Organizational Climate and Ineffectiveness: Evidence from 25 Outdoor Work Crew Divisions

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Organizational climate research has witnessed considerable debate surrounding the nature of the climate construct and its likely consequences. Recent discussion around total quality management adds to the debate by offering insight into the nature of high performance work climates and likely outcomes of such climates. In the current study, several different forms of organizational climate which are indicative of high performance work climates (i.e., trust, quality, cooperation, and customer orientation) were investigated as division-level predictors of organizational ineffectiveness and lost productivity (i.e., accidents and absences). Data from 25 outdoor work crew divisions of a large utility company suggest that a quality climate and climate of cooperation are associated with lower accident and absence rates. There is also evidence that an overall climate measure is related to these outcomes.

INTRODUCTION

Research into organizational climate has attempted to understand the relationship between shared cognitions of the work environment and organizational outcomes. For example, climate and culture have been shown to influence such things as accidents (Hofmann & Stetzer, 1996), absences (Martocchio, 1994), and customer service (Schneider, Parkington, & Buxton, 1980). While demonstrating predictive value in these domains, such studies use measures of climate specifically tailored

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to the outcome of interest. That is, the typical approach has been to identify a particular outcome variable of interest (e.g., safety, absence) and then construct a measure of climate (e.g., safety climate, absence climate) with these criterion measures in mind. Such an approach has been summarized by Schneider (1990), who suggests there are many types of organizational climates which influence different outcomes.

More recently, models of total quality management (TQM) have been forwarded which emphasize how climates can influence organizational effectiveness (Waldman, 1993, 1994). These efforts are noteworthy since they broaden the climate construct in two ways. First, they suggest there is a more general or global climate that typifies effective organizations. Second, they focus on broad organizational outcomes, such as quality and organizational effectiveness. Aspects of this approach are similar to that of James and James (1989; James, James, & Ashe, 1990), who suggest there is a general climate factor that is composed of multiple dimensions.

These differing perspectives on the breadth of the climate construct and its relevant organizational correlates have lead to ambiguity and debate in the climate research about the exact meaning of the climate construct (e.g., Glick, 1988; James, Joyce, & Slocum, 1988) and its importance for organizational outcomes. The present research attempts to add to the debate by identifying and integrating several climate constructs into recent theorizing on TQM. We then investigate how these constructs relate to indices of organizational ineffectiveness.

Organizational Climate

Prior to discussing climate research, however, it is important to address the distinction some have made between climate and culture. That is, some have suggested that climate focuses on how organizations function while culture addresses why they function in a certain way (Schneider, 1987). Others have noted that such distinctions are superficial and that the concepts are more similar than different (Glick, 1985). Specifically, Denison (1996) has recently suggested that climate and culture converge on a number of key points. The current research adopts these latter views, and considers climate and culture to be organizational-level work-context constructs, defined as the "multi-dimensional quality of an organization's internal environment, resulting from behaviors engaged in and policy developed by higher-level management" (Roberts, Hulin, & Rousseau, 1978, p. 32). For convenience, we will hereafter refer to such constructs as climate.

There has also been considerable debate regarding the specific definitions of climate (see Glick, 1988; James & Jones, 1974; James, Joyce & Slocum, 1988; James & Sells, 1981; Schneider, 1975), with some suggesting that early climate definitions were so broad they simply represented situational variance and structure (e.g., James & Jones, 1974). Recently, Schneider (1990) has suggested this controversy can be resolved by breaking climate down into various types. This tradition has generated research into such climates as safety (Zohar, 1980), motivation (Litwin & Stringer, 1968), customer satisfaction (Schneider, 1990), absence (Martocchio, 1994), and innovation (Delbecq & Mills, 1985).

James and James (1989; James, James, and Ashe, 1990), however, take a different approach. They identify a number of dimensions of climate and proceed to

show that a general factor underlies these perceptions, such that individuals make global assessments as to the "degree to which the overall work environment is believed to be personally beneficial versus personally detrimental to the organizational well-being of the individual" (James & James, 1989, p. 740). Thus, a point of contention in the climate literature has revolved around determining whether climate is in fact one thing or many things.

