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CENTRAL TENDENCY AND DISPERSION: TWO MEASURES OF CLIMATE IN LOCAL EMERGENCY PLANNING COMMITTEES

By

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ABSTRACT

CENTRAL TENDENCY AND DISPERSION: TWO MEASURES OF CLIMATE IN LOCAL EMERGENCY PLANNING COMMITTEES

By

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The amount of dispersion within groups on climate measures is proposed to be an interesting property in its own right in terms of understanding the climate construct, particularly in relation to member socialization and early development of organizations. A literature review is first presented addressing six areas of climate research. Local Emergency Planning Committees (LEPCs) are then described along with the benefits of using these organizations to study climate consensus and quality. Finally, a model of climate quality and consensus is presented along with hypotheses.

The proposed model was tested on 180 LEPC Chairs and 1196 LEPC members. Results indicate that climate consensus is affected, to a small degree, by socialization and structural factors. Climate quality has significant relationships with outcomes, while climate consensus does not add significantly to the variance explained by climate quality. Potential implications of these results are discussed along with interesting findings concerning aggregation.

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INTRODUCTION

Organizational climate is an important variable which mediates the relationship between environmental conditions in an organization and the behavior of individuals in that organization. As a construct, "climate" is widely recognized in industrial and organizational psychology. Organizational climate can be defined as the shared set of individual perceptions of the organizational context, features, events, and processes (James & Jones, 1974; Kozlowski & Hults, 1987). It is a single, multidimensional construct with dimensions that apply across a variety of organizations (Kopelman, Brief, & Guzzo, 1990). Organizational climate is perceived by members of the organization, serves as a basis for interpreting the situation, and acts as a source of pressure for directing activity (Abbey & Dickson, 1983). Katz and Kahn (1978) describe climate as affected by shared norms and values of members of the organization; as well as reflecting the history of internal and external struggles, the types of people attracted to the organization, its work processes and physical layout, methods of communication, and the exercise of authority within the system. These things are reflected by distinctive patterns of collective beliefs which are passed along to new group members through the socialization process.

Organizational theorists have drawn a distinction between psychological and organizational climate. Psychological climate refers to the perceptions one individual holds concerning his or her environment. Organizational climate, on the other hand, refers only to

organizational climate must be taken at the level of the individual because of the psychological processes (perceptions and feelings) which can only occur within individuals. James, Joyce and Slocum (1988) make the point that organizations themselves do not cognize. Thus, psychological climate refers to the perceptions of a single individual, while organizational climate is an aggregated measure of these perceptions across individuals.

Several issues are currently at the forefront of climate research. First, debate continues as to whether organizations contain one climate or many climates. James and colleagues (James, 1982b; Jones & James, 1979; James & James, 1989) hold that climate is a single, multidimensional construct which can be examined by similar means in various types of organizations while Schneider proposes that many climates exist in organizations (Schneider, 1987a, 1987b; Schneider & Reichers, 1983). Second, there has been some disagreement as to who should be surveyed to obtain measures of climate. Glick has asserted that climate can be measured by several methods (Glick, 1985, 1988) while James believes that climate should only be measured at the level of the individual (James, 1992a; James, Joyce, & Slocum, 1988). Third, researchers continue to examine ways of measuring consensus to bring climate from the individual level to the organization level. Several methods have been utilized, including ANOVA (Zohar, 1980), the intraclass correlation (Schneider & Bowen, 1985), and $r_{wg(j)}$ (Kozlowski & Hults, 1987). Fourth, the relationship between affect (i.e., job satisfaction) and climate is one researchers have struggled with for twenty years. In particular, Guion (1976) questioned the use of climate as a construct which is conceptually distinct from job satisfaction. Fifth, the development of climates has been raised by several authors on a theoretical level (Katz & Kahn, 1978; Schneider & Reichers, 1983), but has been virtually ignored empirically. The idea that socialization processes affect the development of climate is particularly prevalent

in the current literature (Schneider & Reichers, 1983), but has not been examined empirically. Last, there has been quite a bit of interest in other antecedents and consequences of organizational climate. Several studies have focused on the influence of demographic variables on climate quality and the subsequent effect climate quality has on measures of effectiveness (Lindell & Whitney, 1995; Kozlowski & Hults, 1987; Zohar, 1980). Each of these issues will be explored here in further detail with the primary focus of the paper concentrating on the antecedents and consequences of climate consensus.

