GOVERNMENT OF WESTERN AUSTRALIA

MENTAL AWARENESS RESPECT & SAFETY

CENTRE FOR TRANSFORMATIVE WORK DESIGN

Curtin University

Towards a healthy and safe workforce in the mining industry: A review and mapping of current practice

Report prepared for the Western Australian Government

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Authorship
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Preface

The Mental Awareness, Respect and Safety (MARS) Landmark Study is a four-year research and evaluation project led by ARC Laureate Professor Sharon Parker at the Centre for Transformative Work Design (CTWD).

The Landmark Study was commissioned by the Western Australian Government to design and implement a research and evaluation project focused on the mining industry, regarding three focus areas: 1) mental health, 2) sexual harassment/assault, and 3) emerging mine safety issues and related workplace initiatives to improve mental health, well-being, culture and respect.

This preliminary report is the first of four reports submitted to the Western Australian Government as part of the MARS Landmark Study. This report was authored by the **Bankwest Curtin Economics Centre** as a contribution to the Landmark Study. It presents an assessment of the documented efforts by Australian mining companies to ensure the well-being of employees across three domains: mental health and well-being, physical health and safety, and workplace culture and sexual harassment/assault.

The Landmark Study

In addition to this report, the Landmark Study will include the following reports authored by the CTWD:

Preliminary Report 2A: A literature review which provides an overview and synthesis of the current literature concerning the three focus areas. Findings from this report will guide the further investigation of these focus areas.

Preliminary Report 2B: A report to establish a baseline of current practices and experiences, through: a) *a workplace policy and practices survey* that assesses the initiatives that mining companies engage in to support employee well-being, b) *an employee survey* that assesses employees' experiences in regard to the three focus areas, and c) *employee interviews* to understand the lived experiences of employees in relation to the three focus areas. Recommendations for improvement will be made based on the data.

Preliminary Report 3: This report consists of the findings from a follow-up data collection effort. The success of the initiatives implemented after the baseline data collection will be evaluated in this report.

Final Report 4: The fourth and final report will synthesise the findings and report on efforts across the four years, including but not limited to data collection efforts to track the trajectories and changes in the three focus areas over time, and including recommendations.

About the Bankwest Curtin Economics Centre

The Bankwest Curtin Economics Centre is an independent economic and social research organisation located within the Curtin Business School at Curtin University.

The Centre was established in 2012 through the generous support of Bankwest, a division of the Commonwealth Bank of Australia. The Centre's core mission is to deliver high quality, accessible research that enhances our understanding of key economic and social issues that contribute to the well-being of West Australian families, businesses, and communities.

For more information about the Bankwest Curtin Economics Centre, visit **bcec.edu.au**

About the Centre for Transformative Work Design

The Centre for Transformative Work Design is a Research Centre where passionate organisational psychology researchers and professionals are working together to transform work under the directorship of Australian Research Council Laureate Fellow, Professor Sharon K. Parker.

We conduct high quality, independent and innovative research to understand the role of work design in generating healthy and productive work.

We are committed to fostering the design of good work across all industries.

For more information about the Centre for Transformative Work Design, visit **curtin.edu/ctwd**

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Summary and key findings

Summary and key findings

This report provides an assessment of employee well-being in the mining sector and develops an innovative approach to construct measures of employers' prioritisation of three dimensions of well-being: mental health and well-being, physical health and safety, and workplace culture that protects against sexual harassment.

We undertake an innovative data collection and analysis to capture the significance placed by mining companies on ensuring the mental health, dignity and physical safety of their employees. In order to provide an overview and assessment of health and safety concerns we conduct a mapping exercise to determine current practices within the mining industry benchmarked against non-mining industries. Complementing the quantitative analysis, we provide a collection of interventions and strategies that have already been implemented across different industries which can offer insights on potential approaches that could be considered within the mining sector. The findings within this report should motivate further actions required to improve the health and well-being of mining sector workers.

Key Findings:

Mining workers' subjective wellbeing

- Compared to 15 years ago, a higher share of mining sector workers report being satisfied with their jobs, but the share of very satisfied workers has gone down.
- In the past decade, the share of workers very satisfied with the 'job itself' has gone down by 7.7 percentage points reaching 18.6 per cent.
- At 21.6 per cent, the mining sector has the lowest prevalence of workers who are very satisfied with their job overall compared to workers in other industries.
- Mining is the second last industry in terms of prevalence of workers with a high degree of satisfaction with job security, the job itself, and job prospect.
- Only 5 per cent of the mining sector's workers reported fair or poor physical health in 2020.
- Mining is in the top five of industries by the share of workers with excellent or very good physical health.
- The share of mining sector workers reporting low or moderate levels of psychological distress has gone down over the period from 2009 to 2019, while there has been a 6 percentage point increase in the share of workers reporting high distress levels.

Secondary evidence on workplace culture and sexual harassment in the mining sector

- Australia is still lagging behind other countries in preventing and responding to workplace sexual harassment.
- The mining industry is one of the worst five industries in relation to sexual harassment issues with 40 per cent of workers, and 74 per cent of women workers reported having experienced sexual harassment in the last five years.
- Women working within the mining industry frequently face a range of sexual harassment from unconscious sexism and misogyny to assault.
- Major risk factors which contribute to a high incidence of sexual harassment in the mining industry include poor culture, gender inequality and power disparity.
- Women in higher roles are more susceptible to harassment because they are sometimes perceived as having a 'token' position.
- Findings from Rio Tinto's global Everyday Respect survey which represented 10,303 employees revealed that 28.2 per cent of women reported direct experiences of sexual harassment. Respondents in Iron Ore (13.8 per cent), Strategy, Sustainability and Development (15.5 per cent), and Copper (12.9 per cent) reported the highest levels of sexual harassment.

- In a survey conducted by the Western Mine Worker' Alliance (WMWA) only 34 per cent of respondents agreed that there are adequate protections in place at their site to deal with sexual harassment.

Mining companies' current priorities

- Companies which provide references in company reports on physical well-being are likely to also have references on mental well-being.
- Companies with references to sexual harassment/advances/assault/sexism and bullying/abuse/victimisation/ discrimination/intimidation are highly likely to have references related to psychological distress/harm, depression/anxiety and suicide within their reports.
- Just 33 per cent and 17 per cent of mining and non-mining companies respectively make references to indicator MH3 with keywords relating to loneliness, social connection, or isolation.
- Half of the mining companies within the sample make references to keywords relating to indicator SH1 on sexual (advances)/sexual harassment/ assault/ sexism.
- Twenty-seven per cent of mining companies made keyword references to all five mental health and well-being indicators.
- Majority of mining and non-mining companies reported all three indicators relating to the physical health and safety domain.
- Mining companies make 4.5 references to MH1, well-being, per 100 pages. However, this average is much higher for non-mining companies at 7.3 references per 100 pages.
- Mining companies on average make 10 references to PS1 (safe/safety/physical safety/health and safety) per 100 pages which is higher than the average for non-mining companies.
- There are on average 1.5 and 0.5 references to SH1 (sexual (advances)/ sexual harassment/ assault/ sexism) per 100 pages for mining and non-mining companies, respectively.
- Based on our index, non-mining companies are more likely to prioritise the issues of mental health relative to mining companies.
- Issues concerning workplace culture and sexual harassment might be relatively under-prioritised.

Factors that shape priorities around employee well-being in the mining sector

- Prioritisation of employee health, safety and workplace culture, as captured through our composite index, increases by an increase in company size.
- Financial capacity shapes companies' ability to invest in workforce well-being.
- Companies with above-average representation of women in management are more likely to prioritise employee mental health and well-being, physical health and safety, and workplace culture and sexual harassment relative to companies with below-average representation of women in management.
- Companies with defined diversity and equality targets record a composite index score of 42.6 compared to companies without such targets with an average score of 22.1.
- Companies' commitment to SDG 5 on gender equality appears to be an important predictor of its priorities in the areas of mental health and well-being, physical health and safety, and workplace culture and sexual harassment.
- Companies that make commitments to employee health and safety-related policies and structures are more likely to have health and safety related targets as priorities.
- Prioritisation of mental health and well-being, physical health and safety, and workplace culture and sexual harassment, as captured through our composite index and its ingredients, is substantially higher among companies with a health and safety team compared to companies where no such team is present.

- Companies which have an employee skill training or career development support in place, or a policy to improve the provision of skill training are more likely to prioritise mental health and well-being, physical health and safety, and workplace culture and sexual harassment, as captured through our series of indices, relative to companies who do not have such policies.
- The systems that facilitate the efficient and safe reporting of misconducts and complaints are likely to be instrumental in enhancing employee well-being in certain areas, particularly when it comes to creating a safe workplace culture protecting against sexual harassment.
- Companies with provision to protect whistleblowers exhibit stronger priorities in the areas of mental health and well-being, physical health and safety and workplace culture and sexual harassment, as captured through our indices.

Interventions that make a difference for employee well-being

- Identifying employees' risk of being susceptible to poor mental health is an important first step to address well-being.
- A study on nurses' mental well-being, shows that engaging nurses in online mental health interventions may still require human contact with a coach or occupational physician. Blended work models may be more effective and should be further developed and investigated.
- The ability of managers to understand work-based mental risk factors and to implement adjustments to working conditions when required can improve the well-being of their staff.
- The most promising mental health training strategies include intervention seminars with reflective and interactive exercises in group settings.
- Mindfulness-based interventions in the workplace have been shown to promote mental health.

- Provision of physical health and safety education by methods that primarily focus on increasing knowledge without involving participants in the intervention tend to have limited results.
- Culturally appropriate occupational interventions may reduce worksite hazards and improve knowledge and practices among immigrant workers.
- Restorative breaks are found to have positive associations with workers' mental health and well-being.
- A study of the effectiveness of a safety incentive in the construction industry shows that companies with such programs reported improved employee safety behaviour and outcomes, such as reduced risk of injuries and accidents.
- Standardisation of equipment with high accident risk should be developed further and such public policies are important interventions.
- Implementing comprehensive anti-sexual harassment policies alone is not sufficient in preventing sexual harassment and the quality of these policies is very important.
- Interventions contribute towards reducing harassment if they are adopted primarily with a 'proactive' model of policy development rather than a 'reactive' model.
- Offering training has a significant impact on employees' comprehension of sexual harassment, as well as helping them recognise behaviours that may be signs of such harassment.
- A combination of strong anti-harassment policies where leaders demonstrate commitment and reinforce that harassment will not be tolerated along with regular prevention training for all organisational members was demonstrated to promote workplace safety.
- Formal and informal reporting, investigation, and remediation procedures are important interventions to address workplace sexual harassment.
- Interventions which support an organisational climate which promotes respect were associated with lower rates of gender harassment.

Identifying employees' risk of being susceptible to poor mental health is an important first step to address well-being.

Introduction

Introduction

Mining is one of the most significant sectors of the Australian economy (e.g., Fenna, 2013). It is a major contributor to investment, jobs, exports and government revenues in the country.

Fundamental to its success is the well-being of the sector's workforce. Yet, the sector faces unique challenges associated with remote working and travel, shift work, temporary accommodation, exposure to health and safety hazards and male dominated workforce that create risks for employee well-being and safety (Langdon *et al*. 2016, Parker *et al*. 2018).

Since employees spend a significant amount of time in the workplace, employers play a critical role in creating an environment that promotes well-being. A growing body of work also highlights the strong business case for investment in healthy and safe workforce that can lead to significant productivity gains (Gubler *et al*. 2018). In a recent survey by the Economist Intelligence Unit, more than 90 per cent of executives expressed the belief that investments in employee health and wellness have a direct impact on financial performance (Economist Intelligence Unit 2021).

In April 2022, the Department of Mines, Industry Regulation and Safety (DMIRS) commissioned a consortium led by the Future of Work Institute (FOWI) at Curtin University to undertake a major research and evaluation project on Mental Awareness, Respect and Safety in the Mining Industry.

The four-year project – the Landmark Study – will explore mental health, sexual harassment, emerging safety issues in Western Australia's mining industry. The Landmark Study will include the collection of baseline data on workers' experiences in the industry, and a follow-up data collection after three years to evaluate the success of workplace initiatives intended to improve mental health, well-being, culture and respect in the mining sector.

This first preliminary report by the Bankwest Curtin Economics Centre (BCEC) presents an exploratory analysis to lay the groundwork ahead of the more substantial fieldwork and research to be undertaken as part of the wider Landmark Study. The aim is to provide a general overview on the state of employee well-being in Australia's mining sector. Additionally, as its core emphasis, the report undertakes an assessment of mining companies' efforts to ensure the well-being of their employees based on a mapping of publicly available information. Three core domains of employee well-being are the focus of the report: mental health and well-being; physical health and safety; and workplace culture and sexual harassment.

To address these aims, the report pursues four specific tasks. First, we provide an overview and assessment of employee well-being in the mining sector drawing on an analysis of a secondary survey data and a review of secondary evidence on these issues. Second, we develop and apply an innovative data collection methodology based on content analysis of company reports, to document the significance placed by mining companies on promoting the mental health and well-being and physical health and safety of their employees and on improving the workplace culture so that sexual harassment is not tolerated. Third, using the indicators across the aforementioned three domains collected in the second stage, it provides descriptive analysis on the characteristics of corporate environments that are conducive to companies' prioritisations of employee well-being across those domains. Fourth, the report provides a review of interventions in other industry and country contexts that have been shown to make a difference for employee well-being, offering insights on potential approaches that could be considered within the mining sector.

The empirical analysis in this report draws on several sources of data that allow us to provide a rich analysis on the state of employee well-being and an assessment of employer efforts in ensuring employee well-being in the mining sector. First, we use the latest release of the Household, Income and Labour Dynamics in Australia (HILDA) survey which provides information on aspects of job satisfaction, physical and mental health by industry. Using this data, we are able to document the patterns of employee well-being and their changes over the course of the past 15 years in the mining sector and show how mining compares to other industries in terms of key employee well-being outcomes. Second, given the absence of employer surveys on investment into different domains of employee well-being, we undertake an innovative data collection, drawing on ASX 200 companies' annual, sustainability and other reports. We develop a methodology to extract markers of companies' prioritisation of employee well-being in the three core domains of our focus, based on a thoroughly developed procedure to conduct content analysis. Third, we merge data collected in the second stage with data from *Refinitiv*, a source that provides information on companies' social and governance indicators, thereby creating the opportunity to provide insights on corporate environments that give rise to employee well-being priorities as captured through our markers. This empirical analysis is complemented with a review of diverse pieces of secondary evidence and research to complement and enrich our analysis.

The sector faces unique challenges associated with remote working and travel, shift work, temporary accommodation, exposure to health and safety hazards and male dominated workforce that create risks for employee well-being and safety (Langdon et al. 2016, Parker et al. 2018).

The state of employee well-being in the mining sector

The state of employee well-being in the mining sector

This section provides an overview and assessment of employee health and well being in the mining sector drawing on an analysis of a secondary survey data and a review of secondary evidence on these issues.

The empirical analysis is based on the latest release of the Household, Income and Labour Dynamics in Australia (HILDA) survey, a nationally representative household survey that has a large array of questions on job satisfaction, physical and mental health that we utilise in this analysis. The review of evidence, on the other hand, while drawing on a range of sources, focuses on the evidence submitted to the WA parliamentary inquiry into sexual harassment against women in the mining industry – an area of high significance that is left out of the empirical part of this section due to data constraints. We start the section by defining the key domains of interest and their significance from organisational perspective. The analyses on employee well-being in the mining industry follows.

Employee health, safety and positive workplace culture: why should organisations care?

This report focuses on three areas of employee well-being: mental health and well-being, physical health and safety, and workplace culture such that sexual harassment is not tolerated. But why are these domains of significance? And why should organisations invest in ensuring employee well-being across these areas? Well-being is commonly conceived as a positive state of existence, and "more than simply the absence of negative factors" (Chari *et al.* 2018, p. 2). Hence, well-being in the workplace requires a broader approach than the traditional scope of occupational safety and health, and its conceptualisation is the subject of a growing body of work (Schulte *et al.* 2015). Several work design initiatives promote holistic approaches to get the best outcomes for employee well-being. For example, the 'Thrive at work' framework which consists of three over-arching pillars focusing on helping people get well again (Mitigate Illness), stay well (Prevent Harm) and be the best they can be (Promote Thriving) has demonstrated that well-being initiatives help employees and organisations thrive (see Parker and Jorritsma 2021).

The literature has employed measures of job satisfaction, good physical or mental health and quality of relationships to capture employee well-being (Chari *et al.* 2018). Existing evidence suggests that these outcomes matter for improved work performance and hence organisational productivity. For the case of job satisfaction, for example, studies suggest a positive correlation with employee and organisational performance (Ostroff 1992, Ouedraogo and Leclerc 2013). Similarly, Harter *et al.* (2013) demonstrate that the presence of positive workplace perceptions and feeling are associated with higher business-unit customer loyalty, higher profitability, higher productivity, and lower rates of turnover.

