

Managers' viewpoint on factors influencing their commitment to safety: an empirical investigation in five Finnish industrial organisations

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Abstract

Managers' strong commitment to safety is a key element of a successful safety management, culture and climate. Several studies have approached managers' commitment from the employees' point of view, but research approaching commitment from the managers' viewpoint is scarce. This qualitative study aims to identify the organisational factors that hinder or promote managers' commitment to safety and to suggest organisational measures that can be applied to support managers' commitment to safety. A total of 49 managers in five industrial organisations were interviewed. In addition, a workshop for the safety professionals of the participating companies was organised to review the interview results and to suggest organisational measures to support managers' commitment to safety.

The managers identified role overload, production demands, overly formal safety procedures, external safety goals, workforce attitudes and managers' attitudes as the most common factors hindering their commitment to safety. On the other hand, the factors that promote managers' commitment to safety are increasing managers' safety awareness, influencing managers' safety attitudes, recognising managers' safety commitment, emphasising managers' safety responsibilities, developing adequate organisational safety procedures, superiors' encouragement and support, benchmarking others' safety activities, understanding the economic effects of safety, and safety improvement. The suggested organisational measures to support managers' commitment to safety include inspirational and participative management training; appropriate safety objectives; peer, superior and top management support; campaigns and competitions; employee safety training; and simplified safety procedures and reporting. The study expands on previous studies on supervisors' safety engagement and suggests practical organisational measures to promote managers' commitment to safety.

Keywords: safety commitment, engagement, managers' active participation, organisational support, top management

1. INTRODUCTION

In many industrial organisations, safety is a value and strategic objective (Nenonen et al., 2015). The valuation and prioritisation of safety are increasingly being evaluated by customers, employees and collaborators (Biggs and Biggs, 2013; Montero et al., 2009). Moreover, many industrial organisations nowadays procure services from external service providers and operate at multi-employer worksites where safety is of common interest (Nenonen, 2012).

Despite changes in society and various technological innovations, the number of occupational injuries has not decreased as expected during the last decades, as it did from the beginning of the 1900s until 1961 (Petersen, 2000). More recently, significant declines in rates of reported work-related injuries and illnesses have been observed among U.S. union carpenters (e.g. Lipscomb et al., 2014; McCoy et al., 2013) and in the construction industry as a whole (Welch et al., 2007). A general downward trend has also been seen in work injuries in Denmark across all sectors, but the number of injuries in the construction sector has not changed significantly in the past three decades (Lander et al., 2016; Nielsen et al., 2015). The rate of workplace injury is often seen as associated with the business cycle; a declining number of reported work injuries is observed during recessions (Asfaw et al., 2011; Boone

et al., 2006; Davies et al., 2009; Nielsen et al., 2015). In Finland, the number of occupational injuries has slightly decreased in recent years, mainly due to regulatory changes, development activities and reduced working hours (FAII, 2014). Although safety records have shown some improvement, more safety development measures are needed to meet the demand for safety development. Supporting managers' role in and commitment to safety could help organisations in this endeavor (Simola, 2005; Takala et al., 2014).

Managers have both the power and the obligation to take the necessary actions in relation to safety issues (Frick, 2013). The managerial role presumes knowledge and understanding of safety issues and procedures (Simola, 2005) as well as an understanding of the business effects of safety (Veltri et al., 2013). Managers' resources and commitment, along with organisational support, are essential to the success of safety improvements (Conchie et al., 2013; Frick, 2013; Fruhen et al., 2014; Hale et al., 2010; Hardison et al., 2014; Tappura et al., 2014). Several studies have shown that the continuous support of top management is critical to success in occupational safety interventions (Hale et al., 2010; Hasle et al., 2008; Saksvik et al., 2002). Effective organisational interventions are required to support managers and to develop procedures to help managers protect the employees' health and safety (Hale and Hovden, 1998; Hale et al., 2010; Law et al., 2011). Nevertheless, many managers lack power to take action because upper management often ignores its duty to manage safety and delegates issues to first-line supervisors without providing adequate resources, support, guidance or monitoring of the results (Frick, 2013).

Organisational structures and safety procedures should enhance managers' ability to focus on safety in their workplace, since the origins of safety problems are often at the organisational level (Cox and Griffiths, 2005; Idris et al., 2012; Skagert, 2010; Tappura et al., 2014). Many safety issues are high-level issues, and frontline managers cannot resolve them without support from upper management (Frick, 2013). To support managers in their safety role, it is important to understand their perceptions. Hence, information is needed about the organisational factors that promote and hinder managers' commitment to safety. Moreover, information and examples are needed about the implementation of organisational measures that increase managers' awareness of safety issues and their commitment to safety-related activities.

This study discusses the organisational factors that influence managers' commitment to safety, e.g. safety policies and procedures, as well as suggests organisational measures that could support their commitment. The objective of this study is to chart the factors that hinder or promote managers' commitment to safety from the managerial perspective and to complement the previous literature with empirical findings from five Finnish industrial organisations. The study expands on previous study about supervisors' engagement in safety leadership within the construction industry (Conchie et al., 2013) by providing more detailed information on the hindering and promoting factors of managers' commitment to safety in other industries. In addition, this study provides new information about organisational measures to promote managers' commitment to safety. Moreover, it examines managers' commitment to safety from their perspective, something that has not yet been extensively studied.

