A Safety Exit Interview: Could there be safety gains?

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Abstract

This study sought to investigate the relationship between safety voicing and employee turnover. A model of the safety exit interview process was developed, along with reasons why conducting a safety exit interview may help improve workplace safety. A generic safety exit survey template was developed and administered to a sample of workers previously employed in high safety risk occupations. 126 participants completed the study measures. The type of information which the safety exit survey elicited is described. Results found clear evidence that safety concerns had influenced participants to leave their previous job. It was also found participants wished to voice these safety concerns at exit, but for some reason they could not or chose not to do so. Results also support the predictions that management and co-worker trust and support for safety, would be negatively associated with voicing within the safety exit survey context. Support was also found for the prediction that management trust and support for safety, would be positively associated with the actual voicing of safety issues on the job. Overall, this study seeks to improve workplace safety through encouraging the use of a safety exit interview.

Introduction

Overview

Research has found that employee turnover rates are positively associated with accident rates (e.g., Bell & Grushecky, 2006). One interpretation of the relationship between accidents and employee turnover is that employees leave jobs or workplaces that they consider unsafe. Workers that leave a job because of safety concerns may well leave without sharing or voicing their specific concerns with the organisation. Indeed they may leave because they feel they are unable to voice their safety concerns or if they do voice safety concerns nothing will be done about them (Hirschman, 1970; Reason, 1997). This study investigates the relationships between safety voicing and employee turnover. The use of a Safety Exit Interview is discussed. A Safety Exit Interview would provide employees with their last opportunity to voice safety concerns, and has the flexibility to be conducted outside the influence of the co-worker context and the employment relationship.

Safety Exit Interviewing

Surprisingly, an extensive search of the literature failed to identify any research on the use of an exit survey (or interview) specifically aimed at safety issues. Thus where employees are leaving their work because of safety concerns, the details of precisely why the employee reached this decision are perhaps not being determined. Certainly if there is no formal safety exit interview process, the functional use of any safety related information is not likely to occur. In such circumstances, neither workplace safety, or the costs associated with employee turnover (assuming the replacement employee may also reach similar safety concerns and subsequently leave), are being addressed. Thus two questions addressed by this research

were: *Have safety concerns prompted employees to resign (leave) their previous job?* and *Do employees have safety related information which they would have liked to voice at exit?*

Safety Voicing

Ideally safety information should be communicated during the day-to-day operation of an organisation. However, there is a substantial body of research which has identified why this may not happen. A number of studies support the notion that the failure to report incidents is the product of a 'blame culture' in which obtained information is used to assign blame and take disciplinary action against those believed responsible (e.g,. Adams, & Hartwell, 1977; Clarke, 1998; Webb, Redman, Wilkinson, & Sanson-Fisher, 1989). Reason (1997) states that it is "essential to protect informants and colleagues as far as possible from disciplinary actions on the basis of their reports" (p.198). Research on under-reporting shows that the under-reporting of accidents is much greater in organisations with a poor safety climate and where safety monitoring by management is inconsistent (Probst & Estrada, 2009). According to Webb, Redman, and Wilkinson (1989) the under reporting of safety accidents and incidents is relatively common. Probst and Estrada (2009) found that for every accident that is reported, an average of 2.48 accidents go unreported to management. Furthermore Glendon (1991) reported that certain high safety risk industries, e.g. construction, mining, forestry, etc, may foster a 'macho' work environment where safety reporting is discouraged. This suggests that safety voicing is unlikely to occur in industries with a high safety risk. Clark (1998) investigated accident under-reporting and the factors that affected British Rail train drivers' decisions not to report safety concerns. Research found that the reporting of incidents was largely influenced by train driver perceptions of managements' reaction to their concerns. As such those that held beliefs that 'manager's take no notice' and 'nothing would get done' were less likely to report accidents and incidents.

Support & Voicing Safety Concerns

Employee perceptions regarding the safety attitudes of management and co-workers will influence safety outcomes in the workplace. Lower perceptions of management support and trust regarding workplace safety are likely to reduce safety voicing in the workplace and may even lead to employee silence (Clarke, 1998; Griffin & Neal, 2000). Research by Flin and Burns (2004) found that individuals would take into consideration management and co-workers attitudes towards safety concerns before pointing out unsafe behaviour in the workplace. For example, if management takes a dim view of behaviour that reduces performance and production, then employees may be hesitant to raise safety concerns. Withey and Cooper (1989) suggested that employees weigh up the possible benefits and costs when deciding whether or not to voice their concerns. Research has also found that employees who perceived top management as more open to suggestion were more likely to engage voicing behaviour (Elizabeth & Phelps, 1999; Mullen, 2005). Further research has found that supportive group norms, management openness, and supportive leadership were significant determinants of safety voicing (Neal & Griffin, 2002; Withey & Cooper, 1989).

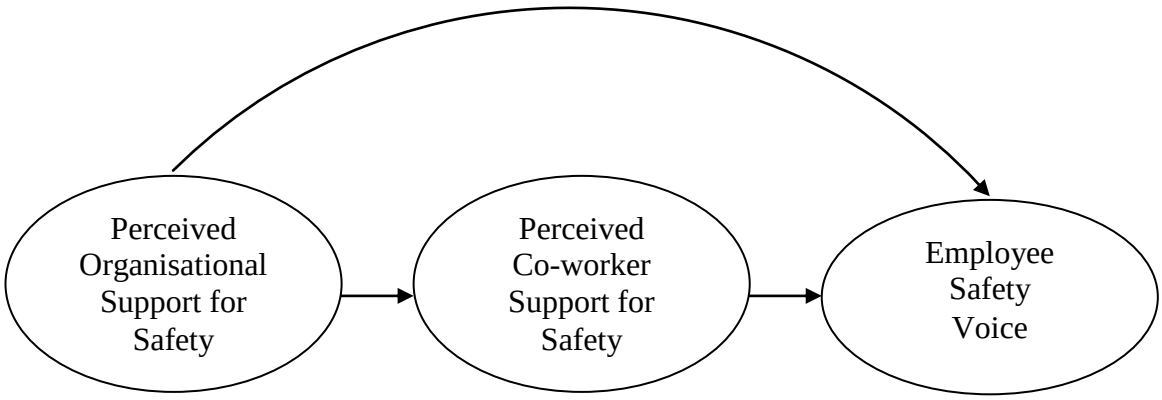

Figure 1. *Tucker et al.'s (2008) proposed mediation model between support for safety and employee safety voice*

Employee perceptions and attitudes have been found to predict many safety outcomes, including increased safety communication (Andrews & Delahaye, 2006; Griffin & Neal, 2000). Tucker *et al*. (2008) found "that perceived co-worker support for safety fully mediated the relationship between perceived organisational support for safety and employee safety voice" (p. 319), as shown in Figure 1. In other words, employees who felt that their co-workers were not supportive of safety initiatives were less likely to voice safety concerns. Essentially here the employee does not trust their co-workers to react appropriately to their voicing safety concerns. It is also possible that an employee who perceives there is no support from management for safety will have suppressed safety concerns. Furthermore, research on support provides the rationale for hypotheses 1 and 2 tested in this study.

Hypothesis 1: *Management and co-worker support for safety will be negatively correlated with the provision of more safety information in the safety exit survey.*

Hypothesis 2: *Management and co-worker support for safety will be positively correlated with actually safety voicing on the job.*

If management fails to handle incidents and the voicing of safety concerns in an appropriate way, employees may develop a lack of trust that any future incidents will be handled correctly, and that voicing their safety concerns will have no influence over the safety of their workplace. Feelings of distrust and a lack of influence concerning accidents and the voicing of safety concerns are likely to manifest into a fear of being blamed and job dissatisfaction. If employees feel they cannot voice their safety concerns, they may feel the only option left is to exit the organisation (Cree, & Kelloway, 1997; Hirschman, 1970; Pfeffer, 1998). Figure 2 illustrates this process (Reason, 1997, as cited in Wallis, 2010).

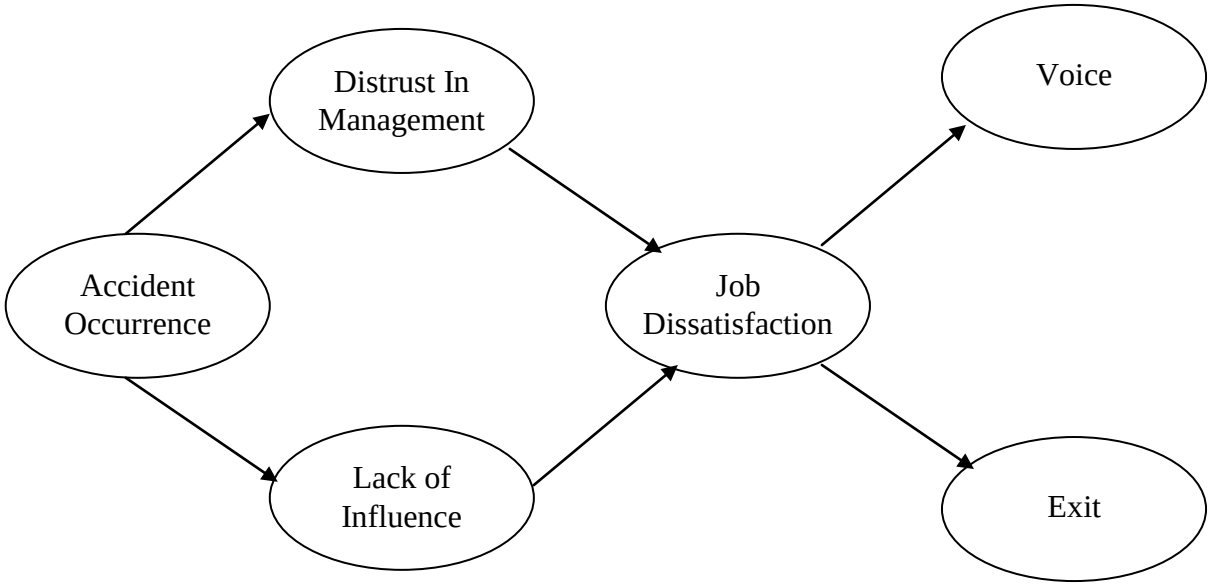

Figure 2. *Reason's (1997) model of possible outcomes concerning the handling of accidents*

Trust & Voicing Safety Concerns

Trust is highly beneficial to organisational functioning. McAllister (1995) defined trust between management and employees as "belief in, willingness to act on the words, actions, and decisions of another" (as cited in Luria, 2010, p.1289). Research has shown the level of trust between team members will influence how the team interacts, thus influencing the exchange of information and cooperation between members (Dirks & Ferrin, 2001). Trust between all levels of the organisation is paramount to facilitate the voicing of safety voicing and maintain a positive safety culture. A degree of trust is necessary for employees to feel they can voice safety concerns to both co-workers and management and not be met with resistance (Clarke, 1998; Flin & Burns, 2004; Mayer, Davis, & Schoorman, 1995). If an employee has low trust for management, perhaps because they consider that voicing safety concerns would negatively influenced their relationship with the organisation or not resulted in

any action (whether justified or not), they may not voice their safety concerns. To maintain a positive safety culture, the enforcement of safety rules, policies and procedures are not enough. In order for employees to abide by these, management must set the standard and lead by example. Murphy *et al.* (1993) identified managers' role in safety as an important feature in improving workplace safety. Other research has shown that the best predictors of both accidents and employee safety compliance are management practices relating to workplace safety (Hayes *et al.*, 1998; Zohar, 1980).