Most empirical research investigating the influence of climate on organizational outcomes has adopted the approach forwarded by Schneider (1990). In particular, recent attention has focused on the influence of specific types of climate on specific measures of organizational ineffectiveness (e.g., accident and absence rates). For example, Martocchio (1994) investigated the influence of an absence climate on individual absence. Controlling for unit size, tenure, demographics, and work attitudes, absence climate predicted individual absence. Similarly, Blau (1995) found that a lateness climate was a significant predictor of lateness. Finally, Hofmann and Stetzer (1996) discussed the role of safety climate in the accident sequence. Safety climate was found to be a significant predictor of unsafe behaviors and OSHA reportable accidents. In sum, it is clear that certain types of climate can influence organizational functioning, including ineffectiveness. What is less clear is how more global forms of climate influence such specific measures of ineffectiveness. Recent theorizing in TQM, however, helps explicate these links.

Total Quality Management

TQM seeks to optimize the work system to improve organizational effectiveness (Deming, 1986; Juran, 1988). Organizational researchers have recently delineated TQM's theoretical core and identified a number of its critical aspects (Hackman & Wageman, 1995; Waldman, 1994). Chief among these is a supportive organizational climate. For example, upper management must possess a commitment to quality and develop a climate that supports quality goals (Waldman, 1994). These shared perceptions foster cooperative efforts throughout the organization, ultimately leading to improved organizational functioning.

This conception of climate has two notable features. First, it suggests that climates characteristic of quality-oriented companies are composed of a number of more specific types. Second, it suggests that organizations with overall positive climates will be more effective. The specific nature of these climates, however, has not been clearly defined. By examining features of TQM and isolating its critical elements, it is possible to outline those aspects of climate central to organizational success.

Based on Waldman's (1994) discussion, four climate types appear necessary to create an organizational context conducive to organizational effectiveness. First, a climate supportive of quality provides an environment which fosters the pursuit of quality goals. Second, a climate of cooperation represents the extent to which individuals and groups within an organization can work together. This is particularly important since many quality improvements result from the joint efforts of organizational members. Third, a climate of trust is necessary between management and employees because employees must feel the organization supports their

quality-oriented efforts, even if it hinders short-term productivity. Finally, since taking a customer orientation is critical to providing a high level of service quality, a positive customer service climate is also critical to organizational effectiveness.

Summary and Hypotheses

When viewed in isolation, the research reviewed appears to be addressing distinctly different issues. We suggest, however, these perspectives are ultimately complementary and can be meaningfully integrated. There appear to be three issues which predominate this research and thus define the approach taken in the present research. The first involves reconciling the debate about specific or general measures of climate. While James and James (1989) suggest a general dimension underlies climate perceptions, they also show that it is composed of a number of specific dimensions. Similarly, TQM theorists imply that general forms of climate influence organizational functioning, but that these forms can be decomposed into more specific dimensions. The current perspective suggests that the specific dimensions identified by previous climate researchers represent various facets of a larger construct best conceptualized as high performance work climates. Thus, organizations who successfully adopt a TQM approach are likely to be high on a number of these climate dimensions, as will organizations who possess positive climates on the more specific measures.

The second issue involves specifying predictor-criterion relationships. That is, past research has commonly measured climates that are tapping the same construct as the criterion. For example, research on safety climate commonly investigates such things as accidents, unsafe behaviors, and intentions to perform unsafe behaviors. This research is relatively silent, however, with respect to broader criteria (e.g., satisfaction). Similarly, research into general forms of climate have commonly focused on more general outcomes such as satisfaction at the expense of identifying its impact on more specific criteria. TQM theorizing provides a conceptual mechanism to link general forms of climate to specific organizational effectiveness measures. That is, this research suggests climate influences specific organizational outcomes via its influence on the wider organizational system. Thus, high performance climates can have a pronounced impact on organizational effectiveness.

