Final Report: Development and Validation of the Health and Safety Inspector Checklist (HaSIC) with WorkSafe Victoria inspectors

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Disclaimer

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Accompanying documents

To cite this report

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Other available related reports

De Cieri, H., Shea, T., Cooper, B., Sheehan, C., & Donohue, R. 2016. *A multi-stage validation study to assess an OHS leading indicators tool in workplaces: Final report.* Report prepared for ISCRR and WSV. Monash University, report no. 045-0316-R11: Caulfield East VIC Australia.

De Cieri, H., Shea, T., Sheehan, C., Donohue, R., & Cooper, B. 2015. *Safety climate, occupational health and safety leadership and workers' engagement with safety: Comparison of survey responses in two unions.* Report prepared for ISCRR and WSV. Monash University, report no. 130-0915-R01: Caulfield East VIC Australia.

Shea, T., De Cieri, H., Sheehan, C., Donohue, R., & Cooper, B. 2015. *Occupational health and safety issues for aged care workers: A comparison with public hospital workers.* Report prepared for ISCRR and WSV. Monash University, report no. 045-0216-R10: Caulfield East VIC Australia.

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

De Cieri, H., Shea, T., Cooper, B., Donohue, R., & Sheehan, C. 2015. *Early indicators of injuries and accidents at work: An analysis of leading indicators as predictors of WSV data for Victorian workplaces.* ISCRR report number: 045-0415-R08. Monash University: Caulfield East VIC Australia.

De Cieri, H., Shea, T., Donohue, R., Sheehan, C. & Cooper, B. 2015. *Leading indicators of occupational health and safety: A report on a survey of Australian Education Union (Victorian Branch) members.* ISCRR report number: 045-0415-R07. Monash University: Caulfield East VIC Australia.

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All reports are available at http://ohsleadindicators.org/

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1. Executive Summary

1.1. Background and aims

This report presents results of a research project designed to develop and validate a brief, generic occupational health and safety checklist to assist inspectors with their evaluations of worksites. The research was conducted in 2013-16 by a Monash University research team.

The work is part of a larger research project that is being conducted by Monash University in partnership with WorkSafe Victoria via the Institute for Safety, Compensation and Recovery Research.

The aims of the project were to

- develop a brief, generic occupational health and safety checklist (hereafter referred to as the Health and Safety Inspector Checklist; HaSIC) to assist inspectors with their evaluations of worksites;
- validate the HaSIC via a trial study; and
- promote the concept of OHS leading indicators among inspectors.

1.2. The steps in the Inspector Trial

The research project comprised two stages:

- **Stage 1: Development of the HaSIC**
  - Literature relevant to health and safety inspections was reviewed.
  - An Expert Reference Group was established, comprising four highly experienced inspectors.
  - Six work shadow inspections were conducted by members of the Monash Research Team accompanying three WSV inspectors for a day and conducting cognitive interviews after each workplace inspection.
  - The key outcome of Stage 1 was the design of the HaSIC, a 7-item checklist for inspectors.
- **Stage 2: Testing of the HaSIC**
  - A total of 368 workplace inspections were conducted by WorkSafe Victoria Inspectors between July, 2015 and February, 2016 under the HaSIC Development and Validation project. Inspectors were asked to complete an online questionnaire that included the HaSIC before completing their report on the workplace.
  - Ratings on the HaSIC were provided in relation to 270 workplace inspections (representing a 73 percent response rate) and these were conducted by 25 inspectors.
  - As part of this project, inspectors handed an envelope to the organisational representative at the start of the inspection; this contained an invitation for the

organisational representative to complete a brief questionnaire that included the Organizational Performance Metric-Monash University (OPM-MU), a measure of OHS leading indicators used for validation. The organisational representative was asked to mail this to the Monash Research team using the reply-paid envelope provided.

- In total, 70 usable surveys were received from organisational representatives that were matched to inspector ratings on the HaSIC.
- 70 matched responses from workplaces were obtained.
- Matched work-related injury and illness claims data were obtained from WSV for claims lodged by workplaces in the total sample (N = 270 workplaces) between 1 July, 2014 and 29 February, 2016.
- Inspectors' responses on the HaSIC, the organisational representatives' responses to the OPM-MU, and the WSV claims data, were analysed and compared.

1.3. Key outcomes and results for the Inspector trial

Key outcomes and results:

- The HaSIC, completed by WSV inspectors, is a 7-item checklist that was developed in consultation with an Expert Reference Group of WSV inspectors and tested in a study of 270 Victorian workplaces.

  The HaSIC provides a high-level measure that can be used by inspectors to assess the potential of a workplace to keep everyone healthy and safe.

  The HaSIC can be supplemented by a single-item global OHS rating, completed by an inspector for each workplace. The global OHS item captures the inspectors' overall views and perceptions of a workplace.

  - Results indicate that the HaSIC is a reliable and valid measure, predicting a number of OHS lagging indicators.
  - HaSIC results reveal systematic differences in ratings across inspectors. This may suggest there are rater effects or differential patterns between inspector assessments. Evidence of a possible rater effect on a standardised checklist (common set of items) such as the HaSIC, suggests that there is likely to be more variability when inspections occur more intuitively, without a consistent measure as a guide.
  - There were statistically significant correlations among the HaSIC and several OHS lagging measures, including lost time injury frequency rates (LTIFR), as well as a number of notice and WorkCover claim outcomes. The correlations were in the expected direction and provide **strong evidence for the criterion validity of the HaSIC**.

1.4. Recommendations

In this section we present the recommendations as follows:

1) **The HaSIC could be used by health and safety inspectors to**
   a. provide a reliable and valid high-level assessment measure of the potential of a workplace to keep everyone healthy and safe, and;
   b. enhance a consistent inspector assessment approach.
2) **Use of the HaSIC as part of the systematic training for inspectors.** The incorporation of the measure into training as a guide to a uniform approach to assessment would be likely to reduce rater effects, particularly for new/inexperienced inspectors.
3) **Ongoing longitudinal research, examining the relationships among the HaSIC and prospective OHS outcomes, would be beneficial.** This would test whether HaSIC can predict future outcomes (i.e., test the predictive validity of the HaSIC). In the current study, we compared ratings on the HaSIC with OHS outcomes (LTIFR, notices and claims) that were concurrent or retrospective.
4) **Additional research in other industries could be conducted.** To date the HaSIC has been tested in several industries, further research in the remaining Australian and New Zealand standard industry classification (ANZSIC) industries should be conducted.
5) **Future research should examine the relationship between the HaSIC (completed by inspectors) and leading indicators (OPM-MU) (completed by employees).** Collecting workforce responses to the OPM-MU could address the positive bias evident when those responsible for OHS complete the OPM-MU.
6) **As the findings of this study indicate the possibility of a rater effect for inspectors on the HaSIC, further analysis examining the reasons for these differences is recommended.** For example, it would be useful to know whether characteristics of inspectors such as on-the-job experience, tenure, and prior work experience influence HaSIC ratings.

2. Background and Aims

This report presents results of a research project designed to develop and validate a brief, generic occupational health and safety checklist to assist inspectors with their evaluations of worksites. The research was conducted in 2013-16 by a Monash University research team.

The work is part of a larger research project that is being conducted by Monash University in partnership with WorkSafe Victoria via the Institute for Safety, Compensation and Recovery Research.

In September 2013, the Monash Research Team met with representatives from WorkSafe Victoria to discuss the development of a measure that could be used by WSV inspectors to assess risk/hazards when conducting worksite inspections. While some inspectors had used industry-specific checklists that were developed in-house, there was no brief, validated measure available that could be used by inspectors to evaluate risks and hazards across workplaces from different industries. Approval for the project was granted by the Monash University Human Research Ethics Committee.

The aims of the project were to

- develop a brief, generic occupational health and safety checklist (hereafter referred to as the Health and Safety Inspector Checklist; HaSIC) to assist inspectors with their evaluations of worksites;
- validate the HaSIC via a trial study; and
- promote the concept of leading indicators among inspectors.

3. Stage 1: Development of the Inspector Checklist

3.1. Literature review

As an initial step, the Monash Research Team reviewed the literature on OHS inspectors to determine if a generic measure was available to assist with OHS inspections. Prior research on OHS inspectors has focused on administrational supervision of inspectors in the workplaces that they inspect,[1] how OHS agencies inspect and enforce OHS legislation upstream[2] and the extent to which changed work arrangements have affected the views and activities of OHS inspectors.[3] While one study was identified that reported on the development of a tool to assist with the inspection of the psychosocial work environment,[4] the literature review was unable to find any studies reporting on the development and validation of a tool or checklist for use by inspectors during general OHS inspections.

3.2. Expert reference group

In February 2014, following calls for expressions of interest from WSV inspectors, an Expert Reference Group was established which comprised four highly experienced inspectors. The formation of an Expert Reference Group was important for the project's success, as the members provided essential tacit knowledge regarding the OHS domains that should be included in a tool to assist inspectors (particularly given the lack of guidance available from the literature). In addition, members of the Expert Reference Group agreed to take on the role of "project champions" in terms of promoting the trial among inspectors and encouraging their colleagues to engage with the project. The primary aims for consultation with the Expert Reference Group were to

- determine what occurs during a typical worksite prevention inspection,
- identify the key questions regularly asked by inspectors during a worksite inspection,
- identify aspects of the worksite that inspectors focus on when making an inspection,
- ascertain the triggers associated with issuing notices on a visit; and
- identify OHS issues that are universal across industries.

Following a number of meetings with the Expert Reference Group, seven broad content areas (items) were identified for inclusion in the HaSIC. The items assessed both subjective issues such as the quality of the safety leadership and objective issues such as identifying hazards and controls within the workplace. The content areas were also generic and therefore relevant to workplaces across industries.

The seven OHS content areas identified were

- Housekeeping
- Evaluation of processes
- Hazard identification and control

- Quality of safety leadership
- Quality of documentation & OHS record keeping
- Consultation safety communication
- Chemical management

3.3. Work shadowing and cognitive interviews

Between April and June, 2014, six work shadow inspections were conducted which involved three WSV inspectors and members of the Monash Research Team. Work shadowing is a well-established training intervention where an experienced worker is accompanied (shadowed) by an inexperienced person in order for the latter to learn new aspects related to the job, certain behaviours or competencies.

Following the completion of each shadow inspection, the accompanying Monash Research Team member conducted a cognitive interview with their assigned inspector using the 'think-aloud" technique. Cognitive interviewing is a method of interviewing that comprises a series of memory retrieval and communication techniques designed to increase the amount of information that can be obtained from an interviewee. Cognitive interviewing has been utilised extensively with witnesses/victims of crimes and in the investigation of accidents and near-miss events in organisations.[5] Specifically, the Monash researchers asked the inspectors to rate each item in the HaSIC. For each rating, the inspectors were asked to "think aloud" and elaborate on the process that they used to arrive at that rating. This process was very useful in terms of developing descriptors and examples for each OHS content area.

3.4. Development of the rating scale for the HaSIC

- The rating scale or response format for a measure are the response options available for a respondent to select when rating each item. In discussions with the Expert Reference Group on the response format for the HaSIC, a fundamental issue was that inspectors are required to evaluate worksites relative to the standards specified in the relevant Acts. As a consequence, it was decided that the following principles should guide the development of the HaSIC response format:
- The standards outlined in the relevant Acts need to be reflected in the response format.
- Given that the Act refers to "minimum standards", for each OHS domain covered by the HaSIC item, there should be a midpoint score on the rating scale that represents meeting that minimum standard.
- Inspectors often intuitively rate the OHS of worksites "out of 10" and therefore the rating scale should reflect this. The Expert Reference Group believed that inspectors could meaningfully discriminate among this number of response categories.

As a consequence, with input from the Expert Reference Group, response categories (referencing the standards) were developed and included in the response format. Therefore,

the rating scale for the HaSIC was developed with response categories ranging from 0 (*very poor/well below minimum standard*) through to 10 (*excellent/well above minimum standard*), with 5 (*adequate/meets minimum standard*) as the midpoint on the scale. In consultation with the Expert Reference Group, descriptors and examples, identified in the cognitive interviews following the work shadowing protocol, were modified so that they were calibrated to the different standards.