Trust in organisations has been widely researched. As shown in Figure 2, trust is a clearly established variable concerning the voicing of safety concerns (Reason, 1997; Wallis, 2010). Furthermore, trust has been shown to influence safety climate, safety performance, safety communication, safety perceptions and attitudes, employee responsibility for safety and decreases in accidents (Andrews & Delahaye, 2006; Conchie, Donald & Taylor, 2006; Cook & Wall, 1980; DePasquale, 2001; Reason, 1997). When trust is absent the opposite occurs and employees may withhold safety concerns, choosing to remain silent about concerning issues. Gahan (2012) suggested employee silence as a form of disengagement and dissatisfaction with the concerning issue. The research on trust provides the rationale for hypotheses 3 and 4:

Hypothesis 3: *Management trust and co-worker trust will be negatively correlated with the provision of more safety information in the safety exit survey.*

Hypothesis 4: *Management trust and co-worker trust will be positively correlated with actually safety voicing on the job.*

The present study aims to investigate the relationship between safety voicing and employee turnover. A safety exit interview template was developed to be used by organisations to acquire information regarding employees safety concerns (if any) upon their departure from an organisation. The decision to use a safety exit survey instead of an interview for the current study was considered more appropriate as the study asked for data in relation to the participants last job. That is participants were not sampled at the time they left their job – but rather were asked to think back to the time they left their last job.

In Summary, the study explored whether employees leave jobs without voicing safety concerns. Two specific questions were asked: *Have safety concerns prompted employees to resign (leave) their previous job*? and *Do employees have safety related information which they would have liked to voice at exit?* Secondly, the nature of these safety concerns was examined. Thirdly, predictors of safety concerns and voicing were examined. Finally, the current research sought to expand on the literature investigating four hypotheses regarding the relationship between management and co-worker support and trust for safety and the voicing of safety concerns.

Method

Participants

The participants of this study were individuals previously employed in high safety risk industries around New Zealand. In total, 171 surveys were distributed, of which 126 were completed and returned. This corresponds to a response rate of 74 percent. The participant pool was made up of 99 males and 27 females, with a mean age of 28.68 years (*SD* =10.40, range 18 – 65 years). Job tenure ranged from 1 month to 42 years with a mean of 43.38 months (*SD* = 71.93). The number of co-workers participants worked alongside in their previous job ranged from 0 to 300 with a mean of 28.06 (*SD* = 46.17). The length of time since participants left their last job ranged from 1 day to 13 years with a mean of 22.27 months (SD = 26.46).

Materials

A survey was designed for the study. The front page of the survey (see Appendix A) introduced the study, briefly described the purpose, and provided information regarding informed consent, participation instructions and researcher contact details. The survey was separated into five sections (see Appendix B). The first section contained demographic and background questions. The second section contained a workplace safety issues measure. The third section contained the job risk and team member interaction scales. The fourth section contained the employee safety voice, perceived organizational support for safety (POSS), and perceived co-worker support for safety (PCSS) scales. The fifth section contained the management trust, and co-worker trust scales. Participants responded to these seven scale measures on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). It was also necessary to adapt items from the employee safety voice, POSS, PCSS, management trust, co-

worker trust, and team member interaction scales into the past tense to correspond with participant's previous jobs (see Appendix C).

In an attempt to minimize common method variance the order of sections three, four, and five, incorporating the seven scale measures were presented randomly in three possible combinations.

Demographics and Background Questions

The first section of the survey contained a total of twelve questions pertaining to demographic and background information. This included questions relating to participants age (years), gender, job tenure (months), job title, number of co-workers, the date they left their previous job and the date they filled out the survey. Questions 8, 9 and 10 asked *Please rate (by circling a number) how much contact you have NOW with co-workers from your previous job?* (0 = 'Do not see them at all' to 7 = 'See them regularly'), *Please rate (by circling a number) how much 'safety concerns' prompted you to leave your previous job?* (0 = 'Not at all' to 7 = 'Very much'), and *At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left?* (0 = 'No' to 7 = 'Yes there were a lot of issues'), respectively. If participants responded with a rating of 0 to the latter of these questions they were asked to skip questions 11 and 12. These two questions asked *If you now had an opportunity to sit down with management from your previous job and voice your safety concerns how willing would you be to do that?* (0 = 'Not willing at all' to 7 = 'Would be very keen to do that'), and *If you now had an opportunity to sit down with co-workers from your previous job and voice your safety concerns how willing would you be to do that?* (0 = 'Not willing at all' to 7 = 'Would be very keen to do that'). Participants responded to these five questions on an 8-point Likert scale with various anchors, shown above.

Safety Issues Measure

Section two of the survey was comprised of 40 safety issues designed to measure the type of safety issues which participant's wanted to voice at the time of leaving their previous job. A variety of safety issues were covered, these included new recruits (e.g., New recruits understanding of safety policy), training (e.g., Employees' failure to use safety training), work pressure (e.g., Work speed pressure from supervisors which reduced safety), work environment (e.g., Excessive (unsafe) noise in the workplace), safety rules (e.g., Safety policy/rules which seemed to reduce safety), and equipment (e.g., Lack of equipment to do the job safely). For each safety issue participants where required to tick one or more response boxes. Participants responses were multi-level with a *Not Applicable, Did, Yes Management* and *Yes Co-worker* options. Participants would indicate *Not Applicable* if the safety issue was not relevant to their previous job, *Did* if they did talk about the issue in their previous job, *Yes Management* if it was an issue they would have liked to talk to management about but never did, and finally *Yes Co-worker* if it was an issue they would have liked to talk to co-workers about but never did. Several scores were calculated from this data. Firstly, the total number of applicable safety issues that could be talked about for each participant was calculated by subtracting the total *Not Applicable* responses from the 40 described safety issues. An actual voicing score concerning the number of safety issues participants did talk about in their previous job was calculated by dividing the number of ticks in the *Did* category from the total number of applicable safety issues that could be talked about. A management voicing score and a co-worker voicing score were then calculated by dividing the number of ticks in each of these categories by the number of applicable safety issues which could be talked about. These three scores range from 1 to 100, and represent the proportion of safety issues participants did talk about, and those they would have liked to talk about to management and co-workers in relation to their previous job.

Job Risk *Scale*

Participants perceived job risk was measured using the 10-item Job Safety scale, developed by Hayes, Perander, Smecko and Trask (1998). This scale was included to ensure the research sampled participants with an above average job risk and thus where safety was a real concern in the workplace. Hayes *et al.*'s (1998) measure of job risk demonstrated a coefficient alpha of .91. Participants were required to indicate the extent to which they agree with words and phrases (i.e. "dangerous") that described their previous job. The current study found a Cronbach's alpha coefficient of .85.

Team Member Interaction Scale

Five items from the Team Member Interaction scale developed by Pearce and Gregersen (1991) were adopted to measure job interdependence. This scale has a reported coefficient alpha of .76. An example item is "I worked closely with my team/co-workers in doing my work". The current study found a Cronbach's alpha coefficient of .86.

Employee Safety Voice Scale

The degree to which participants voiced or spoke up about safety concerns in their previous job was measured using five items from Tucker *et al.* (2008) Employee Safety Voice scale. Tucker *et al,*. (2008) reported a coefficient alpha of .78 for this scale. It was necessary to reword this scale, removing its reference to driving and unions to make it suitable for the current study. An example item is "I made suggestions about how safety could be improved". The current study found a Cronbach's alpha coefficient of .79.

Perceived Organisational Support for Safety Scale

The three item Perceived Organizational Support for Safety scale by Tucker *et al.* (2008) was adopted to measure the degree to which the company encouraged workers to express concerns about safety and responded to workers safety concerns. This scale has a reported coefficient alpha of .78 (Tucker *et al.*, 2008). An example item is "The company was quick to respond to the safety concerns of their employees". The current study found a Cronbach's alpha coefficient of .87.

Perceived Co-worker Support for Safety Scale

The three item scale from Tucker *et al.* (2008) was adopted to measure perceived co-worker support for safety behavior. Tucker *et al.* (2008) reported a coefficient alpha of .90 for this scale. An example item is "My co-workers were ready to talk to fellow employees who failed to use safety equipment/procedures". The current study found a Cronbach's alpha coefficient of .81.

Management Trust Scale

Six items from the Interpersonal Trust at Work (ITW) scale developed by Cook and Wall (1980) were adopted to assess participant's trust in management. Cook and Wall (1980) reported that previous studies found that these six management items demonstrated coefficients alphas ranging from .69 to .78. An example item is "Management was sincere in its attempts to meet the workers point of view". Item ratings were summed to provide an overall score of management trust, possible scores ranged between 6 and 30 with a higher score indicating a greater level of management trust. The current study found a Cronbach's alpha coefficient of .84.

Co-worker Trust Scale

Six items from the ITW scale developed by Cook and Wall (1980) were adopted to assess participant's trust in their co-workers. Previous studies found these six items of co-worker trust demonstrated coefficient alphas ranging from .71 to .77 (Cook & Wall, 1908). An example item is "I trusted the people that I work with to lend me a hand if I needed it". Item ratings were summed to provide an overall score of co-worker trust, possible scores ranged between 6 and 30 with a higher score indicating a greater level of co-worker trust. The current study found a Cronbach's alpha coefficient of .79.