Specifically, this paper will first address some of the theoretical and measurement issues surrounding climate by elaborating on the rationale supporting the contention that climate is most usefully conceptualized and measured at the individual level and should be considered a property of the organization only after demonstrating an adequate level of consensus among organizational members. Second, I offer a perspective that shows how Schneider's multiple ("strategically-focused") and James' single ("universal functionality") approaches can be seen as complementary rather than strictly competitive views. Third, a measure of agreement, $r_{wg(j)}$, is described, and its usefulness as a method of justification for aggregating climate perceptions to the organizational level is illustrated. Fourth, the theoretical development of climate into a non-affective measure is explained. Fifth, the proposed relationship between the socialization process and climate consensus is described. Last, models of climate consensus and climate quality will be described along with hypotheses and proposed methods of analyzing these models.

Locus ofClimate

A great deal of attention has focused on "where" climate resides. Some researchers claim that climate resides within the organization itself (Glick, 1985, 1988). This perspective

holds that climate arises from the interactions of members within a group or organization. Thus, meaning must be a property of the *system* in which social interactions occur. Researchers who follow this line of reasoning often use managers or leaders as informants to assess climate as an organizational characteristic (Angle & Perry; 1986), although Glick (1985) suggests using multiple sources. Following this viewpoint, Angle and Perry (1986) used management and labor leaders as informants to assess labor management relationship climates as an organization-level characteristic. They examined 22 municipal bus companies and found the dual commitment of employees toward the organization as well as the union to be stronger in cooperative climates, while this relationship was moderated by union participation.

This method is problematic, however, as there is no way of knowing whether the leaders' judgments accurately predict those of the group members. Leaders' judgments can be biased if they have experiences that are different from those of members (Glick, 1985). This would be a viable method of data collection to the degree that the leader does have accurate information about the climate in the organization; for example, when there is open communication and trust. However, it is possible that leaders' judgments are likely to be biased by role-related differences in experiences and differences in personal values (generated by differential attraction, selection, and attrition to organizational positions). Moreover it is possible for leaders to overestimate the quality of the climate by reporting the climate they intend to create rather than the climate that exists, and there is no way of determining if this is the case (James, Joyce & Slocum, 1988).

Another problem that arises when using leader reports of climate is that investigations thus far have requested respondents to provide only their judgments of *central tendency* (i.e., "how would the *typical* member respond?"). Because group members' perceptions are almost

certain to form a statistical distribution, collecting information only on central tendency necessarily overstates the degree of member agreement. This problem could be overcome if informants were specifically asked to describe the range of opinion or the degree of consensus on a particular facet of climate. Because leaders have not been asked such questions in previous climate studies, they could not possibly contribute information about dissensus. Even if leaders were asked about the variability of members' perceptions, informants' judgments of variability (i.e., "how much do members agree?") it is likely that their estimates would be biased by cognitive processes such as assumed self-typicality which would tend to yield overestimates of consensus. Consequently, using leaders is a second best solution because it assumes, rather than tests, consensus of organizational members. In addition, using leaders as informants inherently constitutes a sample that is small, and thus potentially unrepresentative. In summary, using a single informant appears to be an empirically inferior method of collecting information on organizational climate.

Other researchers believe climate is most usefully defined as residing within the members of the organization (James, 1992a; James, Joyce, & Slocum, 1988). This viewpoint maintains that climate is a property of individuals, and stresses that organizations themselves do not cognize. Organizational climate involves a set of group-level perceptions which reflect the cognitive representation of environments in terms of their psychological meaning and significance to the members of that group. This is different from the concept of psychological climate in that the latter refers to the significance of environmental attributes in terms of their acquired meaning and significance *to a single individual* (James, James, & Ashe, 1990). Climate does not become an organization level construct until those perceptions are similar enough to justify aggregating them. Measurements of organizational climate are therefore

typically taken by surveying the attitudes and perceptions of a representative sample of organizational members, and, if there is adequate evidence of consensus, aggregating these results to bring climate to the organizational level of analysis.