As a visual aid to assist inspectors in deciding on ratings, colour codings were added to the response options of the HaSIC, with graduations ranging from red (*very poor/well below minimum standard)* to green (adequate/*meets minimum standard*) through to blue (excellent/ *well above minimum standard)*. The HaSIC is presented in Appendix 1.

4. Stage 2 – HaSIC Validation Study

A total of 368 workplace inspections were conducted by Worksafe Victoria Inspectors between July, 2015 and February, 2016 under the HaSIC Development and Validation project. When allocating scheduled workplace inspections to the project, WSV aimed to include workplaces in as many industries as possible.

4.1. WorkSafe inspectors

Twenty-five WorkSafe Victoria inspectors participated in the project.

4.2. Procedure

Inspectors who participated in this project were provided with between 20 and 50 envelopes containing hardcopies of the organisational questionnaire. Attached to each envelope was a sheet that provided instructions to inspectors for recruiting organisational representatives and it also included a unique identifying code for matching purposes. Organisational representatives were individuals who typically accompanied inspectors on a site visit and they were informed that their involvement in the project was voluntary and their response would be confidential. Before providing the organisational representative with the envelope containing the questionnaire, the inspector removed the instruction sheet in order to retain the identifying code. Each organisational questionnaire had a code printed on it that was identical to the code on the instruction sheet. The organisational representatives were asked to complete the questionnaire and return it directly to the Monash Research Team using an enclosed reply-paid envelope.

The HaSIC was included in the online Fieldlink system. Following completion of each inspection and prior to writing up their usual report, inspectors were asked to rate the workplace using the HaSIC. In order to enter their rating on the HaSIC, inspectors had to first enter, into a “field” on the system, the identifying code on the instruction sheet. This allowed the Monash Research Team to match the HaSIC rating for each workplace with organisational questionnaires that were returned.

4.3. Total sample of workplace inspections

Ratings on the HaSIC were provided in relation to 270 workplace inspections (representing a 73 percent response rate). The number of workplace inspections conducted by each inspector ranged from 1 through to 23, with the average being 9 inspections. The time to complete inspections ranged from 15 minutes to 6.5 hours with an average inspection completion time of 1.5 hours.

4.4. Measures completed by inspectors

4.4.1. HaSIC

Inspectors completed the 7-item HaSIC rating for each workplace they inspected. The response format ranged from *0 = very poor (well below minimum standard)* through to *10 = excellent (well above minimum standard)*. The HaSIC is presented in Appendix 1.

4.4.2. Single-item global OHS rating

In addition to the HaSIC, inspectors completed a single-item global OHS rating for each workplace they inspected. The item asked, *Overall, how would you rate the OHS of this workplace?* and inspectors responded using the same response format as the HaSIC, ranging from *0 = very poor (well below minimum standard)* through to *10 = excellent (well above minimum standard)*. The global OHS item is presented in Appendix 2.

4.4.3. Notices

The enforcement outcome in terms of the number of notices issued as well as the type of notices issued (prohibition, improvement or voluntary compliance) for each workplace was recorded by inspectors.

4.5. Organisational representatives

In total, workplace surveys were received from 76 organisational representatives, yielding a response rate of 21 percent. However, six workplace surveys were returned from workplaces for which the relevant inspector had not completed the HaSIC, resulting in 70 workplaces for which inspector ratings on the HaSIC could be matched with workplace data.

4.6. Measures completed by organisational representatives

The measures completed by the organisational representative in relation to their workplace are presented below.

4.6.1. Workplace information

Respondents were asked several questions about their workplace such as organisational size, workplace size, main industry and sector, as well as their role in the organisation.

4.6.2. OHS leading indicators

Leading indicators were measured using the Organizational Performance Metric – Monash University (OPM-MU)[6, 7] which is a revised version of the Organizational Performance Metric developed at the Institute for Work & Health, Ontario Canada (IWH-OPM).[8, 9]

The OPM-MU is an 8-item scale that has been reported to be a reliable and valid measure of leading indicators of OHS. Respondents are asked to report on their experiences in the workplace they worked in most often, rather than the organisation overall, using a 5-point

scale (ranging from *1 = strongly disagree* to *5 = strongly agree*), according to the extent to which they agree or disagree with the eight statements.

For the purposes of this study a composite score on the OPM-MU is derived by calculating the average score of the individual items for each organisational respondent, although the OPM-MU can be summed to a score that ranges from eight to 40. A higher score on the OPM-MU indicates that OHS leading indicators are present to a greater extent in the workplace. As the OPM-MU is a leading indicator, it does not assess the number of OHS incidents that have occurred in a workplace. Instead, the OPM-MU provides a measure of employee perceptions regarding the value of, and emphasis given to, OHS in their workplace. Workplaces with higher scores on the OPM-MU, therefore, are perceived to be more actively engaged in practices that could reduce the likelihood of OHS incidents. Conversely, workplaces that obtain lower scores on the OPM-MU are perceived to be minimally engaged in initiatives that may reduce the potential of OHS incidents. Figure 1 below displays the items of the OPM-MU.

Please read each statement carefully and select the number that best shows your views about health and safety at this workplace.

		Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
1.	Formal OHS audits at regular intervals are a normal part of our workplace*	1	2	3	4	5
2.	Everyone at this workplace values ongoing OHS improvement in this workplace	1	2	3	4	5
3.	This workplace considers health and safety at least as important as production and quality in the way work is done	1	2	3	4	5
4.	Workers and supervisors have the information they need to work safely	1	2	3	4	5
5.	Employees are always involved in decisions affecting their health and safety	1	2	3	4	5
6.	Those in charge of OHS have the authority to make the changes they have identified as necessary	1	2	3	4	5
7.	Those who act safely receive positive recognition	1	2	3	4	5
8.	Everyone has the resources and/or equipment they need to complete their work safely	1	2	3	4	5

*For the purpose of this survey an audit means a formal process of evaluating and reporting on how the workplace manages health and safety in accordance with a recognised standard. Regular means that an audit is repeated at regular intervals, for example, once every year.

Figure 1: Organizational Performance Metric-Monash University

Three single-item leading indicators were also included in the questionnaire completed by organisational representatives. These items were *everyone has the authority to take charge of OHS e.g. stop work if they consider conditions are unsafe*; *job safety inspections are conducted regularly* and *where required; corrective actions are completed in a timely manner*. Organisational representatives responded to these single-item leading indicators using a 5-point scale (ranging from 1 = strongly disagree to 5 = strongly agree), according to the extent to which they agreed or disagreed with each statement.

4.6.3. OHS lagging indicators

Organisational representatives provided lost time from injury frequency rate (LTIFR) data for their workplace in the past 12 months.

4.7. WorkSafe Victoria claims data

Matched work-related injury and illness claims data were obtained from WSV for claims lodged by workplaces in the total sample (N = 270) between 1 July, 2014 and 29 February, 2016. The matching process was undertaken by WSV via an algorithm which compared business names and street addresses in both the Action (notices) and Premium (claims) databases and any anomalies were then matched manually. Sixty-seven workplaces had submitted at least one claim for a work-related illness or injury during this period. As claims data are recorded at the individual level, these were aggregated to the workplace level to yield total claims data for each workplace.

4.8. Measures collected from WSV claims data

Table 1 below displays the claims measures for each workplace (N = 270) that were extracted from the WSV claims databases: These measures can be considered as OHS lagging indicators.

Table 1: Claims measures for each workplace

Measure	Description
Number of minor claims	The number of claims that have not exceeded the employer excess for medical and similar expenses or for weekly payments
Number of standard claims	The number of claims that have exceeded the employer excess for medical and similar expenses or for weekly payments
Total number of claims	The total number of minor and standard claims
Number of incapacity work days	The number of days that a worker did not work due to an incapacity
Number of days compensation paid	The total number of days that a worker received compensation payments
Number of days employer paid compensation	The number of days that the employer has paid compensation to the worker
Amount of hospital payments	The total cost of hospital payments following treatment in hospital for a work-related injury or illness
Amount of lump sum payments	Single payment typically made to an injured worker who has sustained a permanent impairment resulting from a work-related injury or illness, or to a partner or family member following the death of a worker
Amount of non-compensation payments	The sum of payments other than weekly compensation and lump-sum compensation payments. Non-compensation payments may be divided into medical and other non-compensation amounts
Amount of weekly compensation payments	Weekly payments calculated based on a percentage of a worker's pre-injury average weekly wages for a 52 week period prior to the date of his or her injury
Amount of total payments	The sum of hospital, lump sum, weekly and non-compensation payments associated with a claim for a work-related injury or illness

A flow chart showing the sampling approach and measures as described in this section on the HaSIC validation study is presented in summary form in Figure 2.

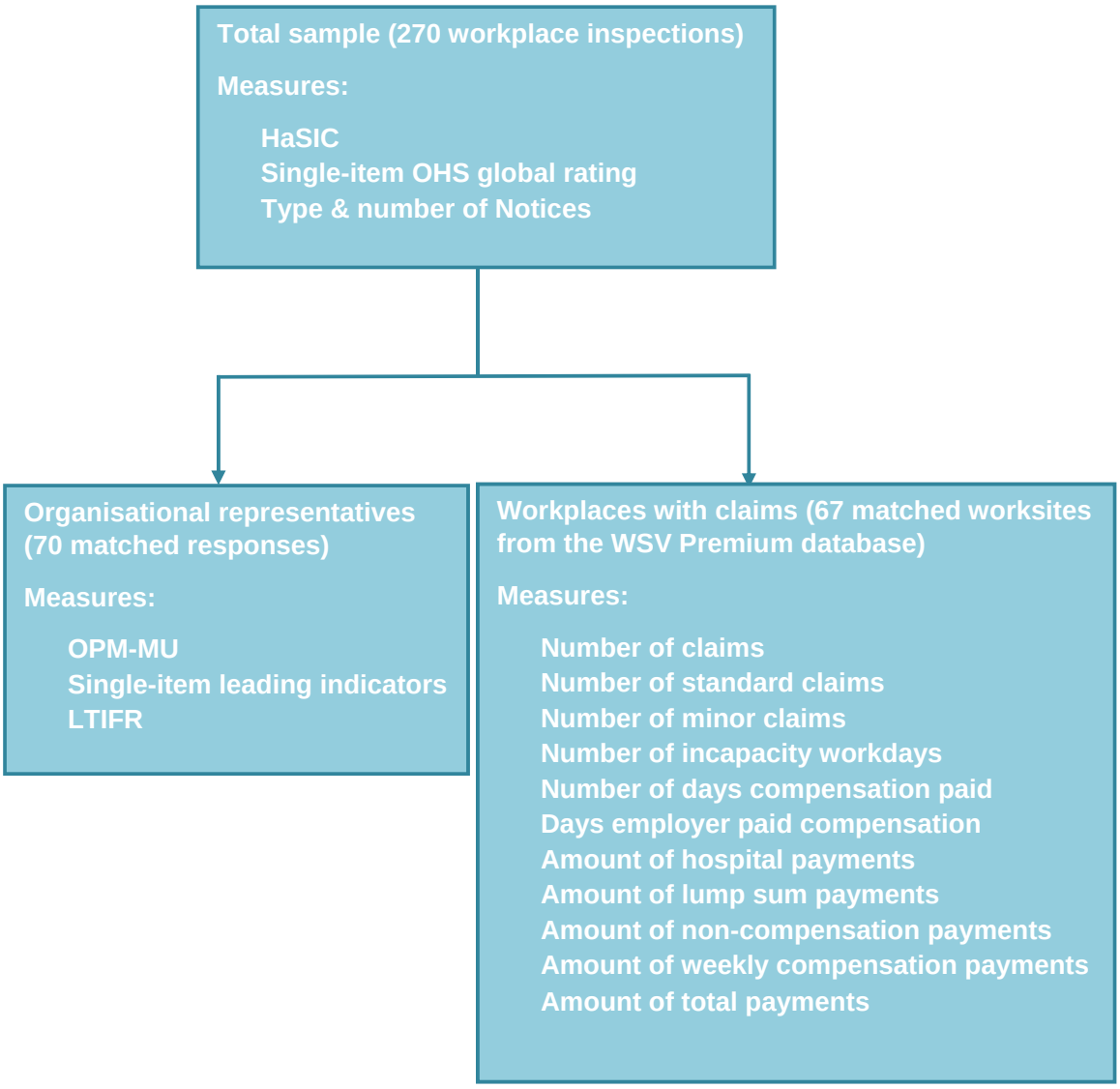

Figure 2: Flow chart showing sampling approach and measures

4.9. Statistical analyses

The initial analysis involved an examination of the psychometric properties of the HaSIC:

- Exploratory factor analysis (EFA); and
- Reliability analysis (Cronbach's alpha).