High levels of sickness absence and incapacity benefits make the issue of health at work a particularly high priority for policymakers (Harvey *et al.* 2009). But good physical and mental health are key markers of well-being and bear important implications for organisational outcomes too. In terms of physical health, for example, there is an established link between employee fitness and performance (Bernacki, E. J., and Baun 1984, Wattles and Harris 2003). On the other hand, mental health is an increasingly growing concern in the context of the workplace with mental disorders now being the leading cause of sickness absence in most high-income countries (Shiels *et al.* 2004, PwC 2014). A review by Ford *et al.* (2011) shows that psychological well-being, depression, general anxiety, and life satisfaction are important predictors

of work performance. Lu *et al.* (2022) find that innovative behaviour and work engagement is a significant mediator of the relationship between mental health and job performance. On the other hand, occupational stress has been recognised as a key area of concern for organisations due to its negative effects on the health of employees that in turn affects their performance at work (Ratnawat and Jha 2014).

No doubt, innovation within the mining industry has great potential to increase productivity, lower costs of production and reduce the social and environmental impacts of mining. Adopting innovations such as remote operations and robotics offers cost-saving opportunities however there are risk associated with such innovations. For example, in an incident on May 2021, a failure of wireless communications led to the deactivation of a safety bubble, exposing two operators to a potentially serious injury when autonomous haul trucks moved forward unexpectedly. Parker and Grote (2020) elucidate that automation without proper management can give arise to negative health and safety outcomes.

Positive workplace culture that does not tolerate sexual harassment is one of the three core areas of focus of our study. But what is sexual harassment exactly? According to the Australian Human Rights Commission, Sexual Harassment is defined as "any unwanted or unwelcome sexual behaviour where a reasonable person would have anticipated the possibility that the person harassed would feel offended, humiliated or intimidated."[1] According to the commission, examples of sexual harassment include: staring, leering or unwelcome touching; suggestive comments or jokes; unwanted invitations to go out on dates or requests for sex; intrusive questions about a person's private life or body; unnecessary familiarity, such as deliberately brushing up against a person; emailing pornography or rude jokes; displaying images of a sexual nature around the workplace; or communicating content of a sexual nature through social media or text messages.

A growing body of work shows that sexual harassment is likely to have immense negative consequences for employees, organisations, and the society overall. Sexual harassment has wide-ranging negative consequences for the physical and mental health of survivors (Willness *et al*. 2007, McDonald 2012). There is also evidence on lower job satisfaction, higher absenteeism and less commitment to the organisations (US Merit Systems Protection Board 1995, Hersch 2015) – all highly detrimental outcomes not only from an individual, but also from an organisational perspective. Moreover, recent research by Folke and Rickne (2022) shows that harassment leads women employees to switch to new workplaces with more female colleagues and lower pay – a phenomenon that exacerbates societal-level gender inequalities. Not only are organisations losing women's skills and potential for leadership roles in organisations, women are losing wages, status and voice in the society due to sexual harassment (Folke *et al.* 2020).

This report focuses on three areas of employee well-being: mental health and well-being, physical health and safety, and workplace culture such that sexual harassment is not tolerated.

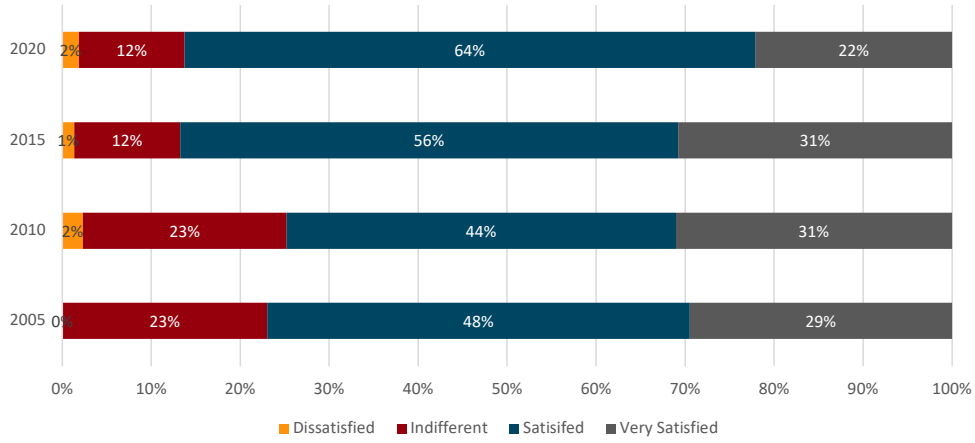
1 See the website of the Australian Human Rights Commission for more detail on the definition: https://humanrights.gov.au/quick-guide/12096

Empirical analysis of health and well-being in the mining sector

As we have seen, the well-being of a workforce is a key driving force behind the prosperity of an industry. In this section we ask whether mining sector workers are happy and healthy in their jobs. We provide an assessment of the well-being of the mining workforce along three key dimensions: satisfaction with work, physical health and psychological distress, drawing on the latest release of the HILDA survey.

We start with considering workers' overall job satisfaction over the past 15 years. The analysis presented in Figure 1 suggests that a higher share mining sector workers are satisfied with their jobs now compared to 15 years ago. But we observe a decrease in the share of very satisfied workers. Twenty-nine per cent of mining sector workers reported being very satisfied with their jobs in 2005; by 2020 this share had dropped to 22 per cent.

Figure 1 Satisfaction with work overall, mining industry workers, 2005-2020



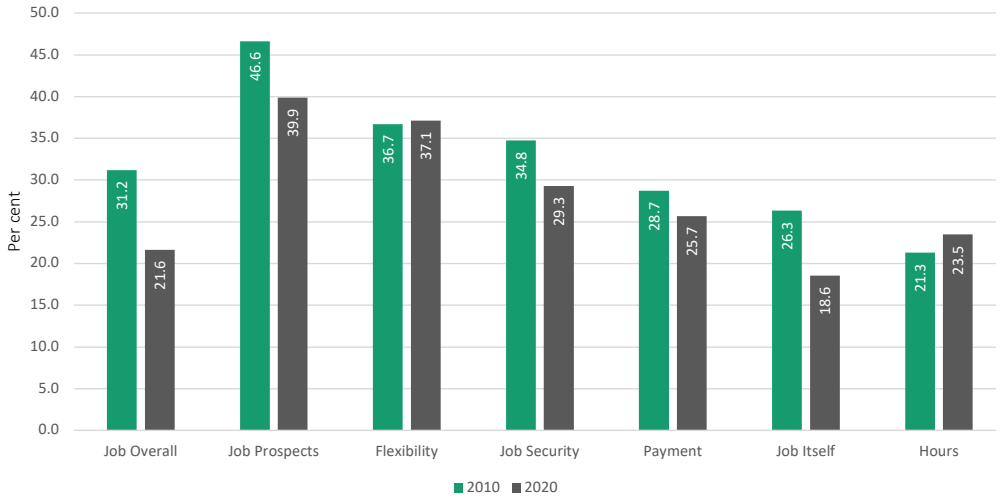
Source: Bankwest Curtin Economics Centre | Authors' calculations based on HILDA Release 20.

The share of mining sector workers being very satisfied with their jobs has gone down in most job aspects (Figure 2). In the course of the past decade, the share of workers very satisfied with the 'job itself' has gone down by 7.7 percentage points reaching 18.6 per cent – the lowest share of very satisfied workers across all work domains. Furthermore, satisfaction with job prospects has gone down by 6.7 percentage points while satisfaction with job security has gone down by 5.5 percentage points.

How do the levels of job satisfaction in the mining sector compare to those in other industries? Figure 3 shows that at 21.6 per cent, the mining sector has the lowest prevalence of workers who are very satisfied with their job overall of all industries. In comparison, the share of workers who report being very satisfied with their job overall is at 35.1 per cent in the real estate sector and at 43.4 per cent in other services sector.

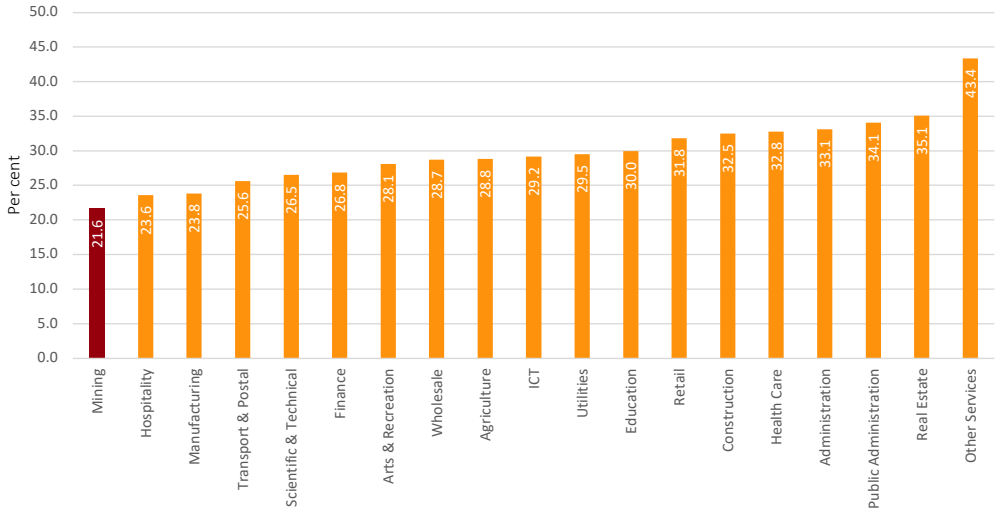
Mining ranks rather poorly when considering the shares of workers reporting being very satisfied by different aspects of their jobs (Figure 4). Mining is the second last industry in terms of the prevalence of workers with high degree of satisfaction with job security, the job itself, and job prospect. On the other hand, in terms of the share of workers being very satisfied with their pay and the flexibility offered by their jobs, mining ranks at around the average across industries.

Figure 2 Share of workers being very satisfied with different job aspects, mining industry, 2010 and 2020



Source: Bankwest Curtin Economics Centre | Authors' calculations based on HILDA Release 20.

Figure 3 Share of workers being very satisfied with work overall by industry, 2020



Source: Bankwest Curtin Economics Centre | Authors' calculations based on HILDA Release 20.

Figure 4 Share of workers being very satisfied with different job aspects by industry, 2020

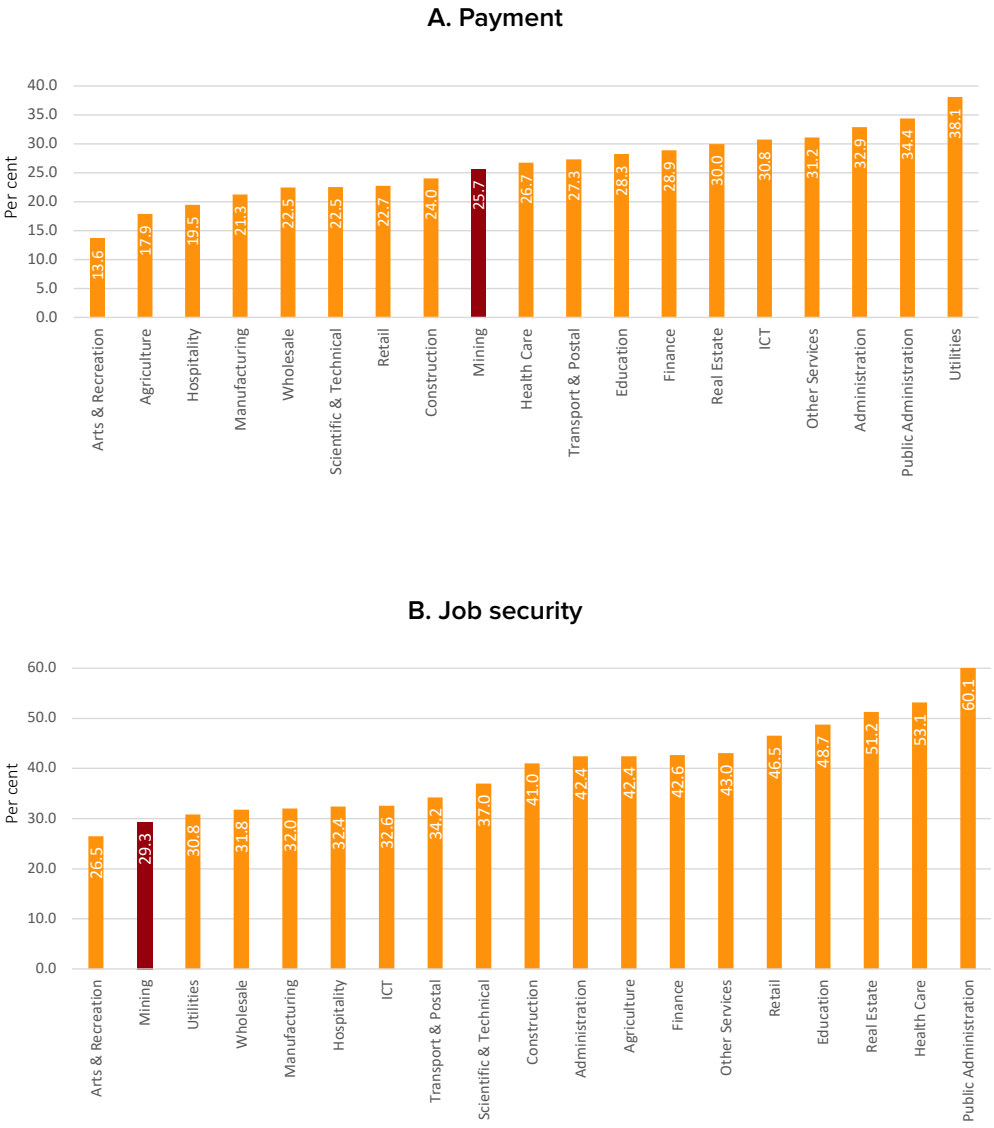


Figure 4 Share of workers being very satisfied with different job aspects by industry, 2020 (continued)

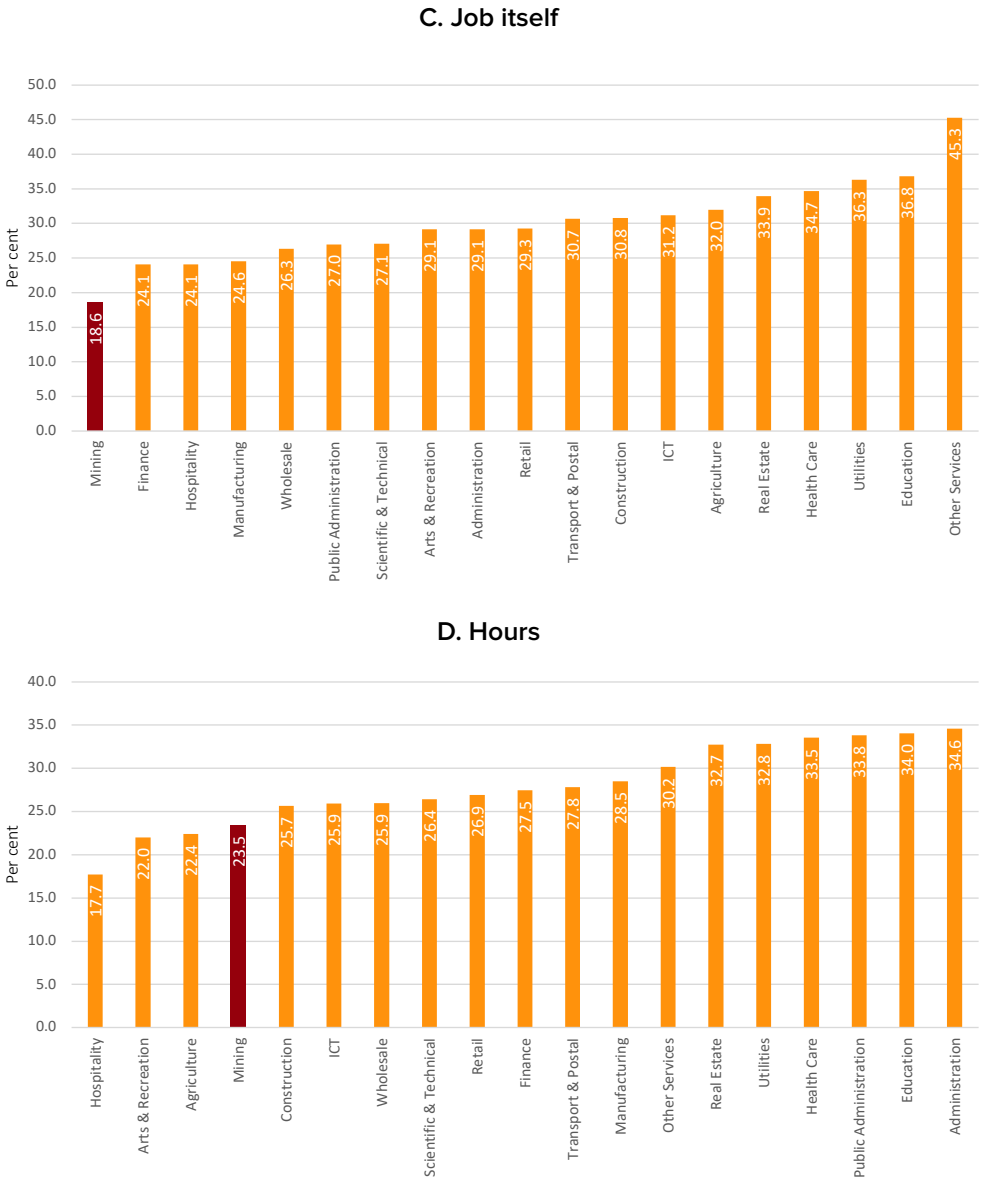
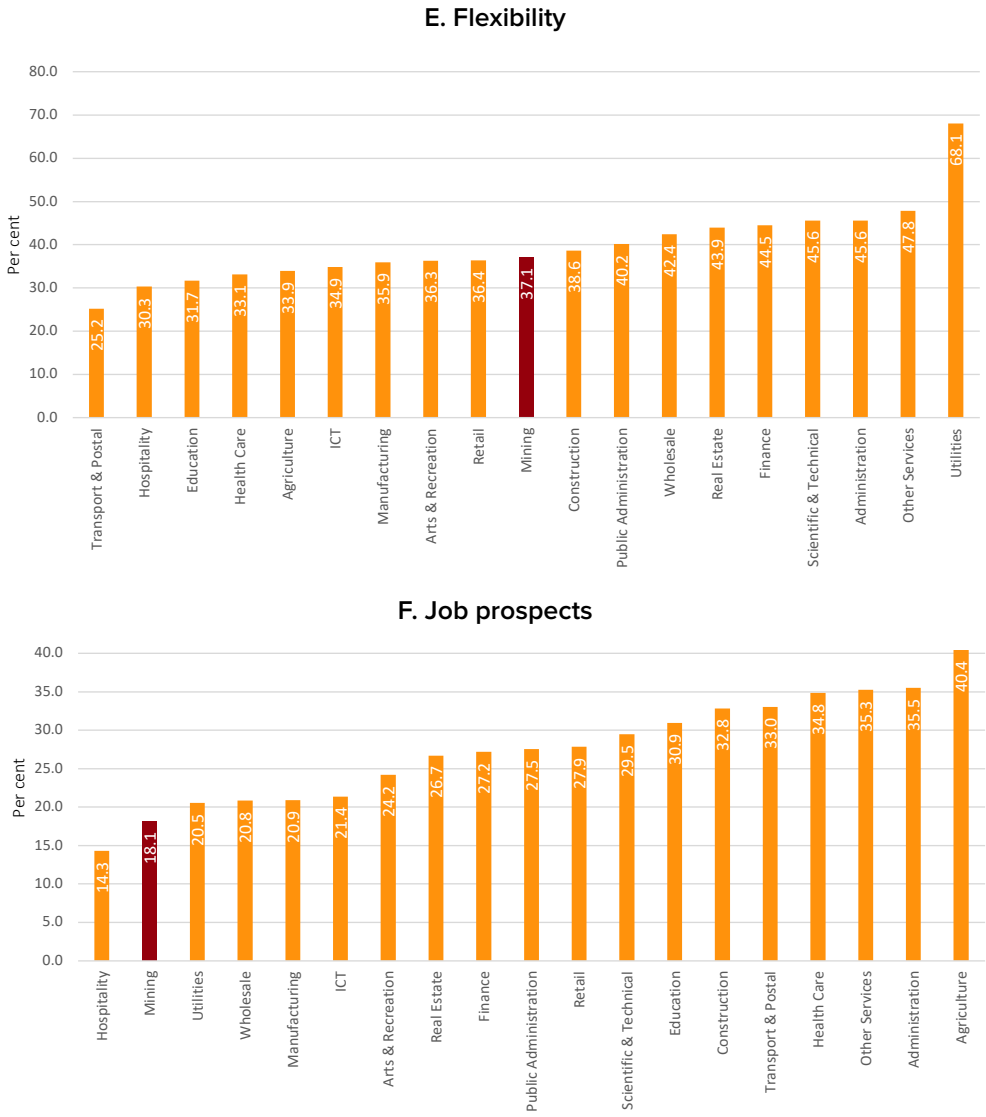


