University safety culture: a work-in-progress?

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Safety management systems in Australian higher education organisations are under-researched. Limited workplace safety information can be found in the various reports on university human resources benchmarking programs, and typically they show only descriptive statistics. With the commencement of new consultation-focused regulations applying to many universities in Australia, the need to have a better understanding of the operation of organisational safety management systems has more prominence. This paper presents results from a 'safety culture' survey completed by staff in a business-related faculty (53 respondents, 15 per cent response rate) from three Australian universities. Based on analysis of the survey data, the safety culture in these three universities can aptly be described as a work-in-progress

Keywords: safety culture, safety climate, consultation, employee participation, universities

Introduction and overview

This paper discusses the results of a 'safety culture' survey conducted with staff at three Australian universities. In 2012, new work health and safety (WHS) laws came into effect in several jurisdictions in Australia, leading to significant changes in how workplace safety is managed. This legislation provides the structure for the harmonisation of the various state and territory WHS legislation around Australia. Under this new legislation, 'officers' of higher education institutions have a duty to be proactive about health and safety issues.The objectives of the 'model' WHS legislation include providing a framework for continuous improvement and progressively achieving higher standards of health and safety, and providing for effective workplace representation, consultation, cooperation and issue resolution in relation to health and safety matters. Overall, consultation requires sharing relevant information with workers, giving workers a reasonable opportunity to express their views, raise health and safety issues, contribute to the decision-making process, and being advised of the outcomes of the consultations in a timely manner. Arguably, these goals seek to attain or advance a 'safety culture' in the workplaces regulated by jurisdictions that have adopted the model law.

Safety Culture

Glendon and Stanton (2000, p. 201) attribute use of the expression 'safety culture' to official inquiries into the 1986 Chernobyl nuclear disaster, the 1987 Kings Cross (London) underground station fire and the Piper Alpha North Sea oilrig platform explosion in July 1988, and consequently it became part of the safety management lexicon. The expression is now used to include the workplace attitudes, behaviours, norms and values, personal responsibilities, as well as human resources features, such as training and development, which influence the identification of hazards and control measures to minimise risk. The idea of a safety culture emanated from the more inclusive concept of organisational culture (Glendon & Stanton, 2000). However, 'safety culture' – similar to the concept of organisational culture – does not have a universal

definition (Glendon & Stanton, 2000). For instance, Lee and Harrison (2000) define safety culture as the values, attitudes, beliefs, risk perceptions, and behaviours as they relate to employee safety. Whereas Singer and others (2003) claim safety culture is mostly a synonym for encouraging data collection and reporting about hazards, risks and safety incidents, reducing blame for unsafe outcomes, management involvement in safety, or focusing on overall safety management systems. This confusion is not aided by the concept of 'safety climate'. For example, Findley and others (2007) suggest that a safety climate involves safety-related attitudes and perceptions of employees at a particular point in time in an attempt to identify systemic weaknesses and/or opportunities to improve workplace safety. Understandings of these two related concepts can be differentiated by time periods: safety culture is something an organisation 'is' or 'has' (Choudhry *et al.*, 2007); while safety climate is a 'snapshot' of employee perceptions on the priority given to safety compared with other organisational outcomes, such as productivity (i.e. if productivity is perceived to have a higher priority, safety may be subordinate to the speed at which work tasks are completed) (Zohar & Luria, 2005).

