidents	In the past 12 months, how many, if any, health and safety incidents at work have you had personally that required the completion of an incident report form? [i.e., EduSafe for AEU, RiskMan for ANMF].
Unreported incidents	In the past 12 months, how many, if any, health and safety incidents at work have you had personally that you did not report?
Near misses	In the past 12 months, how many, if any, near misses (situations that could have caused an injury/illness but did not) at work have you had personally?

3.3. Procedure

The research was approved by the Monash University Human Research Ethics Committee.

All members of each union were given the opportunity to participate in the online survey. Members were sent an invitation email that contained a link to the survey and they were able to complete the questionnaires at their own pace. Two reminders were sent out at two and four weeks following the initial invitation.

4. Results

The results discussed in this report first describe the respondents and then compare the responses with regard to safety climate, OHS leadership and workers' engagement in safety:

- ▶ by gender and location within the AEU and ANMF; and
- ▶ between members of the AEU and ANMF.

Comparisons between members of the AEU and ANMF are also presented for OHS outcomes.

4.1. Survey respondents

AEU respondents	ANMF respondents
<ul style="list-style-type: none"> • 77 percent were women • 73 percent were aged between 46 and 65 years • 81 percent worked in full-time or part-time positions • 75 percent have been in the teaching profession for at least 11 years • 69 percent worked in a major city • 41 percent worked in primary schools and 34 percent worked in secondary schools • 19 percent worked in a management position (e.g., principal, senior educator, director) 	<ul style="list-style-type: none"> • 93 percent were women • 63 percent were aged between 46 and 65 years • 88 percent worked in full-time or part-time positions • 70 percent have been in the nursing profession for at least 11 years • 68 percent worked in a major city • 67 percent were registered nurses and 22 percent were enrolled nurses • 54 percent worked in public hospitals • 14 percent were nursing unit managers or associate nursing unit managers

Figure 1 below shows that most respondents in both union samples were women. However, there was a higher percentage of men among AEU respondents compared to the ANMF.

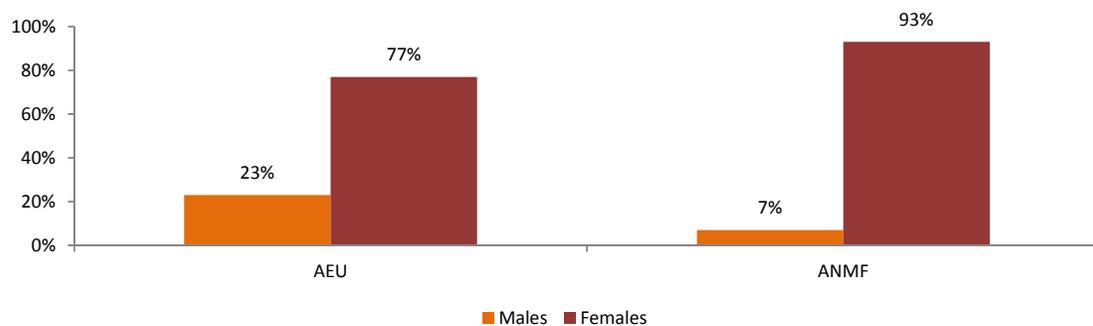


Figure 1: Respondent gender by union

Figure 2 below shows that there is a similar distribution of age between unions. However, there was a higher percentage of members in the older age groups in the AEU compared to the ANMF.

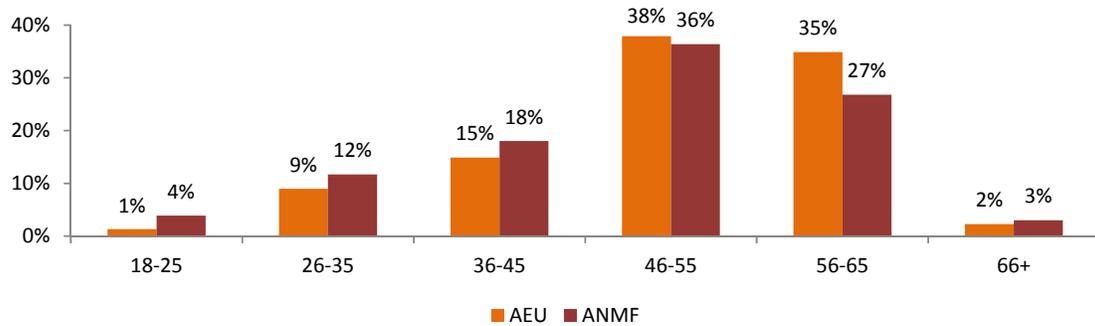


Figure 2: Respondent age by union

Figure 3 below displays the distribution of employment status for members of the AEU and ANMF. The percentage of permanent staff members (full-time, part-time) compared to 'other' (e.g., temporary, bank, agency) was very similar between unions.

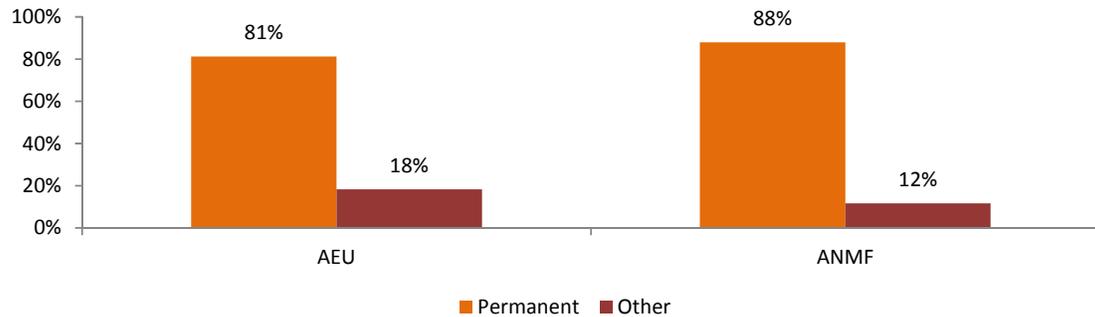


Figure 3: Employment status by union

The distribution of workplace tenure is shown in Figure 4 below. The AEU respondents tended to have been with their respective workplaces for slightly longer periods of time compared to members of the ANMF.

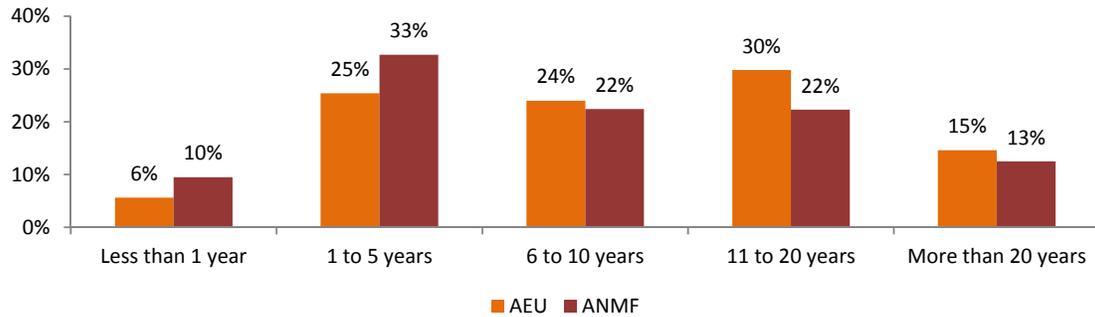


Figure 4: Workplace tenure by union

Figure 5 below shows the distribution of career tenure across the two unions. This distribution is very similar with nearly three-quarters of the sample having been employed in their respective careers for 11 years or more.

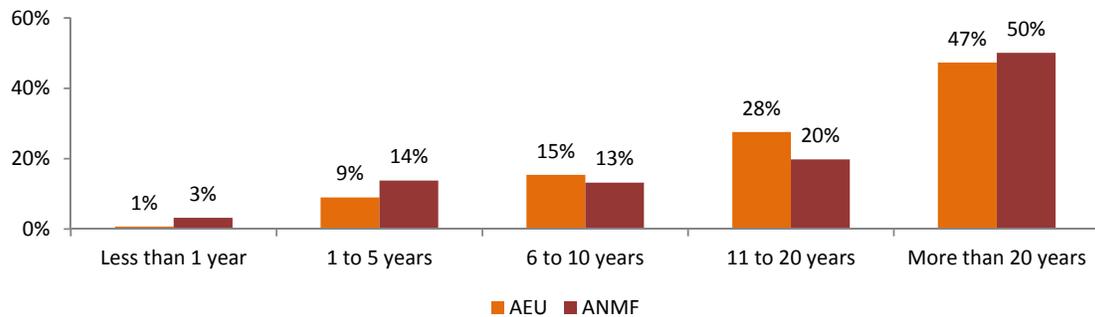


Figure 5: Career tenure by union

To investigate differences between workplace locations, we asked respondents for the postcode of their main workplace which were then classified according to the Australian Statistical Geography Standard. The ASGS rates locations on the basis of their relative access to services and creates five basic categories: major city (e.g., Melbourne, Geelong); inner regional (e.g., Ballarat, Bendigo); outer regional (e.g., Horsham, Bairnsdale); remote (e.g., Cowangie, Bonang); and very remote (none in Victoria).^[5] The towns named here are only examples; they do not indicate the location of actual respondents in the survey. The majority of respondents were in workplaces located in a major city in Victoria; fewer than 10 respondents in each union were working in remote locations.

