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Safety citizenship behaviour: a proactive approach to risk management

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Risk management is an integral part of industrial business due to its high environmental, human, legal and financial implications, especially in the oil and gas industry. There are two dimensions to risk management: technical mechanisms and human behaviours. The technical risk management systems have been developed highly. Organizations are now focusing on building a human risk management system, which means limiting risky behaviours and enhancing safety behaviours. It has been found that compliance with safety rules and regulations is influential in lowering the risk of accidents. However, safety researchers have realized that in order to achieve high safety levels, mere compliance is not sufficient. Organizations need individuals who are also proactive in participating and initiating improvements in safety. These types of proactive behaviours are termed as safety citizenship behaviours (SCBs). This study investigates the concept of SCB, and aims to understand the motivators and consequences for employees engaging in these types of behaviours. The study is based on 24 semi-structured interviews with supervisory-level employees in an oil and gas organization. The findings indicate that a positive safety culture was an influential factor in encouraging people to participate in SCBs, in addition to the innate human need for self-preservation. Previous research indicated that compliance behaviour bears consequences like employee role overload, stress and work–family conflict, but interestingly, SCBs did not show any of these negative effects. However, results suggested other causes for role overload and stress. These issues are discussed with relevance to the work context of the employees.

Keywords: risk management; safety compliance; safety citizenship; safety culture

Introduction

Safety is a major concern in high-risk/high-consequence industries such as nuclear, aviation and oil and gas due to the high human and financial costs at stake. Incident reports of disasters like Chernobyl (1986) and Piper Alpha (1988) have consistently shown that human error is the leading cause of such accidents. Also, most on-the-job injuries appear to result from employees' unsafe acts. Therefore, organizations have been paying considerable attention to establishing good safety management processes. The traditional approach of safety management was narrowly focused on technical factors such as design of equipment, safety policies and programmes. Subsequent investigations indicated that a behaviour-oriented approach is needed because it is becoming apparent that employee attitudes and behaviours govern how they identify risks in the workplace (Specht et al. 2006). In recent years there has been increasing focus on improving compliance behaviour in terms of following

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safety rules and regulations (DeJoy et al. 2004). However, safety researchers soon realized that compliance was not sufficient to minimize the risk of adverse events; and that individuals need to be proactive in dealing with safety issues. This drive to improve safety is demonstrated in behaviours like helping co-workers, promoting safety programmes, demonstrating initiative, suggesting changes for improving safety, and can be collectively known as safety citizenship behaviours (SCBs) (Hofmann, Morgeson, and Gerras 2003). The following section will discuss SCB in detail.

SCB

In the past, researchers have proposed constructs similar to SCB such as safety initiatives and safety participation, which have shown a positive correlation with lower frequency of accidents (Simard and Marchand 1994; Neal and Griffin 1997). SCB, however, is a higher-order construct consisting of various behaviours such as stewardship, voicing one's opinions, helping co-workers, whistle-blowing (reporting unsafe acts), initiating workplace change and civic virtue (keeping informed). SCB stems from organizational citizenship behaviour (OCB). Therefore, just like OCB, SCBs can be defined as behaviours that are discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promote the effective functioning of the organization. The concept of citizenship behaviour is based on the principle of reciprocity i.e. employees tend to reciprocate a high-quality relationship with their supervisor (i.e. relationship based on trust, support and fairness) by engaging in behaviours valuable to the organization. Since it is well known that safety is a valued behaviour in a high-risk industry, it is likely that employees would choose to perform safe behaviours (Hofmann, Morgeson, and Gerras 2003).

In order to understand SCB, it is important to understand its counterpart, safety compliance behaviour, which is outlined in the following section.

Safety compliance behaviour

Achieving compliance with safety rules and regulations continues to be a high priority in high-risk industries (Neal and Griffin 2000). Safety compliance involves following rules and regulations, wearing protective clothing, avoiding risky practices, etc. Although some research indicates that there is a correlation of 0.47–0.64 between safety compliance and SCBs, in most cases it was observed that employees exhibit higher levels of compliance than citizenship behaviours (Neal, Griffin, and Hart 2000; Neal and Griffin 2006; Zacharatos, Berson, and Iverson 2005). While safety compliance ensures control and rigid implementation of rules, SCBs allow employees to use their discretion with respect to safety of their work which in turn is likely to increase their safety consciousness. Both these types of behaviour are important for good safety performance and have been shown to lead to a reduction in accidents and injuries (Clarke 2006). Given the previous findings, the first research question was: *Are employees engaging in higher levels of safety compliance than SCBs?*

The aim of this paper was to also understand what causes employees to participate in SCBs. The next section discusses the potential motivators of SCBs.

