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Commitment vs. Control-based Safety Practices, Safety Reputation, and Perceived Safety Climate

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Abstract

We investigated the extent to which commitment versus control-based safety practices and occupational safety reputation influence perceived safety climate. Both these variables were manipulated experimentally using a vignette approach, creating a 2 X 2 design (safety practices vs. safety reputation). We hypothesized that any effects of safety practices would be direct, as well as mediated by trust in management and affective commitment, while the effects of safety reputation would only be direct. We also expected that the interaction of safety reputation and safety practices would yield stronger effects than either of the variables operating individually. There was substantial support for the direct and indirect effects of safety practices. In contrast, safety reputation exerted neither direct nor indirect effects. There were no significant interactions. We suggest directions for further research on the optimal management of occupational safety.

Résumé

Nous avons étudié l'ampleur avec laquelle les pratiques de sécurité, centrées sur l'engagement comparativement à celles centrées sur le contrôle, et la réputation de sécurité au travail influencent la perception du climat de sécurité. Ces deux variables ont été manipulées expérimentalement par l'utilisation d'une vignette, en créant un modèle 2 x 2 (pratiques de sécurité par rapport à réputation de sécurité). Nous avons posé l'hypothèse que les pratiques de sécurité entraînaient, en plus des effets directs, des effets indirects grâce à la confiance envers les gestionnaires et l'engagement affectif, alors que la réputation de sécurité n'avait que des effets directs. Nous avons aussi envisagé que l'interaction de la réputation de sécurité et des pratiques de sécurité produisait un effet plus marqué que chacune des deux variables opérant séparément. Nos résultats ont largement corroboré l'hypothèse relative aux effets directs et indirects des pratiques de sécurité ; par contre, il s'est avéré que la réputation de sécurité n'avait ni effet direct ni indirect. Par ailleurs, il n'y avait aucune interaction significative. Nous proposons aussi quelques lignes directrices pour de nouvelles recherches sur la gestion optimale de la sécurité au travail.

Workplace safety is an issue of considerable importance for several reasons. First, deaths from occupational injuries remain unacceptably high. Second, legislation across jurisdictions requires managers to ensure that work is performed in a safe manner (e.g., Cooper, Phillips, Sutherland, & Makin, 1994). Third, the recent increase in the number of contract workers has been associated with an increase in incidents and injuries

(Kochan, Smith, Wells, & Rebitzer, 1994). Fourth, workers cite occupational safety and health as one of their primary concerns (Waldman, de la Pena, Springen, Howard, & Smith, 1989). Despite this, occupational safety remains one of the least studied phenomena in organizational behaviour, with estimates suggesting it represents less than 1% of the total amount of research (Campbell, Daft, & Hulin, 1982). The present study is one attempt to understand the effects of different safety approaches to managing occupational safety and the organization's safety reputation on perceived safety climate.

Traditionally, safety issues have been managed from one of two perspectives, that of ergonomics which

emphasizes the optimal design of equipment or that of the law, which focuses on enforcement, typically of government-imposed standards. Possibly the most frequent managerial method used to ensure occupational health and safety emphasizes compliance and enforcement of rules, together with punishment for infractions, and/or goal-setting and rewards for achieving predetermined goals (Cooper et al., 1994; Gomez-Mejia, Balkin, Cardy, & Dimick, 1997; Montgomery, 1996). All these approaches are consistent with a control-based orientation toward human resource management (Arthur, 1994; Walton, 1985), the goal of which is to attain greater efficiency and compliance or reduce costs, through punishment or rewards on the basis of specific, quantifiable outcomes. Yet it is argued that a commitment orientation to human resource management (an approach that increases employees' trust in management and commitment to the organization, for example through participation in decision-making, training opportunities, and higher wage rates), would be more effective in sustaining an organization's competitive advantage (Bloom, 1999; Pfeffer, 1998; Walton, 1985). There are now empirical data to support this idea (see Pfeffer, 1998). The data suggest that firms using commitment-based management styles have a lower turnover, more productive employees, and greater overall success than those using control-based management styles (Arthur, 1992, 1994; Becker & Huselid, 1997; Huselid, 1995).