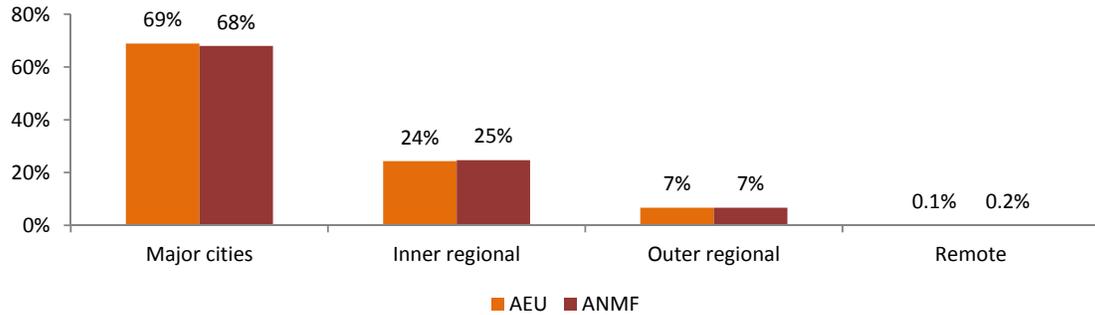


Figure 6: Workplace location by union

Figure 7 below displays the distribution of AEU members by membership type, indicated by their workplace. There were 41 percent from primary schools, 34 percent from secondary schools, 9 percent from special schools, 7 percent from TAFE, 7 percent from early childhood education, 1 percent from Disability Services Centres and 1 percent from Adult Migrant Education Services.

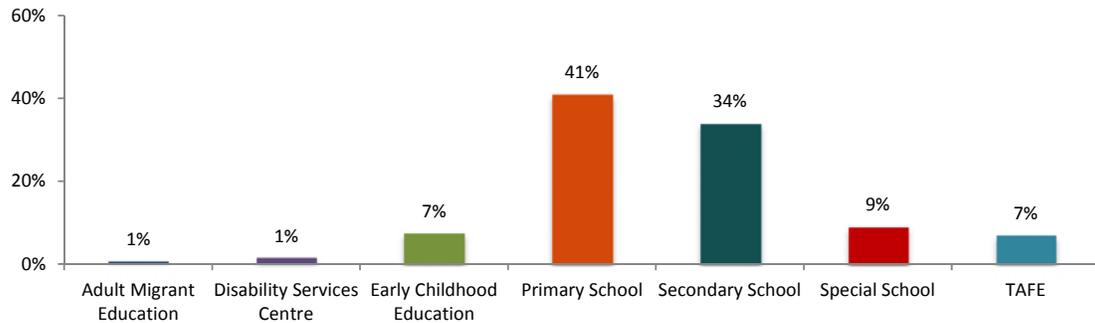


Figure 7: Distribution of AEU members across member type

Figure 8 below displays the distribution of ANMF members by their membership type, which is indicated by their professional category. Sixty-seven percent were registered nurses, 22 percent were enrolled nurses, 8 percent were midwives and 3 percent were personal carers.

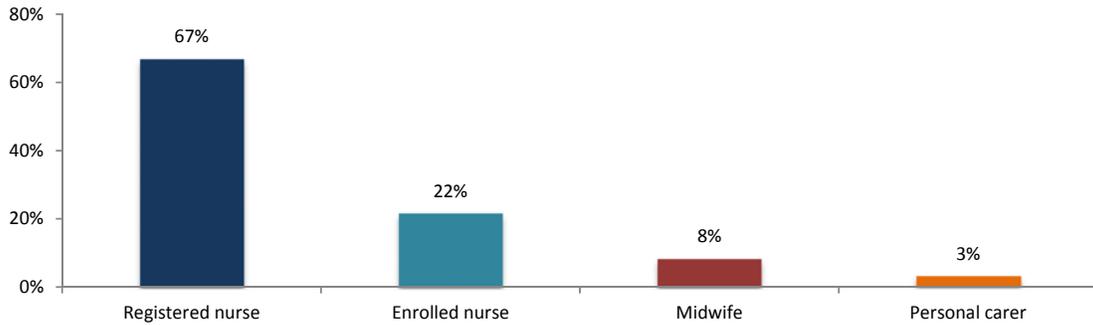


Figure 8: Distribution of ANMF members across member type

Figure 9 below displays the distribution of respondents by workplace role. The distribution of managers/supervisors and employees was similar across unions. In the AEU, managerial or supervisory roles include, for example, principals, senior educators, and directors. In the ANMF sample, managerial or supervisory roles include nursing unit managers and assistant nursing unit managers.

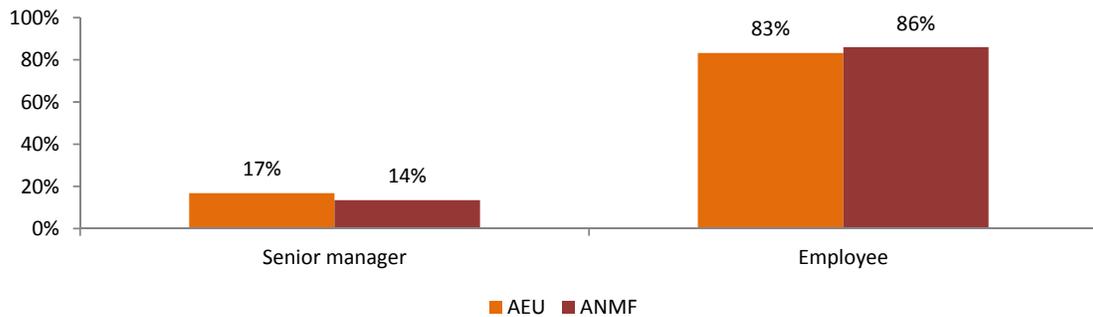


Figure 9: Workplace role by union

4.2. Safety climate, OHS leadership and workers’ engagement in safety

This section compares differences in safety climate, OHS leadership and workers’ engagement in safety across several demographic variables of interest including gender and location for responding members of the AEU and the ANMF.

4.2.1. Safety climate

We used two measures of safety climate. First, we asked all respondents to indicate their perceptions of safety climate in their workplace using a short three-item scale that taps management commitment to safety; and second, we asked everyone to complete the OPM-MU, a measure of OHS leading indicators.

Figure 10 to Figure 14 show respondent scores on safety climate (as measured by management commitment to safety) across the demographics of interest. Figure 10 shows that there were no differences for members across unions in the way safety climate was rated.

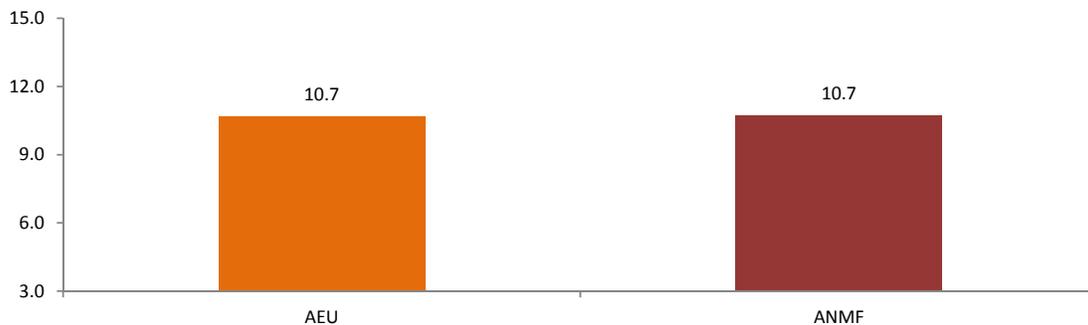


Figure 10: Management commitment to safety by union

Figure 11 below shows that there was only a slight difference by gender in respondent ratings of management commitment to safety. Women in both unions rated management commitment to safety slightly higher than men.

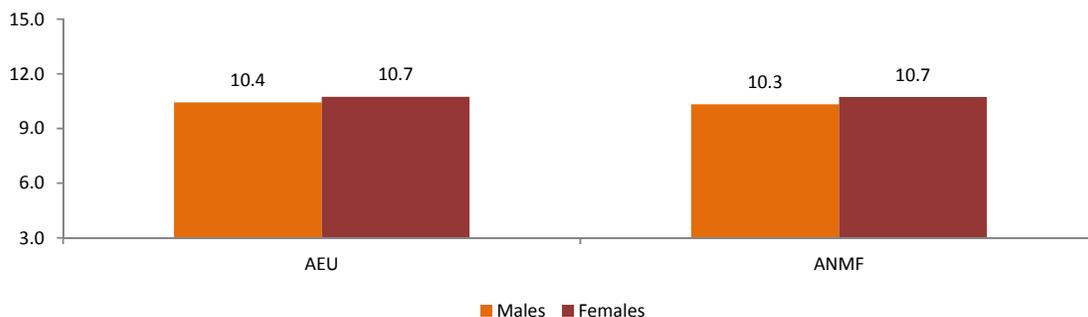


Figure 11: Management commitment to safety by gender

Figure 12 below shows that there were only slight differences in the way management commitment to safety was rated across locations. Members who reported working in major cities tended to rate management commitment to safety slightly lower than those working in other locations.