Procedure

A pilot test was initially conducted to help prevent missing data and ensure survey items were clear and comprehendible (Roth & Switzer, 1995). Five postgraduate students and five employed members of the public completed the survey and provided feedback. Results of the pilot study also found it took approximately 10 to 20 minutes to complete the survey. Participants were invited to participate through a variety of mediums, including email, flyers, social media, and through known acquaintances (see Appendix D). Surveys were distributed via post, email, and by hand. In order for participants to return surveys, a free-post, self-addressed envelope accompanied all mailed surveys. Participants were compensated for their time with either a café or supermarket voucher to the value of ten dollars. This was given to participants while completing the survey so no personal information needed to be collected, maintaining survey anonymity and confidentiality.

Ethical *Considerations*

This research was conducted with the approval of the University of Canterbury Human Ethics Committee under section 3d. The instructions on the cover sheet of the survey (see

appendix A) clearly acknowledged that participation was entirely anonymous and confidential. Informed consent was obtained by the act of participants agreeing to complete the survey.

Results

Data Preparation

The workplace safety survey data was entered into an SPSS database to be analyzed and where appropriate scale items were reverse coded. The variable time since left previous job was also calculated (in months) from the date participants left their previous job and the date they filled out the survey. A reliability analysis was initially conducted on each scale to measure internal consistency. All seven scales were found to have acceptable internal reliability with Cronbach's alphas above the required minimum of .70 (Hinkin, 1995; Mitchell & Jolley, 2004).

The current study also encountered some missing data values concerning age, number of co-workers, the length of time since participants left their previous job, and responses to question ten *At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left?* Item ratings concerning the scales: PCSS, management trust, team member interaction, and job risk also contained missing data values. It was assumed all of these missing values were missing randomly, with the exception of the number of co-workers and the date participants left their previous job, which were assumed left blank because participants were unable to respond. To resolve the issue of missing values, and to help maintain the sample size a mean substitution approach was adopted. Researchers have suggested this technique is superior to list-wise and

pair-wise deletion methods whereabouts participants with missing data are removed from the analysis, leading to losses in statistical power, sample size and the accuracy of findings (Raaijmakers, 1999; Roth & Switzer, 1995; Saunders, Morrow-Howell, Spitznagel, Dore, Proctor, & Pescarino, 2006; Tsikriktsis, 2005). Missing values concerning age (one missing value), the number of co-workers (three missing values), the length of time since participants left their previous job (one missing value), and responses to question ten (two missing values) were substituted with the overall variable mean, M=28.68 years, M = 28.06, M = 692.56 months, and M = 1.94, respectively. A single item response was missing for the scales PCSS and management trust, and these values were substituted with the scale item mean, M = 3.39 for safety factors item number 6 and M = 3.14 for the management and co-workers item number 2, which was also reverse coded. Finally one participant was missing all item responses for the job risk and team member interaction scales, the overall mean for these two scales were substituted, M = 3.08 and M = 4.06, respectively.

Descriptive Statistics

The first concern of this study was to establish whether participants previously worked in high safety risk occupations. To determine the types of high safety risk industries participants previously worked in, participants' specified job titles were categorized into different occupational industries. Table 1 shows the distribution of these, the most prominent industries identified were manufacturing, transport and logistics with 27.2 percent, construction with 23 percent, and mining, resources and energy with 14.4 percent of the total participant pool.

Descriptive statistics and frequencies for all variables were calculated and examined to ensure the data set contained no errors. Table 2 shows the means, standard deviations and range scores for the job risk, team member interaction, employee safety voice, POSS, PCSS,

management trust, and co-worker trust measures. Inspection of Table 2 shows respondents reported having a high safety risk in their previous job, confirming the adequacy of the sample. Examination of Table 2 also suggested that participants reported high levels of management trust, co-worker trust, and team member interaction.

Table 1

Distribution of Sample by Occupational Industrys

Industry	N=125	Percentage
Construction	29	23.0
Engineering	4	3.6
Farming, Animals and Conservation	8	6.4
Government and Defence	3	2.4
Healthcare and Medical	3	2.4
Mining, Resources and Energy	18	14.4
Trades and Services	8	6.4
Manufacturing, Transport and Logistics	34	27.2
Science and Technology	5	4.0
Hospitality and Tourism	12	9.6
Other	1	0.8

Note. One participant did not respond to this question.

Table 2

Descriptive Statistics for Survey Measures

Variables	Mean	Standard Deviation	Range
Job Risk	3.08	0.71	1 – 4.8
Team Member Interaction	4.06	0.76	1 – 5
Employee Safety Voice	3.36	0.72	1 – 5
POSS	3.62	1.03	1 – 5
PCSS	3.60	0.86	1 – 5
Management Trust	19.99	5.14	6 – 30
Co-worker Trust	23.29	3.74	11 – 30

Safety Concerns & Voicing at Exit

The first question addressed by the current study was whether safety concerns had prompted participants to resign (leave) their previous job. A mean response of 1.56 (*SD* = 2.01, Range = 0 to 7) was obtained for the question *Please rate (by circling a number) how much 'safety concerns' prompted you to leave your previous job?.* Given the importance of this question, Table 3 shows the distribution of responses for this question. The mean response and distribution of response ratings shown in Table 3 clearly support the suggestion that safety concerns can prompt employees to leave their job. Furthermore, almost 50 percent of the participants expressed some consideration of safety issues at the time they left their pervious job.

Table 3

Responses to the Survey Question: "Please rate (by circling a number) how much 'safety concerns' prompted you to leave your previous job?"

Response Rating	N = 126	Percentage
0 = Not at all	65	51.6
1	10	7.9
2	16	12.7
3	11	8.7
4	6	4.8
5	14	11.1
6	0	0.0
7 = Very much	4	3.2

The Need to Voice at Exit

The second question addressed by the current study was whether employees have safety related information which they would have liked to voice at exit. Evidence that safety concerns were considered at the time of exit suggests that participants may have safety issues they wished to voiced, but for some reason they could not or chose not to do so. An examination of the entire sample was performed, including those participants who indicated no consideration of safety issues at the time they left their previous job (as they may still have safety issues they wished to voice, but it was not taken into consideration during the process of leaving their previous job). A mean response of 1.94 (*SD* = 2.07, Range = 0 to 7) was obtained for the question *At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left?*. Table 4 shows the

distribution of participant's responses to this question. Inspection of Table 4 clearly shows that some participants had safety concerns they wished to voice before they left their previous job.

Table 4

Responses to the Survey Question: "At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left?"

Response Rating	N = 124	Percentage
0 = No	50	40.3
1	10	8.1
2	21	16.9
3	14	11.3
4	11	8.9
5	10	8.1
6	3	2.4
7 =Yes there were a lot of issues	5	4.0

Note. Two participants did not respond to this question.

Participants that responded with a rating greater than 0 to the question, *At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left?*, were asked to respond to two further questions exploring whether they would be willing to voice their safety concerns now. The first question pertained to management, *If you now had an opportunity to sit down with management from your previous job and voice your safety concerns how willing would you be to do that?*. A mean response of 3.73 (*SD* = 2.4O, *N* = 73) was found. The second question pertained to co-workers, *If you now had an opportunity to sit down with co-workers from your previous job and voice your safety concerns how willing would you be to do that?*. A mean response of 3.81 (*SD* = 2.34, *N* = 73) was found. Responses to these questions indicated that participants were

still willing to voice their safety concerns if given an opportunity now, perhaps attesting to the importance of the concerns. Table 5 shows the distribution of responses for these two questions.

Table 5

Responses to the Survey Questions: "If you now had an opportunity to sit down with management from your previous job and voice your safety concerns how willing would you be to do that?" and "If you now had an opportunity to sit down with co-workers from your previous job and voice your safety concerns how willing would you be to do that?"

Response Rating	Management		Co-workers	
	n = 73	Percentage	n = 73	Percentage
0 = Not willing at all	8	11.0	6	8.2
1	11	15.1	11	15.1
2	6	8.2	8	11.0
3	9	12.3	7	9.6
4	9	12.3	12	16.4
5	6	8.2	4	5.5
6	12	16.4	13	17.8
7 = Would be very keen to do that	12	16.4	12	16.4

Note. One participant did not respond to these two questions.

Types of Safety Concerns

The results reported above show evidence that participants had unresolved safety concerns in which they wanted to voice at the time they left their previous job. Next, the nature of these safety concerns was examined. Three responses were requested from participants concerning the 40 safety issues/concerns listed in section two of the survey. This

included whether the safety issue was applicable to the participant's job, whether they did talk about the safety issue, whether they would have liked to talk to management about the safety issue, and whether they would have liked to talk to co-workers about the safety issue. The proportion of participants that expressed a desire to talk to management and/or co-workers about these safety issues were calculated (using the process described in the method section, N = the number of participants the issue was relevant for, n = the number of participants that would have liked to talk to management and/or co-workers about the issue), see Table 6 and 7 respectively. These two tables show the safety issues ranked in order from safety issues that many participants indicated as wanting to voice to management and/or co-workers to those safety issues less participants indicated as wanting to voice. Inspection of Tables 6 and 7 identified that safety issues pertaining to work pressure (e.g., *Work speed pressure from supervisors which reduced safety)* were the most prominent with 45 percent and 21.9 percent of the sample wanting to voice safety concerns relating to work pressure to management and co-workers, respectively. A high percentage of the sample expressed a desire to voice safety concerns to management attaining to safety rules and training (e.g., *Providing a different type of safety training*). Results also indicated that considerably more participants were willing to voice concerns to management (Range = 45.0 to 15.0 percent) about safety issues/concerns than to co-workers (Range = 21.9 to 5.8 percent). This difference could be attributed to the idea that management has more authority to help resolve safety concerns and influence change in the workplace.