While definitions of both safety culture and safety climate stress shared beliefs and values among management and workers regarding safety, Correll and Andrewartha (2001) suggest safety culture is a multifaceted concept and an enduring characteristic, whereas safety climate is somewhat temporal and subjective. If safety climate is the outward manifestation of safety culture, elements of a safety climate can be altered by changes in policy and procedure. Altering a safety culture is accomplished via deliberate changes in an organisation's safety climate and the safety conditions, which produces enduring workplace safety performances (Correll & Andrewartha, 2001). Nevertheless, Hopkins (2006, pp. 875-76) argues there is no agreement as regards when a safety culture can be identified: 'For some writers, every organisation has a safety culture of some sort, which can be described as strong or weak, positive or negative. For other writers, only an organisation which has an over-riding commitment to safety can be said to have a safety culture'. These understandings are complicated by two seemingly contradictory approaches to assessing safety culture; one which explores how an organisation's culture affects safety, and another that seeks to identify elements that produce a culture of safety. With the former, safety management systems need to appreciate that culture(s) within an organisation help shape perceptions and beliefs around safety or hazards. With the latter, the focus is on safety-related communication, roles and responsibilities, information, and trustworthiness (Mylett, 2010).

The United Kingdom's Health and Safety Executive suggests safety culture is influenced by: (i) management commitment to safety; (ii) employee involvement in safety management systems; (iii) training and competence in safety-related behaviour; (iv) communication between management and the workforce on safety matters; (v) compliance with procedures and regulations, and (vi) organisational learning regarding safety issues (Blewett, 2011, p. 17). Choudhry, Fang and Mohamed (2007) explain why these factors can contribute to a positive safety culture: management has a vital role in shaping a safety culture with their allocation of financial and personnel resources, time and effort and by participating in risk assessments of workplace hazards; employee involvement helps develop workforce 'ownership' of, and commitment to, safe work practices; safety-related consultative processes – such as joint management-employee health and safety committees – aid worker empowerment thus promoting feelings of organisational belonging and shared values; training enhances safety awareness amongst employees and develops their responsibilities towards hazard identification and compliance with policies and regulations; and communication regarding incident reporting and investigation, and risk assessments enhances the ability to actively learn, adapt and modify (both individual and organisational) behaviour based on lessons learned from safety-related incidents.

While a safety climate can be considered as a temporal measure of a safety culture (Blewett, 2011), there is confusion in safety climate research in distinguishing between attitudes and perceptions (O'Connor *et al.*, 2011). This confusion regarding what exactly is measured by research studies can be important, as Guldenmund (2007, p. 734) states: '... people will almost always express an attitude when asked about it'. Perceptions tend to have a greater likelihood of adjustment when circumstances change (e.g. workplace policies, procedures and practices). Therefore, organisational culture is directly reflected by organisational practices (Mylett, 2010)

For these reasons, measuring safety culture/climate is complex notwithstanding its strong endorsement in the academic literature, and measuring a safety culture/climate accurately may not be possible (Biggs *et al.*, 2009). For example, the use of survey questionnaires to measure both safety culture and safety climate is prevalent in the academic literature (Glendon & Stanton, 2000), using over 100 different safety culture measures (Edwards, Davey & Armstrong, 2013) and over 40 different safety climate

measures (O'Connor *et al.*, 2011). In many of these studies safety culture tends to be correlated with worker engagement rather than worker compliance with rules and procedures (Christian *et al.*, 2009). Measurements by safety culture survey questionnaires are mostly variations of the followings six dimensions: management attitudes or commitment to safety; safety-related training; safe work procedures; risk perceptions; workplace hazards; and worker involvement (Glendon & Stanton, 2000). According to Guldenmund (2007) many of these questionnaires are not only quick, but also 'dirty' instruments that can fail to generate relevant and valid information (particularly so for nominating corrective measures or actions). In other words, many questionnaires may fail to appreciate that safety culture should be understood within a specific context (Choudhry *et al.*, 2007, p. 1006).

Part of the context is organisational practices. Surveys can reveal these practices, albeit at a superficial level, yet many practices are too complex to be meaningfully described with the words of a survey question (Hopkins, 2006). While the survey method can be appropriate to identify 'the way we do things around here', the questionnaire items should avoid gauging people's perceptions rather than what actually happens or respondents' experiences, when organisational practices and perceptions may not necessarily be related (Hopkins, 2006, pp. 876-77). Some of the elements of safety culture are perception-based rather than practice-based (e.g. management commitment to safety); so understanding workers' perceptions for such elements of the concept is justifiable.