Exploratory factor analysis was conducted using principal components factoring. A good solution requires a clean factor structure and a minimum of 50% explanatory variance.[10] Cronbach's alpha was used to examine the reliability of the HaSIC, with values of .70 and above being acceptable.[11]

We then assessed the validity of the HaSIC by examining its relationships with other measures which addressed three important elements of scale validity:

- Convergent validity: does the HaSIC correlate as expected (and more strongly) with measures of similar or theoretically related variables?
- Discriminant validity: is the HaSIC not related (or more weakly related) to measures of variables that it theoretically should not be related to? and
- Criterion validity: what is the association between the HaSIC and WorkCover claims and notices?

The relationships between the HaSIC and other OHS measures were examined using Pearsons product moment correlations, analysis of variance (ANOVA) and poisson analyses. Poisson analysis is a form of regression that is appropriate when the outcome variable (criterion) is count data and it contains a significant number of zeros,[12] as was the case with many of the notices' outcomes (e.g., number of notices issued), claims' outcomes (e.g., number of days compensation was paid) and lost time from injury frequency rates (LTIFR).

5. Results

In this section we present the results of the HaSIC validation study as follows:

- a description of the total workplace sample and notices issued by inspectors;
- a description of the organisational survey responses, including their ratings of OHS leading indicators in their respective workplaces;
- a description of the workplaces with claims and the claims data;
- an evaluation of the HaSIC; and
- reporting on the validity testing of the HaSIC, including its relationships with global OHS ratings, notices, leading indicators, claims and other measures.

5.1. The total workplace sample

Figure 3 below displays the ANZSIC industry codes for all workplaces in the total sample (N = 270). When allocating workplace inspections for inclusion in the HaSIC Development and Validation project, WSV attempted to ensure as broad a coverage as possible of industries. With the exception of Mining, all industry categories were represented in the sample. However, most workplaces were from Retail Trade, Wholesale Trade, Accommodation and Food Services and Professional and Technical Services.

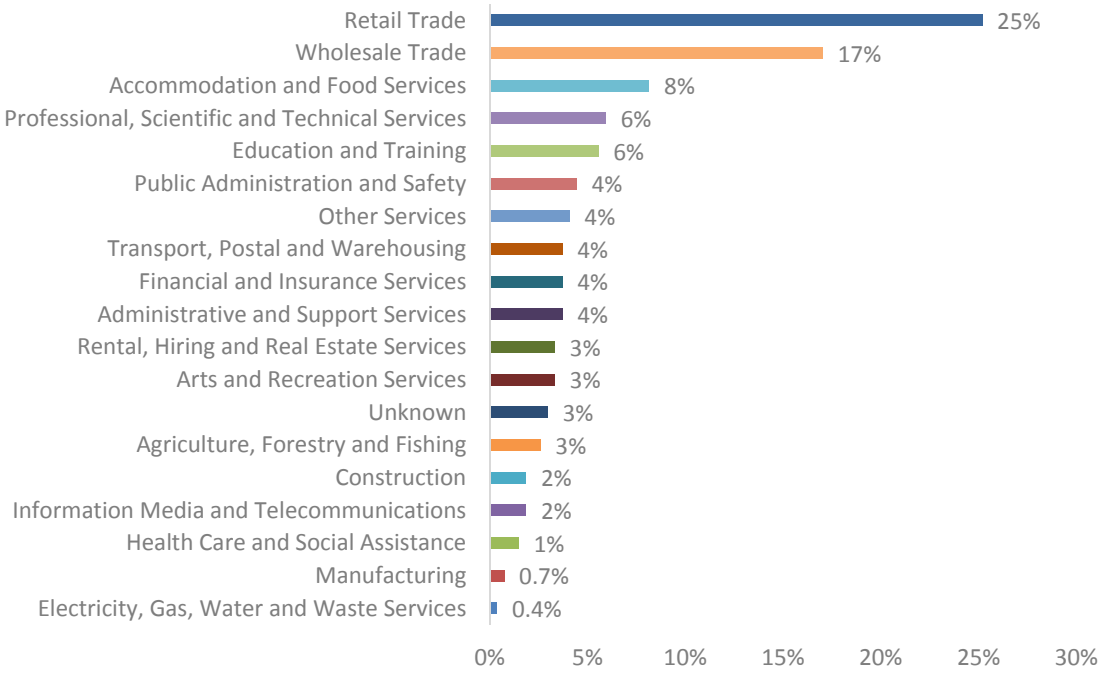

Figure 3: Industry profile of workplaces in the total sample

5.2. Notices issued by inspectors

Figure 4 below displays the percentages of notices issued by inspectors to workplaces within the total sample. These percentages were almost identical to those in the group of matched organisational representatives and the workplaces with matched claims data. Review of Figure 4 shows that voluntary compliance notices were the most common type of notice issued by inspectors, followed by improvement notices. No prohibition notices were issued by inspectors to workplaces in the total sample during the data collection phase.

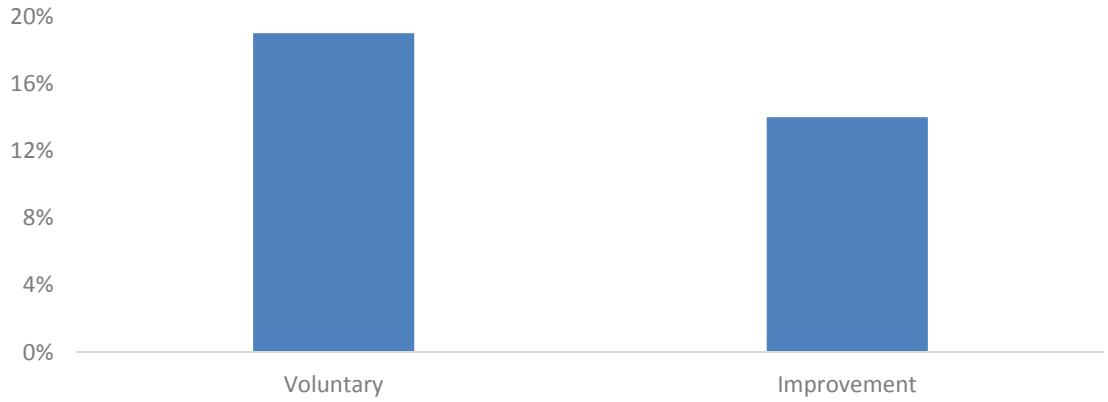

Figure 4: Type of notice issued to workplaces in total sample

Figure 5 below displays the distribution of workplaces in terms of notices (voluntary and improvement notices combined) received. It can be seen that nearly three-quarters of workplaces in the total sample were not issued with notices by inspectors and, among those that were, the majority of workplaces only received a single notice.

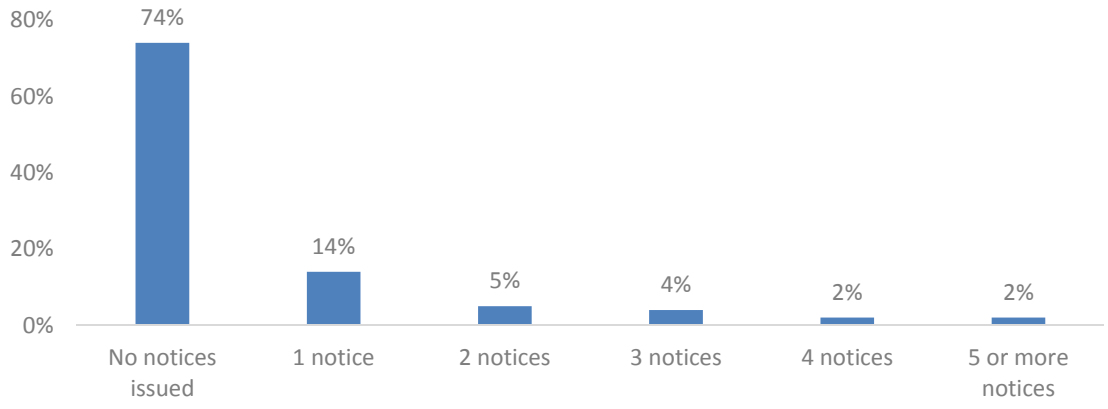

Figure 5: Number of notices issued to workplaces in the total sample

5.3. Organisational survey respondents – description of workplaces

Figure 6 presents the ANZSIC industry codes for the 70 workplaces that responded to the organisational survey. Similar to the total sample, most of the ANZSIC industries were represented in the organisational survey responses with the exception of Mining, Construction, Manufacturing and Electricity, Gas, Water and Waste Services. The most common industries of workplaces of these organisation were Wholesale Trade, Retail Trade and Education and Training.

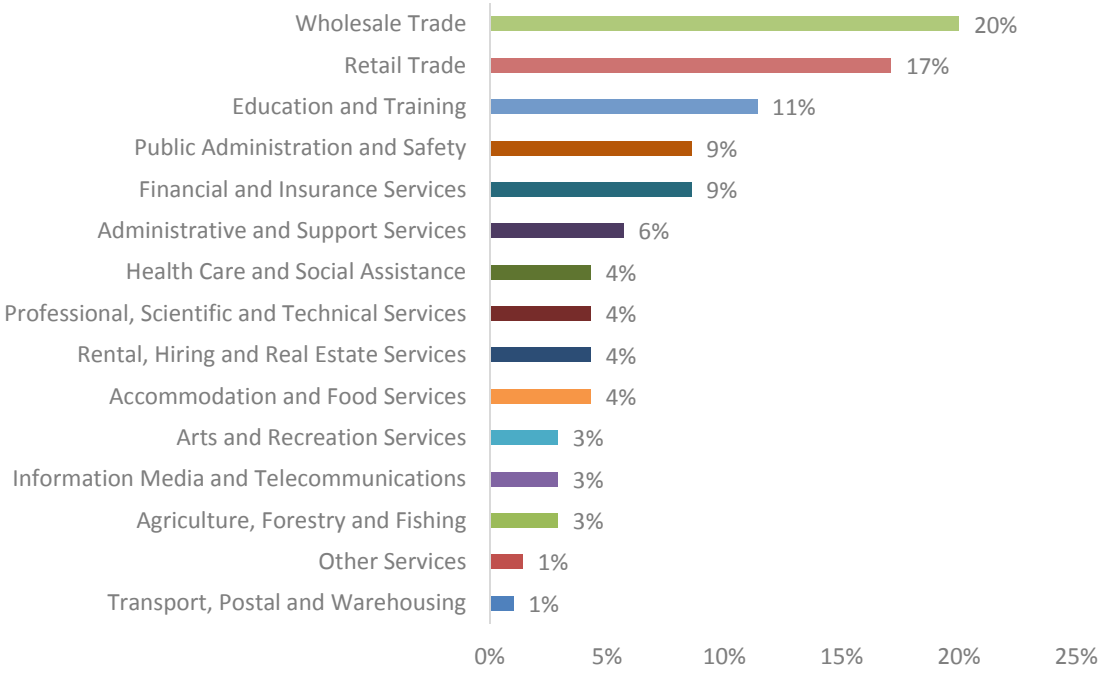

Figure 6: Industry profile of workplaces of the responding organisations

The distribution of roles held by the respondents to the organisational survey is presented below in Figure 7. Review of Figure 7 indicates that the highest percentage of respondents were OHS managers (30 percent), followed by those in other OHS roles (19 percent) and those who were health and safety representatives (14 percent).