Motivators of SCB

Since SCB is a fairly new concept, most of the work on citizenship behaviour is in the area of OCB. Literature shows that characteristics related to one's job such as job satisfaction, organizational commitment and supervisor fairness are the driving forces for employees to engage in citizenship behaviours (Podsakoff et al. 2000). As for SCB, a study indicated that effective working relationships between leaders and subordinates and a positive safety climate (where safety is emphasized and valued) contributed to higher levels of subordinate SCBs (Hofmann, Morgeson, and Gerras 2003). However, this study was conducted in a military setting where the army unit was responsible for the transportation of heavy equipment. The aim is to investigate how SCB operates in the oil and gas industry. Hence, the second research question was: *What are the motivating factors for employees to engage in SCBs?*

Also, most of the research has been guided by the positive assumption that 'good soldiers/citizens' have good motives; i.e., looking at only positive factors and overlooking other plausible motives (particularly self-serving). Bolino, Turnley, and Niehoff (2004) suggested that there can be self-serving motives for engaging in citizenship behaviours, such as making oneself look good in front of others, or even wanting to make others look bad by volunteering for extra work, making up for lost time or dissatisfaction with one's own personal duties, and therefore, engaging in other tasks. There are therefore contradictory proposals as to why people might engage in SCBs. Hence, the next research question was: *Are employees influenced by self-serving motives such as, expectation of rewards, promotions, boosting self-image or dis-interest in in-role duties?*

Having proposed possible motivators of SCBs, the next section will discuss the consequences of SCB at an individual level.

Individual-level consequences of SCB

Citizenship behaviours have always been conceived as a contributing factor to individual and organizational effectiveness. Although previous research indicated instances where high levels of OCBs led to a drop in organizational performance, this assumption has only recently been challenged (Bolino, Turnley, and Niehoff 2004). A study on 196 university alumni showed that a type of citizenship behaviour (i.e. individual initiative) was associated with high levels of role overload, job stress and work-family conflict (Bolino and Turnley 2005). Therefore, in addition to organizational-level consequences, there can be implications at an individual level. This study will only focus on individual-level consequences because of insufficient data to test for organizational-level effects and will investigate whether SCBs lead to similar consequences as outlined earlier.

Role overload describes situations where individuals are pressured to handle many responsibilities or perform too many activities with restrictions on the time, training and resources available (Mullen 2004). As discussed earlier, SCBs are acts which go beyond one's formally prescribed duties (according to the definition). Therefore, it is expected that employees who do not have enough time or resources to fulfil in-role duties might feel pressured about having to engage in these extra citizenship behaviours such as monitoring new team members to ensure they are working safely, taking action to stop safety violations. This led to research question 4: *Is SCB associated with higher levels of role overload?*

Stress in general has been defined as a condition or feeling experienced when a person perceives that 'demands exceed the personal and social resources the individual is able to mobilize' (Lazarus 1966). So we expected that individuals who engage in SCBs might also experience stress. This led to research question 5: *Is SCB associated with higher levels of job stress?*

Work–family conflict is one type of role conflict in which work role demands interfere with family role demands (Greenhaus and Beutell 1985). When employees have to work more in their jobs, it is anticipated that they will find less time and energy for their family duties. In most oil and gas companies employees follow a shift pattern. In the organization where this study has been conducted, off-shore employees work 2 weeks (12-hours shifts with no rest days) and get a break for 2 weeks. On-shore employees also work on a shift basis but work for 9 hours per day. The unusual work pattern in this industry makes it interesting to study the effect that active involvement in safety behaviours can have on employees' work–family life. Hence, research question 6 asked: *Is SCB associated with higher levels of work–family conflict?*

Method

The survey was administered in a UK-based oil and gas production company. Supervisory-level employees ($n=24$) from this company were interviewed and were also asked to complete a short questionnaire. The interviews were conducted with the purpose of gaining an understanding of why individuals engaged in SCBs and the consequences of these behaviours on them. The questionnaire measured their levels of safety compliance behaviour and SCB.

Research participants

The participants were employees in supervisory roles. The Health and Safety officer of the company selected interviewees depending upon their availability and their willingness to participate. The participants' mean age was 40 years and mean work experience was 14 years. All the participants were male and had families. One-third of the sample worked off-shore and the rest were on-shore employees. They belonged to various job categories such as production, maintenance, electrical and mechanical engineering.