Employee involvement and participation

According to Geller (2001) and Dollard and Bakker (2010), a positive safety culture is founded on a purposeful relationship between management and employees to improve the safety within a workplace. Past studies point to associations between the presence of workforce representative structures as an indicator of a systematic approach to workplace health and safety management (Quinlan *et al.*, 2010, Ch. 9). Lopaticka and Lyons's (2011) examination of submissions to the harmonisation review of work safety laws in Australia revealed some encouraging signs that worker participation in safety management can be a purposeful relationship between management and employees, yet this was found to be largely a minority employer view. Achieving a cooperative and constructive approach to safety management, and procuring worker participation to improve safety outcomes, presents a notable challenge that is unlikely to be resolved in the absence of trust. For instance, if there is a strong 'production comes first' culture in a workplace, safety-based employee involvement and participation arrangements are little more than tokenism (Quinlan *et al.*, 2010; Gunningham & Sinclair, 2011).

The conjectural underpinnings of the effectiveness or otherwise of employee involvement via health and safety committees, or other mechanisms of worker participation, can be classified as either cognitive (worker knowledge) or political (worker power) (Popma, 2009). However, the degree to which these outcomes are achieved varies, the presence of a communication or 'consultation' process notwithstanding (Quinlan *et al.* 2010). The role health and safety committees play as an employee involvement and participation mechanism is not limited to cognitive outcomes (education and dissemination of information); they can also help achieve political outcomes if the workplace values (indicated by priorities) and beliefs (indicated by procedural arrangements) are compatible, and common to both workers and management. That is, the workplace 'safety culture' needs to facilitate effective employee involvement (Quinlan *et al.*, 2010). The establishment of a health and safety committee, and/or health and safety representatives, does not of itself guarantee employee involvement, as there should be procedures to ensure that the health and safety committee itself, and/or the health and safety representative, communicates and consults with the members of the workgroup that is represented. The main interest in safety-related employee involvement is concerned with organisational or structural issues and not directly psychological-based issues.

Safety culture in Australian universities

Very little is known about the safety culture or safety climate in Australian higher education organisations. Glendon's review of over 150 journal articles examining the issues connected with safety culture shows that most research is restricted to industries or industry sectors with high levels of workplace safety hazards and risks: manufacturing, health care, transport, petrochemicals, construction, and energy (Glendon, 2008). By comparison, the 'education' industry is under-researched (see, for example, Dollard & Bakker, 2010; Gairín & Castro, 2011). For example, limited information about workplace safety outcomes can be found in the various Queensland University of Technology's (QUT) 'Universities HR Benchmarking Program' reports, though this information is confidential data provided to QUT for intra-sector

comparative purposes and has restrictions placed on the use of the reports. The reports show only descriptive statistics related to the average number of working days lost due to safety-related incidents, the number of workplace health and safety related occurrences per 100 employees, and workers' compensation costs as a proportion of total labour costs. Consequently, this information does not give insights into the safety culture within universities.

Survey Method

In order to have a better understanding of safety-related practices in higher education organisations a 'safety culture' survey was conducted in three higher education workplaces – two metropolitan universities and one regional university located in New South Wales (NSW). The State of New South Wales adopted the model national law on workplace health and safety (see Lopaticka & Lyons, 2011) with the passage of the Work Health and Safety Act 2011 (NSW), which commenced in early 2012. As a result, the three universities were navigating the transition to the 'harmonised' national legislative framework when the survey was conducted.