One study that is representative of this viewpoint (James & Tetrick, 1986) utilized a heterogeneous sample consisting of 260 firefighters from a metropolitan fire department, 113 systems analysts and programmers from a private health care program, 40 incumbents from less technical jobs from the same health care program, 164 production line personnel from four small paper product manufacturing plants, and 65 nonproduction "white collar" personnel from the same four plants. Individual workers were all given the same survey, then the average intercorrelations between items were computed for each scale. This computation was performed for workers in each of the separate organizations to justify the existence of climate at the organizational level. The mean score on the climate measure was then assigned to the individuals within each organization, and a Pearson correlation coefficient was computed between the mean score on the climate measure and employee satisfaction. The authors concluded that the results supported the contention that organizational climate causes individual satisfaction among employees.

Number ofClimates

The debate as to how many climates reside in an organization has persisted for some time. James and colleagues (James, 1982b; James & James, 1989: Jones & James, 1979) conceptualize climate as a single, multidimensional construct for which the same measures would be appropriate within all types of organizations. They argue that organizational members interpret events and processes in terms of personal relevance, and these interpretations affect general outcomes such as attendance and turnover intentions. Because climate is thought to

represent the cognitive representations an individual holds of the events and processes within the organization, several climate scales are used to examine the various components of climate. There may be an affective component underlying these perceptions, however; causing a single, higher-order factor to emerge from a second order analysis (James & James, 1989).

James' single higher-order factor perspective allows climate to be measured by the same scales in any organization. Several subscales have been developed to represent the multiple dimensions of climate along the lines of reasoning proposed by Katz and Kahn (1978). These include leader facilitation and support; role conflict, ambiguity and overload; job challenge, importance and variety; and workgroup cooperation, friendliness, and warmth (Jones & James, 1979; James & Sells, 1981; James & James, 1989).

In contrast to James' focus on climate as a single, general construct with multiple dimensions, Schneider and Reichers (Schneider, 1987a, 1987b; Schneider & Reichers, 1983) propose the idea that numerous climates exist within the organization. These climates are thought to be *for* something (such as customer service or technology). Along these lines, other researchers have examined climates strategically focused on service (Schneider & Bowen, 1985), technical updating (Kozlowski & Hults, 1987), and safety (Zohar, 1980; Dedobeleer & Beland, 1991).

The apparent conflict between James' position that climate has a universal functionality and Schneider's position of strategically focused climate can be resolved in part by noting that the two theorists are implicitly addressing different outcomes. James' work has addressed the overall impact of climate on individual workers, while Schneider's focuses upon more specific outcomes within the organization. Schneider's perspective can be explained further in terms of Katz and Kahn's (1978) contention that organizations consist of distinct subsystems for

production (the work that gets done), support (procurement, disposal, and institutional relations), maintenance (tying people to functional roles), adaptation (organizational change), and management (direction, adjucation, and control). Accordingly, climate for service can be interpreted as being related to organizational events and practices that promote support, climate for safety as related to organizational events and practices that promote maintenance, and climate for updating as related to organizational events and practices that promote adaptation. Thus, James' focus is on global impacts of climate while Schneider's focus is on more specific functional impacts.

In conjunction with this idea, studies focusing on strategically focused climate (Kozlowski & Hults, 1987; Schneider & Bowen, 1985; Zohar, 1980; Dedobeleer & Beland, 1991) examine only singular and very specific organizational goal emphases. In other words, these studies examined climate at a high level of specificity. For example, Schneider and Bowen examined climate for customer service by surveying 142 employees and 968 customers in the branch offices of banks, while Zohar (1980) examined climate for safety by surveying 20 workers in each of 20 industrial organizations in Israel.