Research method

Supervisors were interviewed, and were tape-recorded with their consent. Ethical permission for the study was granted by the School of Psychology Ethics Committee. The interview questions were adapted from the survey items used by Bolino and Turnley (2005). The interviews followed a semi-structured pattern where interviewees were asked specific questions, but probing was used when responses were not informative enough. They were asked to describe their experiences at work whenever relevant. Interviews were conducted on the work-sites but in a closed room so that there was least distraction.

The duration of each interview ranged from 25 to 45 minutes. An information sheet was handed to every interviewee highlighting the purpose, confidentiality and

anonymity of the interviews. Each interviewee signed a consent form for being audio-taped and the data were to be used in a de-identified manner for research.

The questionnaire measure given to each interviewee at the end of the interview was a 15-item measure consisting of items relating to safety-specific compliance behaviour and citizenship behaviour. Seven items measured safety compliance behaviour (Offshore Safety Questionnaire; Mearns, Whitaker, and Flin 2001) and eight items measured SCB (Hofmann, Morgeson, and Gerras 2003). A five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used such that higher scores reflected higher levels of safety compliance and SCBs. Examples of safety compliance behaviours are following safety rules and procedures, adhering to codes of practice even under pressure, not taking chances or shortcuts to get the job done. Examples of SCBs are helping teach safety procedures to new team members, trying to change policies and procedures to make them safer. The mean scores obtained on these scales were used to make a comparison to see whether there was a difference in the frequency of performance of both these types of behaviours.

Data analysis

Two raters coded the interview data in order to agree on common themes in the interview data. The frequency of these themes was then coded by the raters.

The responses for role overload, work stress and work–family conflict were coded into ‘yes’, ‘no’ and ‘sometimes’ categories. The SCB ratings were coded into high, medium and low scores categories. Cramer’s V was calculated in order to test for the associations between SCB and role overload, work stress and work–family conflict. Cramer’s V is a non-parametric test to measure the strength of association between two categorical variables with more than two categories (Field 2000).

In order to compare the frequency of safety compliance with SCB, a t -test was calculated on the mean scores. Among the 15 items in the questionnaire, four were negatively worded items and therefore, reverse-coded for analysis.

Research findings and implications

Safety compliance versus SCBs

Relating to the first research question, we found that the mean score of engaging in safety compliance behaviours was 4.33 ($SD=0.43$) and the mean score of SCBs was 4.35 ($SD=0.51$) (on a scale of 1–5). Overall, this indicated high levels of safety behaviour for the present sample. The t -test results showed that there was no significant difference in the mean scores of these behaviours ($t=0.18$, ns). The lack of any significant difference between the two means indicated that employees reported that they were engaging in similar high levels of SCBs and safety compliance behaviours. This is an interesting and positive finding because it means that people are not only working to the rules but are also taking a participative approach to safety, which coupled together benefits safety performance.

Motivators of SCBs

The study investigated the motivators of SCBs. The interviewees were asked what motivated them to engage in SCBs. Several themes emerged from the responses. These themes fell into three levels: individual-, group- and organizational-level

Table 1. Motivators of safety citizenship behaviours.

Level	Motivators	Frequency of response
Individual	1. Self preservation (people want to go home safe/I want to be safe/we don't want to hurt ourselves)	11
	2. Individual priority (care for others/responsible for own safety/personal enthusiasm)	
Group	Team spirit/peer pressure	2
Organizational	Culture (it is the way we do things here/everyone is safety-conscious/we are told or expected to observe safety/we have safety programs like SUSA)	14

Note: SUSA: Safe and Unsafe Acts Programme.

categories. The frequencies of the themes are shown in Table 1. Some mentioned more than one response.

The interview results suggested that a strong safety culture is a significant motivator of SCB. Some of the interview examples indicating a safe culture are as follows: 'Safety is mentioned all the time'; 'Everybody is regular with meetings, day by day toolbox talks, debriefs, therefore each day is to identify hazards. We follow SUSA [Safe and Unsafe Acts Programme] – it's a safe culture'; 'We have a strong safety culture, not just management walking about, but it is right through all levels. It is embedded in the culture to work safely'. Although the literature defines safety culture in various ways, it perhaps can be most succinctly expressed as 'attitudes, beliefs, and values of the organization which act as prescriptions for the way in which organizational members should work' (Clarke 1999). There is a considerable amount of evidence showing a link between positive safety culture and safety behaviour (Hofmann and Morgeson 1999; Neal and Griffin 2000, 2006; Neal, Griffin, and Hart 2000). The underlying message from our findings is that an environment that values safety and incorporates these values into all levels of the organization encourages employees to take more initiative in improving safety. The findings also indicate that citizenship behaviours do not occur in a vacuum. These behaviours are either encouraged or discouraged by organizational context (e.g., support and prioritization of safety). Hence, organizations should focus on developing their culture in order to achieve higher safety performance. Team spirit and peer pressure are other motivators of SCB, but to a much lesser extent. They are influenced by group-level culture (Zohar and Luria 2005) and hence can be classified as group-level motivators. In the current study, the employees worked in teams of five or six, where a group-level culture is likely to develop.