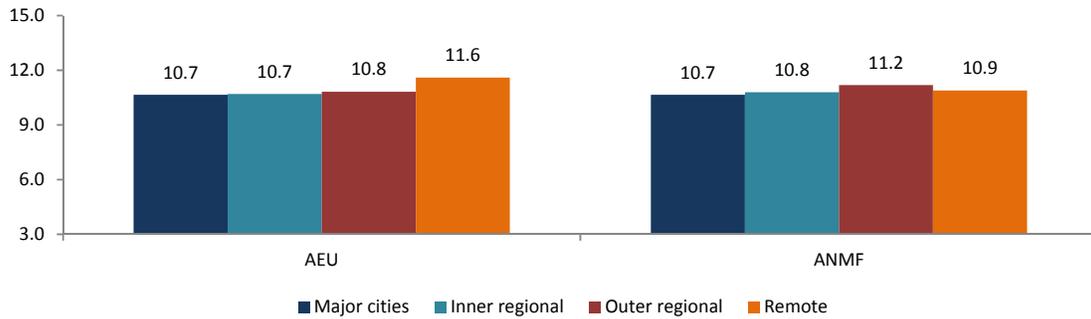


Figure 12: Management commitment to safety by location

Figure 13 shows management commitment to safety scores as perceived by respondents in senior management roles in the AEU (e.g., principals, senior educators, directors) and ANMF (nursing/associate unit managers) compared to other employees who work in non-managerial roles. The pattern of mean scores by role was consistent across unions with respondents in senior management roles rating their workplaces higher on management commitment to safety compared to non-managerial employees.

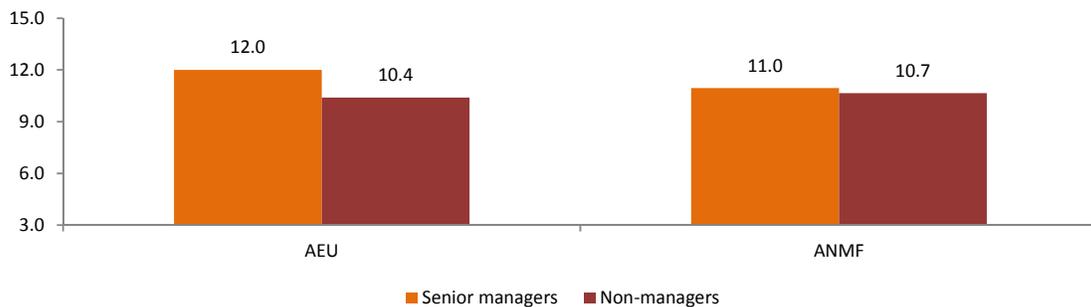


Figure 13: Management commitment to safety by workplace role

We also used the OPM-MU, a measure of OHS leading indicators, as an alternate measure of safety climate. Scores on this measure can range from a low score of 8 to the highest possible score of 40. The OPM-MU provides a measure of employees' perceptions regarding the value of, and emphasis given to, OHS in their workplace. Workplaces with higher scores on the OPM-MU are viewed as more likely to have resources and practices in place that could reduce the likelihood of OHS incidents. Conversely, workplaces that obtain

lower scores on the OPM-MU are viewed as less likely to have resources and practices in place to reduce potential OHS incidents.

Figure 14 to Figure 17 display perceptions of OHS leading indicators (OPM-MU) across the demographic variables of interest. Figure 14 shows a very small difference for members across unions in the way OHS leading indicators (OPM-MU) are rated.

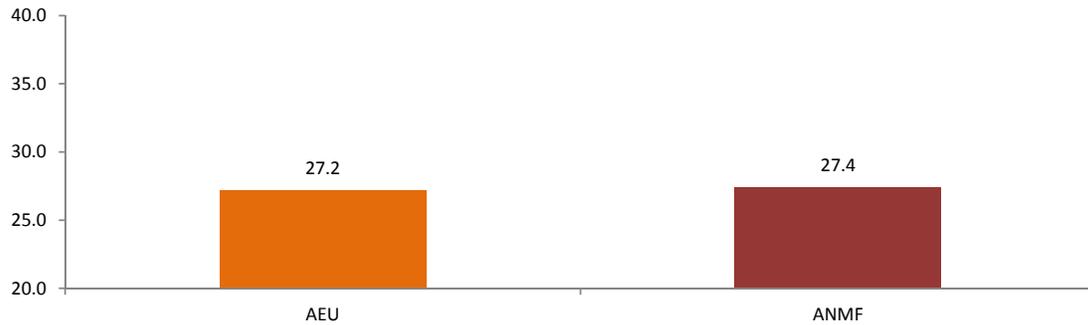


Figure 14: OHS leading indicators (OPM-MU) by union

Figure 15 below displays the average OHS leading indicators (OPM-MU) ratings for men and women across unions. This figure shows that, in both unions, women rated their workplace safety climate slightly higher than men.

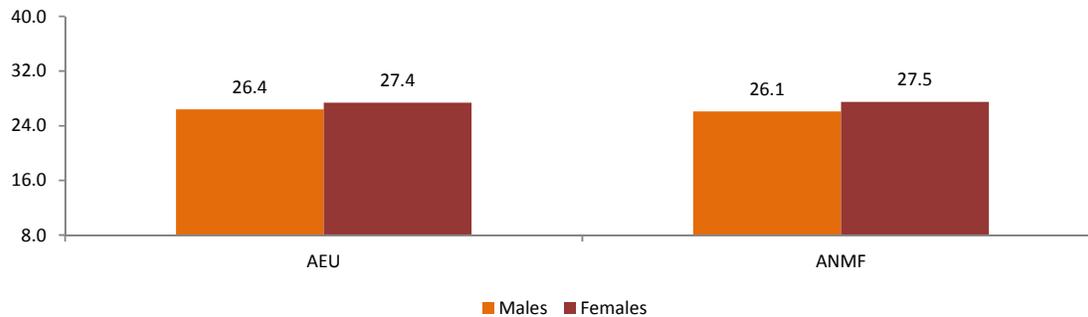


Figure 15: OHS leading indicators (OPM-MU) by gender

Figure 16 below displays average OHS leading indicators (OPM-MU) ratings by workplace location. The pattern of OHS leading indicator ratings across geographic locations was also the same for both unions with ratings being roughly the same across geographic locations. Union members in remote locations did rate their workplaces slightly lower on leading indicators compared to members in other regions. However, it should be noted that the remote area was comprised of a very small number of respondents in both the ANMF (n = 8) and the AEU (n = 5) samples so these figures may not be reliable estimates of leading indicators in remote areas.

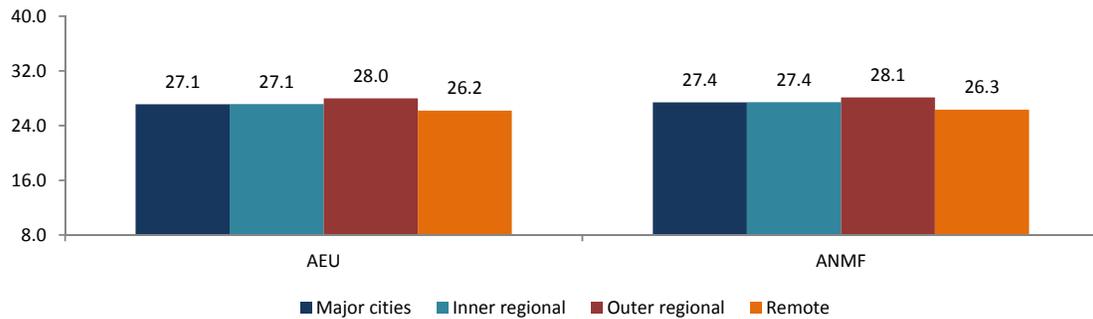


Figure 16: OHS leading indicators (OPM-MU) by location

Figure 17 shows scores on leading indicators of OHS as perceived by respondents in senior management roles in the AEU (e.g., principals, senior educators, directors) and ANMF (e.g., nursing unit managers) compared to other employees who work in non-managerial roles. The pattern of mean scores by role was consistent across unions with respondents in senior management roles rating their workplaces higher on leading indicators of OHS compared to non-managerial employees.



Figure 17: OHS leading indicators (OPM-MU) by workplace role

4.2.2. OHS leadership

We used three measures of OHS leadership:

- ▶ direct supervisor’s support for OHS (all respondents in both unions);
- ▶ supervisor prioritisation of OHS compared to patient safety, which is a measure that applies to the healthcare sector where it compares the level of support for OHS with support for patient safety (ANMF members only); and
- ▶ OHS leadership that required respondents who were in a managerial or supervisory position (e.g., school principals, assistant principals) to rate their own OHS leadership attitudes and behaviours (AEU members only).

Supervisor support for OHS was measured in both AEU and ANMF surveys. Figure 18 to Figure 20 show respondent scores on supervisor support for OHS across the demographics of interest. Figure 18 reveals a very small difference for members across unions in the way supervisor support for OHS is rated.