We argue that a commitment-based approach to the management of occupational health and safety would be more effective than a control orientation and would achieve its effects because it would enhance employees' trust in management and their affective commitment to the organization. Presumably, employees who perceive their managers as acting in their best interests (including safety and health) would develop confidence in their managers' abilities and faith in their intentions, the central elements of trust in management (McAllister, 1995). Kim and Mauborgne (1997) also assert that employees' trust in management is a major determinant of work performance and critical for sustaining individual and organizational effectiveness.

Employees who perceive their managers as behaving in a way that shows concern for their safety, rather than ensuring compliance with minimal externally established standards by punishing rule violations, will also be proud of their association with the organization. Some support exists for this. For example, both transformational leadership (Barling, Weber, & Kelloway, 1996) and perceptions of procedural justice (Konovsky & Pugh, 1994) are associated with trust in management and affective commitment.

Oglivie (1987) suggested that employees' affective commitment to the organization is related to their percep-

tions of human resource management practices. Gaertner and Nollen (1989) concluded that "commitment is higher among employees who believe they are being treated as resources to be developed rather than commodities" to be bought and sold (p. 987). We believe that if employees perceive health and safety management practices to be motivated by genuine concern and respect, affective commitment may be stronger than if employees feel that health and safety practices stem from compliance with governing legislation and/or cost consciousness.

Meyer and Allen (1997) reported that both the fairness of organization-level policies and communication style (as it relates to such policies) are important antecedents to affective commitment. Employee expectations with respect to the management of health and safety may moderate the extent to which a particular experience will be related to affective commitment (Wanous, 1992). For example, if an employee anticipates significant attention to health and safety matters but experiences the reverse, affective commitment may be negatively affected. In contrast, if the employee's expectations with respect to health and safety practices are met, positive work attitudes may develop.

Employee commitment and trust in management can result in enhanced safety performance, and there are data to support this notion. For example, studies show a direct relationship between affective commitment and both individual performance (Meyer, Paunonen, Gellatly, Goffin, & Jackson, 1989) and group-level performance (Barling, Moutinho, & Kelloway, 1998; Barling, Weber et al., 1996). Similarly, there are data showing that trust in management predicts organizational citizenship (Konovsky & Pugh, 1994), which would be consistent with working safely. Thus, we are suggesting that commitment-based safety practices would affect the perceived safety climate both directly and indirectly through the mediating effects of trust in management and affective commitment.

Fombrun and Shanley (1990) drew on signalling theory (Spence, 1973) when they interpret corporate reputation as "the outcome of a competitive process in which firms signal their key characteristics to constituents [in order] to maximize their social status" (p. 234). Human resource reputation, a subset of corporate reputation, represents a collective judgement of the company's specific actions in relation to its people (Hannon & Milkovich, 1996). Some corporate-reputation researchers view a firm's reputation as a signalling device that can convey important information, including information about working conditions, to firm stakeholders (Cahan & Malone, 1995; Waddock & Graves, 1997). A positive human resource reputation may therefore be a source of competitive advantage in as much as it is a signal of organizational attractiveness.

This notion of a firm's human resource reputation as a valuable asset was embraced by *Fortune* magazine's 1996 list of "America's Most Admired Companies." That list was based on 11,000 responses to ratings on eight organizational characteristics, one of which was the ability to attract, develop, and keep talented people. Some recent research also supports the idea of human resource reputation as a source of competitive advantage. Turban and Greening (1997) hypothesized that prospective job applicants will favour "attractive" organizations because they want to work for "reputable" firms (firms that are perceived as engaging in more socially responsible activities). Turban and Greening's findings support this hypothesis, leading them to suggest that prospective applicants seem to be aware of, and consider, organizational attractiveness when choosing an employer. Assuming that the best applicants will choose to work for the most attractive firm, human resource reputation may affect competitive advantage.