Schneider's view implies that the kind of organizational goal is crucial to defining the type of climate that should be examined. While this may be true in organizations which have one specific goal-orientation, it is not necessarily crucial to the existence of climate. For example, much of the work performed by James and colleagues has examined climate in military units that serve many different functions, and, thus require examination at a high level of generality (i.e., a lower level of specificity). A sample of organizations with similar organizational goals must be used to examine climate at the level of specificity Schneider deals with, but having a sample of organizations with similar organizational goals does not *require*

Schneider's approach. James' perspective can be used to examine effectiveness in organizations with either a homogeneous set of organizational goals (such as banks) or a heterogeneous set of organizational goals (such as military units) because the level of specificity is lower. However, there is certainly a tradeoff between predictive accuracy (achieved by using Schneider's approach) and transportability (achieved using James' approach).

The preceding analysis suggests that the perspectives taken by Schneider and by James are not entirely incompatible. The strategically focused climate perspective examines climate in terms of the importance of employees' perceptions of one or more strategic imperatives, or specific organizational goals, made manifest through work place routines and rewards (Schneider, Wheeler, & Cox, 1992). For example, a climate for service can be interpreted as members' shared perceptions of those aspects of the organizations' context, features, events, and processes that promote the organization level goal of providing quality service to customers. James' perspective suggests that adherence to goals is one of multiple dimensions of organizational climate. In this perspective, supervisory goal emphasis, supervisory support, role conflict, role ambiguity, and role overload refer to formal properties of goals and roles, not their substantive content. For example, James' measure of climate addresses the *strength* of leaders' goal emphasis, but does not assess *which specific goals* (e.g., production, customer service, safety) are being emphasized.

Asserting that James' and Schneider's positions are compatible could itself be considered controversial given that Schneider and Bowen (1985) claim to have shown strategically focused climate measures produce stronger relationships with specific organizational outcomes than less-focused measures. Schneider and Bowen's study actually supports the level of specificity idea, however, in that more specific predictions typically have

stronger relationships with more specific criteria. Fishbein and Ajzen (1975) reported that there is greater consistency between attitudes and behavior when both are measured at a similar level of specificity. In any event, the conclusions from Schneider and Bowen's study must be considered tentative because their sample sizes were very low (less than 7 informants), and the measure of climate consensus used to justify aggregation of individual members' responses (the intraclass correlation) is thought to be biased in such sample sizes (James, 1982a, 1982b) because samples tend to vary a great deal from the true score of the population with such small samples. Schneider and Bowen's data can only be taken to show that strategically focused climate might be different from less-focused measures; their study provides no conclusive evidence that strategically-focused climate is a better approach in any case, let alone all cases. Because Schneider and Bowen's study is the only one to date which has compared the two methods of measuring climate, the issue must be considered to remain unresolved until more research has been conducted on the issue. Despite the fact that these two perspectives have both been used by many climate researchers, there is no evidence to date that either of them is theoretically or methodologically superior to the other across a broad set of organizationa. Because the organizations in this study might have a heterogeneous set of organizational goal emphases, the survey instruments adopted James' perspective - a lower level of specificity.

Measuring Consensus

Research on climates has also addressed multiple levels of analysis and measurement in studying organizational phenomena. It is now widely accepted by organizational psychologists that organizational climate is a concept which involves the shared perceptions of those within the organization (James, et al., 1988; Rousseau, 1989). If the perceptions are not shared, the existence of organizational climate is questionable. Because attitudes and perceptions can only

be assessed on an individual level, an aggregated measure of individual perceptions is necessary to represent the opinions of all the members involved. However, consensus must be verified before this aggregation can be justified, and this requires an index of consensus.

Early studies of climate aggregated individual perceptions without examining the degree of consensus. For example, a study on safety climate by Zohar (1980) utilized analysis of variance (ANOVA) to determine whether the variance could be attributed more to differences within or between groups. Other studies have utilized the intraclass correlation coefficient (ICC), which is based on the ANOVA procedure (James, Demaree & Wolf, 1984).