The final issue involves the nature of the criterion used in this research. That is, some have focused on the relationship of climate to effectiveness measures, while others have concentrated on indices of ineffectiveness. As noted, some have investigated customer service while others have concentrated on such things as accidents and absences. TQM research, on the other hand, has generally emphasized organizational effectiveness measures, and typically does not specify the effect of high performance climates on ineffectiveness measures. We suggest that organizations with high performance climates will not only be more effective, but will also avoid organizational ineffectiveness and lost productivity

With these considerations in mind, the present research investigates the climate dimensions identified earlier which are conceptually linked to the TQM approach and representative of high performance work climates. These are mea-

sured and tested as independent factors, although it is likely they are related to varying degrees. These climate measures are then linked to indices of ineffectiveness, namely, accidents and absences. More formally, we hypothesize that organizations which have positive quality, cooperation, trust, and customer service climates are likely to experience fewer accidents and absences.

These climate measures relate to accidents and absences for a number of reasons. For example, a climate of cooperation can lead to greater work-load sharing, assistance, and advice, particularly when confronted with high risk situations. All of these outcomes are likely to reduce the number of accidents in a work group. In fact, the importance of cooperation for accident reduction has already been demonstrated at the group level (Hofmann & Stetzer, 1996). Similarly, a climate that emphasizes quality would be more supportive of doing the job correctly the first time, minimizing the kind of shortcuts that would degrade quality and increase the likelihood of accidents. Again, the importance of time pressure has been noted in the accident sequence (Hofmann & Stetzer, 1996). With respect to absences, those climates characterized by trust and cooperation will be better places to work and would likely have lower absence rates. Finally, quality climates are likely to produce an atmosphere of commitment to team success, personal accountability, and greater intrinsic interest in the job, thus motivating better attendance.

METHOD

Sample

The data for the current investigation were collected from employees of a large utility company. All climate measures were taken from a larger employee survey that was mailed directly to employees. Accident and absence data were collected from archival records at the participating corporation. To control for opportunity and environmental risks, only divisions consisting exclusively of outdoor work crews that engage in identical tasks were included in the analyses. This resulted in a sample of 14,553 employees from 25 divisions. The divisions differed only in their location and management personnel, utilizing the same technology, structure, and work processes. Only employees in non-exempt jobs were included.

Analytic Strategy

It is imperative in cross-level research that the level of analysis and interpretation match the level of theory (Roberts, Hulin & Rousseau, 1978). However, Schneider (1990) has made an important distinction between the unit of the data and the unit of analysis. While perceptual climate data must necessarily be collected from individuals, "the analysis of individuals' perceptions may occur at any meaningful level" (Schneider, 1990, p. 388). An important determinant of the appropriate level for analysis is the frame of reference used in questionnaire items. Therefore, a statement on a survey asking employees to evaluate the quality of work done in his/her division can justifiably be aggregated with other workers in that division since the question is framed at the division level. Glick (1985) sug-

gests a similar strategy in terms of directing questions toward the organization as a whole as well as asking descriptive rather than affective questions. These strategies serve to improve the accuracy and construct validity of climate measures. All of these strategies were employed in the present study. Since the majority of items in the current investigation were framed at the division level, the proper analytic strategy is to aggregate individual perceptions to the division level. While this procedure carries with it a loss in statistical power (i.e., the actual sample size becomes 25 instead of 14,553), the manner in which the questions were phrased dictates a division-level analysis.

An additional reason we used an aggregate analytic strategy stems from the conceptual nature of the constructs under investigation. The high performance work climate measures addressed in the current study have been identified as one component of a TQM approach. Therefore, it is likely that senior management will have varying levels of commitment to creating a climate of quality, trust, cooperation and customer service. In fact, different divisions are likely to implement and support the appropriate climates with varying enthusiasm. Even though they operate within the context of a larger organization, each division is highly autonomous, with separate management and executive staff. As a result, each division is likely to have its own climate (as a function of division policy and personnel) which is distinct from other divisions (see Kozlowski & Hattrup, 1992). Finally, our strategy was similar to Waldman and Gopalakrishnan (1996) who investigated TQM factors as predictors of service quality at the division level. For these reasons, the appropriate conceptual level of analysis is the division.