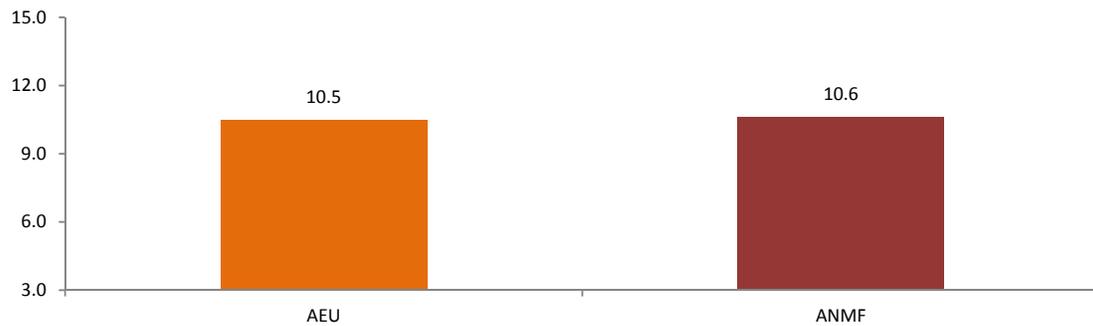


Figure 18: Supervisor support for OHS by union

Figure 19 below shows only slight differences by gender in ratings of supervisor support for OHS. Women rated supervisor support for OHS slightly higher than men.

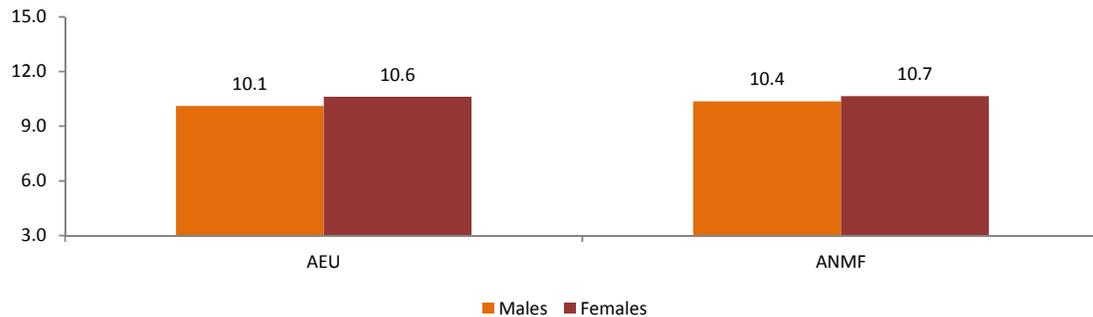


Figure 19: Supervisor support for OHS by gender

Figure 20 below shows a few differences in the pattern of ratings on supervisor support for OHS for locations. AEU members working in remote areas tended to rate supervisor support for OHS lower than those working in other locations, although this result should be treated with caution given the very small sample for this group.

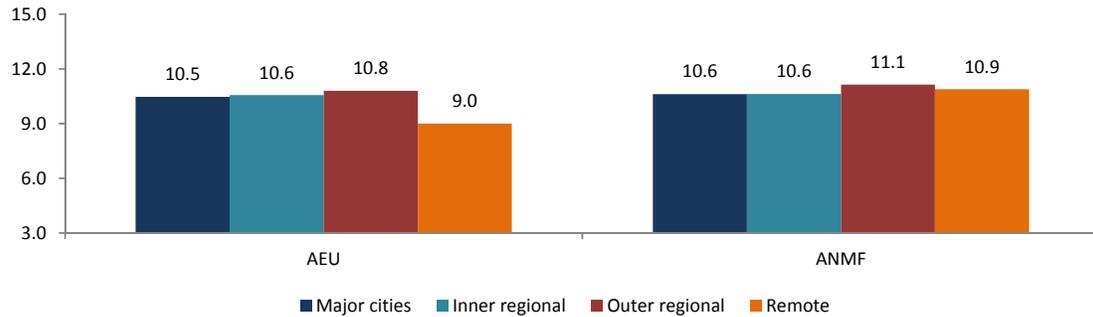


Figure 20: Supervisor support for OHS by location

Figure 21 and Figure 22 below display average prioritisation of OHS ratings across demographic variables of interest for members of the ANMF. Figure 21 shows only slight differences in the prioritisation of OHS by gender, with women being more likely to report that they perceived management prioritising OHS at the same level as patient safety than men.

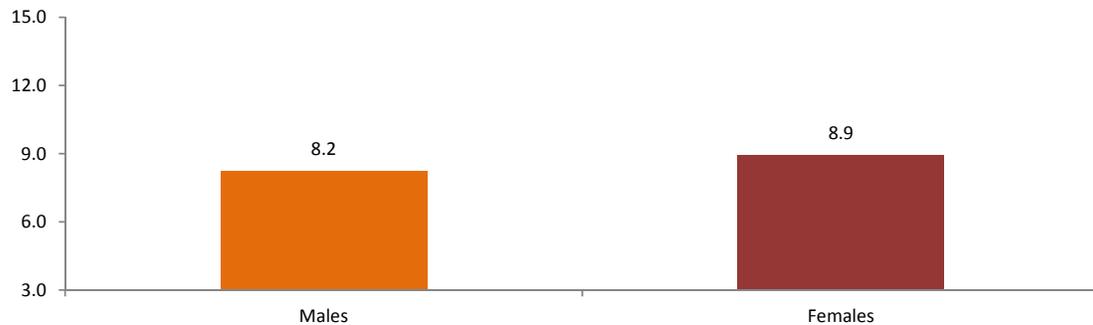


Figure 21: Prioritisation of OHS by gender - ANMF

Figure 22 shows slight differences in how ANMF members rated prioritisation of OHS across locations. Respondents in major cities were slightly less likely to report management prioritising OHS at the same level as patient safety than respondents in other locations.

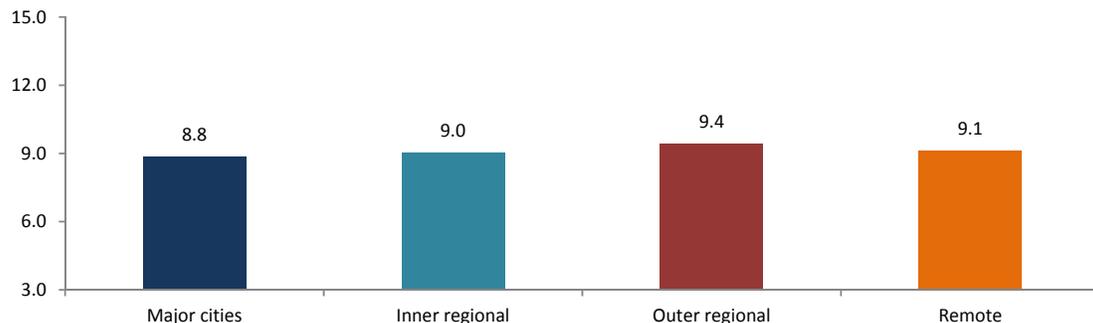


Figure 22: Prioritisation of OHS by location - ANMF

We asked respondents within the AEU who were in managerial or supervisory roles (e.g., principals, assistant principals in schools) to rate their own attitudes and behaviours regarding OHS leadership. Figure 23 and Figure 24 below display management ratings of their own OHS leadership for these members of the AEU. Figure 23 shows only slight differences in OHS leadership ratings by gender.

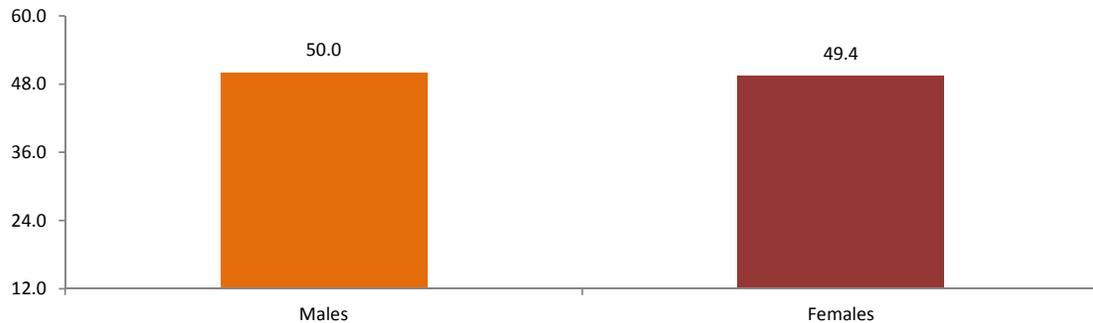


Figure 23: OHS leadership by gender - AEU

Figure 24 below displays average OHS leadership ratings by location. While only slight differences can be seen, AEU members in managerial or supervisory roles working in remote areas tended to rate their own OHS leadership lower than those working in other locations. However, this result should be treated with caution given the very small group size.

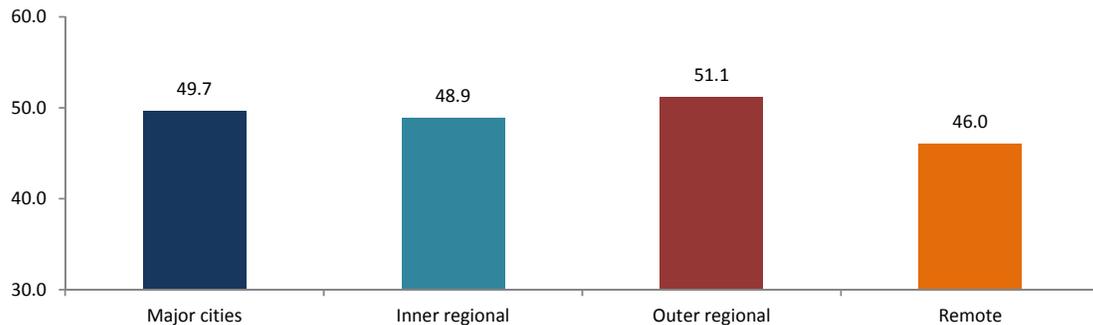


Figure 24: OHS leadership by location - AEU

4.2.3. Workers' engagement in safety

Workers' engagement in safety is represented by several measures: safety motivation, safety compliance and safety participation as well as a measure of safety control (the last measure was only used in the AEU survey; it was not included in the ANMF survey). Figure 25 to Figure 27 show respondent scores on safety motivation across the demographic variables of interest. Figure 25 reveals a small difference between members across unions in the way respondents rated their own safety motivation.