An organization's reputation for occupational safety reflects an aggregated judgement about all its practices by individuals both within and outside of the organization. As such, we suggest that the nature of the link between the organization's safety reputation and occupational safety outcomes will differ from that of the link between safety practices and safety performance. More specifically, we suggest that safety reputation is a consequence of the organization's health and safety record and its health-and-safety-related public relations.

We focus on perceived safety climate as the outcome in this study for two major reasons. First, perceptions of organizational climate in general guide future behaviour (Schneider, 1975), and this is true for perceived safety climate as well (Zohar, 1980). Second, while the ultimate aim would be to understand the effects of the safety reputation and safety practices on actual safety behaviours, the obvious social value of safety behaviours in organizations demands that caution be exercised before embarking on a study in which such behaviours are manipulated.

In this study, we use a vignette approach, in which experienced managers respond to an experimentally manipulated scenario. The major strength of the vignette approach is that it maximizes internal validity. This is appropriate in this study because given safety considerations, it would be imprudent and unethical to attempt intervention studies without some prior indication that occupational safety is effected by commitment-based safety practices and safety reputation.

Pilot Study

Before undertaking the main study, the validity of the vignettes was assessed by conducting a manipulation check. For this purpose, 24 volunteers (median age = 37

years, SD = 11.21, range = 19-61 years; 12 males, 12 females) each read the vignettes depicting both the commitment and the control-based safety scenarios. We used two items (each rated on a scale of 1 to 5) to assess the commitment vs. control manipulation ("DCI-Fibres' management of health and safety is motivated essentially by the notion of employees as valuable assets" and "DCI-Fibres' management of healthy and safety is driven by government regulation and the notion of cost awareness") item recoded. These two items were combined so that a high score reflects a commitment-based approach. Likewise, occupational health and safety reputation was assessed by two items ("In general, DCI-Fibres' health and safety reputation is poor" item recoded, and "DCI-Fibres' health and safety reputation is good"). These two items were averaged so that a high score reflected a positive safety reputation.

Substantial support emerged for the validity of the commitment versus control-based manipulation (M = 4.08 vs. 2.88, t (22) = 3.63, p <.01). In contrast, the manipulation of the safety reputation variable was not valid (M = 3.8 vs. 3.61, t (22) = .45, p >.05). Accordingly, before embarking on the major study, we strengthened the safety-reputation manipulation, which resulted in the scenarios depicted in Table 1. The validity of the strengthened safety-reputation manipulation was assessed by building a manipulation check ("DCI-Fibres' has the reputation, externally, of providing a healthy and safe workplace for its employees") into the main study's questionnaire. There was then substantial support for the strengthened manipulation (M = 4.46 vs. 2.81, t (22) = 6.27, p <.01).

Method

Respondents and Procedure

Fifty-four full-time students from an executive MBA program participated voluntarily and anonymously. All participants (median age = 29 years, SD = 4, range = 23-48 years; 45 males, 9 females) had some management experience prior to enrolling in the program. Questionnaires were administered during class and distributed so that respondents sitting next to each other received different vignettes.

Experimental Manipulation

Using four different vignettes, commitment vs. control orientation and safety reputation (positive and negative) were manipulated in a 2 X 2 design. All respondents initially read the same description of a hypothetical organization:

Table 1
Contrasting Descriptions of the Positive and Negative Safety Reputation Scenarios