1.1 Managers' commitment to safety

Managers' commitment to safety can be defined as the extent to which they place a high priority on safety and how effectively they communicate and act regarding safety issues (Neal and Griffin, 2004, as cited in Fruhen et al., 2014). Engagement is often synonymous with commitment (Conchie et al., 2013) and is defined as the extent to which a person shows energy, enthusiasm, a sense of inspiration and full concentration (Schaufeli and Bakker, 2004, as cited in Conchie et al., 2013). In this study, commitment refers to managers' commitment to safety management and leadership. Several studies have suggested that an organisation's industry or operating environment are not predictive of safety

performance but that commitment to safety is important (Hale et al., 2010; Killimett, 2006; Veltri et al., 2013; Yorio and Wachter, 2013). These findings highlight the value of managers exhibiting a strong commitment to safety.

Achieving sustainable safety performance requires paying attention to both safety management systems and cultural change in organisations (Fitzgerald, 2006; Killimett, 2006). Through their actions and examples, managers can positively affect the safety culture and climate to encourage safe behaviours and activities for employees (Biggs et al., 2013; Fernández-Muñoz et al., 2007; Flin, 2003; Fruhen et al., 2014; Guldenmund, 2000, 2007; McDonald et al., 2000; Reason, 1997). In particular, leadership behaviour is important with regard to safety performance (Clarke, 2013; Griffin and Neal, 2000; Jitwasinkul et al. 2016; Kapp, 2012; Tappura and Nenonen, 2016). Both the transactional and transformational leadership styles (Bass 1985) are related to effective leadership, with the best managers demonstrating both styles when motivating employee safety participation and safety compliance (Clarke 2013; Hoffmeister et al. 2014; Kapp 2012; Tappura and Nenonen 2016). According to previous studies (Clarke 2013; Hoffmeister et al. 2014; Tappura and Nenonen 2016), specific leadership facets (Bass 1985) are emphasised with regard to safety performance. They include: idealised influence (such as being a role model for safety and creating trusting relationships), inspirational motivation (such as fostering safety goals and using inspirational appeals), intellectual stimulation (such as empowering and consulting with employees) and active management by exception (such as monitoring employees' safety behaviour, encouraging safety related learning and sanctioning rule violations). Managers who successfully demonstrate honest and consistent prioritisation of worker safety can promote the development of workers' trust in the importance of safety; this may motivate workers to behave safely (Jitwasinkul et al., 2016; Törner, 2011).

Employees' perceptions of managers' commitment to safety is one of the most significant predictors of accidents and near accidents (Cohen, 1975; Hale et al., 1997; Rundmo, 1992; Smith et al., 1978) and predicts their reporting (Clarke, 1996). Moreover, managers' visible commitment is essential for employees to accept changes to the working routines (Clarke, 1996; Huse and Cummings, 1985). Management's commitment to and active participation in safety is also one major aspect of occupational health and safety systems and safety management systems (e.g. Carder and Ragan, 2003; Fernández-Muñoz et al., 2009; OHSAS 18001:2007; Redinger and Levine, 1998; Robson et al., 2007), as well as effective safety interventions (Chen et al., 2009; Hale et al., 2010; Mearns et al., 2003; O'Toole, 2002; Vinodkumar and Bhasi, 2011; Vredenburg, 2002).

Top management's commitment, active role and support are often emphasised in relation to successful safety interventions (Fernández-Muñoz et al., 2007; Hale et al., 2010; Hale and Hovden, 1998; Michael et al., 2005; OHSAS 18001:2007; Shannon et al., 1997). Employees' perceptions of senior managers' safety attitudes and behaviours form the basis of their safety behaviour and, in turn, their safety performance (Clarke, 1999; Cooper and Phillips, 1994; Cox et al., 1998; Zohar, 1980). Thus, top management should visibly demonstrate their commitment to the continual improvement of safety performance (Geldart et al., 2010; OHSAS 18002:2008). They should also ensure organisational measures and support for managers at different levels of the organisation (Frick, 2013; OHSAS 18001:2007).

Petersen (2000) suggested the following criteria for safety excellence, reflecting management's commitment to safety at different organisational levels:

- Safety system enforcing supervisory performance
- Middle managers' involvement in the threefold role of
 - Ensuring supervisory performance
 - Ensuring the quality of that supervisory performance
 - Doing something that shows commitment
- Top executives visibly demonstrating that safety is a value

According to Clarke (1999), safety attitudes and collective concern for safety should be recognised at all management levels and between different groups. Employees typically do not have direct contact with senior management; therefore, they base their perceptions on middle managers and supervisors.

Organisations with a strong management commitment to safety may improve safety performance while increasing desirable non-safety outcomes such as job satisfaction, organisational commitment and job-related performance (Michael et al., 2005). Veltri et al. (2013) stated that the top-performing organisations in operational outcomes are also the top performers in safety outcomes, and all have a supportive safety culture. For example, in these organisations, safety is a core value, they are committed to safety, and safety is an integral part of their operations. However, despite managers' essential role, some show low levels of commitment to safety and prioritise production criteria instead. Thus, the level of implementation of safety management procedures may be low, resource allocation for preventive actions could be limited, and managers may only seek avoidance of legal responsibilities when adhering to formal compliance with regulations (Fernández-Muñoz et al., 2009). Due to their central role, managers' commitment to safety should be supported in organisations to achieve real improvements in safety (Simola, 2005).