When the appropriate level of analysis is identified as the group level, it is important to empirically test for aggregation justification (James, 1982; James et al., 1988). While it would have been ideal to demonstrate empirical justification for aggregation in the current study, we were unable to do so. The data collected for the current study were anonymous below the division level to satisfy the confidentiality concerns of the participating organization. That is, we were only able to link individuals to divisions and not to their individual perceptions of climate. In the present research, we adopted the viewpoint proposed by Glick (1985, 1988). Specifically, Glick notes that large sample sizes, by their nature, generate stable estimates of group-level constructs. While we cannot compute the appropriate aggregation statistics (e.g., r_{wg}), we undoubtedly have very stable estimates given the size of each of the 25 divisions.

Climate Measures

Four types of climate were investigated as independent variables in the current study. The items comprising the scales, response options, and estimates of internal consistency (Cronbach's alpha) are detailed below

Quality Climate

Overall quality climate was assessed with a six item measure. Four items had a 5-point Likert-type scale with anchors of "strongly disagree" (1) to "strongly

agree" (5). The items were as follows: "To what extent do you agree or disagree that, over all, senior management shows by their actions their commitment to quality improvements?"; "Senior management shows by their actions that quality is a top priority"; "Day-to-day decisions and activities in my work group demonstrate that quality is a top priority"; "Employees in my organization are taking steps to reduce the company's expenses without lowering quality." One item ("How would you rate the overall quality of work done in your work group?") had a 5-point response scale with anchors of "very poor" (1) and "very good" (5). Finally, one item had participants choose between several general statements about quality, each indicating different levels of organizational commitment to developing a quality climate. Alpha for this scale was .97.

Customer Service Climate

A four item measure was used to assess the customer service climate. The response scales were the same as above. The items were as follows: "Employees in my company demonstrate honesty and ethical behavior in dealing with external customers"; "Employees in my company demonstrate honesty and ethical behavior in dealing with internal customers"; "My work group uses feedback from our external customers to improve the quality of our products and/or services"; "My work group uses feedback from internal customers to improve the quality of our products and/or services." Alpha for this scale was .91.

Cooperation Climate.

A two item measure was used to assess the climate of cooperation in each division. The response scales were the same as above. The items were as follows: "Employees from different organizations work together to meet customer requirements" and "The people I work with cooperate to get the job done." Alpha for the two item scale was .85.

Climate of Trust

A two item measure was used to assess the climate of trust. The response scales were the same as above. The items were as follows: "Employees are reluctant to reveal problems or errors to management above them" and "Employees in my company demonstrate honesty and ethical behavior in dealing with other employees" (reverse scored). Alpha for this two item scale was .37. Due to the unreasonably low reliability of the climate of trust measure, this variable was excluded from further analyses.

Overall Climate

One of the purposes of this investigation is to assess the extent to which these various dimensions of climate are independent of one another and the degree to which they relate to accidents and absences. Thus, a 12 item overall climate measure was constructed consisting of the quality climate, customer service climate, and cooperation climate measures. This measure thus represents what we have pre-

viously referred to as a high performance work climate. Alpha for this 12 item scale was .95.

Outcome Measures

Accidents and absences served as dependent variables in the current study and were collected from the organization's archives for the 3 months preceding the survey and the 9 months following survey administration. That is, the survey was administered at the end of the third month of the year the archival data were collected. This 12 month period was chosen for a number of reasons. First, it provides a stable estimate of accidents and absences at the division level given that both criteria might be influenced by the time of year. Second, aggregating over a long time period provides greater opportunity for an adequate number of incidents to accumulate for two low base rate phenomena. Finally, the practice of aggregating these type of data over long time periods is quite common in the safety and absence literatures (see Hofmann & Stetzer, 1996; Martocchio, 1994).