Positive reputation	Negative reputation
Commitment to health and safety at DCI begins at the top, with the company's CEO assuming the role of Chief Safety Officer. Another senior officer of the firm, the VP, Health and Safety, heads up the administrative complement responsible for ensuring health and safety practices. The company's mission statement clearly states the firm's commitment to a goal of zero work-related injuries or illnesses. Website pages brag about the comprehensive reporting systems that DCI plants use to track progress in the health and safety management field. DCI's leadership and accountability in the health and safety area are central to its public relations efforts. Corporate health and safety practices and achievements are regularly highlighted in internal and external communications, which portray DCI as a leader in the health and safety field. Indeed, in the firm's most recent annual report, the CEO concluded his comments by stating that excellence in health and safety is an integral part of business excellence and by renewing his commitment to ensuring that all DCI operations would embrace such a philosophy.	Commitment to health and safety at DCI derives primarily from government-mandated legislation. In common with industry practice, the VP, Human Resources or another senior officer of the firm assumes corporate responsibility for health and safety. The company's mission statement makes no mention of health-and-safety-related goals and objectives. The modest amount of health-and-safety-related data that was made available to employees, other firm stakeholders, and the general public captured information about the cost of administering health and safety programs and the number of health and safety infractions reported to provincial authorities. Any disclosure of health and safety practice is carefully crafted to ensure that DCI is portrayed as a responsible corporate citizen in terms of adherence to local health and safety regulations. In the firm's most recent annual report, the CEO stressed the need for the rigorous application of fundamental business principles, including practices that would ensure that DCI met its objective of being the lowest cost producer in the markets in which it operated.

Diverse Chemicals International (DCI), a public company trading on all of the world's major stock exchanges, is a world leader in chemistry-based fields. An aggressive innovator, DCI is well known for its Fibres Division (DCI-Fibres). DCI plants in Germany, Malaysia, and Canada produce synthetic fibres used both industrially and in the clothing and fabrics trades. The Canadian plant, located in Ontario, built 20 years ago, has undergone several renovations and expansions since that time. The plant, unionized from inception, has enjoyed reasonable levels of profitability for most of its history. Plant sales volume is strongly tied to the business cycles of a primarily US customer base.

The production process at DCI-Fibres is typical of the industry. Manufacturing techniques require the use of potentially hazardous chemicals, extreme temperatures, and dangerous machinery. Provincial health and safety legislation establishes the minimum health and safety standards to be met by heavy industry. Government inspectors may conduct site inspections at any time. The government department responsible for ensuring compliance with health and safety legislation has, however, been overtaxed for some time now; consequently, on-site inspections are rare.

The same individual was then described in all four vignettes:

Jodie Smith grew up in the shadows of the Canadian DCI-Fibres plant and has worked there, as a machine operator for the last three years."

Two different descriptions were then used to portray either a positive or a negative safety reputation. These descriptions appear in Table 1. There were also two different narratives to depict either the commitment- or the control-based approach to the management of safety practices (see Table 2).

The study therefore utilized four vignettes (in a 2 x 2 design) to depict different combinations of safety practice management style and safety reputation. Table 3 depicts these experimentally manipulated scenarios and the number of respondents for each scenario. We used a 2 X 2 design because we believed that the effect of using the combination of variables (e.g., a positive safety reputation and commitment-based safety practice) would be greater than using just one of these variables alone.

Questionnaires

To assess trust in management, we used three items from McAllister's (1995) Interpersonal Trust Scale, namely "Jodie can talk freely to his/her supervisor about