Table 6

Percentage of Applicable Safety Issues That Participants Would Have Liked to Talk to Management About in Their Previous Job

Safety Issue	N	n	Percentage
30. Work speed pressure from supervisors which reduced safety	100	45	45.0
29. Work speed pressure from co-workers which reduced safety	96	38	39.6
26. Inadequate safety inspections	81	30	37.0
8. Providing a different type of safety training	85	30	35.3
31. Too much work to perform safely	88	31	35.2
32. Work related fatigue which reduced safety	103	32	31.1
34. Working methods which decreased safety	94	29	30.9
7. Amount of pre-start safety training	104	32	30.8
33. Insufficient staff to complete the job safely	84	25	29.8
22. Lack of safety equipment	78	23	29.5
11. Supervisors not supporting the use of safety training	73	21	28.8
25. Failures to enforce the use of safety equipment	86	24	27.9
24. Poor quality safety equipment	72	19	26.4
9. Relevance of safety training	94	24	25.5
23. Employees not using safety equipment	90	22	24.4
5. New recruits lack of skills and abilities to work safely	99	24	24.2
36. Incomplete safety procedures	75	18	24.0
4. New recruits lack of sufficient experience to work safely	101	24	23.8
12. Excessive (unsafe) noise in the workplace	81	19	23.5
17. Out of date or old equipment	98	23	23.5

39. Employees not following safety rules	102	24	23.5
21. Being asked to operate equipment without sufficient training	74	17	23.0
13. Excessive (unsafe) dust or fumes in the workplace	83	19	22.9
16. Faulty or unsafe equipment	105	23	21.9
20. Lack of equipment to do the job safely	87	19	21.8
35. Safety policy/rules which seemed to reduce safety	69	15	21.7
38. Negative attitudes which reduced safety	98	21	21.4
40. Employees working under the influence of prohibited substances	76	16	21.1
15. Precautions to prevent hazards occurring	110	23	20.9
14. Inadequate (unsafe) lighting in the workplace	68	14	20.6
18. Equipment maintenance	108	22	20.4
27. Outside contractors creating hazards	79	16	20.3
37. Employee behaviour which reduced safety	99	20	20.2
19. Equipment which was unsafe to use	96	19	19.8
28. Clients/customers creating hazards	86	17	19.8
2. New recruits being alerted to the risks involved in their job	115	21	18.3
6. New recruits behaving unsafely	95	17	17.9
3. New recruits understanding of safety policy	112	19	17.0
10. Employees' failure to use safety training	89	14	15.7
1. Awareness that new recruits can pose a safety risk	100	15	15.0

Note. N = the number of participants the issue was relevant for, n = the number of participants that would have liked to talk to management and/or co-workers about the issue

Table 7

Percentage of Applicable Safety Issues That Participants Would Have Liked to Talk to Co-workers About in Their Previous Job

Safety Issue	N	n	Percentage
29. Work speed pressure from co-workers which reduced safety	96	21	21.9
38. Negative attitudes which reduced safety	98	20	20.4
30. Work speed pressure from supervisors which reduced safety	100	19	19.0
37. Employee behaviour which reduced safety	99	16	16.2
33. Insufficient staff to complete the job safely	84	13	15.5
34. Working methods which decreased safety	94	14	14.9
31. Too much work to perform safely	88	13	14.8
32. Work related fatigue which reduced safety	103	15	14.6
23. Employees not using safety equipment	90	13	14.4
11. Supervisors not supporting the use of safety training	73	10	13.7
4. New recruits lack of sufficient experience to work safely	101	13	12.9
8. Providing a different type of safety training	85	11	12.9
39. Employees not following safety rules	102	13	12.7
12. Excessive (unsafe) noise in the workplace	81	10	12.3
40. Employees working under the influence of prohibited substances	76	9	11.8
9. Relevance of safety training	94	11	11.7
6. New recruits behaving unsafely	95	11	11.6
10. Employees' failure to use safety training	89	10	11.2
1. Awareness that new recruits can pose a safety risk	100	11	11.0
13. Excessive (unsafe) dust or fumes in the workplace	83	9	10.8

7. Amount of pre-start safety training	104	11	10.6
25. Failures to enforce the use of safety equipment	86	9	10.5
2. New recruits being alerted to the risks involved in their job	115	12	10.4
27. Outside contractors creating hazards	79	8	10.1
15. Precautions to prevent hazards occurring	110	11	10.0
21. Being asked to operate equipment without sufficient training	74	7	9.5
22. Lack of safety equipment	78	7	9.0
3. New recruits understanding of safety policy	112	10	8.9
14. Inadequate (unsafe) lighting in the workplace	68	6	8.8
26. Inadequate safety inspections	81	7	8.6
24. Poor quality safety equipment	72	6	8.3
5. New recruits lack of skills and abilities to work safely	99	8	8.1
36. Incomplete safety procedures	75	6	8.0
16. Faulty or unsafe equipment	105	8	7.6
19. Equipment which was unsafe to use	96	7	7.3
20. Lack of equipment to do the job safely	87	6	6.9
18. Equipment maintenance	108	7	6.5
17. Out of date or old equipment	98	6	6.1
28. Clients/customers creating hazards	86	5	5.8
35. Safety policy/rules which seemed to reduce safety	69	4	5.8

Note. N = the number of participants the issue was relevant for, n = the number of participants that would have liked to talk to management and/or co-workers about the issue

Voicing on the Job

After identifying safety issues that participants wanted to share with management and co-workers, it was important to investigate the number of safety concerns they did voice while in their pervious job. Actual voicing or the number of applicable safety issues that participants did talk about in their pervious job is shown in Table 8. Inspection of Table 8 shows that a large number of participants talked about safety issues relating to new recruits with 58.3 percent of the sample sharing safety concerns relating to "*New recruits being alerted to the risks involved in their job"*, 57.0 percent of the sample sharing concerns relating to "*Awareness that new recruits can pose a safety risk"*, and 54.5 percent of the sample sharing concerns relating to *"New recruits understanding of safety policy".* Table 8 provides evidence that a large number of the sample did voice particular concerns in their previous job.

Table 8

Percentage of Applicable Safety Issues That Participants Did Talk About in Their Previous Job

Safety Issue	N	n	Percentage
2. New recruits being alerted to the risks involved in their job	115	67	58.3
1. Awareness that new recruits can pose a safety risk	100	57	57.0
3. New recruits understanding of safety policy	112	61	54.5
16. Faulty or unsafe equipment	105	57	54.3
18. Equipment maintenance	108	58	53.7
15. Precautions to prevent hazards occurring	110	59	53.6
28. Clients/customers creating hazards	86	44	51.2
19. Equipment which was unsafe to use	96	49	51.0
17. Out of date or old equipment	98	49	50.0
20. Lack of equipment to do the job safely	87	42	48.3
6. New recruits behaving unsafely	95	45	47.4
10. Employees' failure to use safety training	89	42	47.2
37. Employee behaviour which reduced safety	99	46	46.5
13. Excessive (unsafe) dust or fumes in the workplace	83	38	45.8
9. Relevance of safety training	94	43	45.7
5. New recruits lack of skills and abilities to work safely	99	44	44.4
39. Employees not following safety rules	102	45	44.1
32. Work related fatigue which reduced safety	103	45	43.7
4. New recruits lack of sufficient experience to work safely	101	44	43.6
27. Outside contractors creating hazards	79	34	43.0

34. Working methods which decreased safety	94	40	42.6
23. Employees not using safety equipment	90	38	42.2
12. Excessive (unsafe) noise in the workplace	81	34	42.0
35. Safety policy/rules which seemed to reduce safety	69	29	42.0
14. Inadequate (unsafe) lighting in the workplace	68	28	41.2
38. Negative attitudes which reduced safety	98	40	40.8
33. Insufficient staff to complete the job safely	84	34	40.5
36. Incomplete safety procedures	75	30	40.0
21. Being asked to operate equipment without sufficient training	74	29	39.2
24. Poor quality safety equipment	72	28	38.9
7. Amount of pre-start safety training	104	40	38.5
40. Employees working under the influence of prohibited substances	76	28	36.8
25. Failures to enforce the use of safety equipment	86	31	36.0
22. Lack of safety equipment	78	28	35.9
31. Too much work to perform safely	88	29	33.0
29. Work speed pressure from co-workers which reduced safety	96	29	30.2
11. Supervisors not supporting the use of safety training	73	22	30.1
30. Work speed pressure from supervisors which reduced safety	100	30	30.0
26. Inadequate safety inspections	81	24	29.6
8. Providing a different type of safety training	85	20	23.5

Note. N = the number of participants the issue was relevant for, n = the number of participants that would have liked to talk to management and/or co-workers about the issue

Table 9

Correlation Matrix Between Demographic and Scale Variables

Variable		1	2	3	4	5	6	7	8
1	Job Risk								
2	Team Member Interaction	.10							
3	POSS	-.27**	.09						
4	PCSS	-.25**	.16	.46**					
5	Management Trust	-.24**	.15	.67**	.29**				
6	Co-worker Trust	-.10	.23**	.33**	.44**	.40**			
7	Age	.00	-.05	-.04	.10	-.14	.02		
8	Job Tenure	.02	.01	-.04	.02	-.10	.02	.68**	
9	Co-workers	.20*	-.01	-.08	-.06	-.13	-.02	.10	.07

Note. *$p < .05$. ** $p < .01$.

Intercorrelations between Measures

Correlations between demographic and scale variables were calculated, see Table 9. These correlations found no significant relationships between the variables age, job tenure, and the number of co-worker participants had in their previous job in relation to the scale variables job risk, team member interaction, POSS, PCSS, management trust and co-worker trust. Significant negative correlations were found between POSS, PCSS and management trust in relation to job risk. These correlations suggest that greater perceived safety risk is associated with lower levels of POSS, PCSS and management trust. Significant positive correlations were found between POSS, PCSS, management trust and co-worker trust. These results suggest that these variables are all contributing to participant's perceived trust and support for safety in their previous job. Lastly, a significant positive correlation was found between team member interaction and co-worker trust.

The strong positive intercorrelations between POSS, PCSS, management trust and co-worker trust may indicate some degree of multicollinearity regarding these predictor variables. It is important to be aware that the presence of multicollinearity may impact beta weights, whereabouts individual predictors may appear redundant when in fact another highly correlated predictor is also incorporated into the multiple regression analysis. Mill, Durepos, and Wiebe (2010) suggested that multicollinearity could cause a problem when correlations among variables are greater than .90, which is not the case in the current study.