Accidents

An accident was defined as a recordable incident, as mandated by the Occupational Safety and Health Administration standards (i.e., injuries that require more than first aid treatment). Recordable accidents that had occurred for employees in the sample during a 12 month time period surrounding the survey administration were collected. Raw accident data were aggregated and divided by the number of employees in the group, producing an aggregate accident measure for each division that indicated the number of accidents per 100 employees.

Absences

The absence data used in the present study was somewhat constrained by organizational record keeping and benefit plan design. Specifically, the organization only kept records of absences lasting longer than 7 consecutive days. Furthermore, absences lasting more than 14 consecutive days due were excluded because the company considered these absences serious, non-discretionary medical conditions (i.e., only those employees who have serious medical conditions are absent for more than 14 consecutive days). Thus, in the current investigation, an absence was defined as an employee who had missed more than 7 but less than 14 consecutive work days. Following the same procedure that was used for summarizing the accident data, the number of absences in each division during the 12 month period per 100 employees was calculated.

Restricting the measurement of absences to those with a duration of 7-14 days is recognized as a variance restricting strategy which would fail to completely capture the entire absence picture. This operationalization of absence is no doubt incomplete, and is recognized by the authors. In fact, it is our belief that climate would have a more pronounced effect on absences of durations less than 7 days. Unfortunately, these data are not available as a function of the participating orga-

nization's record keeping system. That is, the company only systematically archives absences of longer than 7 days as a result of a benefit (i.e., short term disability) that does not commence until the eighth day of absence. While less than ideal, the absence measure used in the current research provides a more conservative test of the relationship between climate and absence. Given the drawbacks associated with this absence measure, a significant association with climate merely suggests that a robust effect is operating.

Control Variables

A number of extraneous factors could influence the hypothesized relationships in the current study. For example, workers with greater tenure may be less likely to cause an accident due to their experience on the job. In a study of absence, Martocchio (1994) identified and utilized tenure as a predictor of absence. In an effort to rule out tenure as an explanation of our findings, it is used as a control variable in our analyses. Since the average age in a division was highly correlated with the average tenure in a division ($r = .98$, $p < .001$), only the average division tenure is used as a control variable. There is also evidence to suggest that absence rates may also be influenced by division size (Martocchio, 1994). Thus, division sizes were calculated for each of the 25 participating units ($M = 582$, $SD = 178$) and are also used as a control variable in our analyses.

RESULTS

Relationships between Climate Measures

Table 1 contains descriptive statistics and intercorrelations for the various climate measures. The three climate measures were all highly related to one another (r's from .86 to .91). This suggests the specific climate dimensions reflect an underlying high performance work climate factor, although definitive conclusions

Table 1. Means, Standard Deviations, and Intercorrelations Among Study Variables

Variable	*M*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
1. Tenure	19.8	2.2	–							
2. Division Size	582	178	-.17							
3. Accidents	7.9	3.4	-.67**	.19	–					
4. Absences	6.4	4.0	-.42*	.01	.70**					
5. Quality Climate	3.3	.22	.47**	.47**	-.61**	-.46*	–			
6. Customer Service Climate	3.4	.21	.50**	-.27	.58**	.45*	.87**	–		
7. Cooperation Climate	3.5	.25	.66**	-.28	-.73**	-.64**	.86**	.91**	–	
8. General Climate Factor	3.3	.21	.52**	-.42**	-.63**	-.48**	.97**	.95**	.94**	.48**

Note: $N = 25$.
* = $p < .05$, ** = $p < .01$

require factor analysis. In the current research, a factor analysis could not be completed at the division level of analysis because of low statistical power (i.e., 25 data points). We chose to analyze the climate measures separately because they may differentially relate to accidents and absences. Thus, analyzing these measures separately may provide unique insight in terms of predicting accident and absence rates.