Assessing consensus by means of the ICC is better than failing to assess it at all, but is problematic because it assumes that the environments employed in a study comprise a random sample of environments from a heterogeneous population of environments (James, 1982b). An implication of this assumption is that between-environment variance in mean climate perceptions is necessary for high interrater reliability. If there is little variation among the mean climate perceptions across environments, ICC will be low even if the individuals surveys in each environment agree almost perfectly. In addition, ICC is noted to have problems with range restriction in small samples of organizations, or individuals within organizations (James, 1982a, 1982b). A related issue, pointed out by Kozlowski and Hattrup (1992) is that ICC is a measure of reliability, not consensus. The distinction between reliability and consensus is important to survey research on climates. It is well known that the variation among a group of individuals can be consistent (i.e., reliable) without being the same (i.e., consensus). For example, one person surveyed could produce item scores of 5, 4, 4, and 5. A second person could produce item scores of 2, 1, 1, and 2. This would result in perfect reliability (i.e., a perfect correlation) with virtually no consensus.

Because of the three reasons listed here, a new index of consensus was proposed for climate research by James, Demaree, & Wolf (1984). Specifically, the current indicator used to assess consensus is $r_{wg(j)}$. This measure was derived from r_{wg}, which is calculated as follows:

$$r_{wg} = 1 - (s_x^2/\sigma_E^2) \qquad [1]$$

where:

r_{wg} = within-group interrater agreement for a single group of raters on a single item X,

s_x^2 = the observed variance on item X in the group, and

σ_E^2 = the variance on item X that would be expected if the raters responded randomly, which implies zero interrater reliability and no agreement. When "random response" is operationalized as a uniform distribution,. $\sigma_E^2 = (A^2-1)/12$, where A is the number of response alternatives on item X.

The equation for $r_{wg(j)}$ is as follows:

$$r_{wg(j)} = \frac{J\left[1-\left(\overline{S_{xj}^2}/\sigma_{EU}^2\right)\right]}{J\left[1-\left(\overline{S_{xj}^2}/\sigma_{EU}^2\right)\right]+\left(\overline{S_{xj}^2}/\sigma_{EU}^2\right)} \qquad [2]$$

where:

$r_{wg(j)}$ = the within-group interrater agreement for judges' mean scores based on J essentially parallel items within each climate subscale,

$\overline{S_{xj}^2}$ = the mean of the observed variances on the J items within each climate subscale,

and

σ_{EU}^2 = the variance on X_j that would be expected if raters responded randomly.

Following the introduction of $r_{wg(j)}$, Schmidt and Hunter (1989) criticized it as lacking a conceptual foundation. As an alternative, they suggested using the standard deviation of ratings, SD_x, as an index of interrater agreement and the standard error of the mean, S_{EM}, as an index of the average amount of error in the average rating. As pointed out by Kozlowski and Hattrup (1992), however, SD_x is a measure of reliability, not consensus, and SE_M is critically dependent on the number of raters in the group. Since Kozlowski and Hattrup's paper in 1992, $r_{wg(j)}$ has remained an accepted means of assessing consensus between members on climate measures, although there remain unanswered questions about $r_{wg(j)}$ (i.e., whether a uniform distribution is the most appropriate model of "random response" and the measure's stability under different sample sizes).

One especially important unanswered question regarding $r_{wg(j)}$ concerns the minimum magnitude of the index at which an investigator can conclude that a climate exists. By convention, a value of $r_{wg(j)}$=.70 has been considered necessary to justify aggregating perceptual measures of climate to the organizational level (James, 1982b). Organizations with $r_{wg(j)}$ less than .70 typically are not examined further (e.g., Kozlowski & Hults, 1987). This procedure, which can result in a severe reduction in data, implies that organizational climate does not exist in organizations with only moderate levels of consensus.

A broader perspective suggests that climates may exist and can be examined at lower levels of consensus, but are simply not completely formed to the point of examining it as an organizational-level variable representative of all individuals. This perspective suggests that degree of consensus itself can be examined as a legitimate focus of analysis (James, et al, 1984), although it is important to remember that the same effects found in the relationship between measures of dispersion and central tendency hold true in the relationship between

amount of consensus ($r_{wg(j)}$) and climate quality. A high measure of climate quality cannot be achieved without having high consensus.