Predictors of Safety Concerns at Exit

Correlations were calculated to examine the relationship between participant responses to the question *Please rate (by circling a number) how much 'safety concerns' prompted you to leave your previous job?,* labelled Safety Concerns in Figure 3, and scale

variables. Figure 3 shows Safety Concerns are positively associated with job risk and negatively associated with POSS, management trust, and co-worker trust. Figure 3 also shows the relationship between Safety Concerns and responses to the question *At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left?*, labelled The Need to Voice at Exit. Results show the variable Safety Concerns has a significant positive association with the variable The Need to Voice at Exit.

To further explore the predictive variables of safety concerns at exit, multiple regression analyses were conducted. Possible confounding variables, age, job tenure, number of co-workers in participants previous job, team member interaction, the contact participants now have with their previous co-workers and the time since participants left their previous job were also included in the analysis to obtain more valid beta weight estimates. Table 10 shows the beta weights, t-values and p-values of variables which responses to the survey question *Please rate (by circling a number) how much 'safety concerns' prompted you to leave your previous job?* was regressed onto. Significant predictors were identified regarding the relationship between how much safety concerns prompted participants to leave their previous job and the scale variables job risk and PCSS. This result indicates that the number of safety concerns increase by .488 as perceived job risk increases. The number of safety concerns increase by .278 as PCSS increases. The variables time since left previous job was found to have a significant negative beta weight. This result indicates that safety concerns decrease by .156 per month of time since participants left their previous job.

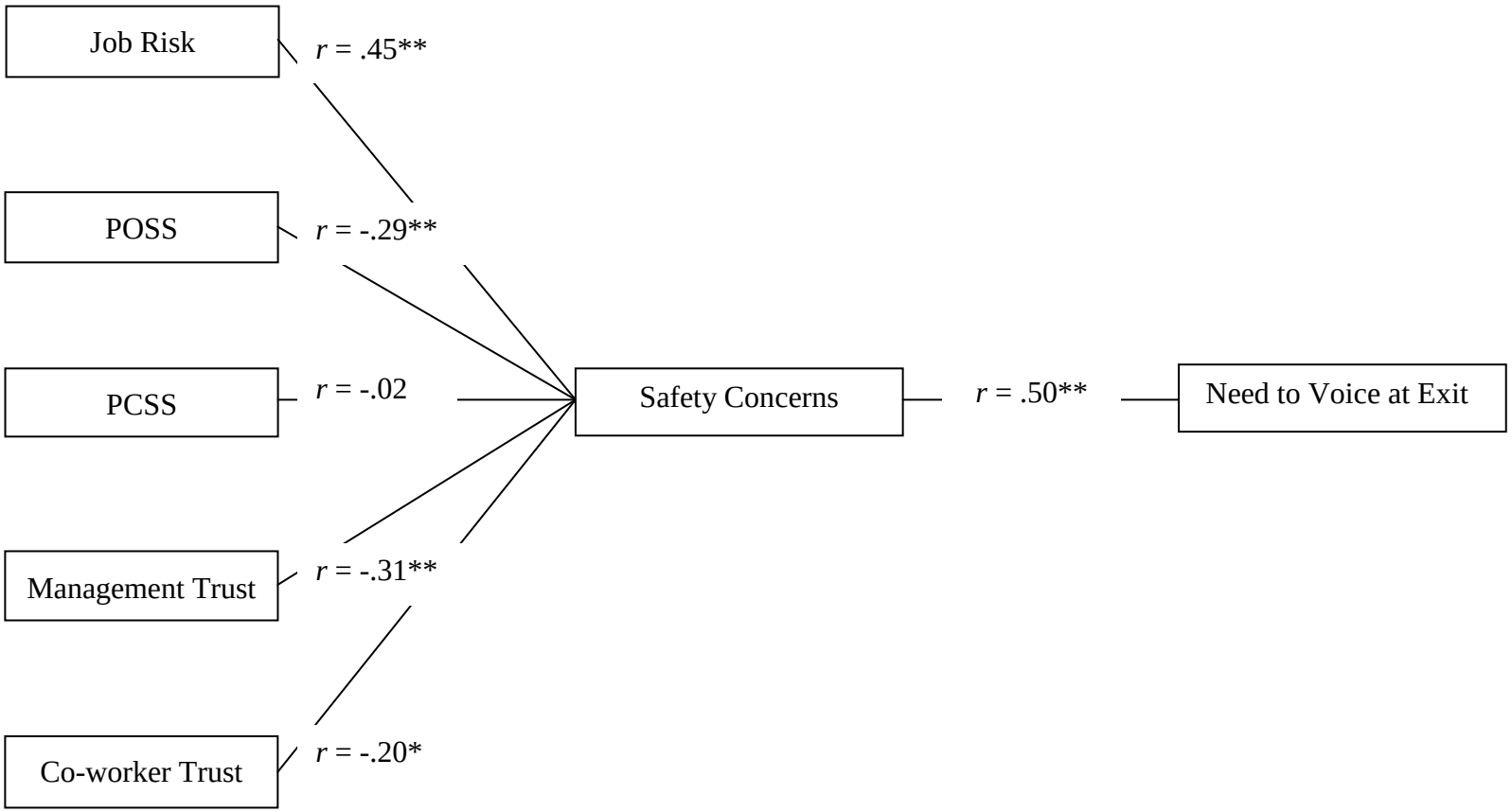

Figure 3. *The relationship between scale variables, safety concerns and the need to voice at exit. Safety concerns = responses to the question "Please rate (by circling a number) how much 'safety concerns' prompted you to leave your previous job?" and Need to voice at exit = responses to the question "At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left?". Note.* N = 126, *$p < .05$. ** $p < .01$.

Table 10

Beta Weights, t-values and p-values of Variables When Regressed onto the Question: "Please rate (by circling a number) how much 'safety concerns' prompted you to leave your previous job?"

Measures	Beta Weight	t-value	p-value
Job Risk	.488	6.123	.000**
POSS	-.155	-1.418	.159
PCSS	.278	3.045	.003**
Management Trust	-.129	-1.189	.237
Co-worker Trust	-.127	-1.407	.162
Age	.188	1.789	.076
Job Tenure	-.202	-1.940	.055
Number of Co-workers	-.149	-1.954	.053
Team Member Interaction	-.134	-1.719	.088
Contact with Co-workers	-.028	-.329	.743
Time Since Left Pervious Job	-.156	-1.981	.050*

Note. *$p < .05$. ** $p < .01$. Adjusted r squared = .330 ($F = 6.598$, $p = .000$)

Table 11 shows the beta weights, t-values and p-values of variables which responses to the survey question *At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left*? (the need to voice at exit) was regressed onto. Significant predictors were identified regarding the relationship between the need to voice at exit and the scale variables job risk, POSS, and PCSS. No significant predictors were identified regarding the relationship between the need to voice at exit and scale variables management trust, and co-worker trust. This result indicates that the need to voice at exit increases by .394 as the level of perceived job risk increases. The need to voice at exit decreases by .257 as POSS increases. The need to voice at exit decreases by.182

as PCSS increases. The variable age was found to have a significant positive beta weight. The variables job tenure and time since participants left their previous job were found to have significant negative beta weights. This result indicates that the need to voice at exit increases by .310 per year of age. The need to voice at exit decreases by .386 per month of job tenure. Finally the need to voice at exit decreases by .173 per month of time since participants left their previous job.

Table 11

Beta Weights, t-values and p-values of Dependent Variables When Regressed onto the Question: "At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left?"

Variable	Beta Weight	t-value	p-value
Job Risk	.394	5.235	.000**
POSS	-.257	-2.489	.014*
PCSS	-.182	-2.119	.036*
Management Trust	.012	.119	.906
Co-worker Trust	.000	.003	.997
Age	.310	3.134	.002**
Job Tenure	-.386	-3.936	.000**
Number of Co-workers	-.085	-1.180	.241
Team Member Interaction	.123	1.673	.097
Contact with Co-workers	.099	1.242	.217
Time Since Left Pervious Job	-.173	-2.317	.022*

Note. *$p < .05$. ** $p < .01$. Adjusted r squared = .403 ($F = 8.677$, $p = .000$)

Hypothesis Testing

Correlations were calculated to test each of the hypotheses and to examine the relationship between scale variables and the three safety voicing measures: actual voicing, the need to voice at exit, and employee safety voice. Actual voicing concerns the proportion of safety issues participants did talk about in their previous job. The need to voice at exit relates to participants responses to the question *At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left?*. Employee safety voice relates to participants mean score calculated from the Employee Safety Voice scale. The results are shown in Figure 4.

Hypothesis 1 stated that management and co-worker support for safety will be negatively correlated with the provision of more safety information in the safety exit. A highly significant negative relationship between POSS and The Need to Voice at Exit was found. A highly significant negative relationship between PCSS and The Need to Voice at Exit was found. The results from these correlations show support for hypothesis 1.

Hypothesis 2 stated that management and co-worker support for safety will be positively correlated with actually safety voicing on the job. A highly significant positive relationship between POSS and Actual Voicing was found. A highly significant positive relationship between PCSS and Actual Voicing was found. The results from these correlations show support for hypothesis 2.

Hypothesis 3 stated that management trust and co-worker trust will be negatively correlated with the provision of more safety information in the safety exit survey. A highly significant negative relationship between Management trust and The Need to Voice at Exit was found. A negative relationship was also found between co-worker trust and The Need to

Voice at Exit although this result was not statistically significant. The results from these correlations show partial support for hypothesis 3.

Hypothesis 4 stated that management trust and co-worker trust will be positively correlated with actually safety voicing on the job. A highly significant positive relationship between management trust and Actual Voicing was found. A highly significant positive relationship between co-worker trust and Actual Voicing was found. The results from these correlations show support for hypothesis 4.

Figure 4 also shows that employee safety voice was positively correlated with PCSS. A significant positive correlation was found between actual voicing and employee safety voice, however these two variables were not correlated with the need to voice at exit.