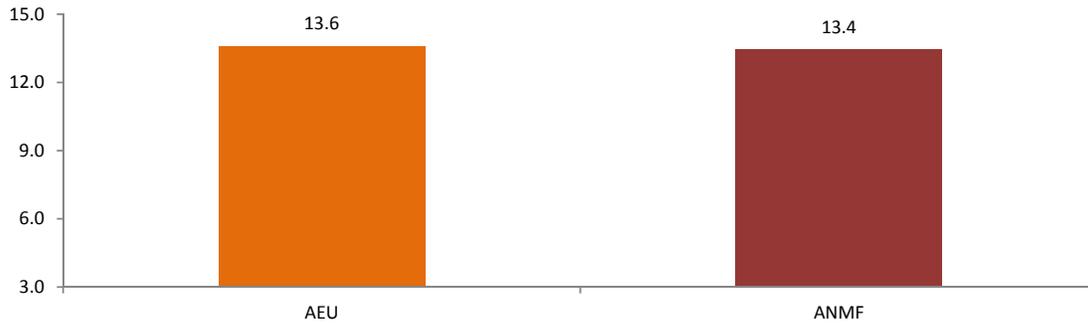


Figure 25: Safety motivation by union

Figure 26 below shows that there were no differences in the way respondents of each gender rated their own safety motivation.

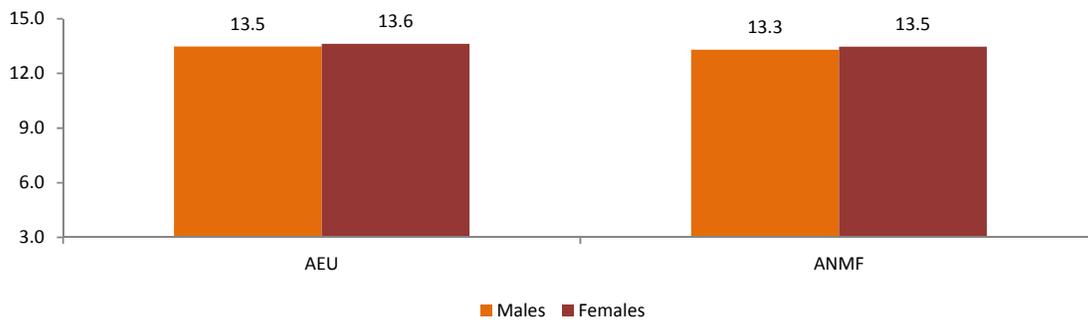


Figure 26: Safety motivation by gender

Figure 27 shows the pattern of ratings for safety motivation by location. This figure shows that ratings were similar across all geographical areas.

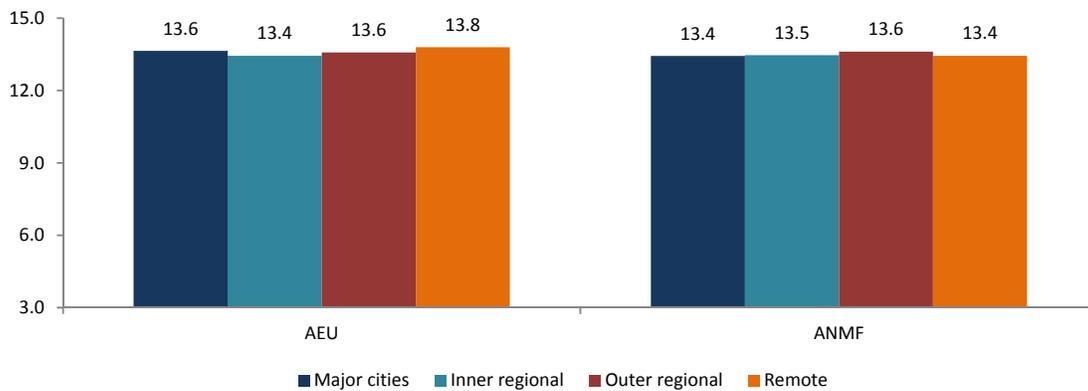


Figure 27: Safety motivation by location

Figure 28 to Figure 30 display ratings of safety compliance across the demographic variables of interest. Figure 28 reveals a small difference for members of each union in the way respondents rated their own safety compliance. Members of the AEU rated their safety compliance slightly lower compared to members of the ANMF.

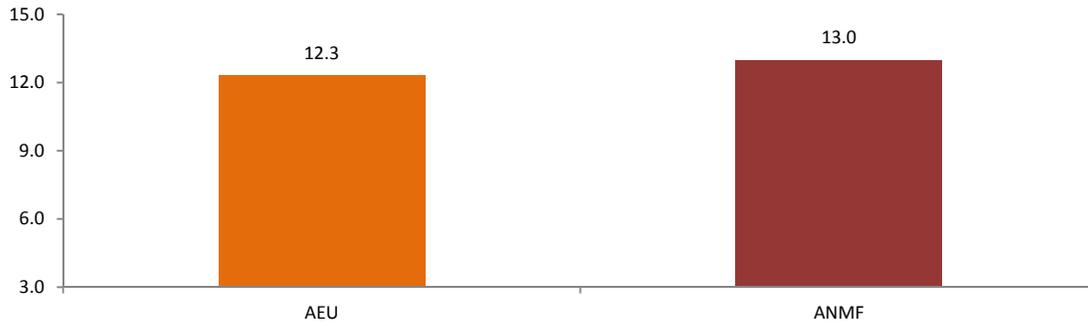


Figure 28: Safety compliance by union

Figure 29 below shows that there were no differences in the way respondents of each gender rated their own safety compliance within the AEU and only slight differences for respondents of the ANMF. Women in the ANMF tended to rate their safety compliance slightly higher than men.

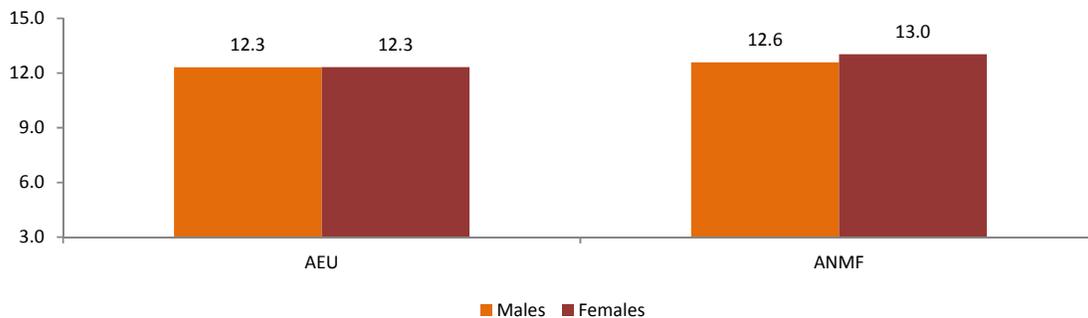


Figure 29: Safety compliance by gender

Figure 30 below shows that there were slight differences in the way respondents rated their own safety compliance. While there were few differences by location, members within the AEU rated their own safety compliance slightly lower than those of the ANMF across all demographic locations. This was particularly evident for members of the AEU who work in remote areas; however, this figure should be treated with caution given that this mean score is based on a very small sample (AEU n = 5).

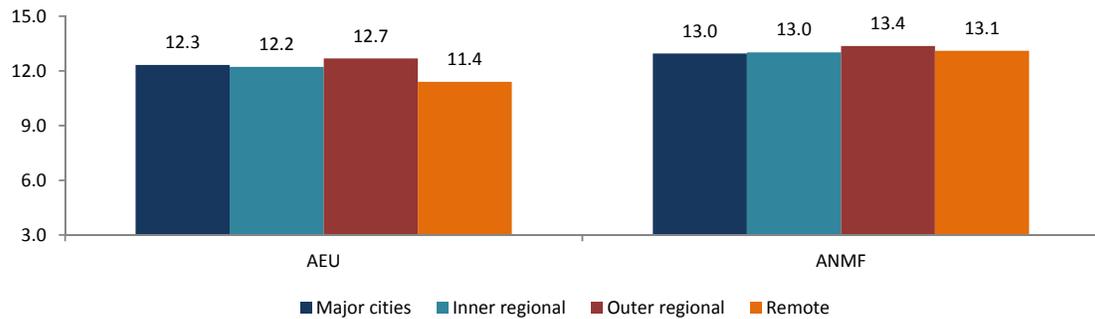


Figure 30: Safety compliance by location

Figure 31 to Figure 33 display ratings of safety participation across the demographic variables of interest. Figure 31 reveals only slight differences for members across unions in the way respondents rated their own safety participation.