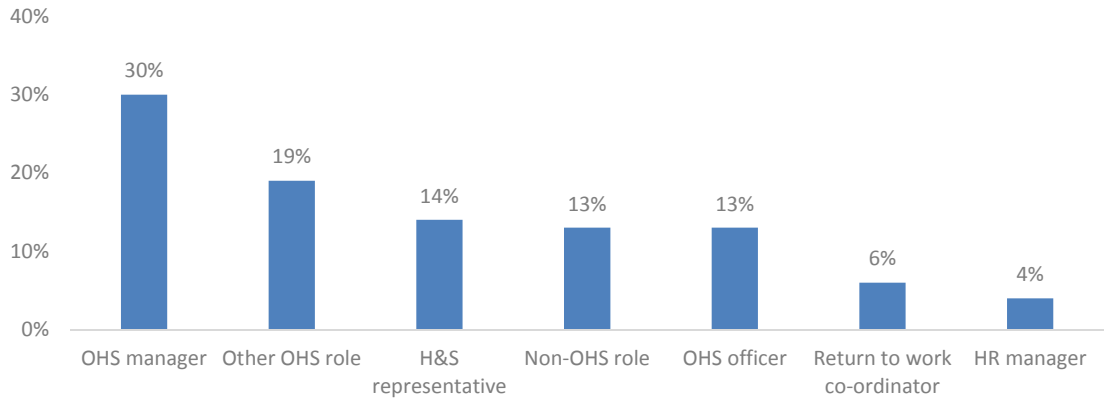

Figure 7: Role of organisational respondent

Figure 8 displays the different sectors of workplaces in the organisational survey responses. Most workplaces were from private sector firms, with 42 percent from non-listed firms and 24 percent from listed firms. Non-profit organisations and public sector/government departments constituted 18 percent and 12 percent respectively of the workplaces.

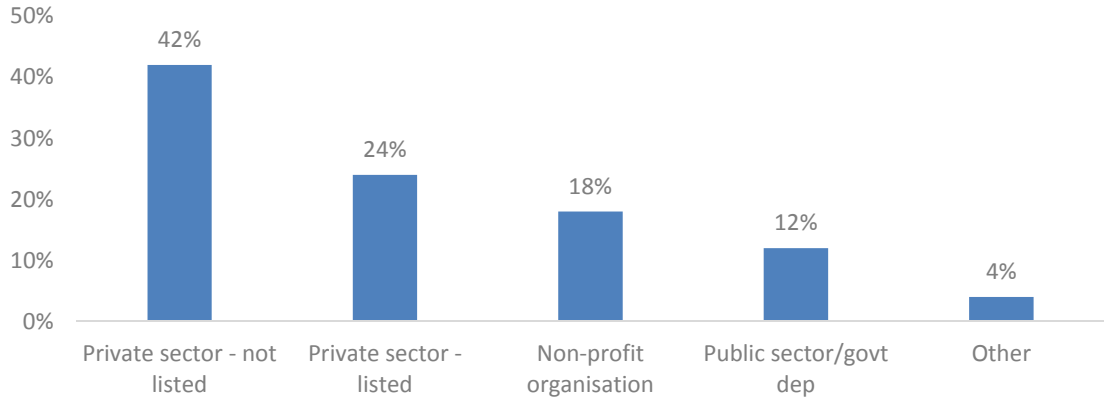

Figure 8: Workplaces sector

As can be seen in Figure 9, 45 percent of workplaces in the organisational survey responses were from medium sized organisations, 39 percent were from large organisations and 17 percent were from small organisations.

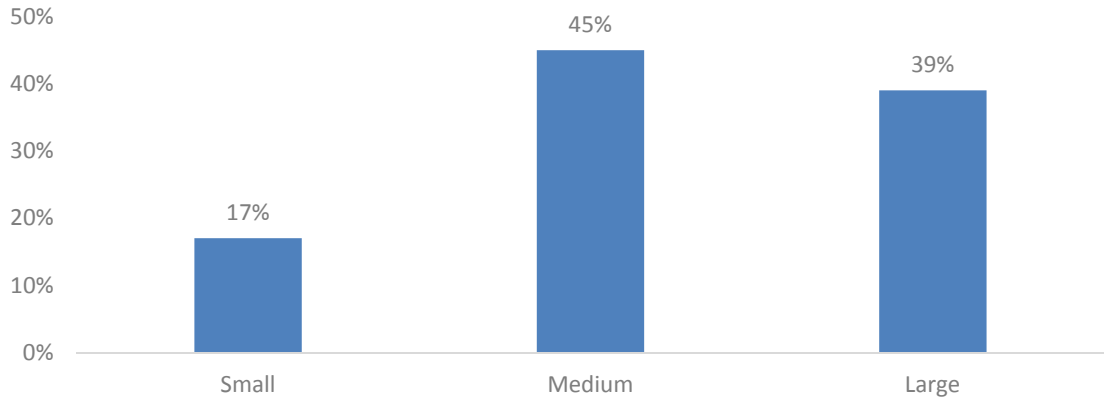

Figure 9: Organisational size

In terms of the size of the workplaces in the organisational survey responses, review of Figure 10 indicates that 38 percent had between 5 and 19 employees, 28 percent had between 20 and 49 employees and 16 percent of workplaces had between 1 and 4 employees. Very few workplaces had more than 100 employees on site.

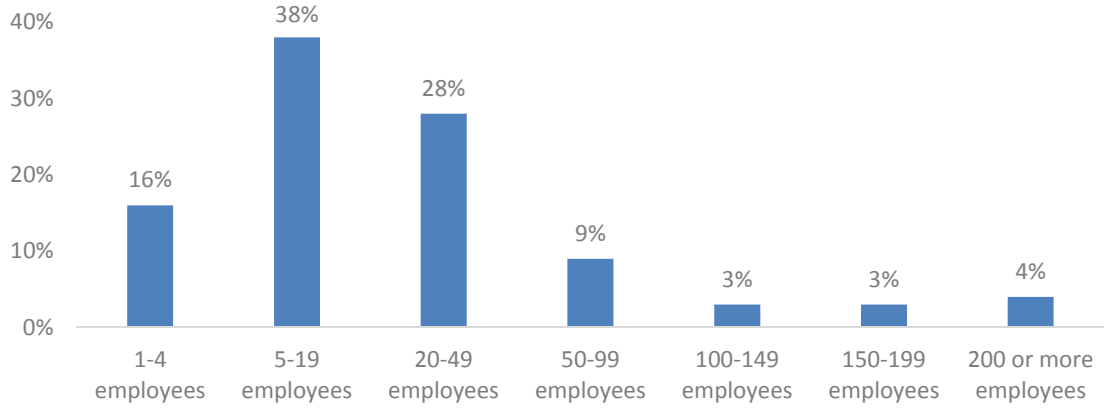

Figure 10: Workplace size

5.4. OHS leading indicators for organisational survey respondents

Figure 11 below displays the average ratings on the individual items that comprise the OPM-MU (blue columns) and the average composite score on the OPM-MU (mean of all of the items; green column). The standard deviation for each item and the composite score measures the amount of dispersion in ratings is shown by the “bars” overlaying each column. A low standard deviation indicates that the ratings tend to be close to the mean and a high standard deviation indicates that the ratings are spread out over a wider range of values. Review of the means in Figure 11 shows that organisational representatives tended to rate their workplaces high in terms of leading indicators with average scores on all of the items and the composite being 4 or greater on a 5-point scale. The standard deviations for

the individual items and the composite OPM-MU score were quite low, indicating that the scores tended to cluster around these high means. These results suggest the presence of positive bias on the part of organisational representatives when rating the OHS leading indicators of their workplaces, which would account for the "ceiling effect" (high scores with low variance) which appeared to be present in the OPM-MU scores. This ceiling effect for the OPM-MU was evident in an earlier study conducted by the Monash Research Team[13] (where managers who were responsible for OHS responded and also in a Canadian study using an earlier version of the OPM (IWH-OPM)[8, 9] with similar respondents. Scores on the OPM-MU can also be summed to provide a total score (possible total scores range from 8 to 40). In the current study, the average total OPM-MU score was 33.7 (SD = 3.96). These values are consistent with those obtained in the earlier study conducted by the Monash Research Team, where managers completed the OPM-MU (*M* = 33.4, *SD* = 4.2), however, this positive bias was not evident in the earlier study when employees rated their workplaces using the OPM-MU (*M* = 29.0, *SD* = 5.8)

The items that were rated lowest by organisational representatives on the OPM-MU were

- Those who act safely receive positive recognition; and
- Formal OHS audits are conducted regularly.

The items that were rated highest by organisational representatives were

- Information needed to work safely; and
- Those in charge of safety have authority.

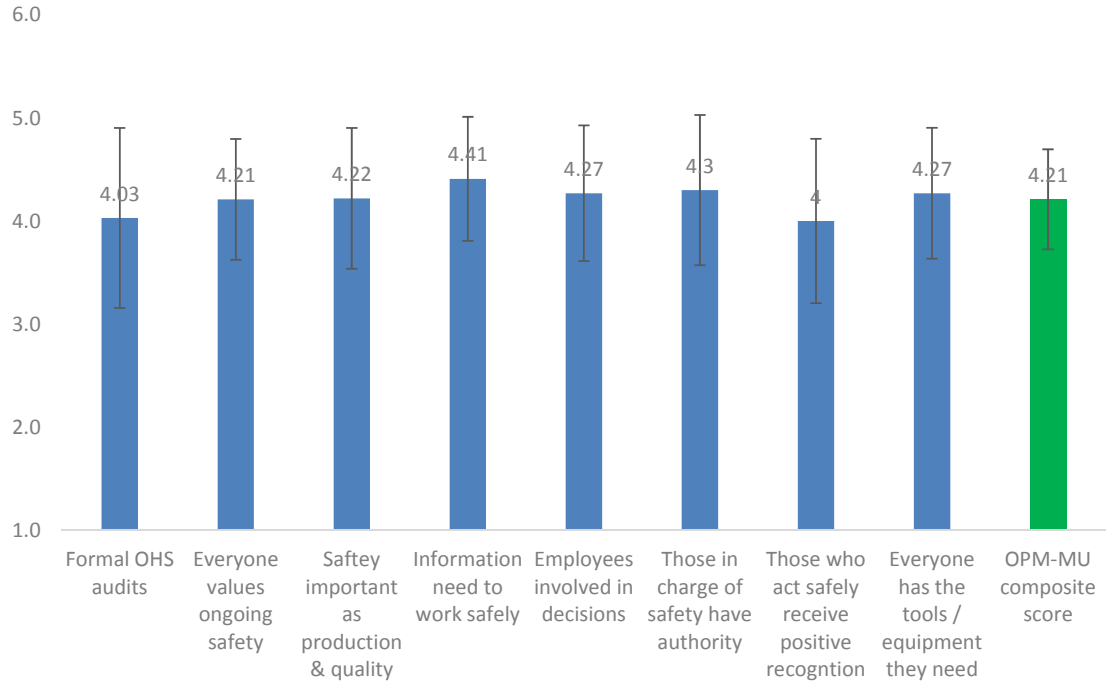

Figure 11: Means & standard deviations for the OPM-MU individual items & composite OPM-MU score

The means and standard deviations for the single-item OHS leading indicators for the organisational subsample are presented in Figure 12. Consistent with the OPM-MU, organisational respondents tended to rate their workplaces highly on the single-item leading indicators as the average scores on these items were at 4 or above (rated on a 5-point scale) and the standard deviations for these items were all less than 1. Again, this suggests positive bias on the part of organisational representatives when evaluating OHS leading indicators, resulting in a ceiling effect.