Conversely, consensus as measured by $r_{wg(j)}$ might fail to attain a conventionally accepted level because only a few members (or perhaps even just one) fail to share the majority's view of organizational events and processes. A legitimate cause may be present for these members to have aberrant views. For example, those members having aberrant views may have joined the organization only recently. Thus, the low degree of consensus could be due to the presence of one or more statistical "outliers" whose presence in the organization can be explained in terms of newcomer socialization processes. Alternatively, low levels of consensus could reflect pervasive disagreement about the meaning of organizational conditions and events that have arisen because of structural characteristics of the organization itself, such as little opportunity for communication between members.

Despite its theoretical significance, climate research has not addressed the degree of consensus as a dependent variable in its own right. This might be due to previous studies' focus on full-time employees in established organizations but is not attributable to a complete lack of recognition of this important issue. Schneider and Reichers (1983), for example, noted that research is needed to identify factors leading to the development of strong consensus between organizational members, and especially how these varying degrees of consensus are related to potential antecedents such as selection, environmental influences, and particularly, socialization (Katz & Kahn, 1978). They also called attention to the importance of examining the relationship between climate consensus and potential consequences such as production quantity and quality.

Affect in Climate

The first climate measures developed contained an affective component. However, Guion (1973) suggested that with its affective component, climate was extremely similar - if not identical - to job satisfaction. Since that time, researchers have struggled to eliminate the affective component from climate measures by creating a purely cognitive construct. While the attempt to disentangle climate and satisfaction has been laudable theoretically, it has not been an unqualified success empirically. James and Jones (1980) and James and Tetrick (1986) found the relationship between psychological climate and job satisfaction to be reciprocal; job satisfaction leads to more positive impressions of climate, and positive climate perceptions, in turn, lead to greater job satisfaction. These data suggest that climate consists of a general perceptual factor, with a general affective component closely related to the cognitive component (James & James, 1989).

Development of Organizational Climate

Schneider's (1987a, 1987b) Attraction-Selection-Attrition Theory provides a useful framework for explaining the development of organizational climate. This theory proposes that the attributes of people are the fundamental determinants of organizational behavior. In the first phase, people are attracted to organizations they expect to be instrumental in obtaining outcomes they desire. Next, the theory suggests representatives of the organization (recruiters, interviewers, etc.) select those individuals from the applicant pool that they feel will fit well in the organization. Finally, individuals who have been selected into an organization progress through a socialization process during which the values and norms of the organization are transferred to the individual. If the values and norms the individual brings to the organization fit well with those of the organization, little adjustment is necessary. If the newcomers' values and

norms differ from those of the organization, they must either change their values to fit those of the organization, or they must leave the organization. Thus, the socialization process plays a critical part in determining whether an individual will remain with the organization and internalize its values, norms, and other such attributes; or leave the organization completely.

The socialization process, in particular, plays a key role in the formation of organizational climate. Feldman's (1976) model of socialization delineates three stages of socialization. The anticipatory stage occurs before members enter a group and involves all of the impressions and learning present at that time. During the accommodation stage, the individual tries to understand the processes within the organization and become a participating member. The final stage, role management, includes the employee's attempts of conflict management after the tasks and roles have been learned. It is during the accommodation stage that perceptions of climate are likely to be formed, as this is the period during which new members learn tasks and roles within the organization.

In sum, individuals with similar characteristics are attracted to similar types of settings, are socialized in similar ways, are exposed to similar features within contexts, and share their interpretations with others within the setting. This process leads to increasing consensus on climate perceptions over time (Kozlowski & Doherty, 1989). By contrast, individuals of different backgrounds designated for membership in a small, informal group that meets infrequently would not be expected to share consensual perceptions of climate.

Description of Local Emergency Planning Committees

The previous research on LEPCs suggests that these organizations might be particularly useful in examining the antecedents and consequences of organizational climate. LEPCs are mandated by Title III of the Superfund Amendments and Reauthorization Act of

1986 (SARA Title III), and they are charged with the responsibility of preparing comprehensive emergency response plans for toxic chemical emergencies. LEPCs are comprised of volunteer representatives from community agencies such as public safety, public health, public administration and environmental protection, as well as representatives from private organizations, such as facilities handling hazardous chemicals. Each LEPC determines its own focus, sets its own goals, and plans its own schedule. The only requirement they all hold in common is the necessity to write site-specific plans for all potentially hazardous industries within their districts.