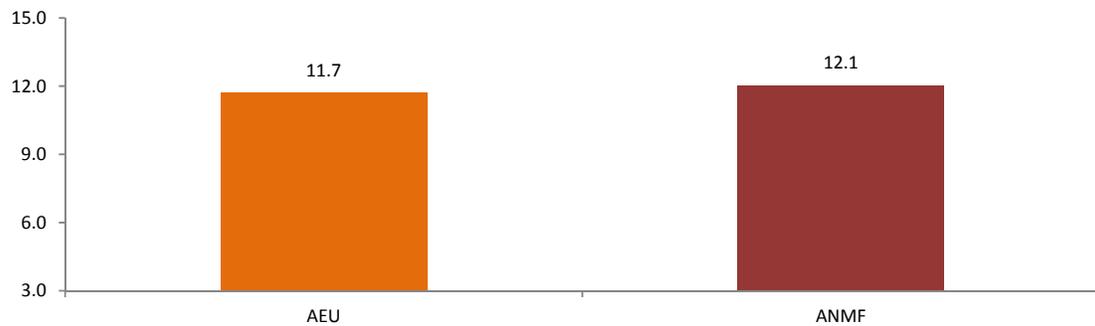


Figure 31: Safety participation by union

Figure 32 below shows that there was little difference in the way respondents of each gender rated their own safety participation.

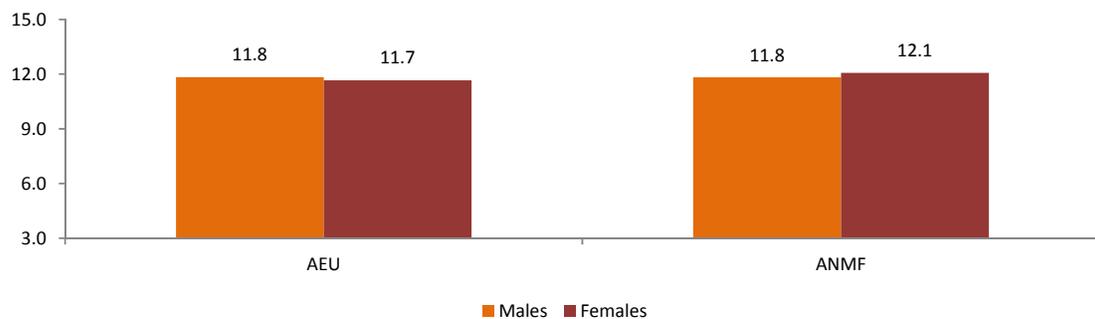


Figure 32: Safety participation by gender

Figure 33 below shows only slight differences in member ratings of their own safety participation. These ratings were at similar levels across both unions.

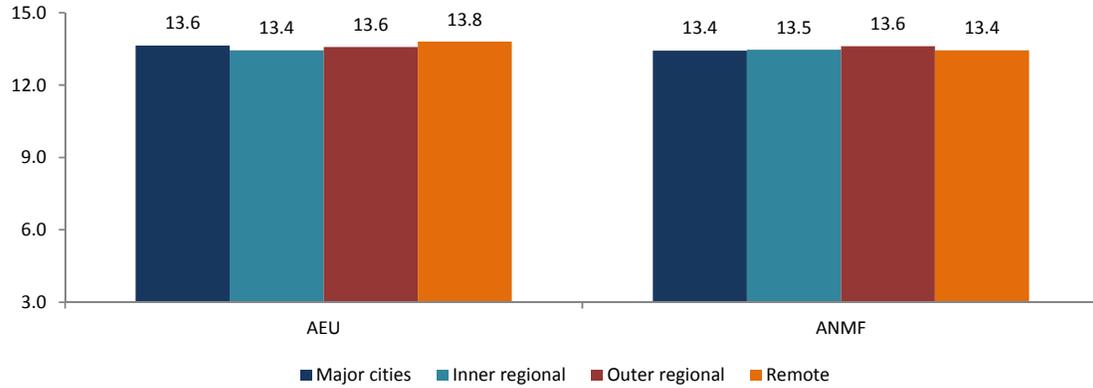


Figure 33: Safety participation by location

AEU members also reported on a measure of safety control. Ratings across gender and location are displayed below in Figure 34 and Figure 35. There were no differences in perceptions of safety control across gender.

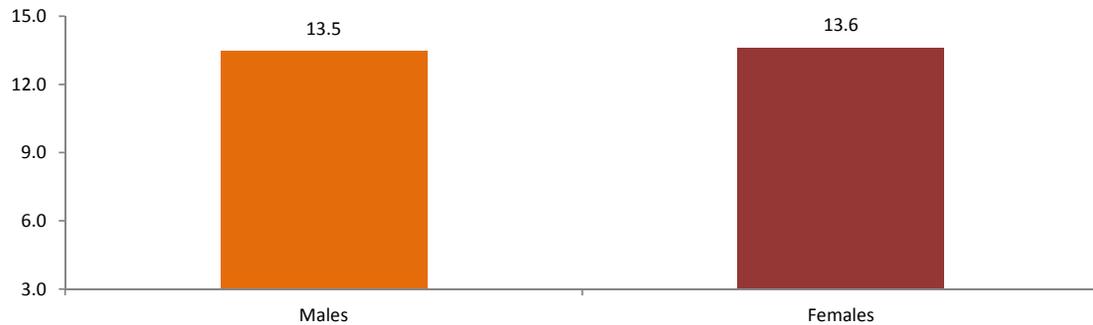


Figure 34: Safety control by gender - AEU

Figure 35 below shows only slight differences in perceptions of safety control for AEU members working in different locations. Those working in remote areas reported slightly higher levels of safety control; however, this figure should be treated with caution given that this mean score is based on a very small sample (AEU n = 5).

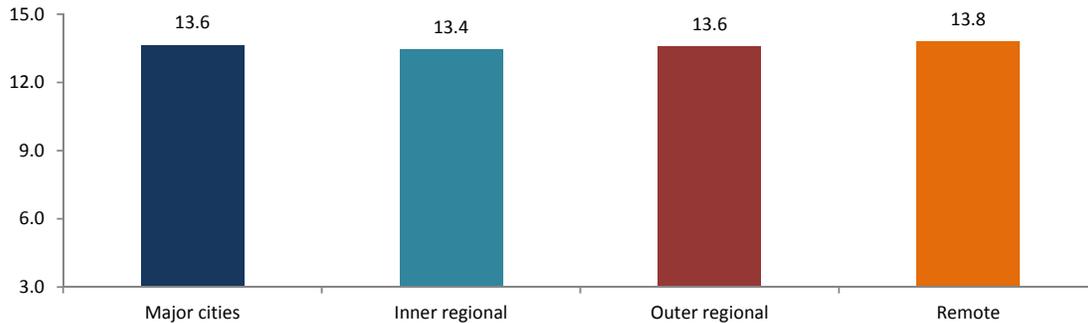


Figure 35: Safety control by location - AEU

4.3. OHS outcomes

The percentage of members who said they had experienced an OHS incident was very similar across unions with 60 percent of ANMF members and 58 percent of AEU members experiencing at least one OHS incident in the past year. Figure 36 to Figure 38 below show the average number of OHS incidents experienced by respondents across all incident types.

Figure 36 below shows the average number of reported OHS incidents experienced by members of the AEU and ANMF. Members of the ANMF experienced more reported incidents over the past year compared to members of the AEU.

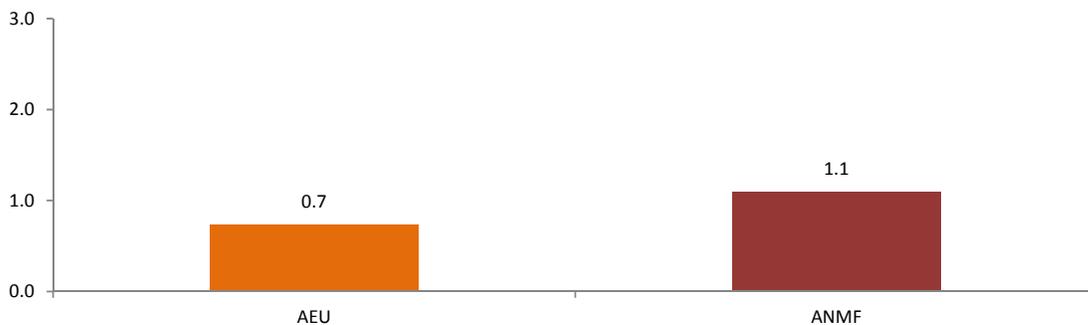


Figure 36: Reported OHS incidents by union

Figure 37 below shows the average number of OHS incidents experienced by members of the AEU and ANMF that were not reported to management. Members of the ANMF experienced slightly fewer unreported incidents over the past year compared to members of the AEU. Interestingly, members of the ANMF experience a higher number of reported incidents and a lower number of unreported incidents, on average, compared to members of the AEU.