Relationships between Climate Measures and Outcome Measures

Tables 2 through 5 provide regression results for the climate dimensions of quality, customer service, and cooperation, as well as the high performance work climate factor. Based on the bivariate relationships between tenure, division size, and the rest of the study variables (see Table 1), we controlled for their potential influence via a series of hierarchical regression analyses (Cohen & Cohen, 1983). Tenure and division size were entered in the first step with the independent variable entered in the second step. Support for our hypotheses were found if the change in R^2 in the second step is significant. Using this strategy, it is possible to evaluate the influence of climate on accidents and absences while holding tenure and division size constant.

Absences

Investigating the influence of the climate measures on absences revealed that a quality climate was a significant predictor of the absence rate in the work group such that higher average ratings of quality climate were associated with lower absence rates ($\Delta R^2 = .14, p < .05$). A climate of customer service, however, was not significantly related to absence rates ($\Delta R^2 = .09$, ns). Cooperation climate was also a significant predictor of absences such that more cooperative climates were associated with lower absence rates ($\Delta R^2 = .26, p < .01$). Finally, the overall climate factor was associated with lower absence rates ($\Delta R^2 = .14, p < .05$).

Table 2. Results of Hierarchical Regression Analysis of Absences and Accidents on Tenure, Division Size, and Quality Climate

		Criteria			
		Absences		*Accidents*	
	Predictor	*B-Weight*	ΔR^2	*B-Weight*	ΔR^2
Step 1	Control Variables				
	Tenure	-.79		-.98	
	Division Size	-.00	.19	.00	45**
Step 2	Predictor				
	Quality Climate	-8.14	.14*	-6.97	.14**

Note: * = $p < .05$, ** = $p < .01$.

Table 3. Results of Hierarchical Regression Analysis of Absences and Accidents on Tenure, Division Size, and Customer Service Climate

		Criteria			
		Absences		*Accidents*	
	Steps	*B-Weight*	ΔR^2	*B-Weight*	ΔR^2
Step 1	Control Variables				
	Tenure	-.79		-.98	
	Division Size	-.00	.19	.00	.45**
Step 2	Predictor				
	Customer Service Climate	-7.22	.09	-5.58	.08

Note: * = $p < .05$, ** = $p < .01$.

Table 4. Results of Hierarchical Regression Analysis of Absences and Accidents on Tenure, Division Size, and Climate of Cooperation

		Criteria			
		Absences		*Accidents*	
	Steps	*B-Weight*	ΔR^2	*B-Weight*	ΔR^2
Step 1	Control Variables				
	Tenure	-.79		-.98	
	Division Size	-.00	.19	.00	.45**
Step 2	Predictor				
	Cooperation Climate	11.08	.26**	-6.84	.14*

Note: * = $p < .05$, ** = $p < .01$.

Table 5. Results of Hierarchical Regression Analysis of Absences and Accidents on Tenure, Division Size, and General Climate Factor

		Criteria			
		Absences		*Accidents*	
	Steps	*B-Weight*	ΔR^2	*B-Weight*	ΔR^2
Step 1	Control Variables				
	Tenure	-.79		.98	
	Division Size	-.00	.19	.00	.45**
Step 2	Predictor				
	General Climate Factor	-9.42	.14*	-7.05	.11*

Note: * = $p < .05$, ** = $p < .01$.

Accidents

Investigating the influence of climate on accidents we found that a quality climate was a significant predictor of accidents such that more positively rated quality climates were associated with fewer accidents ($\Delta R^2 = .14$, $p < .01$). Customer service climate was unrelated to accidents ($\Delta R^2 = .08$, ns). Cooperation climate was a significant predictor of accidents such that more cooperative climates were associated with lower accident rates ($\Delta R^2 = .14$, $p < .05$). Finally, the overall climate factor was associated with lower accident rates ($\Delta R^2 = .11$, $p < .05$).