Previous research related to managers' safety commitment has focused on different managerial actions that demonstrate commitment from the employees' viewpoint (e.g. Michael et al., 2005). Conchie et al. (2013) studied supervisors' engagement in safety leadership from the managers' perspective, whereas Huang et al. (2012) examined the interconnection between employees' and supervisors' perceptions of management safety commitment. However, research approaching managers' commitment from the managers' viewpoint is scarce (Fruhen et al., 2014). While relatively little research in the safety field has focused on factors that influence managers' commitment to safety, non-safety domain factors that promote commitment have gained increasing attention (Conchie et al., 2013).

1.2 Factors that hinder or promote managers' commitment to safety

Research in the non-safety domain has shown that individual factors (Barling et al., 2000) and contextual factors in the work environment (Arvey et al., 2006) significantly affect leadership engagement. Individual factors such as personality or emotional intelligence are beyond the scope of this study and are not investigated here. This study is interested in the contextual factors because they are less frequently studied (Bommer et al., 2004; Porter and McLaughlin, 2006) and can be developed in organisations. Physical, social and organisational demands (such as hazardous work environment) and resources (such as peer support) may affect engagement positively or negatively depending on the context and whether each is perceived as a hindrance or a challenge (Conchie et al., 2013; Crawford et al., 2010; Demorouti et al., 2001). Organisational factors affecting managers' commitment to safety in the safety literature are presented in Table 1.

Table 1. Organisational factors that may hinder or promote managers' commitment to safety in the literature.

| Study | Industry | Hindering factors | Promoting factors |
|----------------------|-----------------------------|--|---|
| Conchie et al., 2013 | Construction | Role overload Production pressure Formal procedures Workforce characteristics | Social support Perceived autonomy |
| Michael et al., 2005 | Wood products manufacturing | | Developing management's knowledge about the manufacturing process Emphasising managers' role of showing personal concern for employee safety Developing consistent safety attitudes and actions among production managers |

| Study | Industry | Hindering factors | Promoting factors |
|------------------------------|-------------------------|--|--|
| Simola, 2005 | Metal manufacturing | | Management training Safety improvement programmes |
| Tappura and Hämäläinen, 2011 | Several | | Management training and workshops with dialogue and company-specific examples |
| Fruhen et al., 2014 | Air navigation services | | Senior management training and guidance in problem-solving abilities and perceptions of others |
| Tappura et al., 2013 | Several | Underestimation of occupational accident costs | Knowledge of overall occupational accident costs |

Managers' commitment to safety arises from increased safety awareness, which may be induced by an accident or other crisis or by a training or safety improvement programme (Simola, 2005). According to Tappura and Hämäläinen (2011), commitment can be promoted by workshops and training consisting of joint dialogue that build a shared understanding of safety issues. Fruhen et al. (2014) suggested that training and guidance designed for senior managers should focus on their problem-solving abilities and perception of others to support their demonstration of a commitment to safety.

Conchie et al. (2013) identified several contextual factors hindering and promoting supervisors' commitment to safety leadership. Multiple and often conflicting role responsibilities and production pressures reduced supervisors' time for safety activities and impeded their commitment to safety. Formal procedures related to administration and discipline, as well as conflict between formal discipline procedures and their preferred style of leadership, were also regarded as hindrances. Workforce characteristics, which include subcontractor safety attitudes, inadequately skilled employees and language barriers, likewise emerged as a hindering factor. For some supervisors, a lack of management training or experience was regarded as a hindrance. Consequently, supervisors exhibited coping mechanisms such as adopting a directive approach of telling rather than consulting and adapting their leadership approach to the situation or employee, thus helping them with the role's demands. Meanwhile, social support and autonomy were perceived as the main resources promoting engagement. Providing organisational support, conveying a message that safety is the top priority and is expected from supervisors, equipping supervisors with adequate safety knowledge and providing supervisors with necessary tools supported the supervisors' safety commitment. The importance of peer support and both professional and personal relationships with co-workers was emphasised. Support and 'back-up' from managers was also perceived as crucial. Most of the supervisors agreed that managers could provide more support such as verbal recognition. Tappura et al. (2014) found that organisational support, especially support from immediate superiors and peers, is crucial in challenging safety management situations but is often insufficient.

According to Michael et al. (2005), developing managers' knowledge and understanding of the manufacturing process helps them identify unsafe working conditions, equipment or behaviours and take corrective actions reflecting their commitment to safety. Emphasising managers' and supervisors' responsibility to show personal concern for employee safety and health, to implement job training programmes, to participate in safety committees and to consider safety in job design may help improve their commitment to safety. Furthermore, developing consistent attitudes and actions, such as not allowing safety to be compromised, among production managers and supervisors helps them demonstrate such a commitment.

Tappura et al. (2013) stated that estimating overall occupational accident costs could increase managers' safety awareness and help them focus on optimal safety investments and the introduction of preventive actions; that is, it could help managers internalise the importance of safety measures from the economic perspective. However, these costs are often underestimated, which may influence

managers' commitment to safety. At the same time, instead of seeing safety as an economic or business issue, many managers perceive safety as a value in itself and as a moral obligation (Nenonen et al., 2015). Nevertheless, both perspectives are needed when developing different managers' commitment to safety.