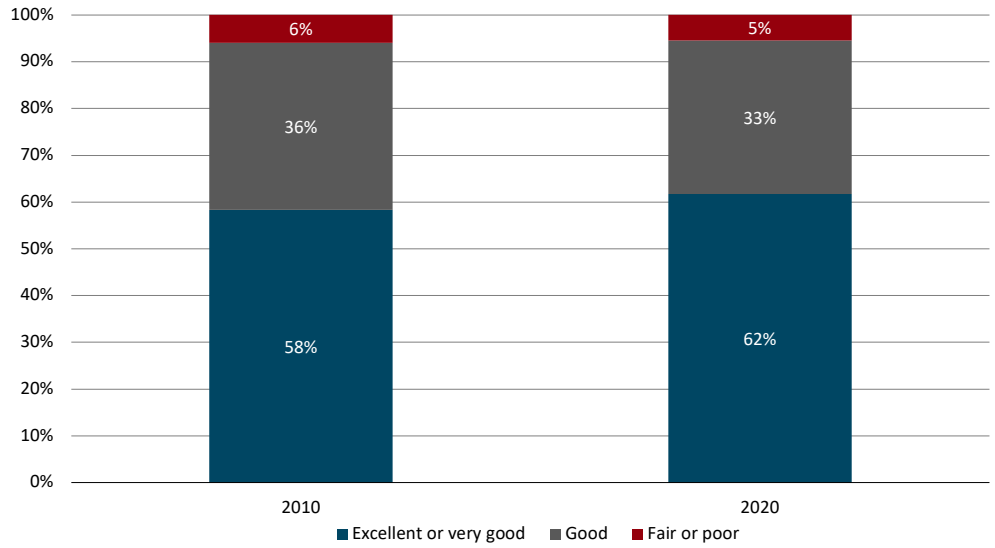
Figure 4 Share of workers being very satisfied with different job aspects by industry, 2020 (continued)



Source: Bankwest Curtin Economics Centre | Authors' calculations based on HILDA Release 20.

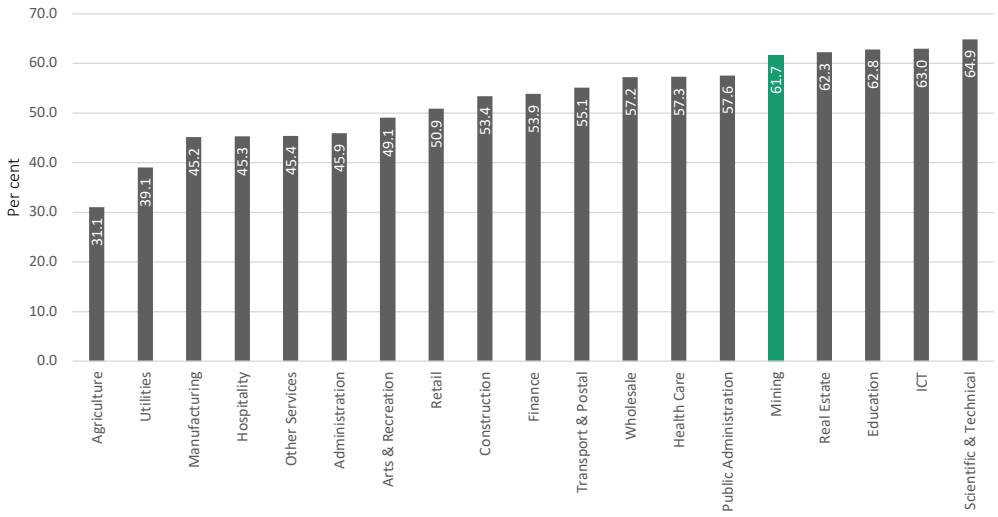
We turn to physical health of mining sector workers in Figure 5. Only 5 per cent of the mining sector's workers reported fair or poor physical health in 2020. The rest of the workers described their physical health as either excellent or very good (62 per cent) or good (33 per cent). These patterns have been stable over the course of the past decade. Moreover, mining is in the top 5 of industries by the share of workers with excellent or very good physical health (Figure 6). Mining also has a relatively high prevalence of workers reporting low distress levels based on psychological distress, Kessler scale (K10) risk categories (Figure 7). These findings however could be a result of male predominance in the mining workforce and their low rates of reporting psychological distress (Considine *et al.* 2017). As seen in Figure 8, the share of mining sector workers reporting low or moderate levels of psychological distress has gone down over the period from 2009 to 2019, while there has been a 6 percentage point increase in the share of workers reporting high distress levels.

Figure 5 Self-reported physical health, mining industry workers, 2010 and 2020



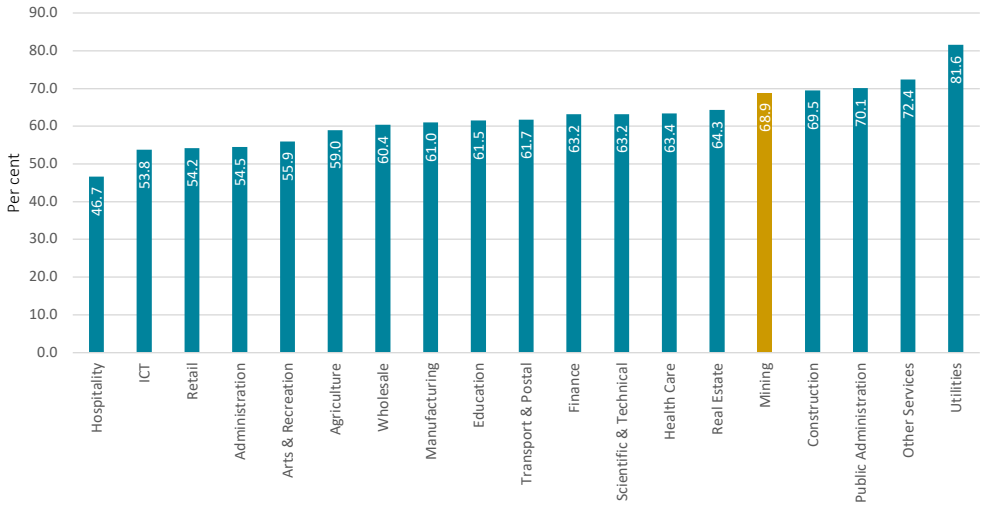
Source: Bankwest Curtin Economics Centre | Authors' calculations based on HILDA Release 20.

Figure 6 Share of workers reporting excellent or very good health by industry, 2020



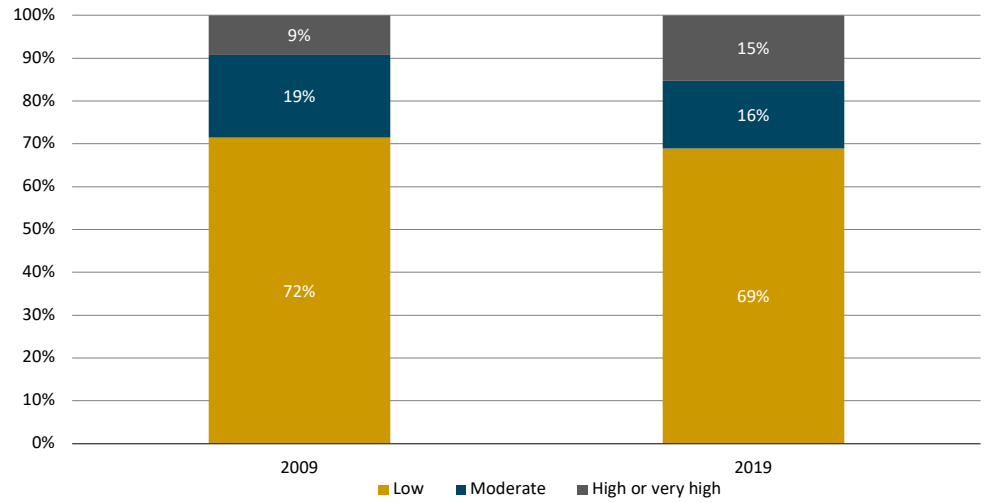
Source: Bankwest Curtin Economics Centre | Authors' calculations based on HILDA Release 20.

Figure 7 Share of workers reporting low distress levels based on psychological distress, Kessler scale (K10) risk categories by industry, 2019



Source: Bankwest Curtin Economics Centre | Authors' calculations based on HILDA Release 20.

Figure 8 Psychological distress, Kessler scale (K10) risk categories, mining industry workers, 2009 and 2019



Source: Bankwest Curtin Economics Centre | Authors' calculations based on HILDA Release 20.

Overall, smaller shares of mining sector employees report being very satisfied with many aspects of their jobs in 2020 compared to 15 years ago. Mining ranks at the bottom when it comes to the share of workers being very satisfied with their job overall. Mining has a relatively high prevalence of physically and mentally healthy workers compared to other industries. However, there are signs of increasing psychological distress among the sector's workers.

Secondary evidence on workplace culture and sexual harassment in the mining sector

While the previous section provided insights into areas relating to domains on mental health and well-being and physical health and safety, in this section we draw evidence relating to the third domain of our interest, workplace culture and sexual harassment. One of the first and largest pieces of work in Australia relating to sexual harassment, sex discrimination, and victimisation in the workplace was undertaken by the Australian Human Rights Commission (AHRC) between 2018 and 2020. In their report, *Respect@Work: National Inquiry into Sexual Harassment in Australia*, the AHRC expressed alarming high incidences of sexual harassment within Australian workplaces. Despite the introduction of the *Sex Discrimination Act 1984*, 35 years on Australia is still lagging behind other countries in preventing and responding to workplace sexual harassment (AHRC 2020).

Their National Survey data showed that characteristics and practices which make up certain industries may increase risks of sexual harassment. Male-dominated industries such as the mining industry which have unequal gender ratios, over-representation of men in senior leadership roles, and masculine workplace culture with roles considered as 'non-traditional' for women tend to be settings with increased prevalence of women experiencing sexual harassment. The AHRC (2020) found that in 2020, 31 per cent of women expressed that they had experienced some form of sexual harassment. The Commission identified the mining industry as being one of the worst five industries in relation to sexual harassment issues with 40 per cent of workers, and 74 per cent of women workers reported having experienced sexual harassment in the last five years.

Following the work of AHRC, the Western Australia parliament made an inquiry into sexual harassment against women in the mining industry. The inquiry commenced in July 2021 was completed in June 2022. Submissions were received by a wide range of individuals, government bodies, major mining companies, and representative organisations and unions. Overall, 87 submissions were received of which 55 were made by people with lived experience of the issue including 47 women who were victims of sexual harassment. The submissions established that women working within the mining industry frequently face a range of sexual harassment from unconscious sexism and misogyny to assault (AHRC 2020). The incidences which were catalogued where compelling, shocking, and confronting. Such experiences often left women feeling intimidated and fearful throughout their stay at FIFO camps; some women also suffered long-term severe trauma.

Not surprisingly, the submissions found that women were highly underrepresented with the industry making up just 19.1 per cent of workforce.

Similar to the findings by the AHRC (2020), through the submissions to the WA inquiry, major risk factors identified were: (i) Poor culture – including the general tone of the workplace, acceptance of poor behaviours from leaders, protection of 'high value' workers above others, and misuse of alcohol and drugs. (ii) Gender inequality – including rigid and stereotypical relations, aggressive male-male peer relationships and disrespect for women. (iii) Power disparity – where workers in leadership positions have power over promotion, reward, or dismissal (Parliament of Western Australia 2022).

Not surprisingly, the submissions found that women were highly underrepresented with the industry making up just 19.1 per cent of workforce. Women under representation was especially a concern for supervisor and manager roles. The evidence suggested that women in higher roles were more susceptible to harassment because they were sometimes perceived as having a 'token' position. That being said, the submissions did convey a range of actions that were being taken to reduce the risk of workplace sexual harassment. This included conducting surveys and having audits to learn the truths of what is happening within the workplace as well as making changes to alcohol policies by limiting consumption and implementing training about sexual harassment. Some companies have also invested in improving security of accommodation through the use of CCTV, locks, and improved lighting in camps (Parliament of Western Australia 2022).

The inquiry demonstrated that industry understanding of sexual harassment is poor and underreported. However, in their submissions, Rio Tinto and the Western Mine Worker' Alliance (WMWA) conducted surveys in response to the inquiry and provided some quantitative evidence. Findings from Rio Tinto's global *Everyday Respect* survey which represented 10,303 employees revealed that 28.2 per cent of women reported direct experiences of sexual harassment. In addition, respondents in Iron Ore (13.8 per cent), Strategy, Sustainability and Development (15.5 per cent), and Copper (12.9 per cent) reported the highest levels of sexual harassment. The survey also revealed that employees in Australia were more likely to have experienced sexual harassment in the last five years compared to their employees in Canada, Mongolia, USA, South Africa, and New Zealand (Rio Tinto 2022).

Respondents of the survey conducted by the WMWA included 425 employees from companies including Rio Tinto, BHP, Fortescue Metals Group and others. Amongst the respondents only 26 per cent agreed that workers are supported throughout the process when reporting instances of sexual harassment in FIFO workplaces. Forty-five per cent of respondents agreed that the worksite culture, encouraged by their employer, protects workers from sexual harassment on-site and in-camp. However, only 34 per cent of respondents agreed that there are there adequate protections in place at their site to deal with sexual harassment (WMWA 2022).

All companies which made submissions to the inquiry appeared before the Committee and agreed that sexual harassment was unacceptably prevalent within the industry, yet according to the Parliament of Western Australia (2022) the understanding of companies about what is happening within workplaces is limited and a sign of corporate failure. To that end, there is still much improvement required to safeguard the dignity of workers in the mining industry.