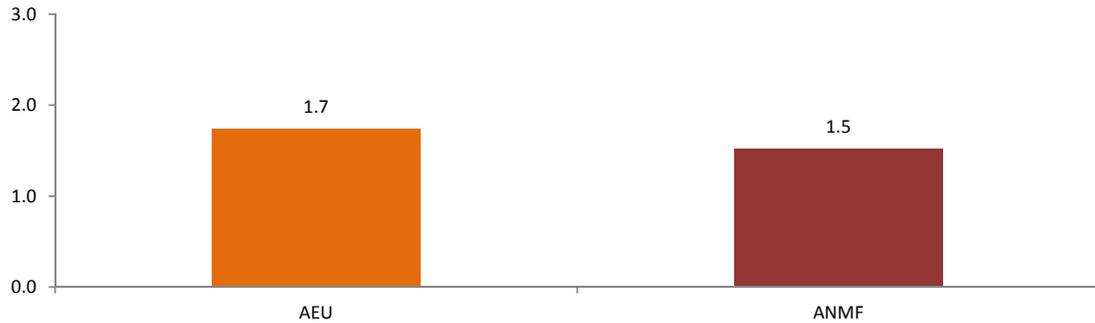


Figure 37: Unreported OHS incidents by union

Figure 38 below shows the average number of near misses experienced by members of the AEU and ANMF. Members of the ANMF experienced slightly more near misses over the past year compared to members of the AEU.

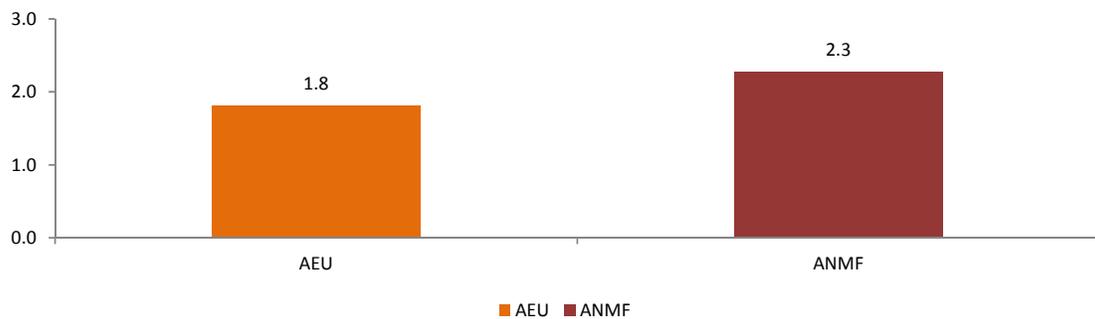


Figure 38: Near misses OHS by union

Figure 39 to Figure 41 below display each type of OHS incident by gender. Figure 39 shows that men tended to experience more reported OHS incidents, on average, compared to women in both unions; this difference was larger for members of the ANMF.

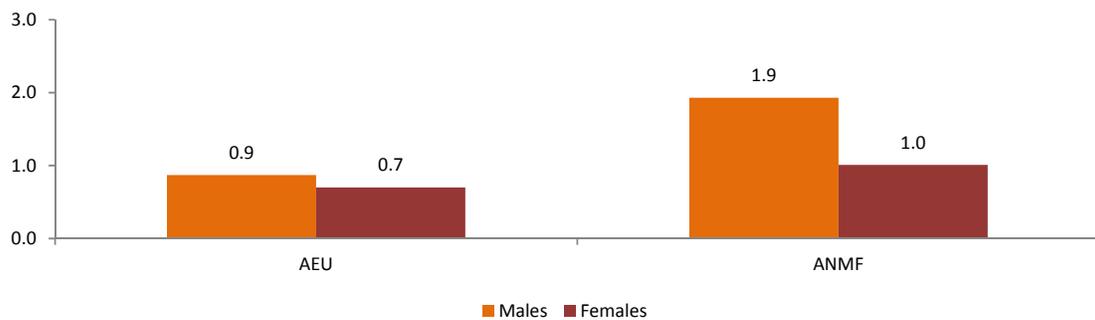


Figure 39: Reported OHS incidents by gender

Figure 40 shows that men tended to experience more OHS incidents that were not reported to management, on average, compared to women in both unions. As with the reported incidents, this difference was larger for members of the ANMF.

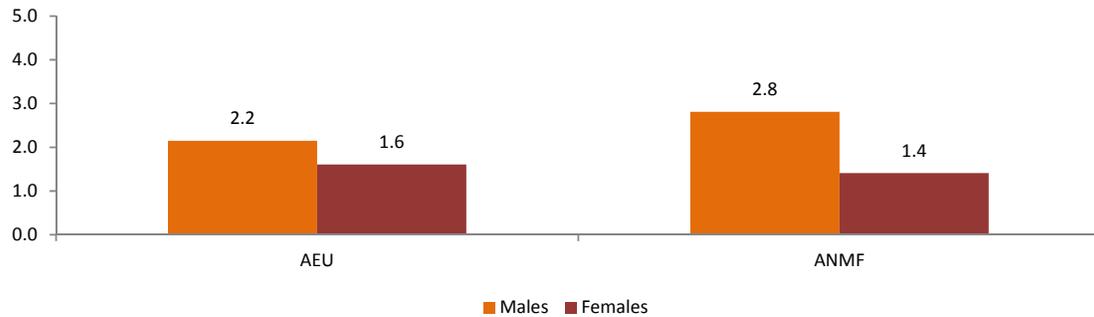


Figure 40: Unreported OHS incidents by gender

Figure 41 shows that men tended to experience more near misses, on average, compared to women in both unions. Compared to members of the AEU, this difference for gender was substantially greater for members of the ANMF where the average number of near misses experienced by men was more than twice the average for women.

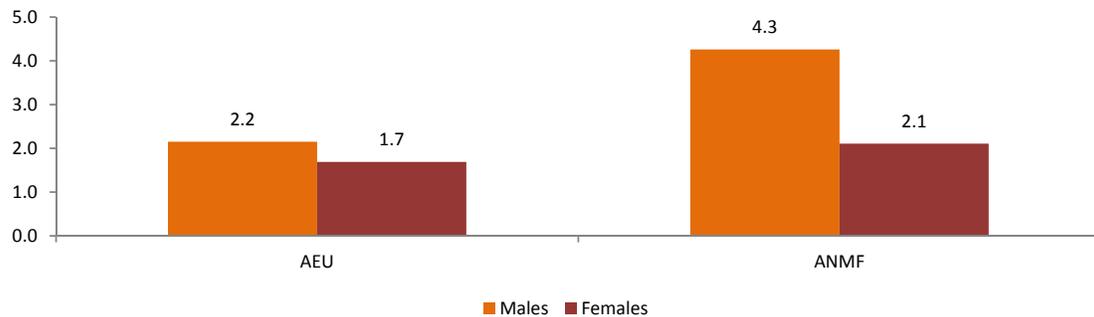


Figure 41: Near misses by gender

Figure 42 to Figure 44 below show the average number of OHS incidents experienced by respondents across different locations. Figure 42 below shows the average number of reported OHS incidents experienced by members across different geographic locations. The pattern across locations was similar for both unions. Members of the ANMF who worked in remote areas experienced more reported incidents over the past year, compared to members of the AEU who worked in remote locations, however, the sample size for those working in remote locations was very small so this outcome should be treated with caution.

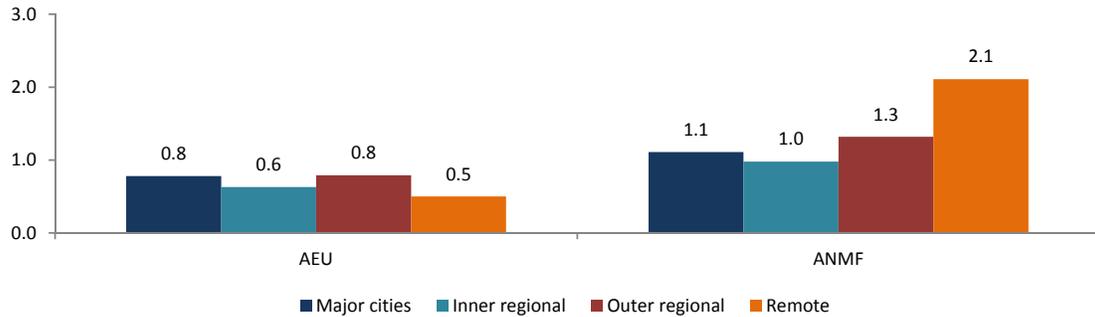


Figure 42: Reported OHS incidents by location

Figure 43 below shows the average number of OHS incidents experienced by respondents across different locations that were not reported to management. While the unions were comparable for members working in major cities and outer regional areas, the pattern across the other locations was quite different. AEU members working in inner regional areas were more likely to experience unreported incidents compare to ANMF members working in inner regional areas. Members of the ANMF who worked in remote areas experienced more reported incidents over the past year compared to members of the AEU who worked in remote locations, however the sample size for those working in remote locations was very small so this outcome should be treated with caution.

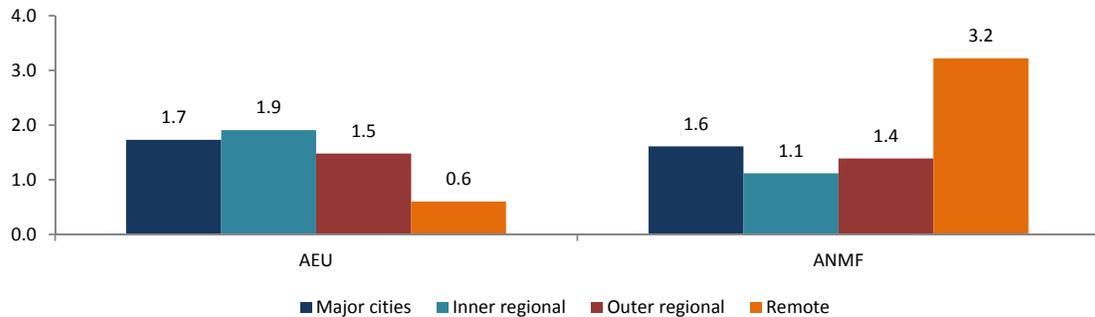


Figure 43: Unreported OHS incidents by location

Figure 44 below shows the average number of near misses experienced by respondents across different locations. Overall, members of the ANMF experienced more near misses over the past year compared to members of the AEU, particularly those working in outer regional and remote areas.