Previous research has shown that LEPCs vary significantly with respect to organizational conditions and levels of performance (Lindell & Meier, 1994; Lindell & Whitney, in press), even though they all have the same date of initiation and performance requirements. This gives them a unique value for studying organizational climate. Specifically, the investigation of LEPCs has distinct research advantages because clear inferences can likely be made about the causal relationships involved in creating effective emergency planning teams (Lindell, 1993). Moreover, there is also variation in the external physical environment (hazard vulnerability), external social environment (community resources and community support) and internal environment (emergency planning resources, staffing, and structure) of LEPCs. In particular, variations in size, meeting frequency, and formalization of meetings are likely to be important in the socialization experiences of LEPC members, and thus the development of organizational climate. Other characteristics which vary across LEPCs are the use of computer technology and the member orientation process.

As mentioned previously, James' perspective appears particularly suitable for heterogeneous samples such as organizations used in this study. Recent research (Lindell,

Whitney, Futch, Clause & Rogers, 1994a, 1994b, 1995a) shows that LEPCs vary in their emphasis on different emergency planning activities. Some LEPCs focus on hazard assessment, while others focus on hazard mitigation or preparedness. Several dimensions of climate previously examined by James and colleagues are proposed to be relevant to LEPCs. These include leadership, role stress, and teamwork. All of these variables are likely to define the climate within each LEPC.

LEPC mandates designate members to be chosen in such a way that specific groups will be represented (National Response Team, 1987). For example, at least one representative from fire departments, police departments, and education are mandated to hold positions on the LEPC, along with twelve other groups. Some members are "pure volunteers" while others have experienced some pressure to be members (Lindell, Whitney, Futch, & Clause, 1995b). Few, if any, are sanctioned for non-participation. Thus, because LEPCs have little control over attraction and selection, these components of Schneider's ASA model are not likely to have as much of an impact as in other organizations. However, socialization and training are particularly likely to be important in LEPCs.

Because members of LEPCs may not have complete control over their inclusion in the organization, they also might not be able to leave if their values do not match those of the other members. Thus, it is possible to have members on LEPCs with very different norms and values (see Lindell, Whitney, Futch, & Clause, 1995b for case study data to support this proposition). It follows that because norms, values, and other such attributes affect organizational climate, it is possible that LEPCs vary considerably in their degrees of consensus.

Another source of variation in LEPC conditions and climate comes from Schneider's (1987a, 1987b) suggestion that the founder's personality usually determines the structure and

strategy of an organization. Because of the specific federal requirements for organizing LEPCs, the founders are members of numerous types of organizations with diverse interests and focuses. This could produce significant variation in organizational structure and strategy across LEPCs. Moreover, because LEPCs are self-directed and managed, the times, dates, and locations of meetings may be set or variable, causing socialization opportunities to vary across LEPCs. Additionally, membership size varies across LEPCs, as does the existence and number of subcommittees. Some LEPCs are very structured, including setting and evaluating annual goals for the organization, while others have little or no structure (Lindell, Whitney, Futch, & Clause, 1994a, 1994b, 1995a, 1995b). Strategy varies across LEPCs as well. Some LEPCs have focused on providing emergency training, while others have chosen to focus on emergency planning, and still others have focused on providing information to the public. Some LEPCs have more formalized orientation process, while others rely on the individual to adapt to the organization on his or her own.

In summary, past research on LEPCs indicates that they vary considerably in their external (hazard vulnerability, community resources, community support) and internal (staffing, structure, and process) characteristics, as well as their overall effectiveness. Some preliminary evidence suggests that LEPC climate is related to important organizational antecedents and consequences, but methodological concerns limit the confidence that can be placed in this conclusion. The broader literature on organizational climate provides a theoretical perspective, specific scales, and measurement procedures that would provide a more conclusive test of the relationships of organizational climate with its antecedents and consequences.