2. MATERIALS AND METHODS

To chart managers' perceptions of the factors that hinder or promote their commitment to safety, the current study was carried out as a part of a larger interview study. The study was part of a research project called 'Safety Management – Managers' Safety Competence, Leadership and Commitment', which was carried out in 2014–2015 at Tampere University of Technology. This study was carried out in five industrial organisations (in the energy and processing industries and industrial services; Table 2). All these organisations emphasise safety as a strategic goal and have carried out successful work to improve occupational safety. The motivation for the study of the participating organisations arose from their need to better support managers in their safety role to improve occupational health and safety. Managerial work is studied in the organisational context based on managers' formal position (Grint, 2005). Thus, the focus is on the managerial viewpoint, as well as the organisational factors and measures supporting the managers' safety role (management and leadership). The study is based on managers' thematic interviews (n = 49) about the five participating companies. It used a qualitative research strategy, which is suitable to its exploratory nature and its focus on the managers' perceptions of the topic (Creswell, 2013; Palys, 2003). Moreover, it strives to deepen the understanding of the studied phenomenon (Patton, 2001; Stenbacka, 2001).

Interviews were considered the most appropriate way to draw open and sincere insights about the managers' perceptions. The validity of the study was improved by choosing an adequate number and quality of informants from different organisations (Stenbacka, 2001).

Table 2. Background information about the participating organisations: 2014.

| Company | Industry | Turnover | Number of employees | Number of interviewees |
|---------|---------------------|---------------|---------------------|------------------------|
| A | Energy | €819 million | 1,500 | 15 |
| B | Industrial services | €640 million | 7,800 | 14 |
| C | Chemical processing | | 550 | 7 |
| D | Industrial services | €100+ million | 700 | 7 |
| E | Industrial services | €13 million | 320 | 6 |

Purposive sampling was applied to recruit interviewees from different organisational levels and different business units within the participating organisations. The organisations' safety professionals were asked to identify and invite the interviewees who presented different levels of safety experience, awareness and attitudes to avoid self-selection bias in the original population. The number of interviewees per organisation varied depending on the size of the organisation and the interviewees' availability. The interviewees were middle managers and line managers, including production managers, maintenance managers, project managers and supervisors. One of the two researchers (the first or second author) scheduled and conducted each interview. In the larger interview study, thematic interviews were used to explore the managers' perceptions of their safety competence, leadership and commitment. In the current study, the interviews were used to explore the organisational factors that managers perceive as hindering or promoting their commitment to safety. The interviews were conducted either individually or in focus groups of two to three participants. Three interviews were conducted by phone due to scheduling difficulties. At the beginning of each interview, occupational health and safety was defined as the perspective on safety in this study. The anonymity and confidentiality of the responses was emphasised during the interviews to facilitate interviewees' free and open responses, which improves the validity of qualitative research (Stenbacka, 2001). Moreover, managers could freely express both safety management and leadership

related issues in the interviews. Interviews were conducted between May 2014 and January 2015 and lasted between 30 and 60 minutes.

A specific hypothesis was not set, but decreasing hindering factors and increasing promoting factors were regarded as measures that positively influence the managers' commitment to safety. The results of the study are based on the following research questions:

- What are the factors that hinder managers' commitment to safety?
- What are the factors that promote managers' commitment to safety?
- Through what kind of organisational measures can managers' commitment to safety be promoted?

The interview data were recorded and transcribed with the participants' permission. Qualitative data analysis was used to create new knowledge of the studied phenomenon (Patton, 2001) and build theory upon the empirical data. In the qualitative data analysis, a phenomenological approach (Patton, 2001) was used, since it emphasises the participants' perceptions and experience of the studied subject. An inductive approach (Boyatzis, 1998) was used to categorise the hindering and promoting factors under main themes in accordance with thematic analysis. The transcriptions of each of the interviews were thoroughly explored, and all the mentions related to each theme were summarised in a data table. Quotations that illustrated the findings well were selected from the data. The researchers then compared the theme categorisation with the findings from previous studies (Conchie et al., 2013). Similar categories were named accordingly, and several new categories were found. Moreover, typical examples of each factor were presented.

The interview data were reviewed during a workshop in March 2015. The workshop participants (n = 9) were safety professionals of the participating companies and the research organisation. The researcher (the main author) presented the interview data table with theme categories to the participants. The participants added to the data by suggesting organisational measures that could support managers' commitment to safety in each category.

3. RESULTS AND DISCUSSION

3.1 Managers' perceptions of the organisational factors hindering their commitment to safety

Based on the results, the most important organisational factors hindering managers' commitment were categorised. Examples of each category are presented in Table 3. Relevant categories were named based on the previous literature (Conchie et al., 2013), and new categories were added. The categories are as follows: managerial role overload, conflicting production demands, overly formal safety procedures, inability to influence the setting of safety goals, employees' negative attitudes towards safety, and management attitudes and appreciation of safety at different organisational levels.