DISCUSSION

The current study investigated a constellation of high performance work climate variables identified by TQM theories (Hackman & Wageman, 1995; Waldman, 1994) as important for organizational functioning, and then linked them to objective ineffectiveness measures (i.e., absences and accidents). This approach was unique because it examined the influence of general climate measures on specific ineffectiveness measures. While specific climate types have been linked to specific outcomes (e.g., Blau, 1995; Hofmann & Stetzer, 1996; Martocchio, 1994; Schneider, Wheeler, & Cox, 1992) and there has been discussion of general climates (James & James, 1989), there have been few investigations linking the more distal general climate construct to specific outcomes, particularly indices of ineffectiveness. We found that the specific types of climates were highly related to one another, although each of the specific types provided differential predictions for accidents and absences. More specifically, we found that a climate of quality and cooperation were significantly related to both accidents and absences, while customer service was not related to either outcome. The overall climate factor was significantly related to both accidents and absences.

In general, this research suggests that an overall climate factor, which reflects high performance work climates, underlies more specific types of climates. Thus, it seems important to consider both the overall climate factor and the more specific types of climate when investigating measures of organizational ineffectiveness. While we found no relationships between customer service climate and our outcome measures, this type of climate has been shown in previous research to relate to other important organizational outcomes (e.g., customer satisfaction; Schneider, Parkington, & Buxton, 1980). It is possible that customer service climates only relate to measures of organizational effectiveness, and not the ineffectiveness criteria identified in the present study. Such a conclusion should be considered tentative, however, since statistical power was low at the division level of analysis. Perhaps more importantly, these findings offer evidence for the relationship between high performance work climates such as one might expect in organizations oriented around a TQM approach and organizational ineffectiveness (i.e., accidents and absences). This becomes increasingly important when one considers potential tradeoffs between positive and negative outcomes in organizations. That is, it is possible that organizations may sacrifice safety in pursuit of quality goals.

Furthermore, the emphasis on quality may create uncomfortable work environments where employees are forced to withdrawal through increased absenteeism. The present research found none of these tradeoffs, instead revealing that positive climates were associated with lower absences and accidents. This suggests efforts which focus on improving climates do not simply shift costs from one criteria to another (e.g., sacrifice safety in the pursuit of quality).

Limitations

The current investigation, however, is not without limitations. First, because the data is cross-sectional in nature, causality cannot be conclusively established. Second, the analyses were conducted at the division level with no empirical aggregation justification. While it has been argued that systematic between group variance alone justifies aggregation (Glick, 1985, 1988), it has also been posited that aggregate analyses should not be completed unless individual level responses demonstrate within group homogeneity (James, 1982; James et al., 1988). Finally, all climate measures were provided by respondents on the same questionnaire. While this may have inflated the intercorrelations among our scales, these concerns are mitigated somewhat by our aggregation strategy. In addition, our predictor and criterion measures were methodologically separate and independent. Thus, method bias cannot account for the present findings.

The dimensionality of the climate measures is another potential limitation. That is, due to the high intercorrelations among measures, it is unclear if these are separable factors. To address this issue a factor analysis is required. Given the small number of divisions studied, however, a factor analysis at the division level was impossible. While the pattern of results is such that these measures demonstrated differential predictive power, one cannot definitively conclude these measures tap distinct constructs. Thus, future research is needed to clarify the specific structure and relations of these climate variables and their true independence from one another.

CONCLUSION

Even with these limitations, these findings are important for a number of reasons. First, they represent a preliminary investigation into the relationship between high performance work climates and important, often neglected, indices of organizational ineffectiveness. In addition, this research provides an important empirical and conceptual link between the climate and TQM literatures. This is particularly important since there has been very little empirical work on TQM (Anderson, Rungtusanathan & Schroeder, 1994; Dean & Bowen, 1994; Spenser, 1994; Stone & Eddy, 1996; Waldman & Gopalakrishnan, 1996). In sum, the current investigation offers evidence that organizational climate may play a role in reducing negative outcomes. Because absences and accidents represent a potentially large social and financial cost to organizations, identifying methods for reducing these productivity losses is paramount. Further research should continue investigations into the

relationships among various climate measures, especially in light of interventions such as TQM which rely heavily on positive organizational climates. Finally, research should delineate the causal relationships among climate, TQM, and organizational outcomes. This should include the employee perceptions and attitudes that may mediate the relationship between climate and behavior.

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