Another reason for employees to engage in SCBs is the need for self-preservation. Six responses fell in this category. It has been stated in popular need theories like Maslow's (1943) hierarchy of needs that security is a basic human instinct. Therefore, it comes as no surprise that protecting oneself from danger and risks is an important drive for human behaviour. In addition, five individuals stated that working safely was an individual priority. In other words, they see it as a responsibility to care for others and their own safety. Both self-preservation and individual priority have been categorized as individual-level variables.

Discretionary nature of SCB

As per the definition of OCB (as noted previously), all citizenship behaviours are discretionary (Organ 1988). However, this assumption has been challenged by other researchers. Some researchers (Morrison 1994) have argued that behaviours which are considered 'extra' by employees are actually considered part of the jobs by their supervisors/managers (Lam, Hui, and Law 1999; Moideenkutty 2005). Also, it is possible that employees themselves include citizenship behaviours as part of their jobs (Podsakoff et al. 2000). This study found that SCBs are not considered discretionary because employees view SCBs as expected or duty-bound behaviours. This is also because of the influence of safety culture. Responses like: 'People are told to observe safety around here'; 'It's not part of job description, but it is expected'; 'To look out for our own safety and not get hurt, it is our duty to do that' indicate that SCBs are not considered discretionary by some employees.

Consequences of SCB

One of the research questions was whether employees performing high levels of SCB experienced role overload, stress and work-family conflict. The results show that there is no significant correlation between SCB and the three consequence variables. Table 2 shows the values obtained for Cramer's V statistic.

Although engaging in SCBs was not associated with employee role overload, stress levels and work-family conflict, the interview responses revealed other interesting findings. Thirteen interviewees admitted to experiencing role overload. The causes can be categorized into external and internal categories. Organization-related factors such as shortage of resources and training, time/work pressure, growing organization, setting unrealistic goals, were classified as the external causes. The internal causes (that reflect the individual characteristics such as skills, behaviour, and attitude) were lack of prioritization, lack of skills and also self-imposition/self-infliction. These findings help us to understand the challenges faced by the oil and gas industry (e.g., production versus safety, high-stake financial targets) and the aspects which set it apart from other work contexts. Half of the respondents reported experiencing stress and the rest did not. The reasons were similar to those mentioned previously.

The findings for work-family conflict were very positive; 16 individuals felt that they did not experience any problems balancing work and family activities. Employees seemed to be used to the nature of the work (e.g. shift pattern, unexpected events) and planned their life accordingly. Even off-shore workers

Table 2. Responses for role overload, work stress and work-family conflict and their association with SCBs.

	Frequencies			(Cramer's V)
	Yes	No	Sometimes	Association with SCBs
1. Role overload	13	9	2	0.44, ns
2. Stress	9	9	6	0.55, ns
3. Work-family conflict	6	16	2	0.52, ns

Note: ns: non-significant.

reported being quite comfortable with their routine, although they lost some time adapting to the home mode. There is also some evidence of management support for special or emergency needs, which helped employees to cope with the unusual work pattern.

Conclusion

This research study has revealed some interesting findings with respect to SCBs as a proactive approach to risk management. The results indicate that the motives and consequences for SCBs in the oil and gas industry are different from the traditional ones given in the literature on OCB. Organizational-level variables like strong safety culture and individual-level variables like self-preservation were found to be the strongest motivators of SCBs. SCBs do not seem to affect employees' workload, stress levels or work–family conflict. Another finding is that in the oil and gas industry, employees engage in similar levels of safety compliance and SCBs. There is also some evidence that SCBs are not considered 'discretionary'. It seems that when safety is endorsed at every stage and every level, the gap between what one is 'expected' to do and what 'more' one can do is reduced considerably. This also indicates the influence of safety culture. In summary, the present study shows that SCB is a potential area which organizations should focus on in their efforts to combat risks. Also, it indicates the extent to which findings in one industry and national culture generalize to another.

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