Table 3. Categorisation of organisational factors hindering managers' commitment to safety.

| Category | Examples |
|--|---|
| Role overload (Conchie et al., 2013) | A lot of managerial activities Lack of resources, e.g. time, for safety activities Time-consuming safety administration and paperwork |
| Production pressure (Conchie et al., 2013) | Daily production activities and revenue are prioritised Office work impedes being present and supervising at work sites |
| Formal safety procedures | Slow procurement process for safety equipment Complicated registration procedures and systems Too many safety meetings |
| Safety goals | External safety goals Inability to influence goal setting Tightening of safety goals despite previous goals not being achieved |
| Employee attitudes | Negative attitudes during safety meetings |

| Category | Examples |
|----------------------|--|
| Management attitudes | Negative attitudes towards safety among senior employees Making unnecessary safety notifications Disinterest in safety Not perceiving safety as a necessity Overlooking safety negligence Shooting down safety proposals Conflicting safety alignments between different managerial levels Unfairness and unequal treatment of managers Neglecting formal safety procedures, e.g. issuing a warning Resistance to changes and new safety procedures |

The managers' role overload was due to numerous managerial activities in addition to safety work and a lack of resources for safety activities. Safety work was often seen as taking time from productive work, thus being extra work. Sometimes, safety work was done only when convenient as managers stated:

‘Even if there were enough will, one must prioritise the most important tasks to get euros.’

‘Sometimes there are better times, when there is less work to do. One can arrange safety work and other activities that are not done daily.’

According to Conchie et al. (2013), supervisors perceived multiple and often conflicting role responsibilities as hindering safety leadership. Role overload was seen to reduce the amount of time that supervisors have to focus on safety, since safety is generally regarded as a distinct component alongside production that is fulfilled when other responsibilities are less demanding. Many managers see the importance of safety but still consider it separate from operational work.

In the present study, production pressure hinders managers' commitment due to the perception that production is prioritised over safety. In many organisations, however, top management emphasises safety over production. But this emphasis does not always appear at the supervisor level, and resources for safety work may be insufficient. Managers may have operative work at the office and cannot be present at work sites even if they wanted to be. This is in line with the study of Conchie et al. (2013), where supervisors perceived that they have less opportunity to supervise and coach employees in times of high production pressure.

Overly formal safety procedures, such as a slow procurement process or complicated registration procedures of safety reports, impede managers' commitment to safety work. They delay the implementation of safety improvement activities or take time from practical safety work, and managers cannot do much about them. Too many separate safety meetings or an excessively formal perspective on safety in meetings may also make managers tired of safety:

‘Lack of time is the biggest problem. There'll soon be too many safety meetings.’

External safety goals (safety goals coming from the outside, e.g. from the corporate group level) negatively affect managers' commitment, since managers are unable to influence the setting or tightening of the goals:

‘These safety goals are dull because it is not possible to personally influence them, since they come from somewhere else. They are only goals.’

Both employees' and other managers' negative attitudes towards safety were also perceived as hindering factors. Employees' negative attitudes may appear as negative comments or passive

participation during safety meetings. They affect the safety climate of an organisation as well as the implementation of agreed safety procedures. They may also increase managers' tasks, such as when employees report unnecessary or inappropriate safety notifications. Interestingly, many managers felt that they had the 'right' attitude but that some other managers did not. They saw that other managers were not interested enough in safety and its necessity, neglected fixed safety procedures or resisted new safety procedures:

'Many of my colleagues have difficulties with their attitude towards safety. This is seen in their opinions and comments and in their resistance to new things.'

'A lack of common rules and the fact that all the managers are not committed to obeying the rules weaken the safety culture.'

The conflicting safety alignments between different managerial levels and business lines were perceived as making commitment to the organisation's safety policy difficult, since some managers experienced conflicting expectations from their superiors:

'It is difficult that my own superior's and top management's safety messages are conflicting. I cannot do much in this kind of situation. The top management safety message is clear, and the business line manager's message should be in line with it.'

Thus, the managers were not supported or were even encouraged to neglect the organisation's safety procedures. According to Tappura et al. (2014), inadequate support from the managers' superiors was a key challenge for some managers, as the principal support was expected to come from one's superior.

The top management in particular has a significant role in hindering lower-level managers' commitment, since the top management's attitudes towards and the valuation of safety are reflected in the managers' safety practice. Despite the lower-level managers' high level of commitment to safety, top management's expression of disinterest in safety was seen to affect the managers' commitment:

'If the senior managers' attitude to safety is one of disinterest, my safety motivation decreases.'

'My safety commitment decreases when the top management sees safety issues as a cost and extra drag on production or has a wrong safety attitude.'

The previous results are in line with the findings of Conchie et al. (2013); they confirm that the major factors hindering managers' commitment to safety are related to managers' role overload and production demands. In addition, Conchie et al. (2013) suggested that workforce characteristics, e.g. subcontractors' safety attitudes, inadequately skilled employees and language barriers, were a hindrance to supervisor safety leadership. In the present study, the interviews showed that managers perceived overly formal safety procedures, external safety goals and negative employee and management attitudes to safety as hindrances to their commitment to safety.

In conclusion, most of the interviewed managers were well aware of the importance of safety and were highly committed to it. Many managers saw safety work as an integral part of their work and could not separate commitment to safety from commitment to operation. However, they perceived many organisational factors hindering them from acting according to their understanding of what is right. They were typically genuinely concerned about their employees' safety and wellbeing. Yet the fact that they cannot always act in accordance with their understanding may unnecessarily burden managers, since they already encounter high strain in their managerial role.