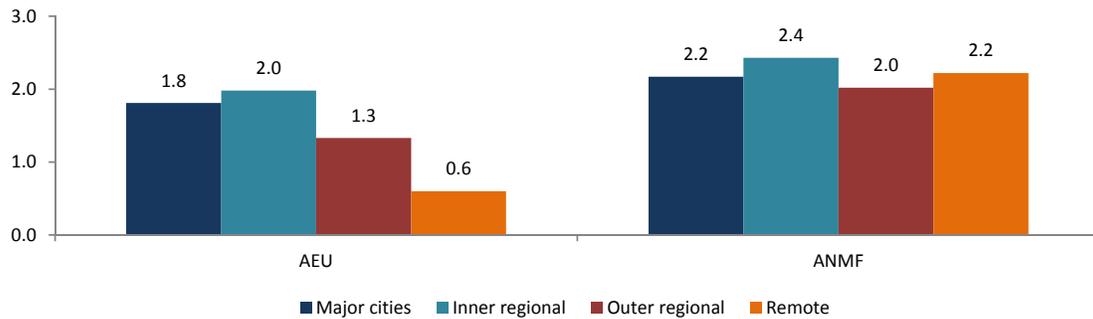


Figure 44: OHS Near misses by location

4.4. Snapshot of analysis across unions

Figure 45 below summarises the analysis in the previous sections by providing a snapshot of the group differences for all of the perceptual measures and OHS incidents. Group differences were summarised for 1) a between union comparison; and 2) within union comparisons for gender and geographic location.

With nearly 5,000 responses from members of each union, the samples for both union surveys were large. With such large sample sizes it is possible to reveal statistically significant differences between groups, even though the actual differences in scores may be small. Therefore, the figure below has been colour-coded to show the differences that are statistically significant and the differences that are not significant. The cells in the table can be interpreted as follows:

- ▶ **Green:** significant group difference where the difference in group scores is more substantial (moderate-large effect $>.12$).
- ▶ **Yellow:** significant group difference but the difference in group scores is very small (small effect $\leq.01$).
- ▶ **Red:** no significant differences between groups.

Note: In Figure 45, NA indicates that a measure was used in one union survey but not in both, so comparisons cannot be made.

	Union	AEU		ANMF	
Safety climate (Mgt commitment to safety)	Red	Red	Red	Yellow	Red
OHS leading indicators (OPM-MU)	Yellow	Red	Red	Yellow	Red
Supervisor support for OHS	Yellow	Yellow	Red	Red	Red
OHS Leadership	NA	Red	Red	NA	NA
Prioritisation of OHS	NA	NA	NA	Yellow	Red
Safety motivation	Yellow	Red	Red	Red	Red
Safety compliance	Yellow	Red	Red	Red	Red
Safety participation	Yellow	Red	Red	Yellow	Red
Safety control	NA	Red	Red	NA	NA
Reported incidents	Yellow	Red	Red	Yellow	Red
Unreported incidents	Red	Red	Red	Yellow	Red
Near misses	Yellow	Red	Red	Yellow	Red
	Unions	Gender	Location	Gender	Location

Figure 45: Summary of group differences

4.4.1. Comparing the two unions

The initial comparisons were to compare the responses of members from the ANMF to the AEU across each scale (first column). Figure 45 reveals some small, but significant, differences (yellow cells) between unions for several measures that were common to the union surveys.

- ▶ AEU members were slightly less positive than were ANMF members in their views of
 - ▶ OHS leading indicators.
 - ▶ their direct supervisor's support for OHS.
 - ▶ their own safety compliance.
 - ▶ their own safety participation.
- ▶ AEU members were slightly more positive than were ANMF members in their views of
 - ▶ their own safety motivation.
- ▶ AEU members indicated that they had fewer OHS incidents in the past year than did ANMF members, with regard to the number of
 - ▶ OHS incidents that they reported to management.
 - ▶ near misses.

Figure 45 reveals no significant differences (red cells) between the two unions for safety climate (management commitment to safety) or unreported OHS incidents.

4.4.2. AEU responses by gender and geographic location

No significant differences were found between men and women's responses for most measures. However, there was one significant, but small, difference between the responses of men and women in the AEU:

- ▶ On average, female respondents rated their direct supervisor's support for OHS more positively than male respondents.

No significant differences were found on any of the measures when comparing AEU respondents in different geographic locations.

4.4.3. ANMF responses by gender and geographic location

Several statistically significant, but small, differences (yellow cells) were found between the responses of men and women in the ANMF.

- ▶ On average, men were less positive than were women in their ratings of
 - ▶ safety climate (management commitment to safety);
 - ▶ OHS leading indicators;
 - ▶ prioritisation of OHS; and
 - ▶ safety participation.
- ▶ On average, men indicated that they had experienced more OHS incidents than did women, with regard to
 - ▶ OHS incidents that were reported to management;
 - ▶ OHS incidents that were not reported to management; and
 - ▶ near misses.

There were no significant differences (red cells) between men and women's responses for

- ▶ supervisor support for OHS;
- ▶ safety motivation; and
- ▶ safety compliance.

There were no significant differences (red cells) on any of the measures when comparing ANMF respondents in different geographic locations.

5. Key Findings and Conclusion

1. **The profiles of AEU and ANMF respondents were similar in several respects:**
 - ▶ The majority of respondents to the AEU and ANMF surveys were women, aged between 46 and 65 years. Generally, members had worked in their respective profession for at least 11 years, were currently working full-time or part-time, and they were located in a major city.
2. **In each sample, respondents covered all member types but the dominant groups from each union were**
 - ▶ From a primary or secondary school with 75 percent AEU respondents reporting that they worked within primary or secondary schools; or
 - ▶ From public hospitals with 54 percent of ANMF respondents reporting that they worked in a public hospital.
3. **Safety climate was operationalised using two scales: management commitment to safety and the Organizational Performance Metric-Monash University (OPM-MU). Key findings for safety climate were**
 - ▶ AEU and ANMF members' views of safety climate (as measured by management commitment to safety) were very similar. AEU members rated OHS leading indicators lower than did the ANMF members.
 - ▶ In the ANMF sample, women had slightly more positive views of safety climate (management commitment to safety) and gave slightly higher ratings to OHS leading indicators in their workplaces than did men.
 - ▶ No significant differences were found for either AEU or ANMF members with regard to their geographic location.
 - ▶ In both unions, respondents in managerial or supervisory roles (e.g., principals; nursing unit managers) had more positive views of safety climate (management commitment to safety) and OHS leading indicators compared to other members (e.g., teachers, nurses).
4. **Leadership was operationalised using three scales: supervisor support for safety, OHS leadership (AEU only) and prioritisation of OHS (ANMF only). Key findings for OHS leadership were**
 - ▶ AEU members gave less positive ratings of their direct supervisor's support for OHS than did ANMF members.
 - ▶ In the AEU sample, women had slightly more positive views of their direct supervisor's support for OHS than did men.
 - ▶ ANMF members were asked to rate the extent to which OHS was a priority, compared with patient safety. Women in the ANMF were more likely than men to agree that OHS was prioritised in their workplaces. The ratings for prioritisation of

OHS were the lowest of any of the measures, suggesting that ANMF respondents consider OHS is unlikely to be treated as a priority in their workplaces.

- ▶ Managers and supervisors in the AEU were asked to rate their own OHS leadership. No differences were found by gender or geographic location.
5. **Workers' engagement in safety was operationalised using four scales: safety motivation, safety compliance, safety participation and safety control (AEU only). Key findings for workers' engagement in safety were**
- ▶ AEU members rated themselves lower than did the ANMF members with regard to their own safety compliance and safety participation, but higher on safety motivation. .
 - ▶ AEU members were asked to rate the extent to which they had control over their safety at work; no significant differences were found for gender or geographic location.
 - ▶ In both unions, respondents rated their own engagement in safety at higher levels than they rated the safety climate (management commitment to safety) or their direct supervisor's support for OHS.
6. **Key findings for OHS outcomes were**
- ▶ Sixty percent of ANMF and 58 percent of AEU members had experienced at least one OHS incident in the past year.
 - ▶ On average, ANMF members experienced a significantly higher number of reported incidents and near misses than did the AEU members.
 - ▶ In the ANMF, men tended to experience more OHS incidents (reported incidents, unreported incidents and near misses) than did women on average. While this difference between males and females was found in the AEU sample, the difference was less pronounced in this latter group.

This report is part of a larger study investigating leading indicators of OHS. Several other reports are available on this project and we recommend that this report be viewed as a companion piece to the other reports, which are available at <http://ohsleadindicators.org> and on the ISCRR website (www.iscrr.com.au). Overall, this research will contribute to understanding of OHS leading indicators and OHS performance in Australian workplaces.

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