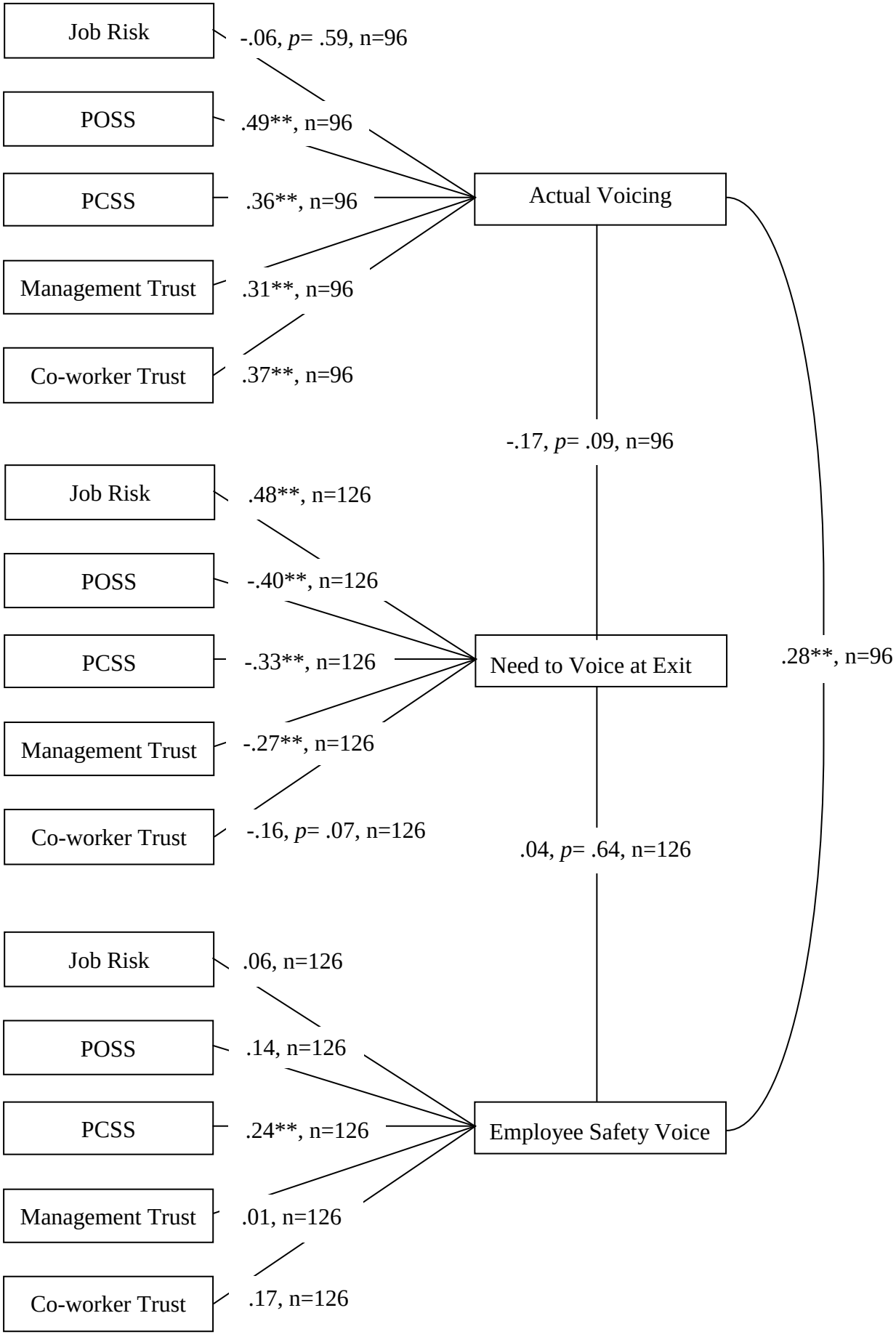

Figure 4. *The relationship between scale variables and participant safety voicing. Actual voicing = the proportion of applicable safety issues that participants did talk about in their previous job and Need to voice at exit = responses to the question "At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left?".*
Note. N = 126, *$p < .05$. ** $p < .01$.

Predictors of Safety Issue Voicing

Table 12 shows the beta weights, t-values and p-values of variables which employee safety voice was regressed onto. No significant predictors were identified regarding the relationship between employee safety voice and the scale variables job risk, POSS, PCSS, management trust and co-worker trust. However the variables age, team member interaction, and the amount of contact participants now have with their previous co-workers were found to have significant positive beta weights. This result indicates that employee safety voice ratings increase by .445 per year of age. Employee safety voice increases by .243 as the amount of contact participants now have with their previous co-workers increases. Finally employee safety voice increases by .079 as job interdependence increases.

Table 12

Beta Weights, t-values and p-values of Dependent Variables When Regressed onto the Variable Employee Safety Voice

Variable	Beta Weight	t-value	p-value
Job Risk	.120	1.420	.173
POSS	.105	.904	.368
PCSS	.114	1.178	.241
Management Trust	-.066	-.576	.566
Co-worker Trust	.033	.344	.731
Age	.441	3.965	.000**
Job Tenure	-.083	-.754	.453
Number of Co-workers	-.072	-.895	.373
Team Member Interaction	.164	1.990	.049*
Contact with Co-workers	.244	2.738	.007**
Time Since Left Pervious Job	-.097	-1.165	.246

Note. *$p < .05$. ** $p < .01$. Adjusted r squared = .248 ($F = 4.750$, $p = .000$)

Table 13 shows the beta weights, t-values and p-values of variables which the proportion of safety issues participants did talk about in their previous job (actual voicing) was regressed onto. Significant predictors were identified regarding the relationship between actual voicing and the scale variables POSS and co-worker trust. No significant predictors were identified regarding the relationship between actual voicing and the scale variables job risk, PCSS, and management trust. This result indicates that the proportion of safety issues participants did talk about in their previous job increases by .540 as ratings of POSS increase. The proportion of safety issues participants did talk about in their previous job increases by .212 as ratings of co-worker trust increase. The variable team member interaction was found to have significant positive beta weights. This result indicates that the proportion of safety issues participants did talk about in their previous job increases by .176 as job interdependence increases.

Table 13

Beta Weights, t-values and p-values of Dependent Variables When Regressed onto the Variable Actual Voicing

Variable	Beta Weight	t-value	p-value
Job Risk	.090	1.024	.309
POSS	.540	4.463	.000**
PCSS	.072	.695	.489
Management Trust	-.139	-1.138	.258
Co-worker Trust	.212	2.054	.043*
Age	.203	1.883	.063
Job Tenure	.128	1.214	.228
Number of Co-workers	-.076	-.888	.377
Team Member Interaction	.176	1.993	.049*
Contact with Co-workers	-.149	-1.580	.118
Time Since Left Pervious Job	-.115	-1.270	.207

Note. *$p < .05$. ** $p < .01$. Adjusted r squared = .356 ($F = 5.772$, $p = .000$)

Table 14 shows the beta weights, t-values and p-values of variables which the percentage of applicable safety issues that participants wanted to talk to management about in their previous job (management voicing) was regressed onto. A significant predictor was identified regarding the relationship between management voicing and the scale variable POSS. No significant predictors were identified regarding the relationship between management voicing and the scale variables job risk, PCSS, management trust and co-worker trust. This result indicates that the percentage of applicable safety issues that participants wanted to talk to management about in their previous job decreases by .455 as POSS increases.

Table 14

Beta Weights, t-values and p-values of Dependent Variables When Regressed onto the Percentage of Applicable Safety Issues that Participants Wanted to Talk to Management About in Their Previous Job

Variable	Beta Weight	t-value	p-value
Job Risk	.026	.261	.794
POSS	-.455	-3.309	.001**
PCSS	-.041	-.350	.727
Management Trust	.069	.497	.620
Co-worker Trust	-.133	-1.136	.259
Age	-.003	-.024	.981
Job Tenure	-.194	-1.609	.111
Number of Co-workers	.076	.777	.439
Team Member Interaction	-.062	-.613	.541
Contact with Co-workers	.155	1.446	.152
Time Since Left Pervious Job	.028	.259	.789

Note. *$p < .05$. ** $p < .01$. Adjusted r squared = .165 (F = 2.709, $p = .005$)

Table 15 shows the beta weights, t-values and p-values of variables which the percentage of applicable safety issues that participants wanted to talk to co-workers about in their previous job (co-worker voicing) was regressed onto. No significant predictors were identified regarding the relationship between co-worker voicing and the scale variables job risk, POSS, PCSS, management trust and co-worker trust. The variables age, job tenure, number of co-workers, team member interaction, contact with co-workers, and time since left previous job were also found to have non-significant beta weights. This result indicates that none of these variables predict the percentage of applicable safety issues that participants wanted to talk to co-workers about in their previous job.

Table 15

Beta Weights, t-values and p-values of Dependent Variables When Regressed onto the Percentage of Applicable Safety Issues that Participants Wanted to Talk to Their Co-workers About in Their Previous Job

Variable	Beta Weight	t-value	p-value
Job Risk	.136	1.266	.209
POSS	-.228	-1.552	.124
PCSS	-.192	-1.519	.132
Management Trust	.201	1.355	.179
Co-worker Trust	-.014	-.109	.913
Age	.115	.875	.384
Job Tenure	-.119	-.922	.359
Number of Co-workers	.178	1.706	.092
Team Member Interaction	-.036	-.331	.741
Contact with Co-workers	.100	.872	.386
Time Since Left Pervious Job	.108	.982	.329

Note. *$p < .05$. ** $p < .01$. Adjusted r squared = .046 ($F = 1.412$, $p = .183$)

Discussion

Summary of Findings

The overall research aim was to investigate the relationship between safety voicing and employee turnover. To address this, the question was proposed *Have safety concerns prompted employees to resign (leave) their previous job?.* Results found clear support that safety concerns were considered at the time of exit and such safety concerns had influenced participants' decision to resign (leave) their previous job. A second question was also proposed *Do employees have safety related information which they would have liked to voice at exit?* was also addressed. Results found clear evidence that some participants had safety concerns they wished to voice, but for some reason they could not or chose not to do so before they left their previous job. These results show support for Reason's (1997) model that when management handles safety incidents and accidents poorly, employees choose either to voice their concerns or exit the organisation. The nature of these unresolved safety concerns were also investigated using the safety exit survey, which indicated that safety issues pertaining to work pressure (e.g., *Work speed pressure from supervisors which reduced safety)* were the most prominent among participants. It was also found that a greater percentage of participants expressed they would like to talk to management about safety issues than co-workers. This result is not surprising as management have more authority and influence over the development of workplace safety policies and procedures.