Addressing employee well-being in the mining sector: A review of current company priorities

Addressing employee well-being in the mining sector: A review of current company priorities

Worker well-being is key to the prosperity of industry, and employers play an important role in creating an environment that nurtures well-being.

As the previous section demonstrates, the mining sector faces important concerns around employee satisfaction, mental health, safety and workplace culture. What do companies do to ensure employee well-being in these areas?

In the absence of employer survey or administrative data to take a detailed account of current practices among the mining sector employers, we undertake an innovative data collection that allows us to generate markers of company priorities in three key areas: mental health and well-being; physical health and safety; and workplace culture and sexual harassment. We describe our approach to data collection next, followed by a presentation of our data on key indicators.

Sample of examined companies and sources

For the analysis we first identified ASX200 mining companies which are classified as having operations relating to coal mining, metal ore mining, non-metallic mineral mining and quarrying, and exploration and other mining support services. We then restricted the sample to companies with mining operations within Australia, leading to a sample of 30 mining companies.[2] Note that our analysis focuses on companies which extract solid minerals however as a robustness check we present additional analyses which includes oil and gas extraction companies in our sample. These results are presented in the Appendix Figures 1A, 2A, and 3A.

In some parts of our analysis we also include a selection of 12 companies outside the mining industry in order to make comparisons between the two types of companies.[3] Non-mining companies are selected from various industries including, retail trade, services, financial, entertainment and recreation, supply chain, and information and telecommunications. We selected non-mining companies within the latter industries following the analysis by the AHRC (2020) which identified them as having the highest rates of harassment (along with mining industries).

Content analysis and indicator construction

To precisely capture what mining industry organisations do towards creation of a healthy and safe workplace, we'd have needed access to a dedicated organisational survey or administrative data. But such data was not there as of the time of this study. Hence, in order to investigate the degree of commitment from mining industry organisations towards the creation of a healthy and safe workplace, we undertook an innovative data collection and in-depth analysis of companies' reports including annual reports, sustainability reports and other reports available on the company websites which relate specifically to workplace health and safety. Using content analysis, we generated proxies for companies' current practices relating to the three domains of health and well-being; physical health and safety; and workplace culture and sexual harassment. Content analysis is a textual analysis which examines messages or characteristics of text to interpret meaning. In particular, we used content analysis based on frequency of concepts relating to specific keywords. Content based analysis methodologies have been effectively implemented and validated by others to study corporate sustainability and corporate social responsibility (CSR) reports (see for example, Bondy *et al*. 2008, Campopiano and de Massis 2015, Dobbs and van Staden 2016, and Landrum and Ohsowski 2017).

2 The 30 mining companies included in the sample are presented in appendix Table 1A.

3 The 12 non-mining companies included in the sample are presented in appendix Table 2A.

Through careful reading of company reports, specific keywords were selected and identified to form indicators for each domain. As seen in Table 1, the mental health and well-being domain comprises of five indicators while the physical health and safety and workplace culture and sexual harassment domains each comprise of three indicators. Keywords from each indicator where coded using NVivo.

In order to ensure efficient coding and to provide an accurate picture of the frequency and breadth of the indicators our investigation included three important features. First, to ensure that all search terms were captured, keyword variants were also included within the analysis (for example, variants of keywords relating to 'safe' included 'safety', 'safer' and 'safely'). Second, coding was implemented for keywords at the sentence level. This was the most appropriate approach given that many companies recorded activities across different sites therefore coding at the sentence level allowed multiple incidences of indicators to be coded which may appear within the same paragraph but relate to different sites and this also reduces ambiguity of only coding at a word level (Gardiner 2022, Campbell and Rahman 2010). Finally, keyword counts were apportioned based on document sizes in order to reduce biases that may occur due to document length. Therefore, the indicators are presented based on references to keywords per 100 pages of reports for each company.

Following the construction of indicators, we implemented a statistical procedure to reveal a broader set of indices which represent each of the three domains. The approach used, known as, Principle Components Analysis (PCA) is a statistical technique that aggregates a set of correlated variables allowing one to construct indices by exploiting similarities and contrasts between indicators. Following the construction of the domain indices a second PCA, with the three estimated domain index scores as input, was then used to construct a composite index, which is a linear weighted combination of the scores. The composite index therefore provides a comprehensive measure of all the three domains relating to workplace mental health and well-being; physical health and safety; and workplace culture and sexual harassment.

Table 1 Domains and key indicators

Domain	Indicator	Description
Mental health and well-being	MH1	Keywords: well-being (independent of specific references to mental or physical well-being)
	MH1M	Keywords: mental and well-being within paragraph proximity
	MH2	Keywords relating to: mental illness/ mental health (ill-health) / mentally healthy/ mental stress
	MH3	Keywords relating to: loneliness / social connection/ isolation
	MH4	Keywords relating to: psychosocial (hazards)/ psychological (distress/ harm) / depression/ anxiety/ suicide
Physical health and safety	PS1	Keywords relating to: safe/ safety/ physical safety/ health and safety
	PS2	Keywords relating to: injury/illness
	PS3	Keywords: physical and well-being within paragraph proximity
Workplace culture and sexual harassment	SH1	Keywords relating to: sexual (advances)/ sexual harassment/ assault/ sexism
	SH2	Keywords relating to: bullying / abuse / victimisation/ discrimination / intimidation
	SH3	Keywords relating to: gender/ female/ woman

Descriptive analysis on indicators

In this section, we take a look into the data resulting from the analysis described above. We start with presenting the correlation across indicators in Table 2. There appear to be some strong correlations across indicators in the three different domains. For example, PS3 is positively correlated with MH1M. This suggests that companies which provide references on physical well-being are likely to also have references on mental well-being. Interestingly, there is also a strong a positive correlation between two workplace culture and harassment indicators (SH1 and SH2) and the mental health and safety indicator MH4 – companies with references to sexual harassment/advances/assault/sexism and bullying/abuse/victimisation/discrimination/intimidation are highly likely to have references related to psychological distress/harm and depression/anxiety and suicide within their reports.

Table 2 Correlation matrix of indicators

		Mental health and well-being					Physical health and safety			Workplace culture and sexual harassment		
		MH1	MH1M	MH2	MH3	MH4	PS1	PS2	PS3	SH1	SH2	SH3
Mental health and well-being	MH1	100%										
	MH1M	28%	100%									
	MH2	21%	90%	100%								
	MH3	0%	5%	12%	100%							
	MH4	3%	37%	42%	25%	100%						
Physical health and safety	PS1	36%	51%	49%	25%	45%	100%					
	PS2	34%	51%	49%	26%	29%	67%	100%				
	PS3	37%	66%	46%	-4%	12%	36%	38%	100%			
Workplace culture and sexual harassment	SH1	6%	11%	17%	19%	83%	31%	9%	1%	100%		
	SH2	8%	18%	25%	26%	83%	36%	11%	7%	94%	100%	
	SH3	48%	34%	37%	26%	46%	31%	49%	25%	48%	49%	100%

Note: Indicator descriptions can be found in Table 1. The sample consists of 30 mining companies and 12 non-mining companies.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

The majority of companies exhibit a general consciousness about well-being. As seen in Table 3, over 90 per cent of both mining and non-mining companies make references to the keyword well-being within their reports. However, just 33 per cent and 17 per cent of mining and non-mining companies respectively make references to indicator MH3 with keywords relating to loneliness, social connection, or isolation. In relation the workplace culture and sexual harassment domain, half of the mining companies within the sample make references to keywords relating to indicator SH1 on sexual advances/sexual harassment/assault/sexism. On the other hand, non-mining companies with at least one incidence of the indicator SH1 is slightly higher at 58 per cent.

Twenty-seven per cent of mining companies made keyword references to all five mental health and well-being indicators compared to 17 per cent for non-mining companies (Figure 9). Amongst the non-mining companies all companies referenced at least two indicators. However, seven per cent of mining companies made no

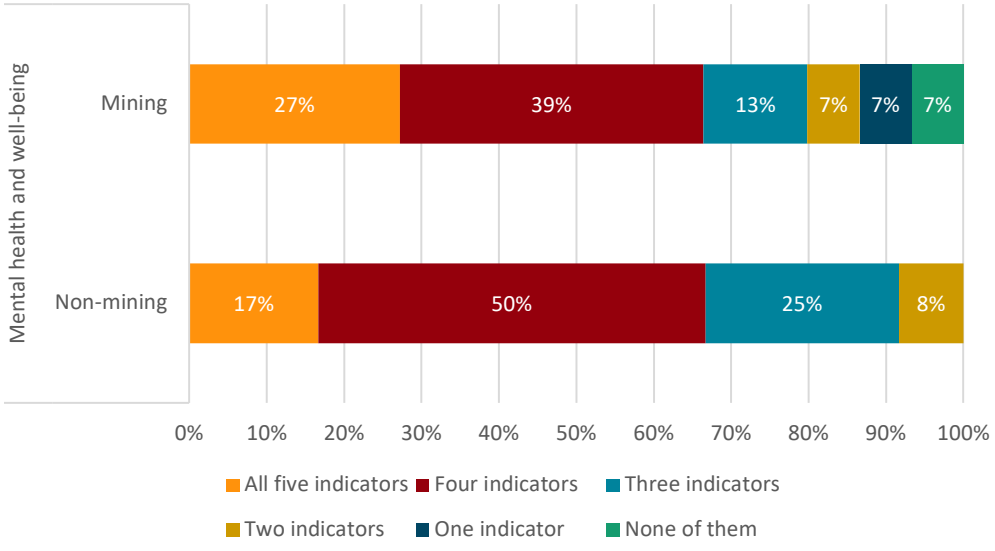
reference to any of the mental health and well-being indicators. The majority of mining and non-mining companies reported all three indicators relating to the physical health and safety domain (Figure 10). In relation to workplace culture and sexual harassment indicators, just 50 per cent of the mining and 42 per cent of non-mining companies had references to all three indicators (Figure 11). Moreover, all non-mining companies had references to at least one indicator within the domain and seven per cent of mining companies had just one indicator present.

Table 3 Instances of at least one indicator, by company type

		Mining		Non-mining	
Domain	Indicator	No. of companies	%	No. of companies	%
Mental health and well-being	MH1	28	93%	11	92%
	MH1M	24	80%	12	100%
	MH2	25	83%	12	100%
	MH3	10	33%	2	17%
	MH4	19	63%	8	67%
Physical health and safety	PS1	30	100%	12	100%
	PS2	29	97%	11	92%
	PS3	21	70%	9	75%
Workplace culture and sexual harassment	SH1	15	50%	7	58%
	SH2	22	73%	6	50%
	SH3	28	93%	12	100%

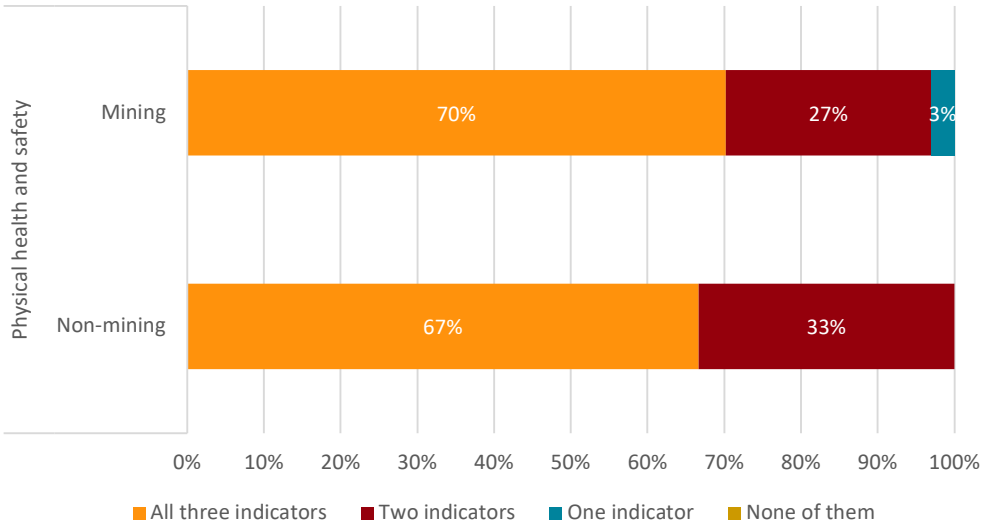
Note: Indicator descriptions can be found in Table 1. The sample consists of 30 mining companies and 12 non-mining companies.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

Figure 9 Percentage of companies with mental health and well-being indicators



Note: Indicator descriptions can be found in Table 1. The sample consists of 30 mining companies and 12 non-mining companies.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

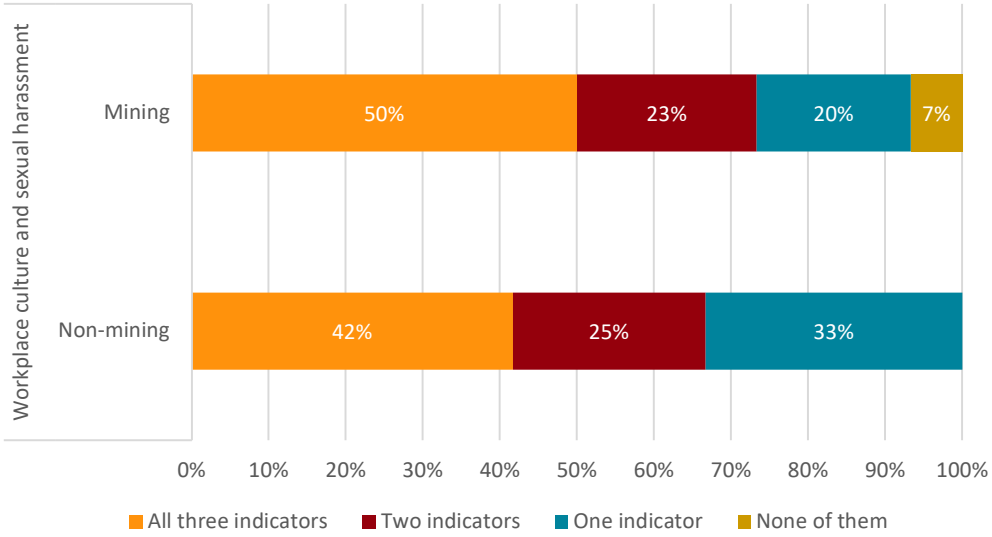
Figure 10 Percentage of companies with physical health and safety indicators



Note: Indicator descriptions can be found in Table 1. The sample consists of 30 mining companies and 12 non-mining companies.

Source: Bankwest Curtin Economics Centre | Authors' estimates.

Figure 11 Percentage of companies with workplace culture and sexual harassment indicators

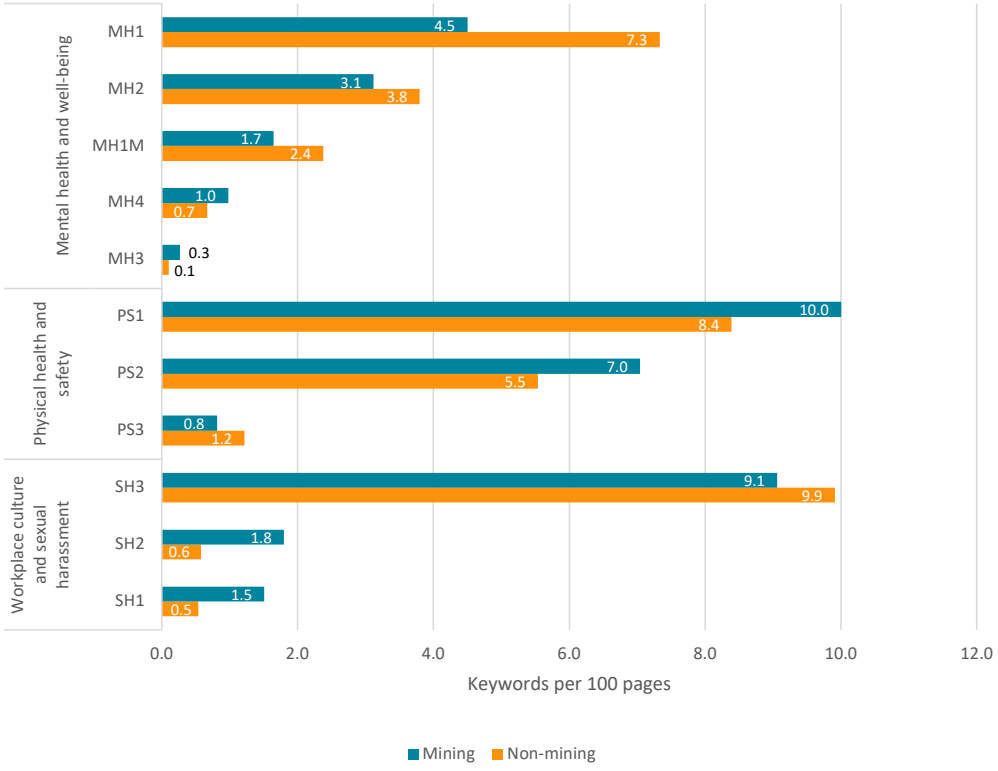


Note: Indicator descriptions can be found in Table 1. The sample consists of 30 mining companies and 12 non-mining companies.

Source: Bankwest Curtin Economics Centre | Authors' estimates.