Following the guidance of Hudson (2007) an instrument that is 'short and simple' both in terms of ease of use for respondents and ease of interpretation was selected. The survey instrument used was an adapted version of the 'Safety Culture Survey: Questionnaire', the one used by the NSW workplace safety regulator (WorkCover NSW, 2010a). This instrument was designed for use in manufacturing workplaces, and contains 37 questions in six topic (element) sections: training and supervision; safe work procedures; consultation; reporting safety; management commitment; and injury management and return to work. This instrument was selected due to its relative brevity, as other safety culture questionnaires have many more items (see Blewett *et al.*, 2012), which would help avoid respondent fatigue which may result from the use of a lengthier questionnaire. This survey was also selected because the questions seek to gain information on respondent experiences or knowledge, and not perceptions or attitudes. The questions in the management commitment section are by necessity more perception-based than experience-based. Each substantive (i.e. non-demographic) question contained three possible response options, and respondents were asked to select the option that best described their workplace experience. The disadvantage with this approach is the responses are recorded as categorical/nominal data and not as ordinal/interval data, limiting the way the survey data can be analysed (e.g. it is not possible to use factor analytical techniques). The wording of the 37 substantive questions was altered so that the descriptor options better reflect employment in Australian higher education institutions. For example, the word 'company' was replaced with the word 'management' or 'managers', and the word 'workplace' was replaced with the word 'workgroup'. The only other adaptation was to include the expression 'or safety representative' with the WHS committee descriptors. A number of demographic questions were included to gain information about each respondent's place of employment (university), job tenure at their respective higher education organisation, category of employment (academic or general/professional), status of employment (full-time, part-time or casual), gender, and if they have staff supervision responsibilities. Another advantage of the WorkCover NSW instrument was simplicity of interpretation of responses, though this is also a limitation. The WorkCover document 'Safety Culture Survey: How to use the survey' (WorkCover NSW, 2010b) suggests the survey data should be analysed with a 'traffic light' system of coding (green, amber and red). The ways to interpret the traffic light codes suggested by WorkCover are:

> Green: Workers think you have a good safety culture in this area. You still need to monitor and review your systems to maintain this level and to continually improve.
>
> Amber: Workers think that you have started improving safety culture and are on the right track, but there is more you can do in this area.
>
> Red: Workers are expressing a lack of belief in your commitment to safety culture, and your systems may not be in place or not working well. Something has broken down or has not been started. You need to take immediate action in this area.

The answers to the substantive survey questions were given a particular traffic light code if half or more of the responses were either a 'green', 'amber' or 'red' response descriptor.

In order to have respondents with similar experiences, staff employed at each of the university's 'business faculty' were identified as likely participants, 386 staff were targeted. Restricting the likely participants to 'business faculty' staff was deliberate, as it was presumed these work groups are a low-risk safety population and a homogeneous cultural environment. The survey used an online method of data collection, the web-based SurveyMonkey software. Potential respondents were invited to participate in the survey via their workplace

email address, publicly available from each institution's website, and directed to the survey questionnaire website. The email invitation to participate was sent in March 2013, and a reminder email message was sent about two weeks later. The email invitations to participate in the research included an information sheet approved by the authors' own university human ethics research committee.

Results and discussion

The 386 invitations generated 34 automatic email replies indicating that, at that time, the staff member was on leave (recreational or study leave) and unable to participate in the study. This means invitations were sent to 352 active email addresses. This recruitment method produced 53 survey respondents, a response rate of 15 per cent. Perkins (2011) indicates a response rate of between 12-20 per cent is not unusual for online surveys when the targeted participants are located at a higher education institution. The respondents' 'on the job' time was lengthy, with almost half having been employed for more than 11 years (47 per cent) and an additional 21 per cent having been employed for between six and ten years. The vast majority of respondents were teaching and research academics (74 per cent), about a fifth were general/professional staff (19 per cent), with the other respondents being either teaching-focused or research-only academics. The overwhelming majority had full-time employment status (85 per cent), the majority were women (62 per cent), and a slight majority indicated they had staff supervision responsibilities (55 per cent). The relatively small number of respondents does not allow for meaningful analysis of the results differentiated by each of the three NSW universities.