The predictors of safety voicing were also examined. Three voicing scores were calculated, actual voicing (applicable safety issues that participants did talk about in their previous job), the scale variable employee safety voice, and the need to voice at exit

(responses to the question *At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left?).* The scale variables POSS and co-worker trust were identified as significant predictors of actual voicing. No significant predictors were identified regarding the relationship between employee safety voice and the scale variables job risk, POSS, PCSS, management trust and co-worker trust. The scale variables job risk, POSS and PCSS were identified as significant predictors of the need to voice at exit. From these results it appears POSS is the most consistent at predicting safety voicing. Withey and Cooper (1989) indicated that because voicing is so broad, predicting voice can be difficult. This may account for the difference observed in results for the current three safety voicing measures. Furthermore, correlations between these voicing measures found an association between actual voicing and employee safety voice, however these two variables were not significantly related with the need to voice at exit.

The results support Hypothesis 1 that management and co-worker support for safety will be negatively correlated with the provision of more safety information in the safety exit survey/interview process. In contrast, participants who showed higher perceived organisational and co-worker support for safety had less to report in regards to the safety exit survey as they had less safety concerns they wanted to share at the time they left their previous job. The later results support Hypothesis 2 that management and co-worker support for safety will be positively correlated with actually safety voicing on the job. Thus participants who showed higher perceived organisational and co-worker support for safety indicated they did talk about more safety issues while working in their previous job. These results are consistent with findings from Clark (1998) where employee under-reporting was attributed to feelings that management were not supportive towards maintaining a safe work environment. Research by Tucker *et al.* (2008) also supports the notion that a lack of perceived organisational and co-worker support for safety is associated with lower levels of employee safety voice.

The results show partial support for Hypothesis 3 that management trust and co-worker trust will be negatively correlated with the provision of more safety information in the safety exit survey. Thus the relationship between management trust and the need to voice at exit was supported. In contrast, participants who showed higher ratings of management trust had less to report in regards to the safety exit survey as they had less safety concerns they wanted to share at the time they left their previous job. The relationship between co-worker trust and the need to voice at exit was not supported. The results show support for Hypothesis 4 that management trust and co-worker trust will be positively correlated with actually safety voicing on the job. Thus participants who showed higher management and co-worker trust indicated they did talk about more safety issues while working in their previous job. These results are consistent with findings in the literature concerning 'blame culture' whereabouts the under-reporting of accidents and safety concerns is associated to feelings of distrust and fear of being blamed (Adams, & Hartwell, 1977; Clarke, 1998; Webb *et al.,* 1989).

Limitations and Future Research

As the only method of data collection used in this research was a self-report survey participant's responses might be susceptible to common method variance. Although an attempt was made to reduce this by presenting the last three sections of the survey in three random combinations, the remaining two sections were presented in the same order. This is problematic as common method variance may influence correlations, inflating relationships between variables.

Another limitation of this study is the impact of social desirability on participant responses. Although this survey was entirely anonymous and confidential, it is possible participants may have exaggerated the amount of safety concerns they did voice while in their

previous job to make their responses sound more desirable. The observed positive association, although non-significant between employee safety voice and the need to voice at exit may provide evidence for this. It was expected that the degree to which participants voiced or spoke up about safety concerns in their previous job would have a negative association between the amount of safety concerns participants expressed a need to voice at exit. Alternatively another explanation for this result is the situation that participants did voice while in their previous job but nothing was done about their voiced concerns, hence they indicated on the survey they needed to voice at exit. It is suggested that a measure of unsuccessful voicing could be incorporated in the current survey. The correlations between voicing measures and scale variables also suggested actual voicing and employee voicing may be measuring different types of voicing intensions. Thus the difference between these results also suggests the presence of social desirability and impression management. It was suggested that the measure of employee safety voice represents an attitudinal measure of safety voicing, providing an indication of participant perceptions of how much they voice. Whereabouts actual voicing represents a behavioural measure of safety voicing, providing an indication of the proportion of safety issues they voiced in their previous job, thus providing a closer estimate of actual safety voicing.

Another limitation of this study was the length of time between participants leaving their previous job and completing the survey, which had a mean just short of two years. Results found that time since participants left their previous job significantly predicted the need to voice safety concerns at exit (responses to the question *At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left).* This indicates that for every month that passed after participants left their job, the need for participants to voice their safety concerns at exit decreases by .163. The most likely explanation for this result was participants' memory deteriorated with time. This

participant memory lapse was also thought to contribute to the missing data values in the current study. Although pilot testing was initially carried out before data collection to ensure survey items were clear and comprehendible, some items still had missing values. Examples of this include questions missing responses concerning the number of co-worker participants worked with and the date participants left their previous job. Raaijmakers (1999) suggested the inclusion of a 'don't know' response among categories to help provide a further understanding why responses may be missing.

Time and budget limitations made it impractical to assess workplace safety issues through the use of a safety exit interview with employees at the time they were leaving a job. Instead a survey format was adopted to assess employee attitudes regarding workplace safety in their previous job. While it would be useful to replicate this study with employees at the time of exit – the actual sample appears appropriate for this type of study. That is, the results can be generalised to those employees working in high safety risk occupations, and the sample has a good distribution concerning gender, age, job tenure and number of co-workers.

The relationship between safety voicing and turnover is complex and the current predictors management and co-worker trust and support for safety are only painting part of the picture. Future research would benefit from further investigation regarding the processes behind employee safety voice and turnover. It is recommended that future research test Reason's (1997) model of possible outcomes concerning the handling of accidents, incorporating measures of job satisfactions and other variables. Furthermore the inclusion of accident rates and reporting of safety concerns in organisations would also improve the understanding of this process. The use of a safety exit interview process might gather valuable feedback on safety concerns if use in the real world.

Conclusion and Implications

This research addresses the necessity for a supportive and trusting environment in which the voicing of safety issues and concerns can occur. This study found that both management and co-worker trust and support for safety are important predictors concerning the voicing of safety concerns in the workplace. The development of a positive safety culture and climate in the organisation should be a priority to facilitate safety voicing.

Are organizations doing all they can to resolve safety issue and concerns in the workplace? Results show that employees resign (leave) their job without voicing safety concerns/issues. The findings from this research are important as they identify a gap in the current literature concerning the use of a safety exit interview. The intended purpose of the safety exit interview is to provide employees with their last opportunity to voice safety concerns and determine the details of precisely why they reached their decision to leave the organisation. The safety exit interview will also provide the organisation with a valuable feedback forum to improve safety in the workplace and help reduce turnover costs associated with reoccurring, unresolved safety issues. This will benefit both remaining and new employees who may also encounter these safety issues, creating a safer place to work. The identification of safety issues may also reduce absenteeism and accidents.

The safety exit interview technique may be particularly useful in high safety risk 'macho' workplaces, whereabouts sharing concerns about safety is not the norm and employees may feel speaking openly about safety concerns/ issues goes against the culture of the employees and views of their co-workers. The safety exit interview will also allow organisations to identify particular areas in the organisation that are unsafe and require action, i.e. new recruits, training, work pressure, work environment, safety rules, and equipment.

The findings of this research suggest a link between employee safety voicing and turnover. Reason's (1997) model suggests voice and exit outcomes are the two choices an employee has when management handles safety incidents poorly. This research also highlights the importance of maintaining a high level of management and co-worker trust and support for safety in the workplace, in particular perceived organisational support for safety as this was found to be the strongest predictor of safety voicing. Overall, this study seeks to improve workplace safety through encouraging the use of a safety exit interview.

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Appendix A

Workplace Safety Survey

Instructions

This survey is designed to help improve safety in the workplace. The survey is entirely **anonymous** and **confidential**. Please **do not** write your name on it. We guarantee that no one outside our research group will have access to your personal views.

This survey is about your <u>previous or last job</u>. That is, the job you held before you began your present position. If you are currently un-employed, complete the survey about your last job.

How to complete the survey

- Read each question carefully. Then answer giving your *first reaction.*
- Please ***answer all of the questions***.
- The usefulness of this survey depends upon the frankness and honesty with which you answer the questions.

Informed Consent

By completing this survey you are consenting to the publication of the results on the basis that no individual, team or organization is identified.

If you have any questions about this research please contact Cassandra Cottle ckc34@uclive.ac.nz or Associate Professor Chris Burt Christopher.burt@canterbury.ac.nz

Appendix B

Section 1

1. What date did you leave/finish your previous job? _____
2. Todays date _____
3. What was the title of your previous job? _____
4. How long had you worked in your previous job? _____ years _____ months
5. How many co-workers did you have in your previous job? _____
6. Your Age _____years
7. Your Gender: Male ☐ Female ☐

8. Please rate (by circling a number) how much contact you have NOW with co-workers from your previous job.

0	1	2	3	4	5	6	7
Do not see them at all							See them regularly

9. Please rate (by circling a number) how much ***'safety concerns'*** prompted you to leave your previous job.

0	1	2	3	4	5	6	7
Not at all							Very much

10. At the time you left your previous job did you feel there were safety issues/concerns which you wanted to tell someone about before you left? **If you respond No=0, skip questions 11 and 12, and move to Section <u>3</u>.**

0	1	2	3	4	5	6	7
No							Yes there were a lot of issues

11. If you now had an opportunity to sit down with management from your previous job and voice your safety concerns how willing would you be to do that?

0	1	2	3	4	5	6	7
Not willing at all							Would be very keen to do that

12. If you now had an opportunity to sit down with co-workers from your previous job and voice your safety concerns how willing would you be to do that?

0	1	2	3	4	5	6	7
Not willing at all							Would be very keen to do That

Section 2

Listed below are 'safety issues' which you might have wanted to talk to either your Co-workers or Management about in your previous job. For each safety issue please respond by ticking **one or more boxes**.