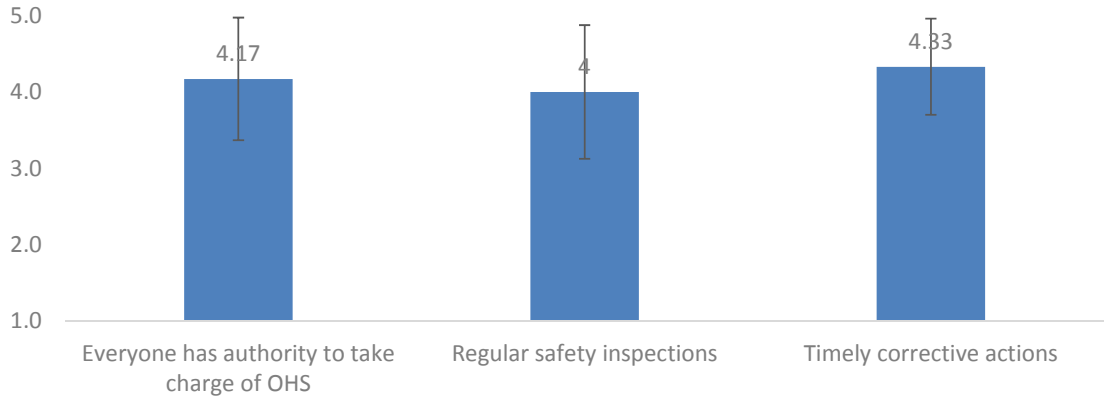

Figure 12: Means & standard deviations for single item leading indicators

5.5. Workplaces with claims

Approximately 25 percent of the workplaces (N = 67) included in the total sample had submitted at least one claim for a work-related injury or illness between 1 July, 2014 and 29 February, 2016. Figure 13 presents the ANZSIC industry codes for the 67 workplaces for which at least one WorkCover claim had been submitted for a work-related illness or injury during this period. As with the total sample, most of the ANZSIC industry categories were represented in the claims subsample, with the exception of Mining; Electricity, Gas, Water and Waste Services; and Information, Media and Telecommunications. The most common industries of workplaces in the claims subsample were Wholesale Trade; Retail Trade; Education and Training; Public Administration and Safety; and Accommodation and Food Services. The least common industries of workplaces with matched claims data were Manufacturing; Construction; Financial and Insurance Services; Health Care and Social Assistance; Rental, Hiring and Real Estate Services; and Agriculture, Forestry and Fishing.

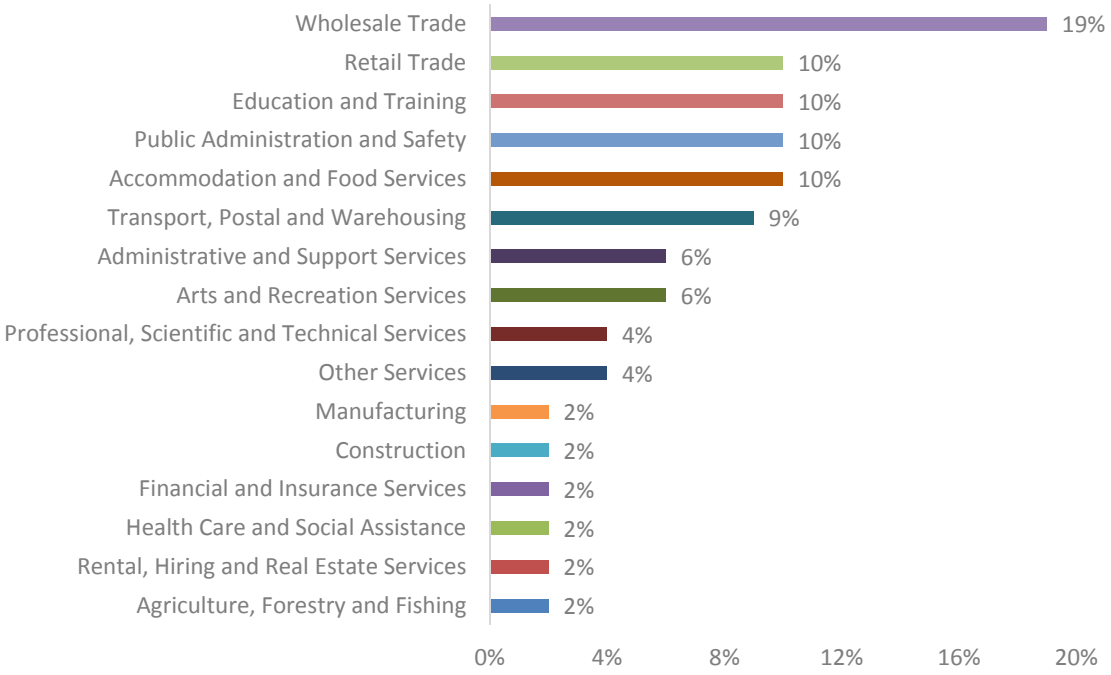

Figure 13: Industry profile of workplaces with claims

As noted above, 67 workplaces had submitted at least one claim; that is, claims data were matched to those 67 workplaces. The claims data summarised in this section of the report have been aggregated to the workplace level.

As shown below in Figure 14, the majority of workplaces with claims data (58 percent) submitted only one claim and nearly one quarter of workplaces submitted two claims between 1 July, 2014 and 29 February, 2016. Very few workplaces submitted more than three claims during this period.

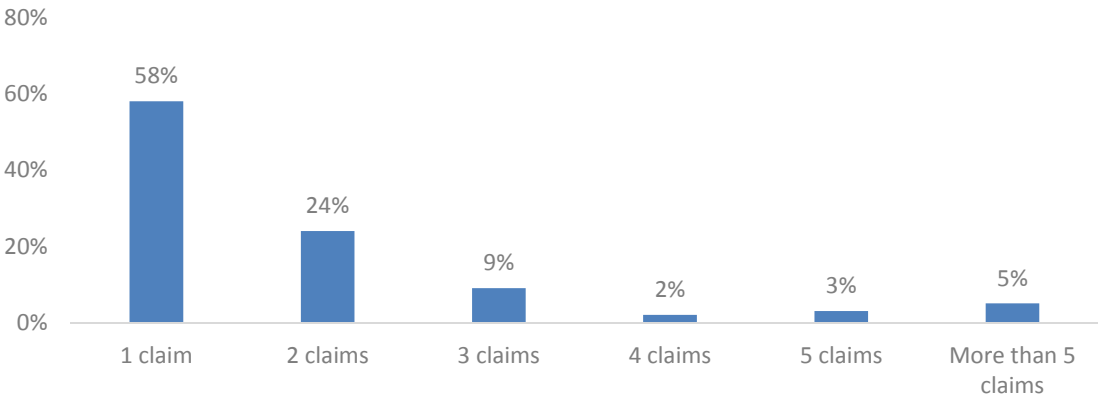

Figure 14: Total number of claims

Figure 15 and Figure 16 display the number of minor and standard claims (respectively) submitted by workplaces. It can be seen that the majority of workplaces had no minor claims and nearly 30 percent submitted at least one minor claim between 1 July, 2014 and 29 February, 2016. However, most workplaces submitted one standard claim during this period.

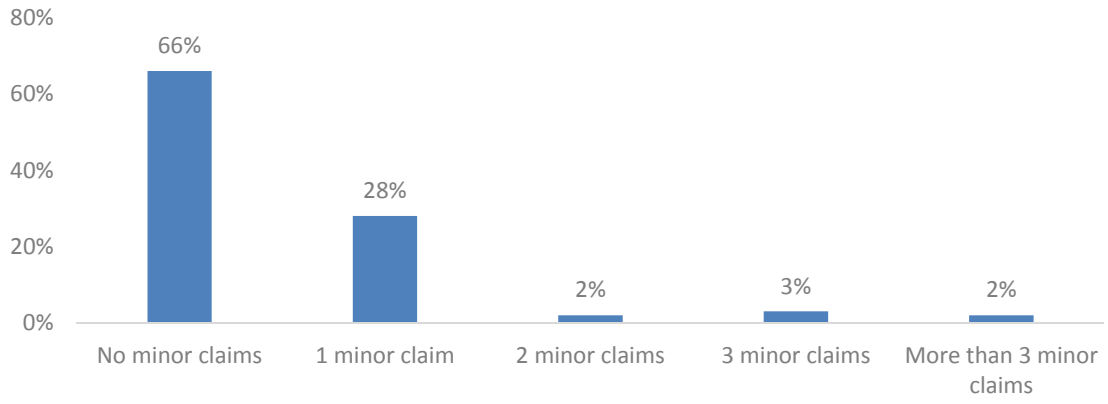

Figure 15: Number of minor claims

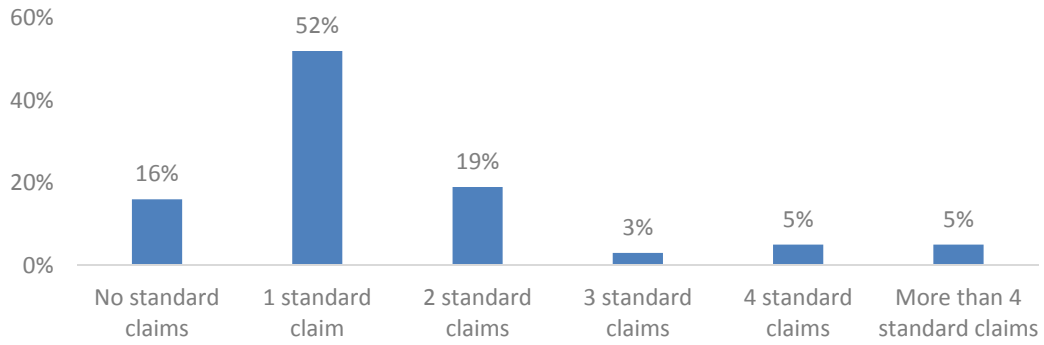

Figure 16: Number of standard claims

Figure 17 below displays the percentage of workplaces that made at least one claim for different types of afflictions. Forty-two percent of workplaces made at least one claim resulting from a musculoskeletal system injury, 27 percent submitted a claim resulting from wounds, lacerations and amputations and 25 percent made at least one claim arising from a traumatic joint/ligament and muscle/tendon injury. Few workplaces made a claim for intracranial injury or burn injury during this period.

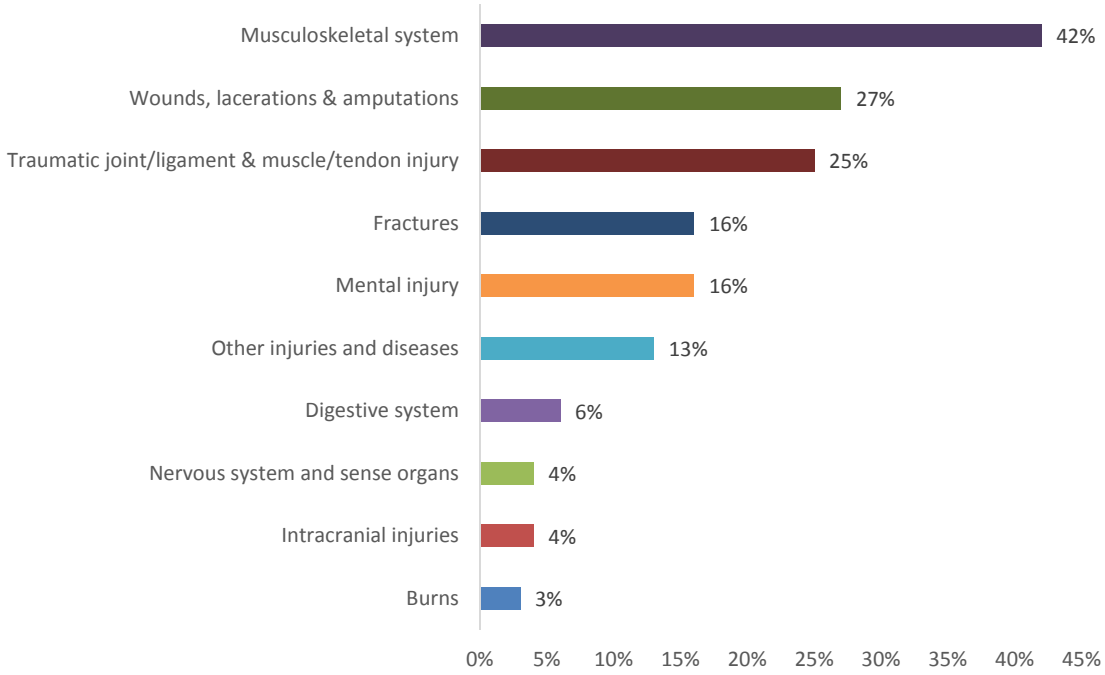

Figure 17: Workplaces that made at least one claim of each type of affliction

The number of days that the employer paid compensation for a work-related injury or illness claim is presented in Figure 18 below. It can be seen that more than half of those workplaces with claims paid compensation for between 10 and 19 days, following an illness or injury claim, in the period between 1 July, 2014 and 29 February, 2016.