3.2 Managers' perceptions of the organisational factors promoting their commitment to safety

Based on the interview results, the most important organisational factors promoting managers' commitment to safety were categorised. The categories, presented in Table 4, are as follows: increasing safety awareness among managers, influencing managers' safety attitudes, recognising managers' safety commitment, developing adequate organisational safety procedures, encouragement and support from superiors, benchmarking others' safety activities, and safety improvement. According to Conchie et al. (2013), the main categories of the factors enhancing supervisors' engagement in safety leadership were autonomy and social support, e.g. organisational support and support from managers and co-workers. Support from the organisation may raise personal awareness and attitudes of safety (Conchie et al., 2013), which in this study are categorised separately to emphasise their importance. Moreover, other categories in the present study, e.g. organisational safety procedures, support from superiors and safety benchmarking, can be seen as distinct perspectives of social support. Autonomy did not emerge as a main category here, unlike in the study of Conchie et al. (2013). In Section 3.1 on hindrance factors, managers' autonomy was discussed in relation to setting safety goals, i.e. the inability to influence the setting or tightening of the goals.

Table 4. Categorisation of organisational factors promoting managers' commitment to safety.

| Category | Examples |
|----------------------------------|--|
| Safety awareness | Increasing managers' safety awareness Understanding managers' safety role Emphasising managers' regulatory and moral responsibility to take care of employees Emphasising the effects of a positive/negative safety culture Understanding the economic effects of good/poor safety and accident costs Personal growth in relation to safety Adequate tools for accessing safety information Safety communication via various channels |
| Managers' safety attitudes | Clear safety goals, e.g. zero accidents Influencing managers' safety attitudes through inspirational training Improving safety knowledge Peer discussion and support |
| Recognition of safety commitment | Rewarding good safety results Ability to influence goal setting Resources (time) for achieving the goals provided Competitions, campaigns and bonuses Verbal recognition |
| Organisational safety procedures | Top management resourcing for, appreciation of and emphasis on safety Uniform, mandatory and scheduled safety procedures Instructions for safety procedures Support and help in safety activities |
| Support from superior | Own superior encouraging and expressing interest in safety Pressure and discussions when the safety goals are not achieved |
| Safety benchmarking | Visiting other units and learning from them Competition between units Wide participation in safety rounds Participating in forums outside the company |
| Safety improvement | Seeing the progress and the benefits of good safety level Ability to influence safety improvement |

The managers' understanding and awareness of their safety responsibilities were seen as a starting point in their commitment to safety, in line with the findings of Simola (2005). To develop their commitment, managers need information and knowledge on the expectations regarding their role. Defining and emphasising managers' safety responsibilities makes the expectations visible and helps managers adjust or develop their work accordingly. Furthermore, emphasising the various effects of safety in the organisation helps raise managers' awareness of the importance of safety, thus enhancing their commitment to it. They also perceived personal growth as important in increasing awareness of

safety issues in relation to their managerial role, and it typically arose over time as they worked in a managerial position.

‘The starting point is the manager’s own sense of responsibility, that you understand that it is part of your managerial duties to be responsible for your own and your subordinates’ safety.’

‘The manager should understand what the role of being a manager includes. If you are a manager, then you represent your company in certain issues [e.g. safety].’

The managers perceived supporting their own or other managers’ positive safety attitudes as important. Support may be provided through inspirational and participative training, such as management workshops (see also Tappura and Hämäläinen, 2011). Other kinds of peer support and discussions were also perceived as promoting factors because they helped managers in difficult situations and offered emotional support, in line with the findings of Tappura et al. (2014). Organisational support that aligns the managers’ different safety attitudes helps the highly committed managers and increases the commitment of the least committed managers, whose commitment rises along with that of the masses:

‘The commitment arises along with that of the masses when general knowledge and procedures become safer and safer over time.’

Recognition, such as rewards for and verbal recognition of good safety work, was also perceived as a promoting factor, since it motivates managers to continue their safety work and maintain their commitment (Conchie et al., 2013):

‘It promotes my safety commitment if there is department-specific follow-up and rewarding as well as a rewarding system for managers.’

‘In the end, the economic incentives are not so important. It is more important that you are recognised, that it is said aloud or written somewhere that this was well done.’

Uniform safety procedures that must be taken care of at the organisational level were perceived as promoting factor. In addition, top management’s resources, appreciation and support for safety work as well as support from others, e.g. supervisors, safety professionals and colleagues also promoted managers’ commitment to safety. Having the feeling that the support is available when needed was emphasised. This is in line with the study of Tappura et al. (2014), where these resources were perceived as support for managers in difficult situations in relation to occupational safety.

‘The fact that I can get support and help with the safety work promotes my commitment to safety.’

In addition to top management, the managers’ superiors have a central role because they are the primary source of support (Tappura et al., 2014). Support from the managers’ superiors is crucial, particularly in conflicting situations, e.g. safety versus costs:

‘The main incentive is that my own superior encourages safe work and keeps it on demand, especially in challenging situations where different solutions must be considered. The cheapest solution is not necessarily the best, but the work is done safely. It gives me the authority to act correctly.’