While the previous descriptive analysis demonstrates the frequency of specific indicators, Figure 12 provides insight into the intensity of companies' references to indicators. On average, mining companies make 4.5 references to MH1, well-being, per 100 pages. However, this average is much higher for non-mining companies at 7.3 references per 100 pages. The average references to MH2 and MH1M indicators were also higher for non-mining companies. The mining industry is generally regarded as having one of the highest rates of fatalities given the high-risk settings for employees. However, the mining industry has made significant improvements in health and safety over the last decade. Within the sample, mining companies on average make 10 references to PS1 (safe/safety/physical safety/health and safety) per 100 pages which is higher than the average for non-mining companies. References to SH2 and SH3 are also higher for mining companies compared to non-mining companies. For example, there are on average 1.5 and 0.5 references to SH1 (sexual (advances)/sexual harassment/assault/sexism) per 100 pages for mining and non-mining companies, respectively.

Figure 12 Indicator averages, by company type



Note: Indicator descriptions can be found in Table 1. The sample consists of 30 mining companies and 12 non-mining companies.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

Table 4 Company indices, by domain

Company ID	Company type	Mental health and well-being index	Physical health and safety index	Workplace culture and sexual harassment	Composite index
1033	Mining	70.6	58.0	100.0	100.0
1022	Mining	88.6	93.6	27.0	85.2
1038	Mining	100.0	72.4	22.1	79.8
1036	Non-mining	78.6	100.0	15.9	77.9
1042	Non-mining	71.2	100.0	2.7	68.4
1019	Mining	61.7	32.4	22.7	49.1
1024	Mining	45.5	66.2	7.8	47.5
1013	Mining	49.0	43.8	17.1	45.2
1017	Mining	41.8	59.4	11.4	45.1
1016	Mining	33.8	50.0	20.4	42.7
1037	Mining	26.2	70.9	8.6	41.5
1031	Mining	30.4	43.4	14.1	35.8
1032	Mining	18.2	63.0	6.5	34.2
1045	Non-mining	34.7	36.8	10.3	33.3
1039	Non-mining	49.5	18.2	9.1	32.1
1027	Mining	37.5	36.8	4.7	31.7
1034	Mining	36.6	38.7	3.1	31.3
1028	Mining	30.8	41.1	2.4	29.4
1029	Mining	38.9	23.8	6.5	28.4
1040	Non-mining	38.9	19.7	9.6	28.4
1006	Non-mining	37.6	30.1	2.0	28.0
1015	Mining	20.7	25.7	20.0	28.0
1005	Mining	18.5	31.5	15.9	27.2
1041	Non-mining	31.9	15.2	13.8	25.8
1008	Non-mining	15.7	38.0	7.4	24.2
1023	Mining	24.5	31.2	4.1	23.9
1011	Mining	20.6	32.9	5.7	23.7
1043	Mining	21.9	34.6	1.8	22.9
1003	Non-mining	13.0	37.7	5.9	22.3
1002	Mining	15.7	32.7	5.6	21.4
1014	Mining	26.7	24.2	1.3	20.9
1009	Non-mining	19.8	13.7	9.8	18.2
1018	Mining	10.2	27.1	5.0	16.7
1021	Mining	1.5	33.3	6.0	15.9
1025	Non-mining	23.6	1.4	6.6	13.7
1020	Mining	3.6	27.4	4.1	13.7
1030	Mining	17.9	7.6	2.1	11.4
1001	Mining	0.9	19.4	7.3	11.1
1026	Non-mining	19.0	0.5	5.1	10.7
1007	Mining	2.4	8.3	0.2	4.2
1012	Mining	0.0	3.5	0.0	1.3
1010	Mining	0.0	0.0	0.0	0.0
Mining company average		30.0	38.0	12.0	32.0
Non-mining company average		36.3	33.8	8.2	31.5

Notes: Indicator descriptions can be found in Table 1. The sample consists of 30 mining companies and 12 non-mining companies.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

The constructed index scores are presented in Table 4. Both mining and non-mining companies have similar average composite index scores. Mining companies have the highest average score for the physical health and safety index whilst non-mining companies have the highest average score for the mental health and well-being index. This implies that relative to non-mining companies, mining companies are more likely to see physical health and safety as a priority. On the other hand, based on our index, non-mining companies are more likely to prioritise the issues of mental health relative to mining companies. Both mining and non-mining companies have the lowest scores for the workplace culture and sexual harassment index of the three domains. What this effectively means is that relative to employee physical and mental health, the issues concerning workplace culture and sexual harassment might be relatively under-prioritised.

Mining companies have the highest average score for the physical health and safety index whilst non-mining companies have the highest average score for the mental health and well-being index.

Company-specific factors that shape priorities around employee well-being in the mining sector

Company-specific factors that shape priorities around employee well-being in the mining sector

Using the indicators collected in the previous chapter, here we ask whether company specific factors can explain the differences across companies in the prioritisation of employees' mental health and well-being; physical health and safety; and workplace culture and sexual harassment.

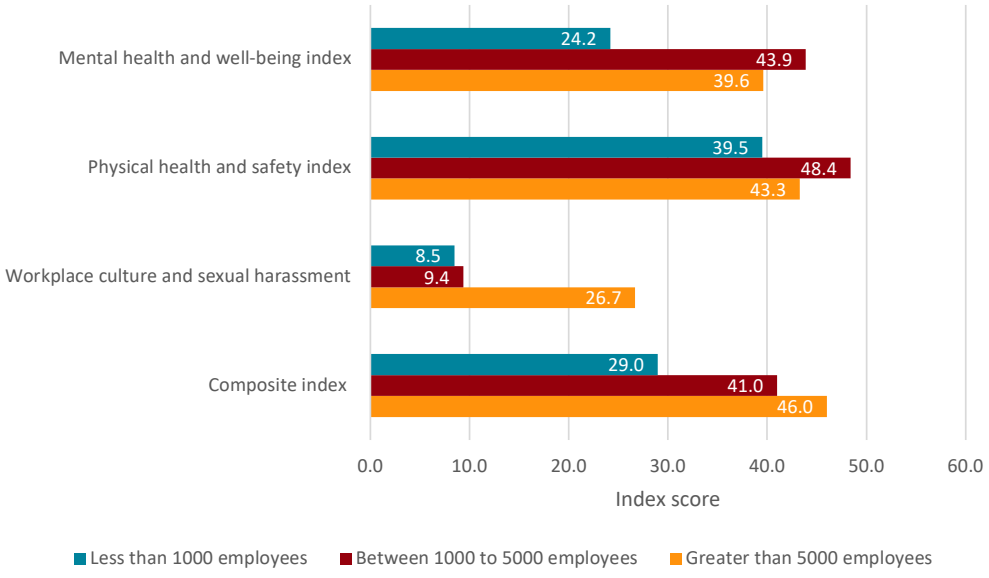
To address this question, we merge our data on indicators with data on a range of company characteristics from *Refinitiv*, a rich source of data on companies' social and governance indicators. This analysis is presented next.

Company size and type

In the last section we saw that there are significant differences in our indices of mental health and well-being, physical health and safety, and workplace culture and sexual harassment across companies in the sample. Here we consider whether companies' background characteristics might explain such differences.

Figure 13 presents the average index scores by company size, distinguishing between companies with under 1000; between 1000-5000; and over 5000 employees. It is possible that bigger companies have more capacity as well as incentives to invest in employee well-being initiatives. Indeed, this analysis suggests an increase in the prioritisation of employee health, safety and workplace culture, as captured through our composite index, by an increase in company size.

Figure 13 Index scores by mining company size

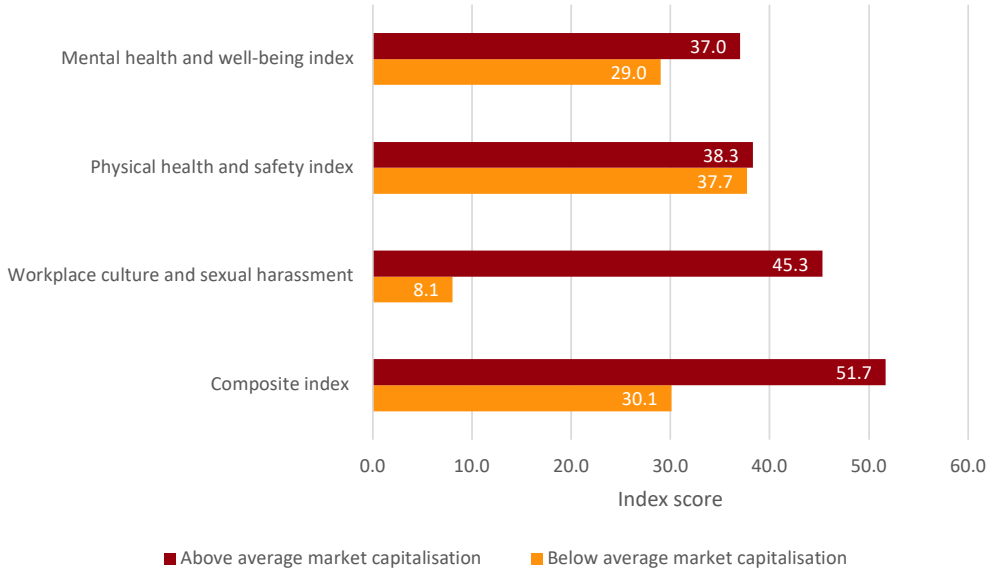


Note: The sample consists of 25 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

When looking at separate components of the index, however, we observe differences in the indices between companies with under-1000 and over-5000 employees but not always between companies with 1000-5000 and less than 1000 employees. In particular, there are no differences between the latter two groups of companies when looking at the workplace culture and sexual harassment index. We also consider the companies' financial capacity, captured by market capitalisation, as a potential driver of their capacity to invest in employee well-being. Market capitalisation refers to the total dollar value of a company's outstanding shares of stock and is a commonly used measure of company size.

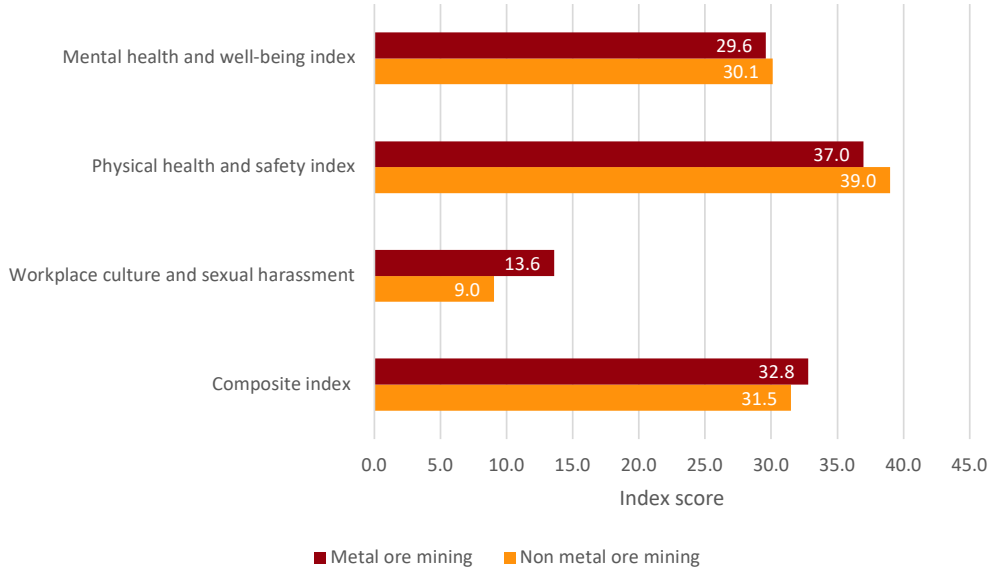
Figure 14 presents the averages of our composite index and its ingredients by the level of companies' market capitalisation, distinguishing between companies above and below the average market capitalisation in the sample. This analysis suggests that financial capacity might indeed shape companies' ability to invest in workforce well-being. Companies with above average market capitalisation record higher indices across most domains relative to companies with below average market capitalisation. Our composite index takes the value of 51.7 for companies with above average market capitalisation and goes down to 30.1 for companies with below average market capitalisation.

Figure 14 Index scores by mining companies' market capitalisation



Note: The sample consists of 30 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

Figure 15 Index scores by mining companies' industry group



Note: The sample consists of 30 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

Next, in Figure 15, we explore the differences in indices by industry sub-grouping, distinguishing between metal ore mining (comprising 60 per cent of our sample) and other type of mining companies. Previous literature has demonstrated that outcomes may vary by mineral type (see for example Ross 2015) and the distribution of our sample allows us to disaggregate the sample between metal ore and non-metal ore companies. Our mental health and well-being index does not vary between these two types of mining companies. However, metal ore mining companies report a higher workplace culture and sexual harassment index score relative to other mining companies potentially suggesting a higher prioritisation of this area of employee well-being among metal ore mining companies.

We explore the differences in indices by industry sub-grouping, distinguishing between metal ore mining (comprising 60 per cent of our sample) and other type of mining companies.

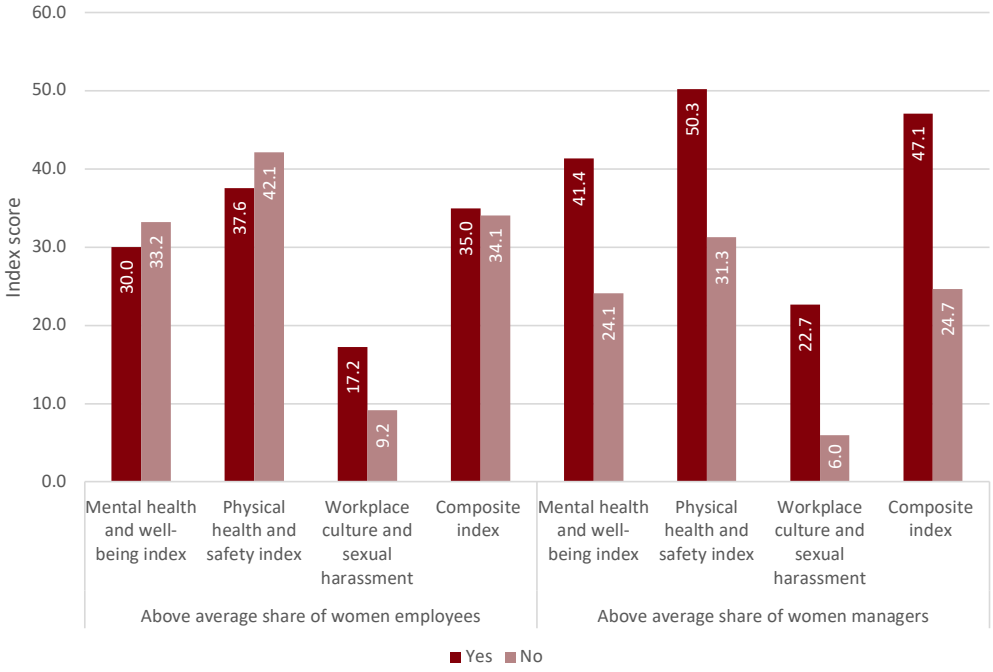
Gender and diversity practices and policies

Organisational diversity is an increasingly important aspect of corporate governance that has been linked with a range of favourable outcomes including better financial performance (Campbell and Minguez-Vera 2008), reduced incidence of fraud (Capezio and Mavisakalyan 2016) and organisational conflict (Nielsen and Huse 2010), more equitable remuneration (Cassells and Duncan 2021) and higher social responsiveness (Galbreath 2011), among other things. We build on this evidence to ask whether companies' gender and diversity practices and policies matter for the effort they put into the area of employee well-being.

Figure 16 reports the averages of our indices by women's representation among employees and managers, distinguishing between above and below average representation groups. We do not observe large differences in index scores of companies with above and below average share of women's representation among employees (left panel of Figure 16). One exception is the domain of workplace culture and sexual harassment where we observe a higher index for companies with an above average representation of women employees.

Turning to the analysis of companies with above and below average representation of women in management roles, we find stark differences. This analysis shows that companies with above-average representation of women in management are more likely to prioritise employee mental health and well-being, physical health and safety, and workplace culture and sexual harassment relative to companies with a below-average representation of women in management.

Figure 16 Index scores by mining companies' share of women employees and women managers

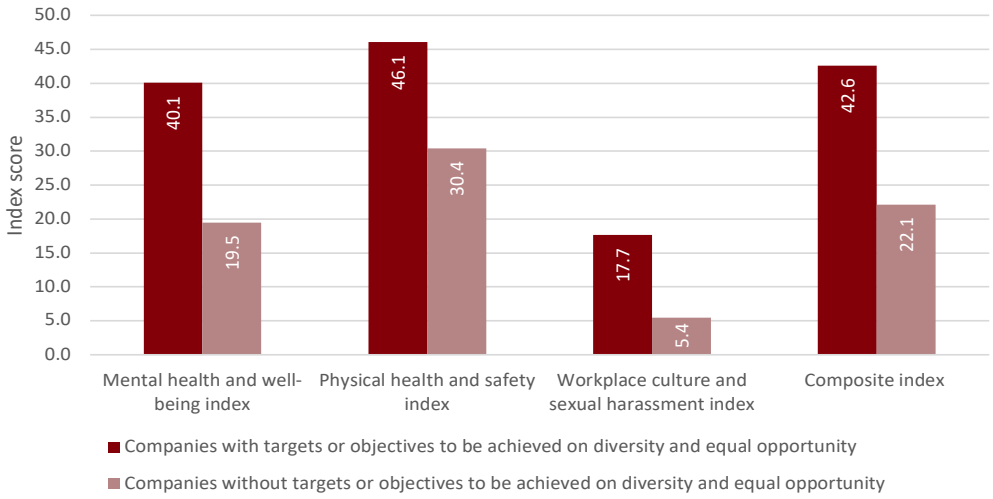


Note: The results are based on 28 and 26 mining companies with the relevant data available on percentage of women employees and managers, respectively.