The traffic light method of interpretation indicates there were some welcome results from the survey, and also some issues of concern. Table 1 show a summary of the 37 questions using the traffic light indicators. No question generated a red traffic light, whereas eight questions (about 21 per cent) generated a green traffic light. This implies there are some features of a positive safety culture in place in NSW higher education workplaces. The questions with the green indictor are shown in Table 2, with half of these responses related to safety incident reporting. Eleven questions generated an amber traffic light (30 per cent), suggesting the workplaces are developing practices that aid a positive safety culture. The questions with the amber indictor are shown in Table 3, suggesting elements of a safety culture outside incident reporting could improve. Of some concern are the results

Table 1: Safety Culture Survey 'Traffic Light' Responses Indicator Summary

Section Topic	*No. of Ques-tions*	*No. of Green**	*No. of Amber**	*No. of Amber/ Red***	*No. of Red*
Training and supervision	4	1	1	2	nil
Safe work procedures	7	nil	3	4	nil
Consultation	6	1	1	4	nil
Reporting safety	7	3	3	1	nil
Management commitment	8	1	2	5	nil
Injury management & return to work	5	2	1	2	nil
Total	**37**	**8**	**11**	**18**	**nil**

** 50% or more responses for the survey item.*
*** combined survey items responses 50% or more.*

showing 18 questions (49 per cent of all questions – see Table 1) in the amber-red zone, where the combined 'amber' and 'red' response options received more than fifty per cent of the responses for that survey item. This last result is indicative of an underdeveloped safety culture, as 'more can be done' (amber) or 'immediate action' is required (red).

Turning to the issue of workplace health and safety employee involvement, the responses to the six 'consultation' questions were not encouraging. Section 48 of the *Work Health and Safety Act* 2011 clarifies what consultation entails: relevant work health and safety information is shared with workers; workers are given a reasonable opportunity to express their views and to raise health or safety issues; workers are given a reasonable opportunity to contribute to the decision-making process relating to the health and safety matter; the views of workers are taken into account; and workers are advised of the outcome of any consultation in a timely manner. The relevant Code of Practice (which can have legislative effect, see section 275 of the WHS Act) outlines how consultation can take place: Consultation does not mean telling your workers about a health and safety decision or action after it has been taken. Workers should be encouraged to: ask questions about health and safety; raise concerns and report problems; make safety recommendations; and be part of the problem solving process (WorkCover NSW, 2011).

Table 2: Safety Culture Survey 'Green Traffic Light' Item Responses

Section Topic	*Survey Item selected by 50% or more of respondents*
Training and supervision	We all get induction training when we start.
Consultation	Managers communicate with us and listen to us about health and safety.
Reporting safety	We have safety reporting procedures (for incidents and issues) and we use them. We are always encouraged by management to report safety incidents. Safe work procedures are reviewed and updated if there is an incident report; we try to find out why an incident happened and how to fix it.
Management commitment	If I didn't follow a safety instruction or policy, I'd feel like I was letting the team down.
Injury management and return to work	We all have to report all injuries straight away. Our return to work program helps get injured workers back to work whenever possible.

Table 3: Safety Culture Survey 'Amber Traffic Light' Item Responses

Section Topic	*Survey Item selected by 50% or more of respondents*
Training and supervision	Mostly someone makes us aware of safety issues.
Consultation	Management sometimes takes notice of what we say about safety.
Safe work procedures	Our management has worked out most of the jobs/tasks in my area that have safety risks. Our workplace has safe work procedures for most task-based activities in my area that have safety risks. We have safe work procedures but don't/ can't always follow them.
Reporting safety	We mostly report safety incidents. Our safety training is sometimes reviewed or updated after an incident. If we report a serious problem where someone could get hurt, management takes action as soon as they can.
Management commitment	Management sometimes gets involved in safety issues. Managers/Supervisors sometimes mean what they say and do what they say, in safety matters.
Injury management and return to work	I'm not sure who to talk to about injuries at work, but I think someone here could tell me.