At the same time, pressure from upper management may also promote managers’ commitment:

‘There will be pressure and discussions [on behalf of the interviewees’ own superiors] if the unit is very far from the goals set.’

Safety benchmarking, such as visiting other units or companies, was also seen as important because it provides a wider view of safety and supports peer discussions and learning from others. Competitions between units and teams were seen as useful in motivating managers’ safety work:

‘People are interested in benchmarking between different units to hear examples and learn from best practices about how things are done elsewhere in a similar industry.’

Moreover, safety improvement itself acted as a promoting factor for managers’ commitment to safety. Managers were typically very concerned about their subordinates and their wellbeing. They were also well aware of the business effects of safety, such as customer satisfaction and costs due to accidents. In addition, they had at least organisational-level safety goals such as zero accident goals, and achieving good results motivated them:

‘It motivates me that we are able to make the work environment safer and safer over time.’

3.3 Organisational measures to support managers’ commitment to safety

The interview results were reviewed in a related workshop carried out with the participating companies. Based on the results, effective measures to support managers’ commitment to safety were suggested and are discussed in this section.

Top management’s expressed commitment (in the form of safety walks and safety communication, allocation of resources for safety activities at all managerial levels, and investment in an adequate safety management system, among others) is crucial to supporting lower-level managers’ commitment to safety. Top management should provide adequate resources, support and guidance for managers when delegating safety issues (Frick, 2013; Tappura et al., 2014). By emphasising the importance of safety as an embedded part of the production and customer expectations, as well as highlighting its economic effects, top management can reduce managers’ role conflicts and support their commitment to safety. Aside from the prioritisation of safety, providing organisational support and tools can promote that commitment (Conchie et al., 2013) and give the managers permission to do safety work. Especially, managers’ desired leadership behaviour and related skills should be supported in order to have positive effects on safety performance (Hoffmeister et al. 2014; Tappura and Nenonen 2016).

Organisational measures that support managers in their safety activities include safety procedures that are consistent, clear and easy to follow. Creating uniform safety instructions and ensuring their enforcement at all organisational levels supports managers when conflicts arise. For example, easy and mobile reporting as well as simple instructions for safety rounds help managers execute the procedures and save time for practical safety work such as supervising and coaching their subordinates. Defining clear objectives, achievable safety goals and their follow-up send the managers the message that safety is prioritised and that fulfilling the objectives is important. At its best, the follow-up is based on the department-level performance, and managers perceive that they can influence both the setting and realisation of goals.

Developing safety attitudes among all employees supports managers’ commitment to safety. This can be done through top management’s emphasis on the importance of safety in different kinds of situations, e.g. meetings, trainings, bulletins and safety walks. Compliance with the common rules should be demanded equally from all the managers to underscore the seriousness of the rules. Moreover, top management should ensure that all the managers are treated fairly and equally across

the organisation. For example, the participants suggested that the warning procedure should apply to managers as well if they do not obey the safety rules and procedures. They also recommended superior and peer discussions to support managers' commitment to safety and related procedures. Safety attitudes may also be influenced by safety knowledge, communication and training, which can lead to a more uniform safety culture and better compliance with safety procedures at the organisational level.

Providing managers with information on the expectations regarding their role and safety responsibilities increases their awareness of their responsibilities and, in turn, their commitment to safety (Simola, 2005). This can be done by defining managers' safety tasks at different organisational levels (top, middle and frontline) and providing this information to all the managers (Tappura et al., 2016). Including safety responsibilities and activities in the job description and recruitment process, e.g. interviews, supports managers' commitment to safety from the very beginning of their careers. In addition to newly recruited managers, the same information should be provided to experienced managers. Ideally, the safety responsibilities are regularly discussed with the manager's supervisor based on the organisational-level safety values and objectives. To support managers' personal growth and to express superiors' interest in safety, safety issues can be included in yearly development discussions and informal discussions. The starting point for this kind of dialogue, however, requires a certain level of safety commitment from the superiors as well. The information on managers' safety responsibilities can also be offered through a discussion with safety professionals or through safety training (Tappura and Hämäläinen, 2011).

Managers' attitudes and commitment to safety can be promoted through workshops and training consisting of joint dialogue with peers, which builds a shared understanding of safety issues and enable peer support (Conchie et al., 2013; Tappura and Hämäläinen, 2011). When management training, workshops and safety meetings enable dialogue on regulatory safety requirements, topical safety issues and related problem solving, they give managers both concrete and emotional support. This is important in helping managers in their role, particularly when they experience challenging situations for the first time (Tappura et al., 2014). Top management workshops can support upper management commitment to safety, when the focus is on their significant part as role models for lower-level managers and on their problem-solving abilities (Fruhen et al., 2014).

Recognition of good safety work supports managers' commitment to safety, since it motivates managers to do right things and maintain their commitment. Having an open and fair safety bonus system as a part of the general reward system may also support managers' commitment to safety. Recognition must not be remarkable, but small incentives can be significant for managers. Nevertheless, the easiest and cheapest way is to give public verbal or written recognition for managers. This may be done, for example, by presenting the good results in organisational-level meetings or bulletins.