Source: Bankwest Curtin Economics Centre | Authors' estimates.

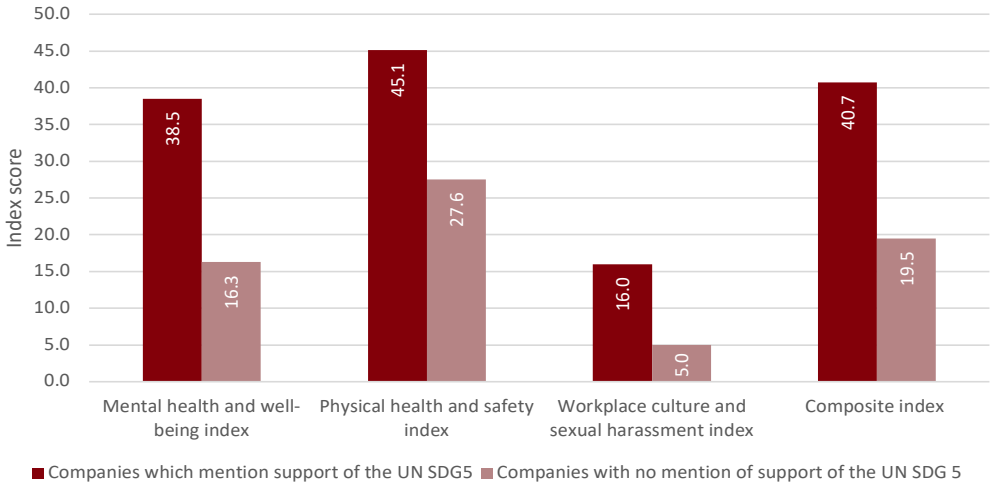
Next, we study the difference in average index scores by companies' commitments to diversity and equal opportunity as evidenced through having targets or objectives on diversity and equal opportunity (Figure 17) and support for the UN SDG 5 on gender equality (Figure 18). There are substantial differences in the composite index and its components between companies with and without targets and objectives on diversity and equal opportunity. Companies with defined diversity and equality targets record a composite index score of 42.6 compared to companies without such targets with an average score of 22.1. Similarly, companies' commitment to SDG 5 on gender equality appears to be an important predictor of its priorities in the areas of mental health and well-being, physical health and safety, and workplace culture and sexual harassment as seen from the analysis reported in Figure 18.

Figure 17 Average index scores by companies' with and without targets or objectives to be achieved on diversity and equal opportunity



Note: The results are based on 29 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

Figure 18 Average index scores by companies' indication of support of the UN Sustainable Development Goal 5 (SDG 5) Gender Equality



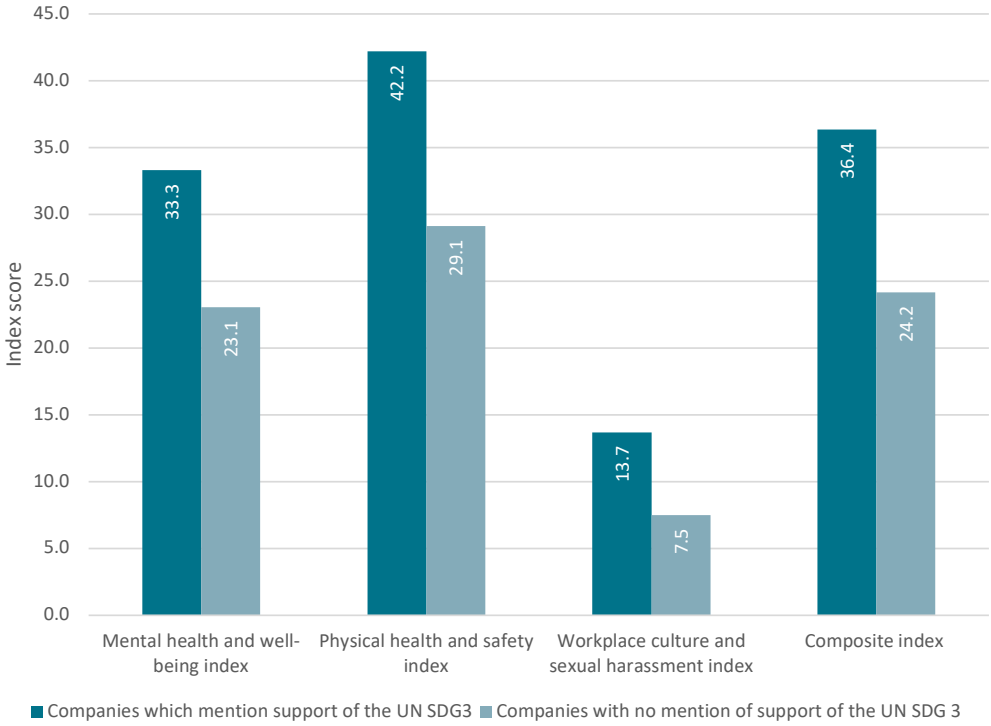
Note: The results are based on 29 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

Policies and structures targeting employee health and safety

Companies that make commitments to employee health and safety-related policies and structures are more likely to have health and safety related targets as priorities. This is evident from the analyses reported in Figure 19 and Figure 20.

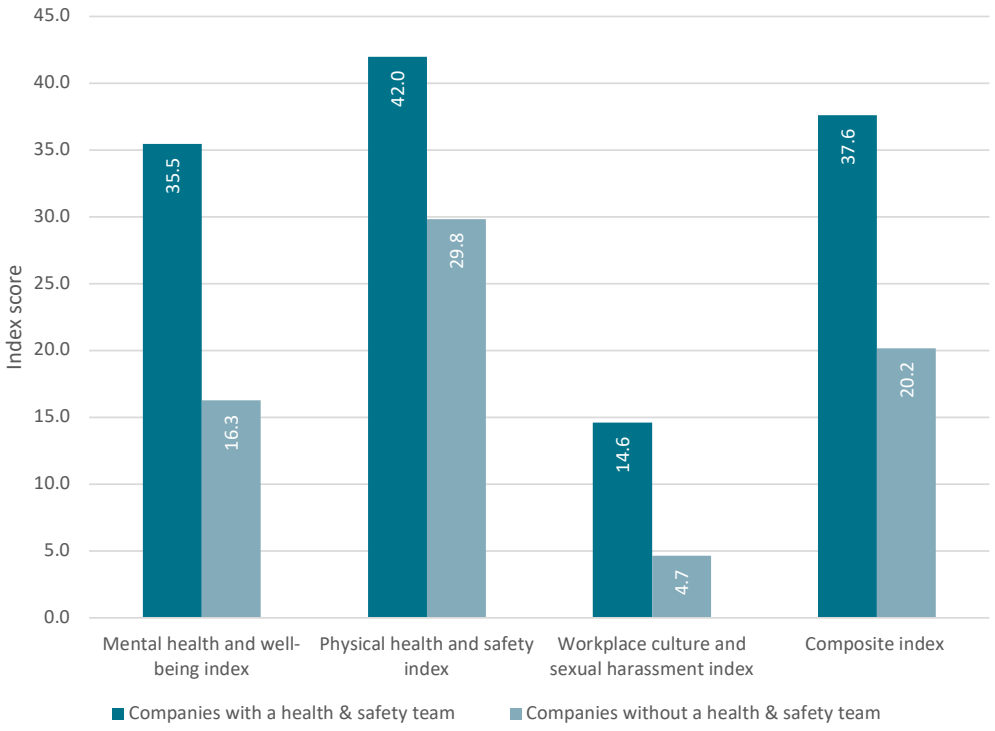
Companies with an explicit support for the UN SDG 3 on good health and well-being record substantially higher scores on our composite index and its ingredients compared to companies which have not made such explicit commitment to SDG 3 (Figure 19). Not only do our indices vary by companies' declarations on health and safety, they also vary by the resources companies put in place to support these targets. In Figure 20 we consider the differences in companies with and without a dedicated health and safety team. This analysis reveals that prioritisation of mental health and well-being, physical health and safety, and workplace culture and sexual harassment, as captured through our composite index and its ingredients, is substantially higher among companies with a health and safety team compared to companies where no such team is present.

Figure 19 Average index scores by companies' support of the UN Sustainable Development Goal 3 (SDG 3) Good Health and Well-being



Note: The results are based on 29 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

Figure 20 Average index scores by companies with and without a health and safety team



Note: The results are based on 29 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

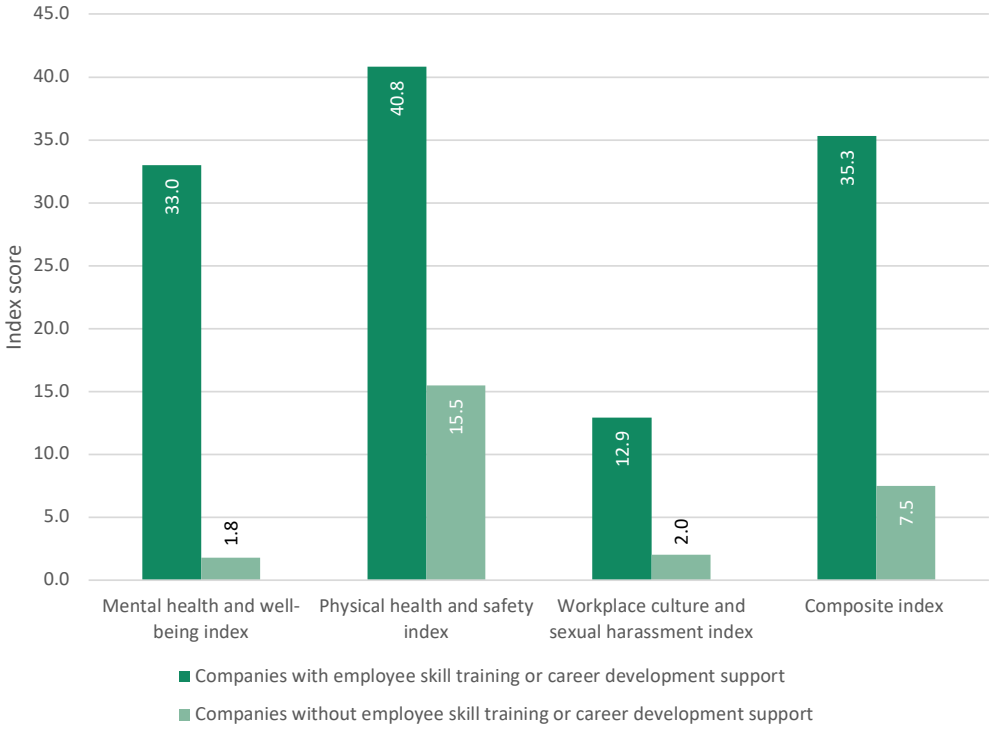
Employee training and support is an important medium to promote well-functioning workforce.

Provision of health and safety training

Employee training and support is an important medium to promote well-functioning workforce. Hence provision of such training is likely to be a reflection of companies' prioritisation of employee well-being targets. Figure 21 and Figure 22 show that companies which have an employee skill training or career development support in place, or a policy to improve the provision of skill training are more likely to prioritise mental health and well-being, physical health and safety, and workplace culture and sexual harassment, as captured through our series of indices, relative to companies who do not have such policies.

A training specifically targeted at executives or key members of the company personnel appears to matter too, as seen in Figure 23, especially in the areas of mental health and well-being and physical health and safety. Companies offering a training for executives or key employees in the area of employee health and safety in supply chain record a mental health and well-being index of 37.3 compared to companies without such training where this index takes the value of 28.4.

Figure 21 Average index scores by companies with and without employee skill training or career development support



Note: The results are based on 29 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

Figure 22 Average index scores by companies with and without a policy to improve skills training of its employees

Note: The results are based on 29 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

Figure 23 Average index scores by companies with and without training for executives or key employees on employee health and safety in the supply chain

Note: The results are based on 29 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

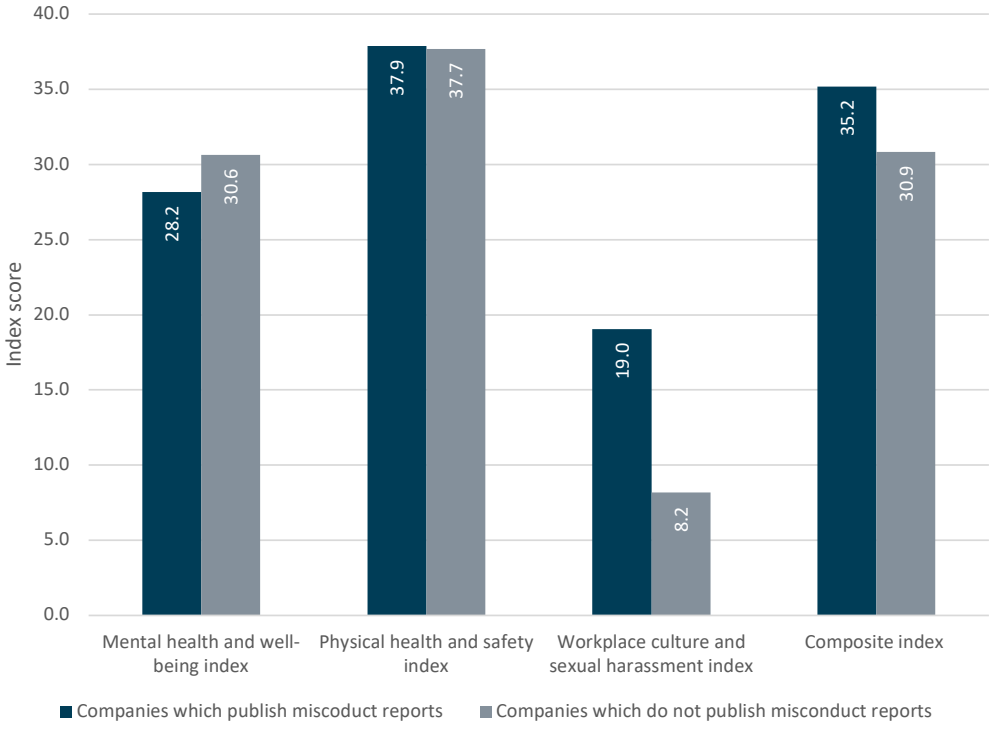
Misconduct and complaint reporting systems

The systems that facilitate the efficient and safe reporting of misconducts and complaints are likely to be instrumental in enhancing employee well-being in certain areas, particularly as creates a safe workplace culture protecting against sexual harassment (see for example, Hershcovis *et al.* 2010). The analysis reported in Figure 24 and Figure 25 lends support to this possibility.

Figure 24 shows that our composite index and its three ingredients are systematically higher for companies which publish misconduct reports relative to companies which do not do so. In particular, companies who publish misconduct reports record a workplace culture and sexual harassment index of 19.0 compared to companies who do not publish misconduct reports where this index takes the value of 8.2.

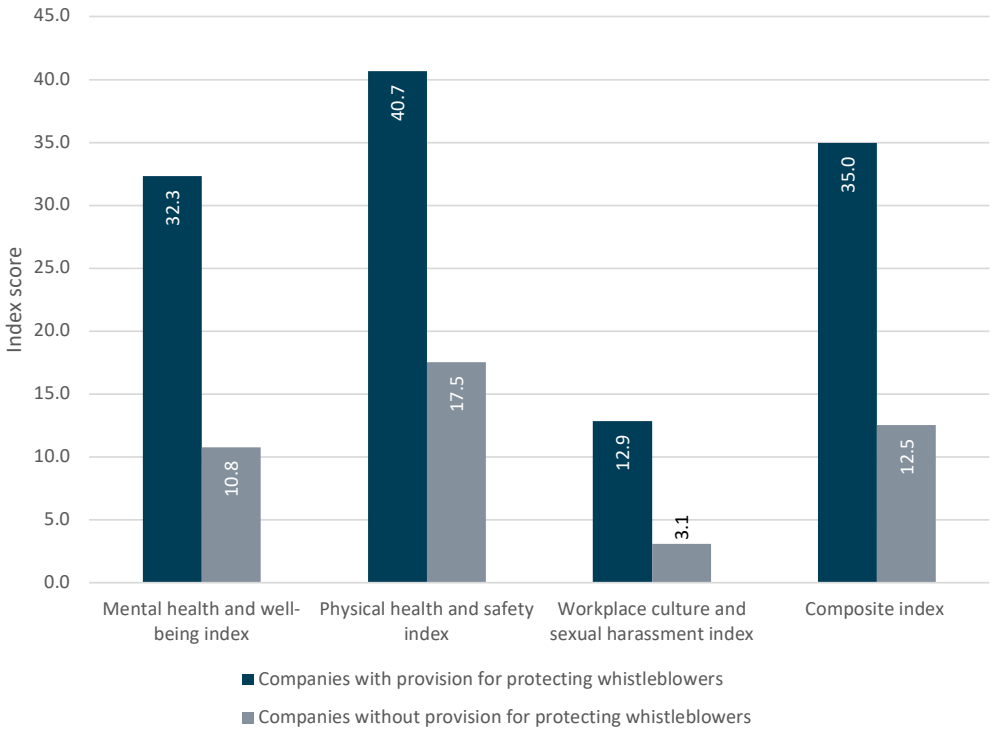
Similarly, there are stark differences in our indices of companies with and without provision to protect whistleblowers. The results of this analysis strongly suggest that companies with provision to protect whistleblowers exhibit stronger priorities in the areas of mental health and well-being, physical health and safety and workplace culture and sexual harassment, as captured through our indices.