As Table 1 shows, only one of the consultation section questions generated a green 'traffic light', one generated an amber 'traffic light', with the other four being in the amber-red zone. Table 4 shows the actual responses to the six question options. While the responses to Questions 18 and 20 suggest the views of workers influence aspects of safety in the workplace, the responses to the other four questions imply this process is either not fully understood by the respondents or lacks formality. Choudhry, Fang and Mohamed (2007, p. 1000) claim everyone within an organisation has the choice to participate or not to participate in the safety management system. One interpretation of Table 4 could be that many of the respondents choose – for a variety of reasons – not to participate in their workplace safety processes. However, Choudhry *et al.* further contend a positive safety culture necessitates safety is regarded by everyone as being an issue that concerns everyone (Choudhry *et al.*, 2007, p. 1003). As Guldenmund (2007, p. 737) notes: '[Safety] culture cannot be isolated from its structure or processes. In carrying out the processes and coping with difficulties groups of people develop a culture, either despite of or because of some particular structure'. The respondents' lack of knowledge of the means by which safety-related employee involvement operates in their workplace can alternatively be interpreted as indicating that the consultation mechanisms are insufficient to allow for informed workforce participation in their respective safety management systems.

The results from the survey are, perhaps, not unexpected when each of the three institution's annual reports are examined (not cited due to de-identification commitments). In the 2011 reports, one university claimed its workplace safety entity delivers direction and leadership on safety issues, while another noted problems with safety awareness of staff and supervisors. Training for relevant personnel was mentioned in all three reports, with two noting the changed obligations – commencing in 2012 – under the new WHS Act. The changed obligations were observable in the 2012 reports: the first-mentioned the university's workplace safety entity role was redefined to be planning, coordinating and administering the safety system; and all three universities had reviewed their safety policies. The changed obligations were also observable in two of the 2013 reports: the first-mentioned university had increased the number of personnel in its workplace safety entity, and stressed the

Table 4: Responses to the 'Consultation' section survey items

Survey Item	*Respondent Answers (%)**
Q18 Answer Options:	
Managers communicate with us and listen to us about health and safety	54
We have a way of communicating with managers about health and safety but it doesn't work very well	37
We haven't got a way of communicating with managers about health and safety	9
Q19 Answer Options:	
We (or our representatives) are always involved in safety matters	42
We (or our representatives) are sometimes involved in safety matters	49
We (or our representatives) are not involved in safety matters	9
Q20 Answer Options:	
Management takes notice of what we say about safety	40
Management sometimes takes notice of what we say about safety	51
Management doesn't take notice of what we say about safety	9
Q21 Answer Options:	
We (or our representatives) are involved in putting together procedures	28
We (or our representatives) are sometimes involved in putting together procedures	47
We (or our representatives) are not involved in putting together procedures	26
Q22 Answer Options:	
We always get feedback (e.g. minutes, informal meetings, email reports etc.) on what's happening with our safety issues within seven days of a formal work group safety meeting	26
We usually get feedback on what's happening with our safety issues within seven days of a formal work group safety meeting	49
We don't get feedback about what's happening with our safety issues within seven days of a formal work group safety meeting	26
Q23 Answer Options:	
We know who our work group safety committee member (or safety representative) is	46
We have a work group safety committee member (or safety representative) but I am not sure who it is	25
We don't have a work group safety committee (or safety representative) or I don't know who it is	30

** Totals may not equal 100% due to rounding.*

need to improve consultation arrangements between staff and management; and another had conducted safety culture training for health and safety representatives and managers. However, the third university only reported the number of 'incidents' recorded. During the 2011-2013 period, one university sought to ascertain its degree of safety culture by applying a recognised measure used in other industries. This method found that the safety system focused on data collection and was primarily driven by management and imposed rather than looked for by the workforce (see Parker, Lawrie & Hudson, 2006). Such a description is not surprising in light of the Universities HR Benchmarking Program emphasis on data collection (see QUT, 2014). Such a description could also summarise the results from our survey (see Table 2).