Table 2
Contrast of the Commitment- and Control-Based Safety Practices

Commitment orientation	Control orientation
Upon joining the firm, Jodie received six weeks of initial on-the-job training, which included a large dose of health and safety education. In fact, prior to commencing on-the-job training, Jodie received an in-depth introduction to the firm's practices in a three-day workshop. In addition to the heavy investment in health and safety evidenced by the firm's training programs for new hires, other examples of the company's investment in health and safety abounded. Employees had the right to refuse work, which they felt to be unsafe or unhealthy. Emergency stop buttons were located conveniently throughout the plant. Jodie knew from experience that regardless of the costs involved, employees could stop production if any employee's safety was thought to be at risk, with no threat of aversive consequences from management. Evidence of the firm's commitment to health and safety included a company-wide incentive program based in part on achieving pre-determined health and safety goals. Employees were paid to attend one or more company-sponsored health and safety refresher courses annually, and health and safety attitude and experience were important factors in the company's promotion decisions. A coworker of Jodie's, one of the union reps on a joint health and safety committee, had confirmed Jodie's impression that DCI-Fibres not only met but regularly exceeded prescribed provincial health and safety standards. Jodie also knew that the health and safety committee regularly sought input from the workforce on health and safety matters. Often such information was the basis for change as the committee was vested with the power to mandate health and safety practices at the plant. The committee's objective, according to Jodie's colleague, was to ensure that DCI-Fibres' employees had the opportunity to work in a healthy and safe environment.	Upon joining the firm, Jodie received six weeks of initial on-the-job training, which included a small amount of health and safety training obtained primarily from available government publications. Prior to commencing on-the-job training, Jodie received a plant tour and reviewed a 15-minute video on plant safety and safety regulations, which served as the sole indications of management's health and safety practices and policies. Although emergency stop buttons were available throughout the plant, Jodie and fellow workers often wondered if employees had the right to refuse work, which they felt to be unsafe or unhealthy. Jodie knew from experience that, due to the costs involved, most supervisors were extremely uptight about stoppages in production, and organizational sanctions could follow from using the stop button. Evidence of the firm's commitment to low-cost production included a company-wide incentive program based on achieving predetermined production quotas. Although there had been suggestions for company-sponsored health and safety refresher seminars, nothing had come of such recommendations. Health and safety attitude and experience were not factors in the Company's promotion decisions. A coworker of Jodie's, one of the union reps on a joint health and safety committee, had agreed with Jodie that DCI-Fibres' production managers appeared to be more concerned with making quota than with a healthy and safe workplace. The coworker explained how health and safety infractions were tracked and monitored by the health and safety committee, which reported such information to production management. Supervisors and managers rarely acted on this information and made little effort to seek input from the workforce on health and safety matters. Perhaps things would be different were the committee vested with the power to mandate health and safety practices at the plant. Some employees had wondered aloud about the objectives and purposes of the health and safety committee.

difficulties at work and know that he/she will want to listen," "Jodie's supervisor approaches his/her job with professionalism and dedication," and "Jodie's coworkers consider their supervisor to be trustworthy."

Affective commitment was measured using a revised form of Meyer and Allen's (1997) 8-item scale. Each item was changed slightly to be relevant to this study (e.g., "I would be very happy to spend the rest of my

working days with this organization" became "Jodie would be very happy to spend the rest of his/her working days with DCI-Fibres").

Perceived safety climate was assessed with a shortened, revised form of Zohar's (1980) perceived safety-climate scale. We assessed three components of perceived safety climate: (a) perceived management attitudes towards safety, (b) perceived risk in the work-

Table 3
Vignette Manipulations

	Safety practice	Safety reputation	Number of cases
Vignette 1	Commitment	Positive	14
Vignette 2	Control	Negative	13
Vignette 3	Commitment	Negative	14
Vignette 4	Control	Positive	14

Table 4
Descriptive Statistics and Internal Consistency

	M	SD	α	1	2	3	4
1. Safety practices	0.5	0.5	—				
2. Safety reputation	.51	.50	—				
3. Trust in management	2.84	.82	.82	.83*	-.08		
4. Affective commitment	2.83	.94	.87	.73*	.03	.72*	
5. Perceived safety climate	2.94	.94	.89	.88*	.16	.82*	.70*

*$p < .01$.

place, and (c) perceived effects of safe conduct on pro-motion. Three items were used to measure perceived management attitudes towards safety ("DCI-Fibres plant management is well informed about safety prob-lems and acts quickly to correct them," "Managers in the DCI-Fibres plant really care and try and reduce risk levels as much as possible," and "Plant management is willing to invest money and effort to improve the safety level"); two items assessed perceived risk in the work-place ("Jodie's chances of being involved in an accident are quite large" and "The risk level of Jodie's job con-cerns him/her quite a bit"); and one item assessed per-ceived effects of safe conduct on promotion ("Reckless behaviour by DCI-Fibres' employees results in a nega-tive evaluation of supervisors toward that worker"). Because the three components of perceived safety cli-mate were substantially correlated, we created a single measure of perceived safety climate by summing the three components.