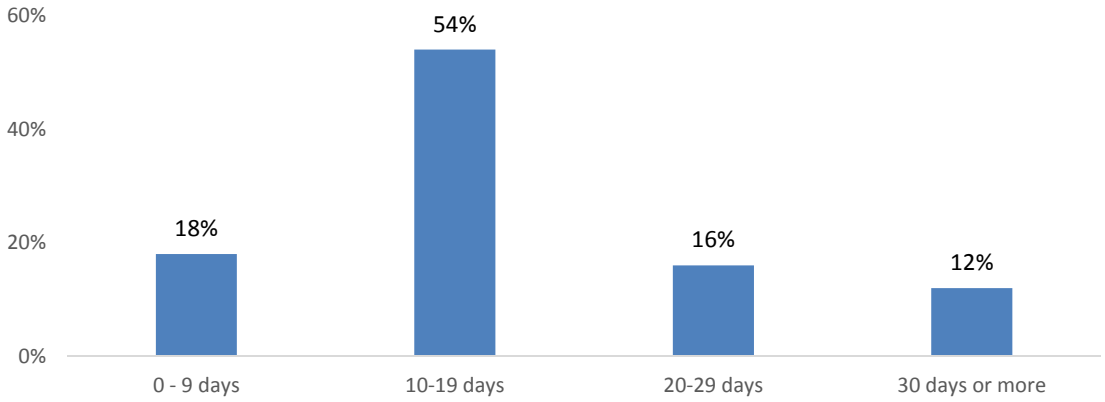

Figure 18: Number of days of employer paid compensation

Figure 19 displays the number of incapacity workdays, accrued by employees between 1 July, 2014 and 29 February, 2016, for each workplace with claims. Review of Figure 19 indicates that more than 30 percent of workplaces, who had submitted claims during this

period, incurred no incapacity workdays, while 22 percent recorded between 1 and 50 incapacity workdays. Thirteen percent of workplaces with claims had sustained more than 250 incapacity days.

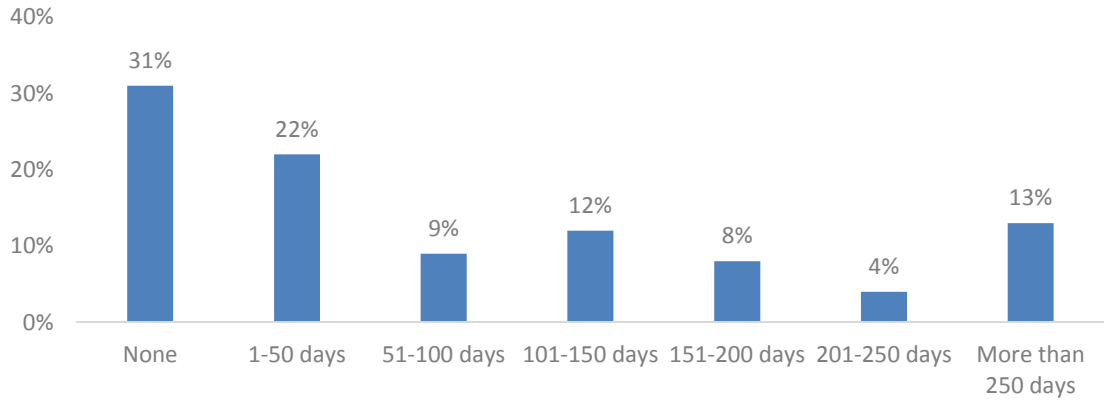

Figure 19: Number of incapacity workdays

The number of days that compensation was paid to employees following a work-related injury or illness claim between 1 July, 2014 and 29 February, 2016 for workplaces with claims is presented in Figure 20. Nearly half of these workplaces had no days when employees were paid compensation. Sixteen percent of workplaces with claims had between 51 and 100 days when compensation was paid, while 15 percent had between 1 and 50 days.

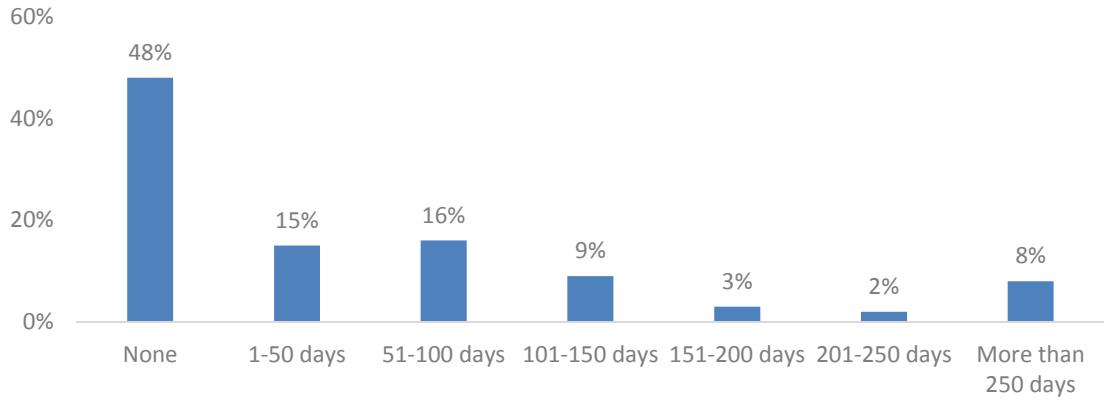

Figure 20: Number of days compensation paid

Figure 21 displays the hospital payments made to employees following a work-related illness or injury, aggregated to the workplace level, in the 20 months leading up to the end of February, 2016. Claims for hospital payments are typically indicative of more acute work-related illnesses or injuries and clearly the higher the hospital payment, the more serious the illness or injury is likely to be. Review of Figure 21 shows that more than half of workplaces

reported no hospital payments during this period, while 13 percent of workplaces had claims for hospital payments between $1 and $1,000.

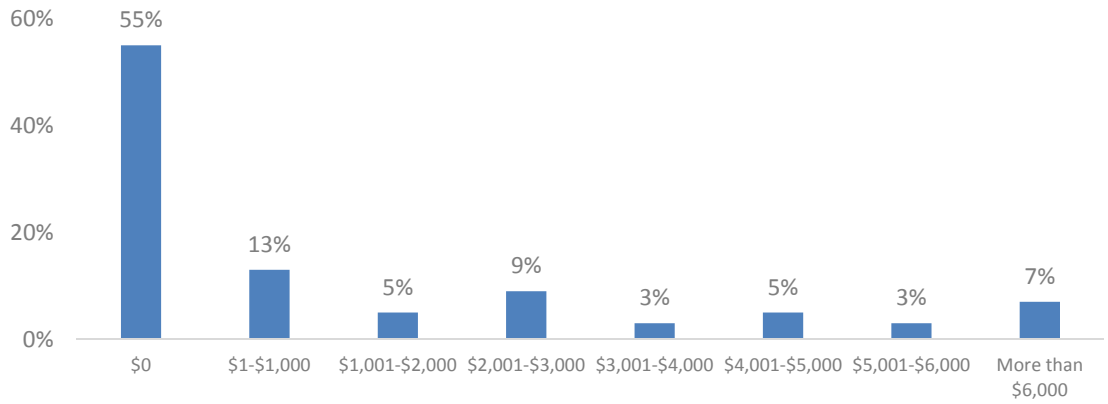

Figure 21: Hospital payments

A lump sum payment is typically made to an injured worker who has sustained a permanent impairment resulting from a work-related injury or illness, or to a partner or family member following the death of a worker. Therefore, similar to hospital payments, lump sum payments are indicative of more severe or indeed fatal work-related injury or illness and clearly the higher the payment, the more severe the illness or injury is likely to be. Figure 22 presents the distribution of lump sum payments for workplaces with claims between 1 July, 2014 and 29 February, 2016. Ninety-six percent of these workplaces had no lump sum payments made to their workers during this period.

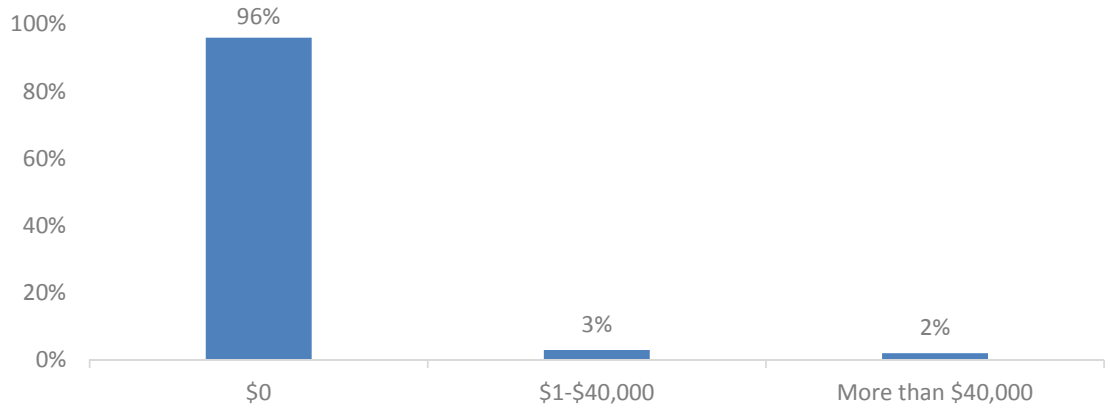

Figure 22: Lump sum payments

Non-compensation payments are the sum of payments other than weekly compensation and lump-sum compensation payments. Non-compensation payments may be divided into medical and other non-compensation amounts. Figure 23 shows the distribution of non-compensation payments made to all employees, between 1 July, 2014 and 29 February,

2016, from workplaces with claims. It can be seen that while 21 percent of these workplaces had no employees receiving non-compensation payments, 34 percent had employees who, in total, received between $1 and $5,000 in non-compensation payments during this period.

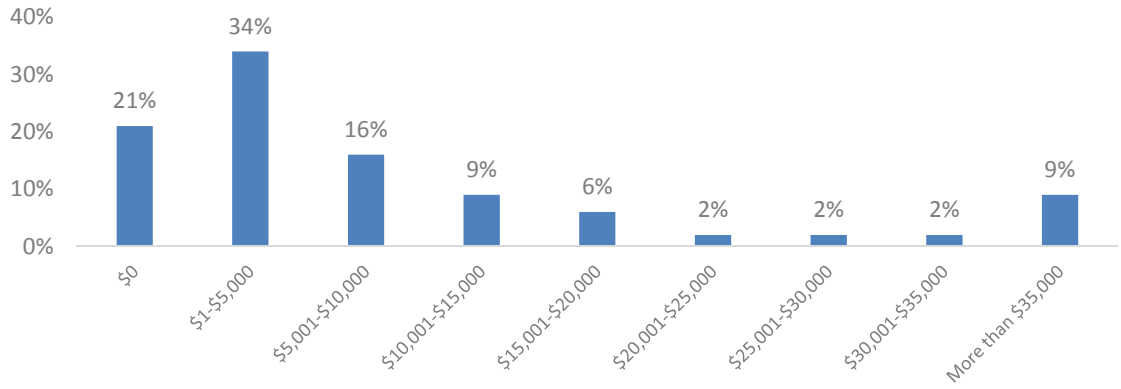

Figure 23: Non-compensation payments

Weekly payments are calculated based on a percentage of a worker's pre-injury average weekly wages for a 52-week period prior to the date of his or her injury. The distribution of weekly compensation payments made to all employees from workplaces with claims between 1 July, 2014 and 29 February, 2016 is presented in Figure 24. Nearly half of these workplaces had no employees who received weekly compensation payments, while 15 percent had employees who, in aggregate, were paid between $1 and $5,000 in weekly compensation.