Conclusion

The concept of safety culture has no universal definition. Likewise, the elements that might constitute a safety culture lack common acceptance. These uncertainties are not aided by the concept of safety climate, its relationship with the notion of safety culture, and the overlap of the features of a safety climate with the elements of a safety culture. The relationship between the two concepts used for this article is that climate is a temporal measurement of a culture, and a change in the climate will produce a change in the culture; though we appreciate the somewhat circular nature of this understanding of the relationship. Adopting the approach of Correll and Andrewartha (2001), it is too narrow a view to conceive the difference

between the two concepts as culture emphasising attitudes and beliefs while climate focuses on perceptions and descriptions. Rather, the focus has been on behaviour and experiences with the 'safety culture survey' of higher education organisations to help align with Reason's premise, that a safety culture is shaped by 'constellations of practices' (Reason, 1997, cited in Hopkins, 2006) and to avoid Guldenmund's (2007) criticism of attitudinal-based safety culture/climate research. Despite this, gauging worker assessments of the priority placed on safety by management – influenced by individual and collective experiences – are largely perceptions.

Owing to the limitations of the survey instrument and the low response rate, the implications of the findings should not be overstated. This caveat notwithstanding, the findings are noteworthy as they provide evidence of an under-explored context of workplace safety research and Australian university safety management systems. In future studies it will be important for the survey instrument to contain a more flexible method of response options, such as that developed for the Nordic Safety Climate Questionnaire (Kines *et al.*, 2011), to allow for comprehensive analysis of the survey data, calculation of mathematical means for each respondent and for each safety culture dimension or element. To increase the response rate in future studies it would be desirable to extend the duration of a survey's availability for participants and to send more frequent email reminders, though a barrage of reminders can lead to irritation for some (Nulty, 2008). Despite all this, a tentative conclusion of this survey is that workplace safety is not a priority in NSW universities. None of the six elements of a safety culture measured by the WorkCover NSW questionnaire are performed at 'best practice' standards, though discrete components of these elements – according to the survey respondents – are indicative of a positive safety culture. Overall, the survey results could be classified as 'encouraging', with just over half the 37 questions generating either 'good' or 'improving' response options from the participants. Nevertheless, 18 of the 37 questions failed to elicit a majority response for even the improving descriptors. Of specific concern are the results suggesting employee involvement in safety management is either underdeveloped or ineffective. While there is no strong evidence that university management lacks a commitment to a safe workplace, this commitment appears to be somewhat weak. Indeed, for eight questions a quarter or more of the respondents selected the 'not be in place or not working well ... [or] has broken down or has not been started' (i.e. red) answer option.

In summary, therefore, meeting the objectives of the model WHS law in Australia (such as the NSW WHS Act 2011) and/or to attain a positive safety culture in the institutions we surveyed is something of a work-in-progress. It would be interesting to scrutinise each institution's annual reports in future years to assess if any further progress is being made with the transition to the model law generally, and its employee involvement arrangements in particular. For if universities – low WHS risk workplaces – struggle, this could imply that either the goals of the WHS Act are unrealistic or those responsible for university management are reluctant to engage with their workforce through employee involvement and participation mechanisms and prefer to adopt a 'compliance mentality' rather than a 'consultation mentality'.

Finally, we acknowledge the limitations of the survey instrument and method of analysis discussed in the article. The questionnaire used was designed for manufacturing workplaces. The data collected by the survey was categorical/nominal and not ordinal/interval, and the method of interpreting the data (WorkCover's 'traffic light' system) is somewhat simplistic. The relatively small number of respondents precluded analysis at the organisational level. Consequently, the conclusions drawn from the sector-level analysis are potentially skewed by the respondents from one of the three organisations surveyed. Lastly, no attempt was made to explore issues connected with psychosocial risk factors related to workloads, such as work stress and bullying, or other work-related determinants of employee mental health (see Brough *et al.*, 2014; Kenny *et al.*, 2012) to obtain insights into the precise nature of safety culture in these NSW universities.

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