Tick ***Not applicable*** if the safety issue was not relevant to your previous job

Did if you did talk about the issue in your previous job

Yes Management if it was an issue you would have liked to talk to management about but never did

Yes co-worker if it was an issue you would have liked to talk to co-workers about but never did

Safety Issue	NA	Did talk about this in my previous job	Yes would have liked to talk to Management about this	Yes would have liked to talk to Co-worker about this
Awareness that new recruits can pose a safety risk				
New recruits being alerted to the risks involved in their job				
New recruits understanding of safety policy				
New recruits lack of sufficient experience to work safely				
New recruits lack of skills and abilities to work safely				
New recruits behaving unsafely				
Amount of pre-start safety training				
Providing a different type of safety training				
Relevance of safety training				
Employees' failure to use safety training				
Supervisors not supporting the use of safety training				
Excessive (unsafe) noise in the workplace				
Excessive (unsafe) dust or fumes in the workplace				
Inadequate (unsafe) lighting in the workplace				
Precautions to prevent hazards occurring				
Faulty or unsafe equipment				

Safety Issue	NA	Did talk about this in my previous job	Yes would have liked to talk to Management about this	Yes would have liked to talk to Co-worker about this
Out of date or old equipment				
Equipment maintenance				
Equipment which was unsafe to use				
Lack of equipment to do the job safely				
Being asked to operate equipment without sufficient training				
Lack of safety equipment				
Employees not using safety equipment				
Poor quality safety equipment				
Failures to enforce the use of safety equipment				
Inadequate safety inspections				
Outside contractors creating hazards				
Clients/customers creating hazards				
Work speed pressure from co-workers which reduced safety				
Work speed pressure from supervisors which reduced safety				
Too much work to perform safely				
Work related fatigue which reduced safety				
Insufficient staff to complete the job safely				
Working methods which decreased safety				
Safety policy/rules which seemed to reduce safety				
Incomplete safety procedures				
Employee behaviour which reduced safety				
Negative attitudes which reduced safety				
Employees not following safety rules				
Employees working under the influence of prohibited substances				

Section 3

Listed below are items about the amount of ***risk associated with your previous job***. For each item please circle the number which indicates the extent to which you disagree or agree.

My previous job was …	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
Dangerous	**1**	**2**	**3**	**4**	**5**
Safe	**1**	**2**	**3**	**4**	**5**
Hazardous	**1**	**2**	**3**	**4**	**5**
Risky	**1**	**2**	**3**	**4**	**5**
Unhealthy	**1**	**2**	**3**	**4**	**5**
Could get hurt easily	**1**	**2**	**3**	**4**	**5**
Unsafe	**1**	**2**	**3**	**4**	**5**
Feared for my health	**1**	**2**	**3**	**4**	**5**
Chance of death	**1**	**2**	**3**	**4**	**5**
Scary	**1**	**2**	**3**	**4**	**5**

Jobs vary in terms of the amount of interaction that is required with other team members or co-workers. The following items are about how much ***job related interaction you had with your team members or co-workers in your previous job***. Please indicate how much you agree or disagree with each of the statements.

In my previous job …	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
I worked closely with my team/co-workers in doing my work	**1**	**2**	**3**	**4**	**5**
I frequently had to coordinate my efforts with my team/co-workers	**1**	**2**	**3**	**4**	**5**
My own performance was dependent on receiving accurate information from my team/co-workers	**1**	**2**	**3**	**4**	**5**
The way I perform my job had a significant impact on my team/co-workers	**1**	**2**	**3**	**4**	**5**
My job required me to consult with my team/co-workers fairly frequently	**1**	**2**	**3**	**4**	**5**

Section 4

Listed below are a number of statements that could be used to describe a variety of ***factors relating to safety within your previous job***. Please indicate how much you agree or disagree with each of the statements.

In my previous job …	Strongly disagree	Disagree	Neither agree/ disagree	Agree	Strongly agree
I made suggestions about how safety could be improved	**1**	**2**	**3**	**4**	**5**
I told colleagues who were doing something unsafe to stop	**1**	**2**	**3**	**4**	**5**
I discussed new ways to improve safety with my colleagues or boss	**1**	**2**	**3**	**4**	**5**
I informed the boss when I noticed a potential hazard	**1**	**2**	**3**	**4**	**5**
I reported to my boss if my colleagues broke any safety rules	**1**	**2**	**3**	**4**	**5**
My co-workers were ready to talk to fellow employees who failed to use safety equipment/procedures	**1**	**2**	**3**	**4**	**5**
My co-workers were prepared to stop others from working dangerously	**1**	**2**	**3**	**4**	**5**
My colleagues encouraged each other to work safely	**1**	**2**	**3**	**4**	**5**
The company took the safety ideas of employees seriously	**1**	**2**	**3**	**4**	**5**
The company was quick to respond to the safety concerns of their employees	**1**	**2**	**3**	**4**	**5**
The company encouraged employees to voice their concerns about safety	**1**	**2**	**3**	**4**	**5**

Section 5

Listed below are items about ***Management and Co-workers.*** For each item please circle the number which indicates the extent to which you disagree or agree that the item applies ***to your previous job.***

In your previous job …	Strongly disagree	Disagree	No opinion	Agree	Strongly agree
Management **was** sincere in its attempts to meet the workers point of view	**1**	**2**	**3**	**4**	**5**
The workers have a poor future unless the organization can attract better managers	**1**	**2**	**3**	**4**	**5**
If I got into difficulties at work I knew my co-workers would try and help me out	**1**	**2**	**3**	**4**	**5**
Management could be trusted to make sensible decisions for the company's future	**1**	**2**	**3**	**4**	**5**
I trusted the people I worked with to lend me a hand if I need it	**1**	**2**	**3**	**4**	**5**
Management at work seems to do an efficient job	**1**	**2**	**3**	**4**	**5**
I feel quite confident that the company always tried to treat me fairly	**1**	**2**	**3**	**4**	**5**
Most of my co-workers could be relied upon to do as they say they would do	**1**	**2**	**3**	**4**	**5**
I had full confidence in the skills of my workmates	**1**	**2**	**3**	**4**	**5**
Most of my fellow workers would get on with their work even if supervisors were not around	**1**	**2**	**3**	**4**	**5**
I could rely on other workers not to make my job more difficult by careless work	**1**	**2**	**3**	**4**	**5**
Management was quite prepared to gain advantage by deceiving workers	**1**	**2**	**3**	**4**	**5**

Thank you for participating in this study

Appendix C

Changes to Team Member Interaction Scale items

Original Item	Adapted item
I work closely with others in doing my work.	I worked closely with my team/co-workers in doing my work.
I frequently must coordinate my efforts with others.	I frequently had to coordinate my efforts with my team/co-workers.
My own performance is dependent on receiving accurate information from others.	My own performance was dependent on receiving accurate information from my team/co-workers.
The way I perform my job has a significant impact on others.	The way I perform my job had a significant impact on my team/co-workers.
My work requires me to consult with others fairly frequently.	My job required me to consult with my team/co-workers fairly frequently.

Changes to Employee Safety Voice Scale items

Original Item	Adapted item
I make suggestions about how safety can be improved.	I made suggestions about how safety could be improved.
I tell my colleague who is doing something unsafe to stop	I told colleagues who were doing something unsafe to stop.
I discuss new ways to improve safe driving with my colleagues or boss.	I discussed new ways to improve safety with my colleagues or boss.
I inform the union/boss when I notice a potential driving hazard.	I informed the boss when I noticed a potential hazard.
I report to my boss if my colleagues break any safety rules	I reported to my boss if my colleagues broke any safety rules.

Changes to Management Trust Scale items

Original Item	Adapted item
Management at my firm is sincere in its attempts to meet the workers' point of view.	Management **was** sincere in its attempts to meet the workers point of view.
Our firm has a poor future unless it can attract better managers.	The workers have a poor future unless the organization can attract better managers.
Management can be trusted to make sensible decisions for the firm's future.	Management could be trusted to make sensible decisions for the company's future.
Management at work seems to do an efficient job.	Management at work seems to do an efficient job
I feel quite confident that the firm will always try to treat me fairly.	I feel quite confident that the company always tried to treat me fairly.
Our management would be quite prepared to gain advantage by deceiving the workers.	Management was quite prepared to gain advantage by deceiving workers.

Changes to Co-worker Trust Scale items

Original Item	Adapted item
If I got into difficulties at work I know my workmates would try and help me out.	If I got into difficulties at work I knew my co-workers would try and help me out.
I can trust the people 1 work with to lend me a hand if I needed it.	I trusted the people I worked with to lend me a hand if I need it.
Most of my workmates can be relied upon to do as they say they will do.	Most of my co-workers could be relied upon to do as they say they would do.
I have full confidence in the skills of my workmates.	I had full confidence in the skills of my workmates.
Most of my fellow workers would get on with their work even if supervisors were not around.	Most of my fellow workers would get on with their work even if supervisors were not around.
I can rely on other workers not to make my job more difficult by careless work.	I could rely on other workers not to make my job more difficult by careless work.

Changes to Perceived Organizational Support for Safety Scale items

Original Item	Adapted item
The company takes the safety ideas of employees seriously	The company took the safety ideas of employees seriously.
The company is quick to respond to the safety concerns of their employees	The company was quick to respond to the safety concerns of their employees.
The company encourages employees to voice their concerns about safety	The company encouraged employees to voice their concerns about safety.

Changes to Perceived Co-worker Support for Safety Scale items

Original Item	Adapted item
My co-workers are ready to talk to fellow employees who fail to use safety equipment/procedures.	My co-workers were ready to talk to fellow employees who failed to use safety equipment/procedures.
My co-workers are prepared to stop others from working dangerously.	My co-workers were prepared to stop others from working dangerously.
My colleagues encourage each other to work safely.	My colleagues encouraged each other to work safely.

Appendix D

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Have you…

- **Worked in a high safety risk job**
- **Recently left your job**

... If so, I need you!

Hello, my name is Cassandra Cottle and I am currently studying towards a M.Sc. in Applied Psychology at the University of Canterbury. As part of course requirements, I am required to undertake a year-long dissertation/research project. The purpose of the current research project is to investigate safety issues in the workplace.

I am currently seeking participants whom have previously worked in a high safety risk job and over 18 years of age. Your involvement in this project will be the completion of a workplace safety survey, which will take approximately 10-20minutes. In return you will receive a $10 Café 101 voucher.

The survey is entirely anonymous and confidential. We guarantee that no one outside our research group will have access to your data. This includes myself, Associate Professor Chris Burt and Dr. Katharina Näswall. This study has been reviewed and approved by the University of Canterbury Human Ethics Committee.

If you are interested or would like any further information, please email me at: ckc34@uclive.ac.nz

Thank you for your time.

Kind regards,

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