Figure 24 Average index scores by companies' misconduct reporting



Note: The results are based on 30 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

Figure 25 Average index scores by companies with and without provision for protecting whistleblowers



Note: The results are based on 29 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

The sector faces unique challenges associated with remote working and travel, shift work, temporary accommodation, exposure to health and safety hazards and male dominated workforce that create risks for employee well-being and safety (Langdon et al. 2016, Parker et al. 2018).

Interventions that make a difference for employee well-being: An overview of evidence from other contexts

Interventions that make a difference for employee well-being: An overview of evidence from other contexts

With the aspiration to improve workplace health and safety in the mining industry we identify and develop a typology of possible interventions.

The interventions examined in this section offer a number of strategies that have already been implemented across different industries and have been shown to be effective in improving worker health and well-being. We analyse interventions relating to the three domains of interest – mental health and well-being, physical health and safety, and workplace culture and sexual harassment.

Our overview consisted of two phases. In the first phase, we identified 25 intervention studies across a set of various industries. In particular, we covered interventions amongst industries which have some similar characteristics as the mining industry namely, industries with high-risk settings (such as construction), industries with long shift work (such as healthcare), and industries which are male dominated (such as military). In the second phase of the review, we identified key themes across the 25 intervention studies for each domain to provide a summary of interventions which could offer insights on potential approaches that can be considered within the mining sector. A summary of potential interventions which could be applied to the mining industry are listed in appendix Table A3 while an overview of empirical evidence of intervention use in other industries is presented next.

Mental health and well-being

Tracking mental health

Companies have paid more attention to mental health in recent years, and research has shown that it has a significant impact on employees' productivity and the work environment. Several studies elucidate that the first step in addressing well-being is by identifying employees' risk of being susceptible to poor mental health. For example, Fragala *et al*. (2021) conducted a pilot program for US based employees within the healthcare sector on a screening tool that identified emerging risks in different categories such as depression, anxiety, substance abuse, financial and social stress, and sleep problems. Employees were then given access to pertinent care based on their results. The findings suggested that the program was useful as a significant part of the sample was classified as having a moderate-high risk for symptoms. By helping employees identify risks, they could be connected with care professionals in the early stages. Most of the employees were keen to receive care if recommended. However, the effectiveness of the intervention is based on employees' willingness to attend help provided which enriches the importance of Mental Health Awareness training.

Several other interventions have demonstrated the benefits of early detection and tracking of employee mental health. For example, Bolier *et al*. (2014) pilot a workers' health surveillance system with automated individual feedback and an offer of online interventions which targets the well-being and mental health of nurses and health professionals. Online interventions included self-help interventions which are easily accessible and can be used at an individuals' own convenience and in the privacy of their own homes. Overall, the workers' health surveillance system was effective in enhancing positive mental health however the uptake and compliance of the online interventions was very low. Bolier *et al*. (2014) recommend that engaging nurses in the interventions may require human contact with a coach or occupational physician. As such, blended work models which may be more effective should be further developed and investigated.

An example of an innovative blended approach can be taken from tools used by military personnel –in particular, the "T2 Mood Tracker" application developed by the US Defense Department's National Center for Telehealth and Technology (T2). The

application is used to track psychological symptoms, including post-traumatic stress disorder, depression, and mood changes that military personnel may experience when returning from deployment. Using touch-screen technology and movable points on scales users can rate their moods, self-monitor across time, and report their emotional experiences to health care providers (Bush *et al.* 2014). Redeployed soldiers who underwent treatment found the T2 Mood Tracker easy to use, and beneficial for their mental well-being.

Training for managers

Several studies highlight on the increasing trend for organisations to provide trainings on employee mental well-being for business leaders. Managers play an important role in the mental health of employees. The ability of managers to understand work-based mental risk factors and to implement adjustments to working conditions when required can improve the well-being of their staff. For instance, Gayed *et al*. (2018) explore the outcomes of training for managers to promote understanding of mental health problems in a variety of organisational settings including emergency services, manufacturing companies, office settings, health services and tertiary institutions. Trainings included content relating to mental health awareness and knowledge, promoting positive workplace and employee-focused mental health, skill development to best support and respond to employee's mental health issues, and promoting management standards to reduce work-related stress. Overall, Gayed *et al.* (2018) find that training managers had positive outcomes for workplace mental well-being. These findings were also consistent with Stuber *et al.'s* (2021) systematic review on the effectiveness of health-oriented leadership interventions for the improvement of mental health of employees in the health care sector. They specify that, the most promising strategies include intervention seminars with reflective and interactive exercises in group settings.

Mindfulness interventions

Mindfulness-based interventions in the workplace have also been shown to promote mental health. Zoghbi *et al.* (2021) present a novel approach, Care for Creatives, which includes a series of immersive activities facilitated by specialist practitioners. The program was targeted to creative arts professionals with the intention of creating a space where wellness activities were approachable without the stigma of traditional clinical therapy. The activities focused on personal development and included, yoga, somatic activities, expressive art modalities and meditation and relaxation practices. Results of the intervention included significant and positive improvements in subjective well-being and mental health indicators.

Physical health and safety

Education and training

Several studies have demonstrated the importance of education and training to improve workplace health and safety. Such interventions have generally shown promising results. In Corman *et al.'s* (2020) systematic review, 36 articles which focus on various educational interventions to reduce farming-induced health and safety issues were analysed. Interventions focused on prevention of farm-induced diseases, health promotion, and accident and injury prevention. Their findings suggested that intervention effectiveness varies as a function of several factors. Provision of education by methods that primarily focus on increasing knowledge without involving participants in the intervention tend to have limited results. Such programs increase knowledge but have limited impact on changes in behaviours. Additionally, community-based participatory approaches had better outcomes in terms of behaviour change. Involving farmers in the development of health and safety interventions promoted stronger identification with the values promoted by the intervention and ultimately increased the

chances of change in behaviours targeted by the intervention. Moreover, interventions that used multidisciplinary or holistic teams that promoted intersectional collaboration and actively involved local communities led to more tangible intervention outcomes.

Corman *et al.* (2020) also found that in settings which involve migrant workers, cultural and educational aspects need to be taken into consideration; workers with lower literacy levels may have different needs in terms of occupational health and trainings. Similarly, Liebman *et al.* (2014), model health and safety interventions for Hispanic immigrants in the dairy industry through a five year pilot which offered culturally appropriate education to address the health and safety training needs of immigrant workers and demonstrate that culturally appropriate occupational interventions may reduce worksite hazards and improve knowledge and practices among immigrant workers.

Fatigue reduction strategies

Caspi *et al*. (2013) investigated interventions to improve health and safety for healthcare workers. The pilot was conducted by the Harvard School of Public Health, Center for Work, Health and Well-being as part of the *Be Well Work Well Study*. Although healthcare workers tend to spend majority of their shifts on their feet, lifting patients, and performing other activities, many did not meet recommended levels of daily physical activity. The motivation of the intervention was to encourage health workers in a small number of hospital units improve worker health and reduce musculoskeletal disorders through a set of policies, programs, and practices run over a three-month period. Some these included, unit manager training on worker health protection, one-on-one safe patient handling trainings, posters on staff break room walls to encourage physical fitness, and one-on-one fitness mentoring. The findings by Caspi *et al.* (2013) suggested that safe patient handing, ergonomics and safety practices were good targets to help improve worker safety and wellness however longer intervention periods may be required to reduce the risks of musculoskeletal disorders.

Other studies within the healthcare industry have focused on interventions to address concerns around nurses' fatigue and burnout. For example, the *Transforming Care at the Bedside* initiative run by the Massachusetts General Hospital examined the impacts of an hour-long, off-unit meal break. The program encouraged nurses to leave the work environment and take an extended break during their shift. While the program required a major cultural adjustment as staff were not accustomed to leaving work during shifts, the new structure resulted in nurses reporting feeling refreshed, less fatigued and more alert (Stefancyk 2009). Other studies on similar interventions which emphasise the value of restorative breaks have found positive associations with nurses' job satisfaction (see for example Taylor 2005 and Nejati *et al.* 2016).

A number of hospitals have implemented "strategic napping" programs to address sleep deprivation with the intention of improving alertness and performance of frontline health care workers. Although some health care leaders remain sceptical about the effectiveness of such programs and the institutional value of encouraging employees to sleep during work shifts, many pilot studies on such interventions continue to indicate that napping schedules reduce reported overall fatigue of healthcare workers (Driskell and Mullen 2005, Arora *et al.* 2006, and Milner and Cote 2009).

Incentives and subsidies

Can integrating occupational health and safety measures with incentives improve well-being outcomes? Injury or illness-based incentive programs reward individuals or groups for avoiding or lowering accidents over a predefined period. In a study of the effectiveness of a safety incentive in the construction industry, Gangwar and Goodrum (2005) elucidate that companies with such programs reported improved employee safety behaviour and outcomes, such as reduced risk of injuries and accidents with on average a 44.16 per cent decline in lost-time workplace incidence rates. However, as

Gangwar and Goodrum (2005) also note, there are some concerns with such programs. For example, employees may be tempted not to report work injuries, especially the less serious ones as they do not want to lose individual incentives or be the reason that the whole group does not receive an award. In addition, the incentive-based interventions were reportedly less effective over time.

On the other hand, Rubio-Romero *et al.* (2013) evaluate the impact of subsidy policies for construction companies in Spain which enables them to acquire new scaffolds. Companies which received grants had a 71 per cent decrease in the rate of workplace accidents compared to companies which did not. The improvement on scaffolds brought about by subsidy policy demonstrated that the standardisation of equipment with high accident risk should be developed further and such public policies are important interventions (Rubio-Romero *et al.* 2013).

Workplace culture and sexual harassment

Anti-harassment policies and practice

Workplace sexual harassment imposes large costs both on individuals and on employers. As such, some organisations have responded by implementing formal policies, grievance procedures, and training programs. Sexual harassment policies are especially important in male-dominated industries since women who work in predominately male workplaces experience higher instances of sexual harassment compared to women in more gender balanced workplaces (Gruber and Morgan 2005). On that note, Haas *et al*. (2010) analyse policy interventions by the Dutch police force noting that between 2004 and 2005 sexual harassment policies became more comprehensive. Additionally, the police force invested in active recruitment of women to reduce the skewed male-female ratio and encouraged promotion of women into higher ranks. However, Haas *et al.'s* (2010) findings demonstrated that implementing comprehensive anti-sexual harassment policies alone was not sufficient in preventing sexual harassment within the police force and the quality of these policies is very important.

A widespread number of anti-harassment policies have been implemented by UK universities since the 1970s when sexual harassment was first named and identified as a barrier to gender equality. Some of these policies include the equal opportunities legislation and zero-tolerance anti-harassment policies. Thomas (2004) provides a survey to establish how many universities possessed sexual harassment policies and the adequacy of such interventions. Amongst 78 universities, 61 per cent had sexual harassment policies in place. Similar to Haas *et al.'s* (2010) finding, Thomas (2004) finds that in order for anti-harassment policies to make a significant impact words should be matched with deeds. Moreover, interventions contribute towards reducing harassment if they are adopted primarily with a 'proactive' model of policy development rather than a 'reactive' model.

Training

Taking a more proactive approach, several studies suggest that offering training has a significant impact on employees' comprehension of sexual harassment, as well as helping them recognise behaviours that may be signs of such harassment. For example, Wiener *et al.* (2002), showed empirical evidence based on an intervention where University students in the United States were divided by trained and non-trained groups. The trained group was orientated on sexual harassment law and exposed to videotapes of sexual harassment scenarios. Indeed, the results demonstrated that without training, individuals assume a variety of inconsistent behaviours and misperceptions regarding sexual harassment scenarios, and that women find the complaints more likely to constitute harassing than do men.

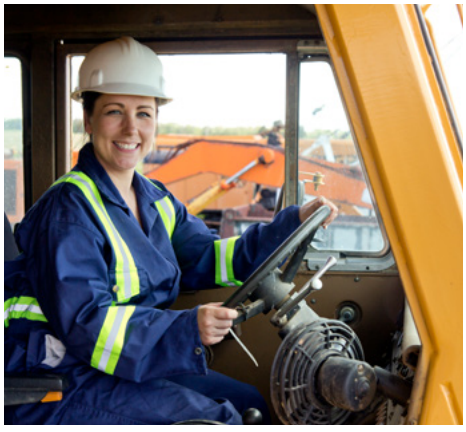
Buchanan *et al.* (2020) analyse the impact of procedures relating to sexual harassment for the US military. The Department of Defense periodically administers surveys to assess the outcomes of anti-harassment interventions. The results from the US Military surveys support best practice recommendations for ways in which organisations can address sexual harassment. A combination of strong anti-harassment policies where leaders demonstrate commitment and reinforce that harassment will not be tolerated along with regular prevention training for all organisational members was demonstrated to promote workplace safety. Additionally, formal and informal reporting, investigation, and remediation procedures are important interventions (Buchanan *et al*. 2020).

Using a military sample, Robotham and Cortina (2019) analyse whether the climate of respect predicts the occurrence of sexual harassment. Their findings suggest that interventions which promote an organisational climate which promotes respect were associated with lower rates of gender harassment. Moreover, the more employees perceived that respectful treatment was the norm, the less people reported being a target of sexual advance harassment. Organisations can create respectful climates through training. For example, the Civility, Respect and Engagement at Work program conducted by the US Department of Veterans Affairs conducts training that incorporates collective brainstorming about what counts as respectful and disrespectful behaviour followed by exercises to practice respectful behaviour (Osatuke *et al.* 2009). The program has been effective in reducing disrespectful behaviour and increasing respectful interactions between employees.

Team composition-related interventions

The literature has also highlighted that changes in team configurations may be used as instruments to nurture the norms of respect and equality in organisations. In particular, Finseraas *et al*. (2016) conducted a field experiment where Norwegian soldiers were assigned rooms at random, except each room had at least two women. During an eight-week period soldiers spent much time with their roommates to perform tasks such as cleaning the room for inspection. The study demonstrated that discrimination reduced when exposing male soldiers to female peers in relevant environments.

In a similar experimental setup in Norway's military, Dahl *et al.* (2021) found that working with women for eight weeks causes men to have more egalitarian attitudes. The findings of these studies showed that there was an increase in the share of men who think mixed-gender teams perform as well or better than same-gender teams, and a decrease in the proportion of men who do not completely disavow feminine traits. Overall, the evidence provided by this study suggests that gender stereotypes, which comprise a significant part of damaging workplace cultures, can be altered by integrating men and women in shared work environments.



Organisations can create respectful climates through training.

Summary and discussion

Summary and discussion

Employees spend a significant amount of their time at work, and organisations play a key role in creating an environment that promotes their well-being.

But there is also a strong business case for ensuring employee well-being due to gains in organisational productivity. This report provided an assessment of employee well-being in the mining sector and developed an innovative approach to construct measures of employers' prioritisation of three dimensions of well-being: mental health and well-being, physical health and safety, and workplace culture that protects against sexual harassment.

Our empirical analysis of the state of workforce well-being in the mining sector showed that a higher share of employees are satisfied with their jobs now relative to 15 years ago, but the share of very satisfied workers has gone down. In fact, the sector has the lowest share of very satisfied workers of all industries. But mining is in the top five industries when it comes to the share of workers with excellent or very good self-reported physical health. However, the share of the sector's employees reporting high or very high levels of psychological distress has gone up considerably in the course of the past decade. Based on a review of secondary evidence, we concur that the mining sector also faces significant and growing challenges in preventing and responding to workplace sexual harassment.

But what do the mining companies do to address the well-being of their workforce? In the absence of employer survey or administrative data, we developed an innovative methodology to capture the prioritisation of employee well-being in three domains: mental health and well-being; physical health and safety; and workplace culture and sexual harassment. Based on a thoroughly developed dictionary, we conducted a text analysis of 30 mining companies' annual, sustainability and other reports, and developed series of indices to capture the companies' priorities in the three domains of well-being. Based on these indices, relative to a reference group comprising selected 12 non-mining companies, mining companies are more likely to prioritise the physical health and safety of their employees, but less likely to prioritise their mental health and well-being. Workplace culture and sexual harassment is the least prioritised domain of well-being based on our index. Linking these findings back to the earlier assessment on growing employee mental health and sexual harassment concerns in the mining sector, this analysis suggests that more needs to be done in prioritising these areas of workforce well-being.

Companies, however, differ in the degree of prioritisation of their employees' well-being, and this report then asks whether there are any company-specific factors that can explain such differences. We show that company size matters: we see higher prioritisation of employee well-being in larger companies. Hence, it is possible that a lack of resources might constrain some companies' capacity to invest in workforce well-being interventions.