Support from others such as safety, occupational health, human resource and law professionals is important since it helps managers when their own competence or resources are inadequate or they need other backup in executing the safety procedures (Tappura et al., 2014). The support can be instructions, discussions and advice in certain situation, for example, when problems arise with an employee's health. The highly committed managers typically proactively ask guidance and support from safety professionals and not only in case of urgency. Although this may burden the safety professional in the short run, it can result in more proactive safety work in the long run.

External safety training and enabling managers to visit customer sites, other units and companies also support the managers' commitment to safety because they acquire new ideas and motivation to develop safety. Encouraging managers' participation in internal audits and safety rounds across the company provides them with an opportunity to compare the safety activities of other managers and

learn from them. Competitions and campaigns between departments may also increase managers' commitment and help them engage the employees in safety work.

Managers perceived their subordinates' safety and wellbeing as a factor that promotes their commitment to safety. They felt successful when accidents did not occur and the employees were healthy. In addition, organisational-level communication of the achieved results, success stories and positive effects of safety plays an important role in committing managers to safety, since the managers consequently perceive the safety work as worthwhile and are better able to maintain their commitment to safety.

3.4 Limitations and future research

While this study suggests various organisational measures to support managers' commitment to safety, it is not without its limitations. The first limitation of this study is its scope. Even though individual factors might have an effect on the managers' commitment to safety in general (Barling et al., 2000; Conchie et al., 2013), these factors were not included in the study and did not emerge during the interviews because the focus was on the contextual factors. The individual factors are more important for the managers' personal development than for developing organisational measures to improve occupational safety. In the future, individual factors and their interaction with contextual factors should be studied to obtain new insights into this subject.

The second limitation is the chosen method. A qualitative method was chosen to gain deeper insight into the managers' perceptions in the organisational context. A phenomenological approach was suitable to analyse the qualitative data because we studied a new topic, revealing different contextual factors. However, the categorisation of the studied factors was based on a relatively small data set, and strong conclusions cannot be drawn from the data. Moreover, the categorisation of the factors was subjective but still guided the analysis of the results. Examples of the factors in each category were presented to better illustrate each category. The suggested organisational measures merely serve as examples and general guidelines to develop managers' commitment to safety and are not definite solutions. Further research should examine in detail the effects of particular organisational factors or the suggested organisational support on managers' commitment to safety.

The third limitation is that this study focused on the industries of energy, chemical processing and industrial services, and the generalisation of the results to other sectors remains unclear. However, the results are in line with those of Conchie et al. (2013) in construction, Michael et al. (2005) in wood products manufacturing and Tappura et al. (2014) in public sector service organisations, which suggests that the results can be applied to other industries. The general organisational measures to support managers are relatively consistent among industries.

Finally, the managers' perceptions were studied at various organisational levels, but the results were not analysed based on the organisational level. This is because no considerable difference emerged between the managers at different organisational levels in the preliminary analysis. They all perceived various hindering and promoting factors and expected organisational support for their commitment to safety. In future studies, the managers' need for support and supportive measures could be examined in different kinds of organisations and at different organisational levels.

4. CONCLUSION

Safety is a core business value and an integrated part of management in many industrial organisations. There is a need to support managers' consistent commitment to safety to achieve real improvements in safety. Many managers were highly committed to safety, but some still perceived safety work as extra work and not as a necessity or value even if it is outlined as such in their organisation. Some

highly committed managers also felt that they could not act as they wished in relation to safety due to the negative safety attitudes of upper management, peers or subordinates. Thus, all the managers need constant appreciation and support for safety work from top management. Thus, top management should recognise the importance of its role in motivating lower-level managers' commitment to safety. This is important in improving safety performance and can lead to other positive outcomes such as fostering favourable employee attitudes and behaviours (Michael et al., 2005).

This study explored the organisational factors hindering and promoting managers' commitment to safety from the managers' perspective. The study suggested organisational measures that can be used to increase managers' commitment to safety in various organisations. Diverse organisational measures are beneficial for improving managers' consistent commitment to safety. These measures include inspirational and participative management training; appropriate safety objectives; peer, superior and top management support; campaigns and competitions; employee safety training; and simplified safety procedures and reporting. Increasing the managers' resources for safety activities or simplifying safety activities helps them perform their daily responsibilities. Developing managers' safety awareness from the very beginning of their careers also supports their commitment due to their increased understanding of their safety responsibilities and the value of safety. A formal peer support system such as managers' forums could be beneficial, especially for less experienced managers. Managers' commitment to safety is important at all organisational levels. Top management should emphasise safety as the primary goal and prioritise it over production to support managers' commitment to safety. Upper management's support, resources and guidance are essential for lower-level managers, especially when they encounter conflicting role responsibilities. Moreover, developing consistent safety attitudes among all the managers requires top management's support.

This study contributes to safety research by extending the previous literature on managers' commitment to safety to an area that has seen scarce research. Presenting examples of the organisational factors that may hinder or promote managers' commitment to safety provides guidance for organisations, managers, safety professionals and researchers towards defining the organisational development activities that promote managers' commitment to safety. Suggesting practical organisational measures to support managers' commitment to safety helps top management in making decisions and investing in safety improvement. This study suggests that top management's appreciation, support and provision of resources for safety work best promote managers' commitment to safety. The resources include time for safety work, uniform safety procedures and tools, and training and support from superiors, peers and safety professionals.

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