Data Analysis

We followed Baron and Kenny's (1986) argument that three conditions must be satisfied to demonstrate the mediating roles of trust in management and affective commitment. In the first condition, the independent variable (safety practices or safety reputation) must be shown to be associated with the predicted mediator (trust in management or affective commitment). In the second condition, the mediator must be shown to be related to the outcome of interest (perceived safety cli-mate). For the third condition, when the hypothesized mediator variables (trust in management and affective commitment) are controlled statistically, previously sig-nificant relationships between the predictor and out-come variables will no longer be significant, or their magnitude will be reduced substantially. Evidence would be generated for full mediation when this rela-tionship does not differ from zero. When the magnitude of the predictor-outcome relationship is reduced sub-stantially but remains significant, Baron and Kenny (1986) suggested that multiple mediation exists. Anoth-er plausible interpretation is that partial mediation exists.

We conducted two sets of regression analyses. In the first, the mediating role of perceived trust and affective commitment in the relationship between safety practices and safety climate was investigated. In the second, the mediating role of both these variables in the relationship between safety reputation and safety climate was exam-ined. In all these analyses, we focus on the F change sta-tistic: Baron and Kenny (1986) argued that the difference in the results between the three criteria is critical in eval-uation mediation.

Table 5
Regression Analyses Testing for Direct and Mediating Effects

	R^2 change	F change	b
Effects of safety practices			
1. Safety practices predict			
Trust	.680	110.68**	.825
Affective commitment	.534	58.49**	.730
2. Mediators predict outcome			
Trust-->safety climate	.672	109.17**	.823**
Affective commitment-->safety climate	.493	50.53**	.702
3. Safety practices predict			
Safety climate	.752	157.70**	.867
Controlling trust and affective commitment	.087	20.84**	.560
Effects of safety reputation			
1. Safety reputation predicts			
Trust	.001	.042	.028
Affective commitment	.012	.373	.084
2. Mediators predict outcome			
Trust-->Safety climate	.672	109.17**	.823**
Affective commitment-->safety climate	.493	50.53**	.702
3. Safety reputation predicts			
Safety climate	.027	1.44	.164
Controlling trust and affective commitment	.087	9.31*	.218

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

Results

Descriptive statistics and internal consistency of the study variables appear in Table 4. The results of this analysis (see Table 5) show strong support for both hypotheses. First, there is substantial support for the notion that trust in management and affective commitment mediate the relationship between commitment-based safety practices and perceived safety climate: The relationships between the predictor and mediator variables (safety practices and trust in management, $\beta = .825$; safety practices and affective commitment, $\beta = .73$) and mediator and outcomes variables (trust in management and perceived safety climate, $\beta = .823$; affective commitment and perceived safety climate, $\beta = .702$) were substantial and significant. After removing the influence of the two mediators, the relationship between the predictor (safety practices) and outcome (perceived safety climate) variables was reduced substantially ($\beta = .867$ to $\beta = .56$).

In contrast, safety reputation exerted neither a direct nor an indirect effect on perceived safety climate. As can be seen from Table 5, neither the first condition (i.e., a significant association between the predictor and mediator variables), nor the third condition (i.e., significant reduction in the strength of the relationship between predictor and outcome variables after controlling for the mediators) was satisfied.

Discussion

The results of this study provide substantial support for our hypothesis concerning commitment-based safety practices. First, as predicted, the commitment-based safety approach exerted a direct effect on perceived safety climate. Just as important, our results showed that this relationship was also mediated by the trust in management and affective commitment generated by a commitment-based approach to safety practices. These findings are interesting for several reasons. First and foremost, the results suggest that refocusing efforts to enhance safety in organizations may benefit from an approach

that emphasizes a commitment orientation, rather than one that bolsters compliance with what are often minimalisitic standards achieved through isolated practices (e.g., goal-setting, feedback, punishment). Second, the present results suggest that the effects of commitment-based management practices may be more widespread than those investigated to date (Pfeffer, 1998). Third, the results of the present study reinforce the role of trust in management (Konovsky & Pugh, 1994; McAllister, 1995; Westin, 1992) and affective commitment (Barling, Moutinho, et al., 1998; Barling, Weber, et al., 1998; Meyer & Allen, 1997) as critical factors in understanding employee attitudes and behaviours in general.