We also find strong links between certain company practices and policies and prioritisation of employee well-being. In particular, companies that invest in gender and diversity practices and policies appear to report higher priorities across all three domains of employee well-being. Our analysis points at the potentially instrumental role played by increased women's representation, especially in leadership roles – a finding that complements the large body of work that documents positive organisational returns to gender diversity in leadership (e.g., Capezio and Mavisakalyan 2016, Cassells and Duncan 2021).

But other company practices matter too. Companies that make commitments to employee health and safety related policies and structures are more likely to have

health and safety related domains as priorities. Our indices of employee well-being vary by companies' priorities and declarations on health and safety, but also by the resources companies put in place to support these targets such as health and safety teams and provision of health and safety trainings.

Finally, we find that the presence of systems that facilitate the reporting of misconducts and complaints are likely to be instrumental in enhancing employee well-being, particularly when it comes to creating a safe workplace culture protecting against sexual harassment. Our analysis suggests higher prioritisation of the three employee well-being domains in companies which publish misconduct reports relative to those who don't. Presence of a provision to protect whistleblowers is another organisational feature that is associated with higher prioritisation of employee health, safety and well-being.

Our analysis presents a broad picture on the extent to which the mining sector's employers see the domains of mental health and well-being; physical health and safety; and workplace culture and sexual harassment as priorities. It does not, however, allow us to capture the specific measures and interventions the companies put in place to act upon these priorities. Our complementary analysis of the literature in other contexts helps us to put forward a list of interventions that are likely to yield returns to investment.

Initiatives addressing mental health and well-being in other contexts have predominantly focused on three areas: tracking mental health; training for managers; and mindfulness interventions. The literature has effectively trialled screening tools for early identification of mental health risks in employees who could then be linked to mental health services to receive care. However, in the case of a workers' health surveillance systems with automated individual feedback and an offer of online interventions there have been reported issues with low uptake and compliance. Mental health training to help managers to understand work-based mental risk factors and possible strategies to mitigate these is another effectively trialled tool that, based on existing evidence, translates into improved mental health outcomes for employees. Finally, there is evidence on the effectiveness of specialist-led mindfulness-based interventions in the workplace including yoga, somatic activities, expressive art modalities and meditation and relaxation practices.

Our review of the literature on interventions that make a positive difference for physical health and safety outcomes points to the role played by education and training; fatigue reduction strategies; and incentives and subsidies to encourage safe performance. Existing evidence lends support for the effectiveness of participatory approaches to training and education on health and safety issues relative to approaches that focus on transmission of knowledge without ensuring engagement by participants. Ensuring multi-disciplinary, intersectional collaboration and cultural appropriateness appear to be important ingredients in educational interventions. Fatigue reduction strategies that translate into better physical health and safety outcomes, based on available evidence include, "strategic napping" programs, restorative breaks and promotion of physical fitness activities. Safety incentives that reward lowering or avoiding accidents over a period have been shown to be effective interventions in some settings however there are concerns that such interventions at times may discourage the reporting of accidents.

Finally, we provided an overview of interventions targeted at promoting positive workplace culture and mitigating sexual harassment in the workplace and found evidence to support the effectiveness of anti-harassment policies and practices; sexual harassment trainings; and team composition-related organisational interventions. Existing evidence suggests that proactive rather than reactive

approaches to developing anti-harassment policies are important in order for such policies to make a significant impact. A consistent finding that emerges from the literature is the role played by training in developing employees' understanding of sexual harassment and helping them recognise behaviours that constitute harassment. Exposure to female peers in relevant environments appears to promote the norms of respect and equality in organisations. Importantly, this literature suggests that gender stereotypes can be altered in gender-mixed team environments.

This preliminary report is intended to provide an overview and mapping of current health and safety practices in the mining industry to support the conceptual frameworks and construction of survey instruments for the next stages of the project, *Mental Awareness, Respect and Safety in the Mining Industry – The Landmark Study*. This report draws on examples of previous and ongoing interventions outside the sector that could potentially be applied to the mining industry. However, as with most health and safety interventions, a one-size-fits-all approach is likely not feasible nor recommended – this is especially the case for an industry such as mining which maintains a wide range of settings, jobs, and tasks. In addition, a deeper understanding of the start-up costs and technological needs would be beneficial. We acknowledge these as limitations and that further research, informed by primary data collection, is required to capture the effectiveness of some of the interventions across different mine sites and settings.

Existing evidence suggests that proactive rather than reactive approaches to developing anti-harassment policies are important in order for such policies to make a significant impact.

Supplementary appendix

Supplementary appendix

Table 1A Mining companies in the sample

Allkem Ltd	Gold Road Resources Ltd	Orica Ltd
Alumina Ltd	IGO Ltd	OZMinerals Ltd
BHP Group Ltd	Iluka Resources Ltd	Pilbara Minerals Ltd
Chalice Mining Ltd	Incitec Pivot Ltd	Ramelius Resources Ltd
Core Lithium Ltd	Liontown Resources Ltd	Regis Resources Ltd
Coronado Global Resources Inc	Lynas Rare Earths Ltd	Rio Tinto Ltd
DeGrey Mining Ltd	Mineral Resources Ltd	Sandfire Resources Ltd
Downer EDI Ltd	New Hope Corporation Ltd	South32 Ltd
Evolution Mining Ltd	Newcrest Mining Ltd	St Barbara Ltd
Fortescue Metals Group Ltd	Northern Star Resources Ltd	Whitehaven Coal Ltd

Table 2A Non-mining companies in the sample

APA Group	News Corp	TPG Telecom Ltd
CBH Holdings Pty	Nine Entertainment Group	Telstra Corporation Ltd
Cleanaway Waste	STHN Cross Media	Westfarmers Ltd
Commonwealth Bank of Australia	Skycity Entertainment Group	Woolworths Group Ltd

Table 3A Health and safety interventions

		Emerical evidence of use in other industries		
Domain	**Safety Initiative**	**Study**	**Industry**	**Potential application to the mining industry**
Mental health and well-being	Tracking mental health	Fragala *et al.* (2021)	Healthcare	Taking a proactive approach to identify emerging mental health risks relating to depression, anxiety, substance abuse, financial and social stress. There is potential for this intervention to have a blended model, such as providing online screening tools or mood trackers which are easily accessible and can be used at the employees' own convenience. Progress should then be reported and accordingly, care professionals engage with employees.
	Training for managers	Gayed *et al.*. (2018) Stuber *et al.* (2021)	Various organisational settings Healthcare	Provision of trainings for managers and leaders on employee mental well-being. Trainings should include mental health awareness and knowledge, promotion of a positive workplace and employee-focused mental health, skill development to best support and respond to employee's mental health issues, and promotion of management standards to reduce work-related stress.
	Mindfulness	Zoghbi *et al.* (2021)	Creative arts	Provision of holistic wellness spaces in camps which are approachable without the stigma of traditional clinical therapy. Interventions activities can include yoga, somatic activities, expressive art modalities and the mindfulness relation practices.
Physical health and safety	Education and training	Corman *et al.* (2020) Liebman *et al.* (2014)	Agriculture Agriculture	Provision of interventions which provide education on health promotion, and accident and injury prevention. Involvement of employees and having a more collaborated nature amongst teams in the development of health and safety interventions is important to increase the chances of behavioural changes targeted by the intervention. Considering the diversity of the Australian workforce, culturally appropriate occupational interventions may also reduce worksite hazards and improve knowledge and practices among migrant workers.
	Fatigue reduction strategies	Caspi et al. (2013) Stefancyk (2009) Taylor (2005) Nejati *et al.* (2016) Driskell and Mullen (2005) Arora *et al.*(2006) Milner and Cote (2009)	Healthcare Healthcare Healthcare Healthcare Healthcare Healthcare Healthcare	Provision of restorative breaks during shifts in a designated rest area at sites. Implementation of napping programs may also be effective in reducing overall fatigue.
	Incentives and subsidies	Gangwar and Goodrum (2005) Rubio-Romero *et al.* (2013)	Construction Construction	Integrating occupational health and safety measures with incentives. For example, rewarding individuals or teams for avoiding or lowering accidents over a predefined period. However, the initiative needs to be carefully monitored as employees may have temptations not to report work injuries.

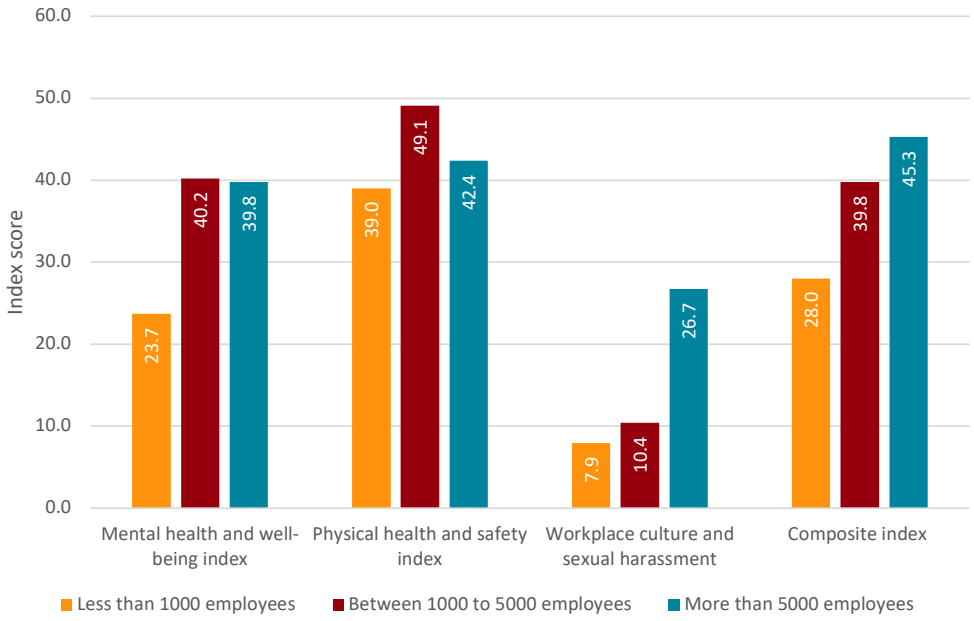
Table 3A Health and safety interventions (continued)

		Emerical evidence of use in other industries		
Domain	Safety Initiative	Study	Industry	Potential application to the mining industry
Workplace culture and sexual harassment	Anti-harassment polices and practice	Haas *et al.* (2010) Thomas (2004)	Police force Education	Provision of sexual harassment policies. These need adopted in a proactive manner, tracked, and of high quality in order to achieve positive outcomes.
	Trainings	Wiener *et al.* (2002) Buchanan *et al.* (2020) Robotham and Cortina (2019) Osatuke *et al.* (2009)	Education Military Military Veterans	Provision of training against sexual harassment. Leaders must reinforce training outcomes and demonstrate commitment that harassment will not be tolerated. Create initiatives which ensure promotion of a respectful organisational climate.
	Team composition	Finseraas *et al.* (2016) Dahl *et al.* (2022)	Military Military	Consideration of changes in team configurations such that non-discriminated employees spend time with discriminated employees on mutual tasks. Integrating men and women in shared work environments (under supervision if need be) to improve workplace culture.

Table 4A Data dictionary

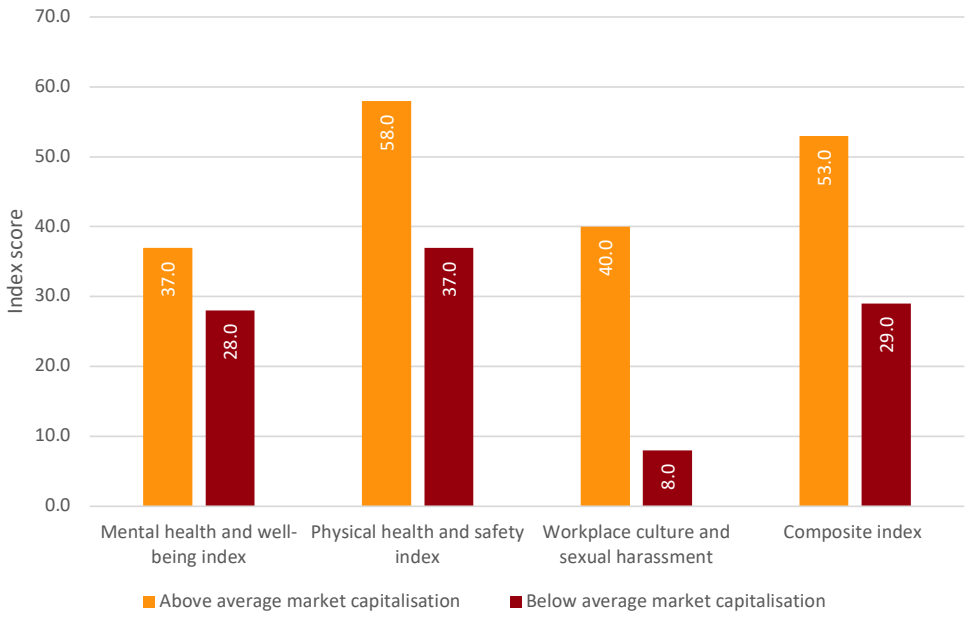
Variable Name	Description
MH1	Keywords: wellbeing/ well-being
MH1M	Keywords: mental and well-being within paragraph proximity
MH2	Keywords relating to: mental illness/ mental health (ill-health) / mentally healthy/ mental stress
MH3	Keywords relating to: loneliness / social connection/ isolation
MH4	Keywords relating to: psychosocial (hazards)/ psychological (distress/harm) / depression/ anxiety/ suicide
PS1	Keywords relating to: safe/ safety/ physical safety/ health and safety
PS2	Keywords relating to: injury/illness
PS3	Keywords: physical and wellbeing within paragraph proximity
SH1	Keywords relating to: sexual (advances)/ sexual harassment/ assault/ sexism
SH2	Keywords relating to: bullying / abuse / victimisation/ discrimination / intimidation
SH3	Keywords relating to: gender/ female/ woman
MH_Index01	Mental health and well-being index
PS_Index01	Physical health and safety index
SH_Index01	Workplace culture and sexual harassment index
Index_Comp01	Composite index
CompanyID	Company ID
Company_Type	Company type
metal_ore	Mining company type: metal ore
oil_gas	Mining company type: oil and gas
other_grp	Mining company type: other
nemp	Number of employees
marketcap0	Company market capitalization
wmngrs0	% women managers
wemp0	% women employees
tdao	Targets Diversity and Opportunity
sdgge	SDG 5 Gender Equality
pschs	Policy Supply Chain Health & Safety
sdgghwb	SDG 3 Good Health and Well-being
tadp	Training and Development Policy
pst	Policy to improve skills training
schast	Trainings for executives or key employees on employee health & safety in the supply chain

Figure 1A Index scores by mining company size (including oil and gas extraction companies)



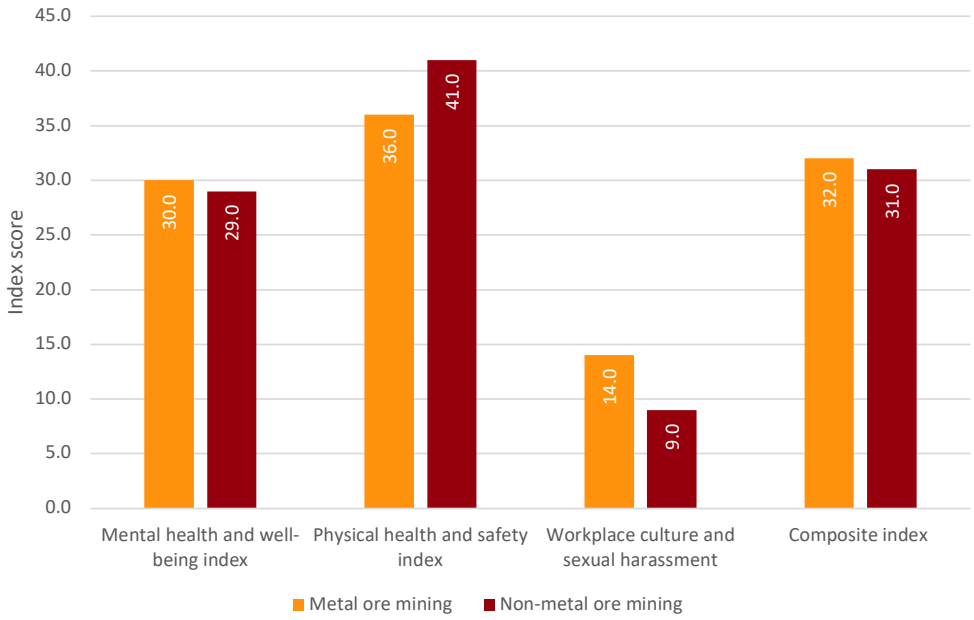
Note: The results are based on 28 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

Figure 2A Index scores by mining companies' market capitalisation (including oil and gas extraction companies)



Note: The results are based on 33 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

Figure 3A Index scores by mining companies' industry group (including oil and gas extraction companies)



Note: The results are based on 33 mining companies with the relevant data available.
Source: Bankwest Curtin Economics Centre | Authors' estimates.

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Disclaimer

We have made all the inquiries that we believe are desirable and appropriate and that no matters of significance that we regard as relevant have, to our knowledge, been withheld from the Commission.

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