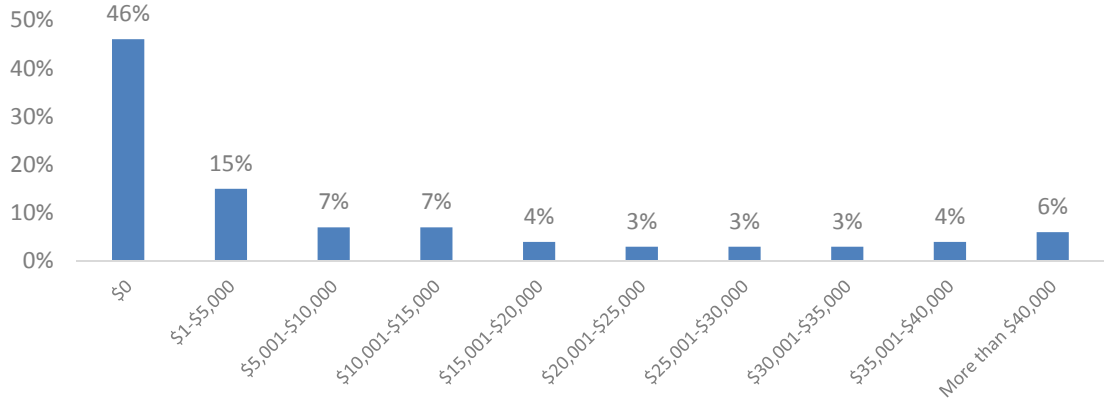

Figure 24: Weekly compensation payments

Total payments are the sum of hospital, lump sum, weekly and non-compensation payments associated with a claim for a work-related injury or illness. The distribution of total payments arising from claims for all employees from workplaces with claims is displayed in Figure 25. Review of Figure 25 indicates that 16 percent of these workplaces had no employees who

received a payment resulting from a claim, while 33 percent had employees who, in aggregate, received between $1 and $5,000 in total payments.

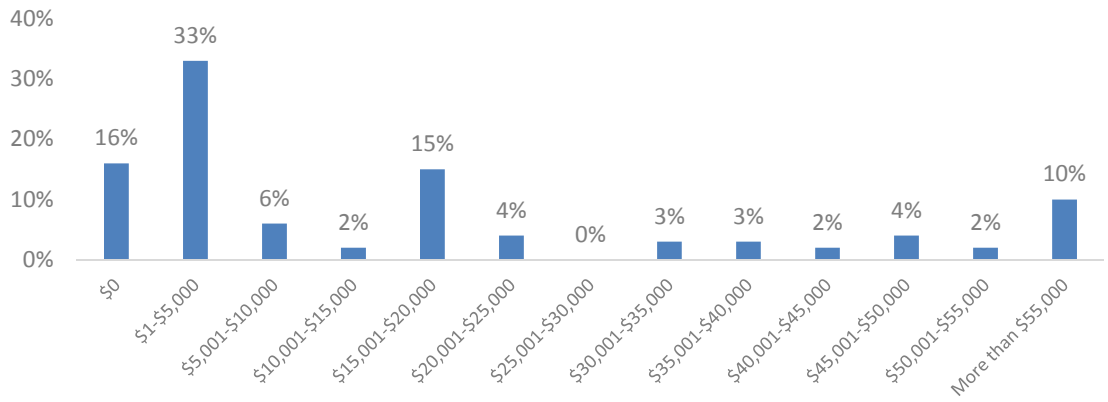

Figure 25: Total payments

5.6. Evaluation of the HaSIC

In the following sections, we report on the results of various tests that were conducted to evaluate the reliability and validity of the HaSIC.

5.6.1. Descriptive statistics and rater effect

Figure 26 presents the average ratings for the total sample of inspections (N = 270) on the individual HaSIC items (blue columns), the average composite rating on the HaSIC (mean rating of all items; brown column) and the single-item global OHS rating (red column). Review of the means for the individual items and the composite HaSIC indicates that they tended to be slightly above the midpoint on the scale (rating of 5 = *adequate/meets minimum standard*). With one exception (Chemical management, SD = 2.50), the standard deviation for the individual items and the composite HaSIC rating ranged between 1.80 and 2.00. Means and standard deviations on items and composite scores of these magnitudes are considered desirable attributes for a measure.[14, 15]

The items that were rated lowest by inspectors were

- Chemical management; and
- Consultation and safety communication.

The items that were rated highest by inspectors were

- Housekeeping and;
- Hazard identification and control.

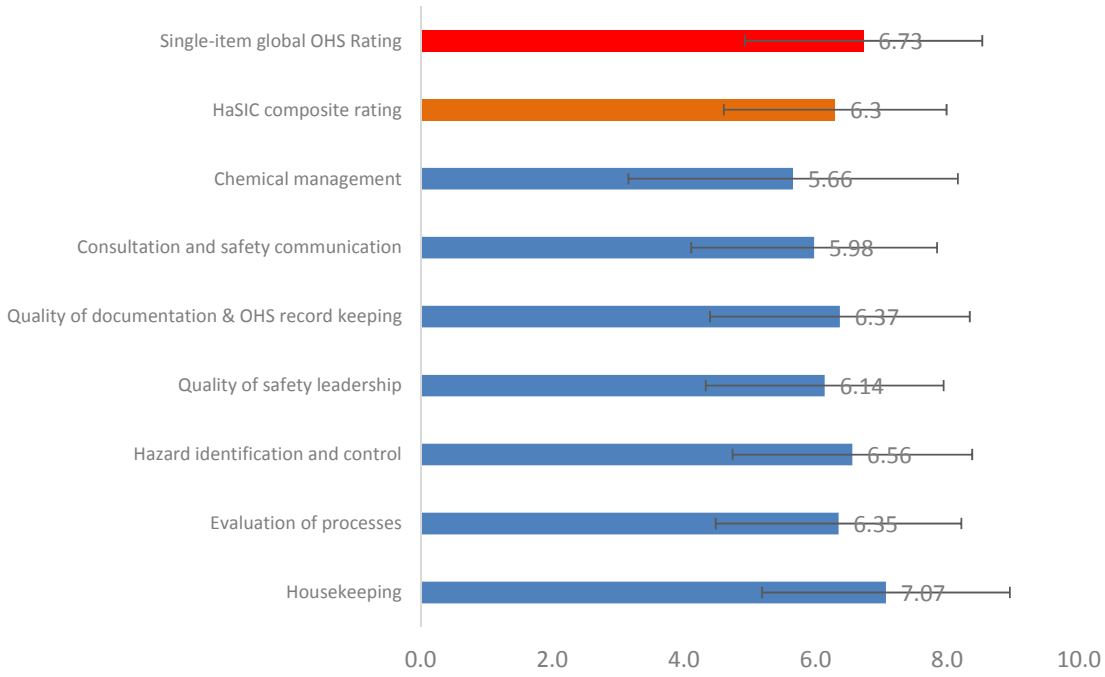

Figure 26: Means & standard deviations for the HaSIC items, composite ratings & single-item global OHS rating

Figure 27 presents the mean HaSIC ratings across industry type of workplaces in the total sample. Review of Figure 27 indicates that there were some differences in ratings on the HaSIC for workplaces from different industries. Those workplaces where the main industry was categorised as Other Services, Administrative Support, Rental Hiring and Real Estate Services and Construction on average obtained lower HaSIC ratings. In comparison, workplaces where the main industry was Manufacturing, Information Media and Telecommunications and Financial and Insurance Services generally received higher scores.

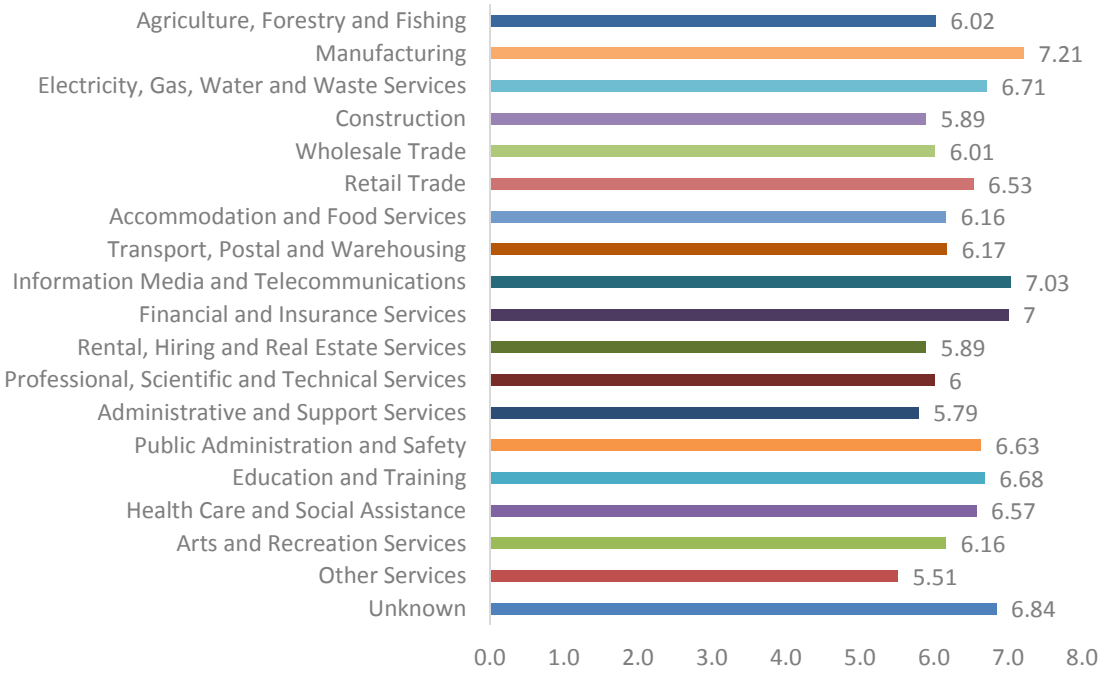

Figure 27: HaSIC rating according to industry of workplace

Table 2 summarises the ratings on the HaSIC provided by each of the 25 inspectors who inspected workplaces included in the total sample. Review of the means and standard deviations suggests that there was considerable variability in how inspectors rated items on the HaSIC. For example, the average HaSIC rating for Inspector 17 was very low (4.20), but his or her ratings varied considerably across workplaces (SD = 2.96), while the average ratings for Inspector 2 were very high (9.27), but his or her ratings varied little across workplaces (SD = 0.55).

In order to test more fully for any rater effect on the HaSIC, the intraclass correlation (ICC) was calculated. The ICC provides an indication of how closely the ratings on the HaSIC by each of the 25 inspectors resembled each other across workplace inspections. The ICC for the HaSIC was .45 and therefore the proportion of variance in ratings on the HaSIC that can be attributed to differences across inspectors was 45 percent (.45 x 100 to convert to a percentage). In other words, nearly half of the variation in ratings on the HaSIC was explained by differences in unobserved characteristics between the inspectors. Despite this quite strong rater effect, the findings summarised in this report suggest that the HaSIC is a valid measure as it functioned very well in terms of predicting a number of OHS lagging indicators.

Table 2: Summary of Inspector HaSIC Ratings

Inspector	Number of Inspections	Mean HaSIC Rating	Standard Deviation	Minimum HaSIC Rating	Maximum HaSIC Rating
1	18	5.73	0.96	4.57	7.86
2	15	9.27	0.55	7.86	10.00
3	6	5.70	1.00	4.29	6.86
4	10	6.54	1.74	4.14	8.86
5	18	5.95	1.14	4.14	9.57
6	41	5.91	0.83	4.43	7.86
7	14	5.95	0.90	5.00	7.86
8	5	7.09	0.95	5.57	8.00
9	7	6.06	1.07	4.71	7.29
10	12	8.88	0.64	8.00	10.00
11	23	6.24	0.78	5.14	7.86
12	20	5.11	0.55	4.71	7.43
13	18	5.69	0.61	4.86	6.86
14	17	4.69	2.79	1.00	8.57
15	6	7.55	1.95	4.00	9.14
16	3	6.90	0.92	5.86	7.57
17	5	4.20	2.96	1.00	9.00
18	4	8.07	2.28	4.71	9.71
19	5	7.97	1.09	6.14	9.00
20	3	5.19	0.82	5.14	5.29
21	2	6.64	2.52	4.86	8.43
22	5	6.00	0.86	5.14	7.29
23	9	7.46	1.00	5.57	8.43
24	3	8.05	0.57	7.71	8.71
25	1	6.00	0.00	6.00	6.00

Note: Inspector ICC = .45

5.6.2. Reliability and construct validity of the HaSIC

Using data from the total sample of workplace inspections (N = 270), the latent structure of the seven HaSIC items was evaluated using exploratory factor analysis (EFA) and the internal consistency of the HaSIC items was examined using reliability analysis.