Some of the vignette manipulations of safety practices and safety reputation may seem contrived. For example, is an overlap of commitment-based safety practices with negative reputations likely to be encountered in the real world? Such an overlap does seem counter-intuitive, yet we may encounter just such an overlap when a negative safety reputation is triggered by a catastrophic event. (Exxon's experience with the *Exxon Valdez* or Union Carbide's experience in Bhopal provide two cases in point.) A firm might react to a health and safety catastrophe by implementing or strengthening a commitment-based approach to health and safety management. Regardless of this commitment orientation, the firm's safety reputation is likely to be negative and to remain negative for some time. All of this suggests that the counter-intuitive vignette manipulations may be infrequent, but they are not impossible.

The results of this study suggest that in designing organizational interventions to maximize occupational safety, a commitment-based approach should be included. While our study was deliberately set up as a comparison of commitment vs. control-based approaches because of the requirements of the experimental manipulation, we believe that organizational interventions should be constructed to incorporate components of both orientations for several reasons. First, the results of the present study indicate that a commitment-based approach is more effective. In this sense, a control-based approach may be a necessary but insufficient condition for maximal safety performance. The control-based approach may ensure compliance with minimal standards and, together with the commitment orientation, may motivate employees to go beyond these minimal standards. Second, from a practical perspective, it may be difficult to get managers who use a control-based approach to agree to move away from that style of managing health and safety. They might, however, be willing to use a combination of the two styles. Third, these results focused on perceived safety climate as the outcome, rather than safe behaviours.

In contrast, the organization's safety reputation exerted no effects on perceived safety climate. Several factors may account for this. First, while the safety-reputation manipulation was successfully strengthened following the pilot study, it remains a less reliable manipulation than that of safety practices. Caution should be exercised, therefore, because a contrast of the effects of safety reputation and safety practices on the basis of the present results entails an unfair comparison (Cooper & Richardson, 1986).

Despite the strength of the findings in the current study, it would be prudent to exercise caution in interpreting their meaning. The current study was based on a vignette methodology that assessed experienced managers' perceptions of the role of commitment-and control-based safety practices and positive and negative safety reputation on perceived safety climate. Vignette studies address internal validity, which is an appropriate first step in a research program, especially where the outcome variable is of such applied significance. The current findings should be interpreted to mean that commitment-based safety practices influence perceived safety climate through the mediating effects of trust in management and affective commitment. Vignette studies, however, do not address issues of external validity, and generalizations concerning actual safety behaviours from the present results would be premature.

Our findings suggest that further research into the effects of the commitment-based approach on occupational safety would certainly be appropriate. Nonetheless, given the consequences of safety infractions, further research on the relationship between commitment-based safety practices and occupational safety should be conducted before any interventions are implemented. One avenue for such research would be to isolate the way in which safety is managed in a large number of organizations (i.e., from a commitment vs. a control orientation) and assess actual incident and injury rates in those organizations. Such research is feasible, given that it is possible to classify organizations on the basis of positive vs. negative safety records (see Zohar, 1980). Likewise, it is possible to differentiate organizations on the basis of their approach to occupational safety (Kochan et al., 1994; Rebitzer, 1995).

In conclusion, the findings of this study show that commitment-based safety practices affect perceived safety climate both directly and by enhancing trust in management and affective commitment. While these findings require replication with actual incident and injury data, contrasting organizations using commitment- versus control-based safety practices, the results of the present study suggest that the management of occupational safety might well benefit from a commitment-based approach.

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