The results of these analyses indicated that the HaSIC demonstrated

- **very good reliability** (Cronbach's alpha = .94), indicating that the HaSIC is relatively free from random measurement error; and
- **good explanatory variance** as the items formed a unidimensional scale with all items loading significantly on one component, which explained 76 percent of the variance in the common variance.

5.6.3. Convergent and discriminant validity of the HaSIC

We used data from the organisational survey responses (N = 70) to test the convergent and discriminant validity of the HaSIC. The results of analyses testing for convergent validity were mixed. For example, in support of the convergent validity of the HaSIC, ratings on this measure were strongly and positively correlated with the single-item global OHS ratings of workplaces provided by inspectors (r = .88, $p < .001$).

We had expected that the HaSIC would be positively related to OHS leading indicators, however, it was not correlated with the OPM-MU or any of the single-item leading indicator measures (i.e., *Everyone has authority to take charge of OHS, Regular safety inspections* and *Timely corrective actions*). The lack of significant associations among the HaSIC and OHS leading indicators is likely to be explained by the ceiling/range restriction effect evident in the OPM-MU and single-item leading indicators, when reported by those responsible for OHS. It is the case that a measure that varies over a narrow range will correlate weakly with other measures (i.e., variance is required for covariance). Thus, the fact that the HaSIC did not correlate significantly with the OHS leading indicator measures may well be explained by the positive response bias of those responsible for OHS who completed the OHS leading indicator measures, rather than problems with the HaSIC.

In support of the discriminant validity of the HaSIC, we found that ratings on this measure were not signifcantly correlated with the size of the workplace (a variable that is theoretically unrelated to OHS safety).

Given the problems with the responses to OHS leading indicator measures in this study, we concluded that the high correlation between the HaSIC and the single item global OHS rating and the nonsignificant correlation between the HaSIC and workplace size provided evidence for both the convergent and discriminant validity of the HaSIC.

5.6.4. Criterion validity of the HaSIC

Arguably one of the most important aspects of validity for a tool such as the HaSIC is whether it is associated with practical OHS outcomes such as notices or claims (criterion validity). Therefore, we tested the criterion validity of the HaSIC comprehensively using data from the total sample as well as the organisational survey responses and claims data, using Pearson product moment correlation, poisson regression analysis and analysis of variance

(ANOVA). The findings of our tests of the criterion validity of the HaSIC are summarised below.

- **Lost time from injury frequency rates (LTIFR)**

  HaSIC ratings were

  - negatively related to workplace LTIFR reported by organisational representatives ($p < .001$).

- **Notices (Total sample, N = 270)**

  HaSIC ratings were

  - negatively related to the total number of notices issued to a workplace ($p < .05$);
  - negatively related to the number of voluntary compliance notices issued to a workplace ($p < .05$); and
  - significantly lower for workplaces where some enforcement action was taken (one or more notices were issued), compared with workplaces where no enforcement action was taken ($p < .001$).

  HaSIC ratings were not significantly related to the number of improvement notices issued to workplaces.

- **WorkSafe Claims obtained from WSV database (aggregated to the workplace level)**

  HaSIC ratings were negatively related to

  - the number of days compensation was paid ($p < .05$);
  - the number of days that employers paid compensation ($p < .01$);
  - the amount of non-compensation payments ($p < .001$);
  - the amount of lump sum payments ($p < .001$); and
  - the amount of total payments ($p < .001$).

  HaSIC ratings were not significantly related to

  - the total number of claims;
  - the number of standard claims;
  - the number of minor claims;
  - the number of incapacity workdays;
  - the amount of weekly compensation payments; and
  - the amount of hospital payments.

The significant correlations among the HaSIC and LTIFR as well as a number of notice and WorkCover claim outcomes, in the expected direction, provide **strong evidence for the criterion validity of the HaSIC**.

5.7. Conditions of use

6. Recommendations

In this section we present several recommendations as follows:

1) **The HaSIC could be used by health and safety inspectors** to
   a) provide a reliable and valid high-level assessment measure of the potential of a workplace to keep everyone healthy and safe, and;
   b) enhance consistent inspector assessment approach.
2) **Use the HaSIC as part of the systematic training for inspectors.** The incorporation of the measure into training as a guide to a uniform approach to assessment would be likely to reduce rater effects, particularly for new/inexperienced inspectors.
3) **Ongoing longitudinal research, examining the relationships among the HaSIC and prospective OHS outcomes, would be beneficial.** This would test whether HaSIC can predict future outcomes (i.e., test the predictive validity of the HaSIC). In the current study, we compared ratings on the HaSIC with OHS outcomes (LTIFR, notices and claims) that were concurrent or retrospective.
4) **Additional research in other industries could be conducted.** To date the HaSIC has been tested in several industries, further research in the remaining ANZSIC industries should be conducted.
5) **Future research should examine the relationship between the HaSIC (completed by inspectors) and leading indicators (OPM-MU) (completed by employees).** Collecting workforce responses to the OPM-MU could address the positive bias evident when those responsible for OHS complete the OPM-MU.
6) **As the findings of this study indicate the possibility of a rater effect for inspectors on the HaSIC, further analysis examining the reasons for these differences is recommended.** For example, it would be useful to know whether characteristics of inspectors such as on-the-job experience, tenure and prior work experience influence HaSIC ratings.

7. Conclusion

The Inspector Trial has developed and validated a 7-item checklist, the HaSIC. This study has resulted in a tool that has substantial potential for implementation by regulators and inspectors. There is also potential for future research to explore a number of areas. For example, in the current study ratings on the HaSIC with OHS outcomes (LTIFR, notices and claims) were analysed concurrently or retrospectively so it would be useful to analyse the relationships longitudinally. Future research could also incorporate a broader range of industries. Additionally, to address the positive bias encountered when those responsible for OHS complete the OPM-MU, there is an opportunity for research to examine the relationship between the HaSIC (completed by inspectors) and leading indicators (OPM-MU) (completed by employees) in workplaces (scores aggregated to the workplace level). Finally as the findings of this study indicate the possibility of a rater effect for inspectors on the HaSIC, further analysis examining differences is recommended.

This study complements the large national study that has been completed by the same research team to validate the OPM-MU.[6, 7] The OPM-MU and the HaSIC are short practical tools for measuring OHS leading indicators.

Overall, this research has contributed to a better understanding of inspectors' approaches to OHS leading indicators and the relationship between leading and lagging indicators.

8. References

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Appendix 1: Health and Safety Inspector Checklist (HaSIC)

		Very poor (well below minimum standard)		Poor (moderately below minimum standard)			Adequate (meets minimum standard)	Good (moderately above minimum standard)			Excellent (well above minimum standard)	
1.	Housekeeping	• External appearance of the site is poor. • Site is untidy. • Access & exits are poor.					• Acceptable external appearance of the site. • Site is reasonably tidy. • Access & exits are adequate.	• Good external appearance of the site. • Site is very tidy. • Access and exits are good.				
		0	1	2	3	4	5	6	7	8	9	10
2.	Evaluation of Processes	• Work methods rely on verbal instructions. • Inadequate supervision of high-risk activities. • Unrestricted access to hazardous areas. • Tasks are not performed safely.					• Safe work procedures have been documented. • Supervisors enforce health and safety rules. • Tasks are performed with adequate safety.	• Safe work procedures are regularly reviewed and updated. • Safe work procedures, job safety assessments (etc.) are task specific. • A systematic process is in place for the maintenance of plant and equipment. • Tasks are performed with a high degree of safety.				
		0	1	2	3	4	5	6	7	8	9	10
3.	Hazard identification and control	• Slip, trip & fall hazards are managed poorly. • Traffic management is poor. • No program in place for health and safety inspections or monitoring in the workplace. • Inadequate process for identifying and assessing hazardous manual handling activities.					• Slip, trip & fall hazards are managed adequately. • Traffic management is acceptable. • Regular workplace inspections are conducted. • Adequate process for identifying and assessing hazardous manual handling activities.	• Slip, trip & fall hazards are managed well. • Traffic management is good. • Inspection results are recorded and identified issues are actioned. • A systematic process is in place to identify, assess, control/eliminate, and review hazards within the working environment. • Comprehensive process for identifying and assessing hazardous manual handling activities.				
		0	1	2	3	4	5	6	7	8	9	10

		Very poor (well below minimum standard)		Poor (moderately below minimum standard)			Adequate (meets minimum standard)	Good (moderately above minimum standard)			Excellent (well above minimum standard)	
4.	Quality of safety leadership	• Tone of opening conversation with worksite representative suggested safety is not a priority. • Management proactivity in areas such as cultural, linguistic, literacy & numeracy diversity is low. • Inadequate supervision of high risk tasks or inexperienced workers. • Management response to previous OHS incidents is poor.					• Tone of opening conversation with worksite representative suggested safety is moderately prioritised. • Management proactivity in areas such as cultural, linguistic, literacy & numeracy diversity is adequate. • Adequate supervision of high risk tasks or inexperienced workers. • Management response to previous OHS incidents is acceptable.	• Tone of opening conversation with worksite representative suggested safety is highly prioritised. • Management proactivity in areas such as cultural, linguistic, literacy & numeracy diversity is high. • Good supervision of high risk tasks or inexperienced workers. • Management response to previous OHS incidents is good. • Systems ensure that all levels of management are accountable for health and safety outcomes.				
		0	1	2	3	4	5	6	7	8	9	10
5.	Quality of Documentation & OHS Record Keeping	• No, or inadequate, published health and safety policy statement. • No, or poor system for, reporting hazards or near misses. • No, or inadequate, reporting or investigation of accidents or incidents. • No, or poor use of, compliance documentation. • Poor audit/inspection regime.					• Adequate published health and safety policy statement. • Adequate system for reporting hazards or near misses. • Acceptable reporting or investigation of accidents or incidents. • Adequate use of compliance documentation. • Adequate audit/inspection regime.	• Good published health and safety policy statement. • Effective system for reporting hazards or near misses. • Good reporting or investigation of accidents or incidents. • Good use of compliance documentation. • Comprehensive audit/inspection regime.				
		0	1	2	3	4	5	6	7	8	9	10

		Very poor (well below minimum standard)		Poor (moderately below minimum standard)			Adequate (meets minimum standard)	Good (moderately above minimum standard)			Excellent (well above minimum standard)	
6.	Consultation and Safety Communication	• Informal induction and verbal safety training. • Employees have limited access to OHS information. • No, or poorly performing, OHS committees. • Employee involvement in health and safety is poor. • OHS consultative processes for workers are poor. • Communication of safety or OHS issues directly affecting workers is inadequate.					• An adequate formal induction process covers health and safety. • Employees have reasonable access to OHS information. • Adequately performing OHS committees. • Employee involvement in health and safety is adequate. • OHS consultative processes for workers are acceptable. • Communication of safety or OHS issues directly affecting workers is adequate.	• A high quality formal induction process covers health and safety. • Employees have good access to OHS information. • High performing OHS committees. • Employee involvement in health and safety is high. • OHS consultative processes for workers are good. • Communication of safety or OHS issues directly affecting workers is good.			
		0	1	2	3	4	5	6	7	8	9	10
7.	Chemical Management	• Health and safety is not considered in handling and storage of materials and hazardous substances. • Inadequate identification system of materials. • Waste disposal of materials does not consider health and safety factors.					• Hazardous substances are stored in controlled areas and transported safely. • Material Safety Data Sheets are available. • Approved waste disposal systems are in place and used for materials.	• The inventory of all hazardous substances is up to date. • All materials are clearly identified and labelled. • Documented storage, handling and transport procedures for all substances have been implemented.				
		0	1	2	3	4	5	6	7	8	9	10

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Appendix 2: Global OHS item

	Very poor (well below minimum standard)		Poor (moderately below minimum standard)			Adequate (meets minimum standard)	Good (moderately above minimum standard)			Excellent (well above minimum standard)	
Overall, how would you rate the OHS of this workplace?	0	1	2	3	4	5	6	7	8	9	10

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