Specifically, the proposed research will seek to answer the following two questions for LEPCs. The first question concerns which organizational and environmental variables are

related to the *climate consensus* within LEPCs. As noted earlier, climate consensus is important because it is a developmental issue in organizations. Climate theory holds that a climate does not simply exist or not exist, it exists to some degree and develops as the organization develops. This progression emerges from the interaction of individuals working on group tasks, and should be reflected in the degree to which organizational characteristics are indicative of the development of climate consensus. Thus, the variance within LEPCs of members' perceptions of different facets of climate can be used as a measure of climate dissensus and, across organizations, these variances can be correlated with other variables.

The second question concerns which organizational and environmental variables are related to the *climate quality*. Similarly, a measure of central tendency of LEPC members perceptions of different facets of climate can be used as a measure of climate quality and these means can also be correlated across organizations with other variables.

Previous research on LEPCs and on organizational climate provides a basis for enumerating 13 specific hypotheses related to these two broad questions. The following sections present the hypotheses and supporting rationales regarding the relationships between climate consensus and its antecedents, climate quality and its antecedents, climate consensus and its outcomes, and climate quality and its outcomes.

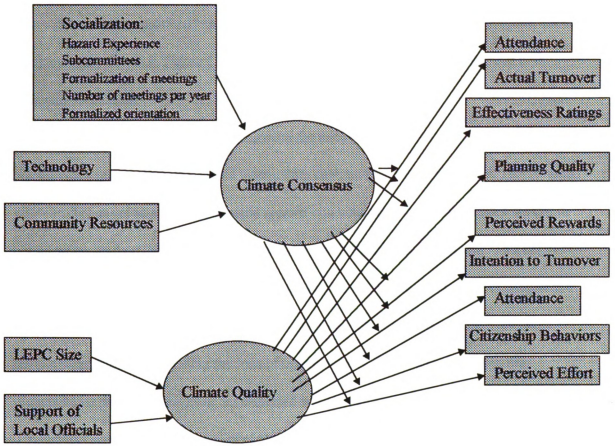

Figure 1:
A General Model of Antecedents and Consequences of Climate Consensus and Climate Quality

Proposed Model of Climate Quality and Climate Consensus

The studies described below provide support for the model of climate consensus and climate quality shown in Figure 1. Hypotheses for these relationships are proposed in the following discussion.

Although researchers have recognized the need to consider the developmental stage of groups when making hypotheses and interpreting analyses (Levine & Moreland, 1990), not a single study has yet attempted to identify specific characteristics that vary within a sample of organizations and could potentially be capable of predicting climate consensus. This might be because climate studies have focused on mature organizations. No study yet has examined a group of organizations having the same functions and goals, but varying in their stages of development. However, existing theories of organizational climate clearly predict that organizations in various stages of development will display a wide range of climate consensus. Presumably, variations in the level of climate consensus will influence organizations' levels of effectiveness, with the most effective organizations having the greatest consensus and average to high climate quality.

It's logical to assume that subscales of climate will be differentially related to antecedent and consequence variables, but past research on climate has implicitly dealt with climate as a single factor construct. Researchers have correlated multidimensional measures of climate with other variables, but hypotheses and results have been couched in terms of climate as a single construct (James & Jones, 1980; Kozlowski & Hults, 1989; Lindell & Whitney, 1995; Zohar, 1980;). There is empirical support for this (apparently implicit) assumption of a single climate dimension, as James & James (1989) found a single higher-order factor underlying all of their climate subscales which they termed $pc_{(g)}$. As will be seen later, the

present study addresses three distinct subcategories within climate (leader, team and role characteristics). James & James' (1989) first order factor analysis seems to indicate that these three climate dimensions are distinct and would have differential relationships with antecedents and consequences. However, because they did find one higher-order factor and other studies are consistent with this idea (Kozlowski & Hults, 1987; Lindell & Whitney, 1995), there is really no basis to make specific differential predictions concerning these three subcategories of climate. Thus, because previous studies suggest only that there may possibly be differences in relationships between each of the three subcategories of climate and other variables, the three subcategories of climate used in this study will be examined using separate sub-hypotheses - one for leadership scales, one for team scales, and one for role scales, even though no specific differential prediction are made for these scales.

Hypothesized Antecedents of Climate Quality

James and James (1989) found climate to be related to structural variables including size and number of levels; socialization, or role formation; and context variables, including technology and available funds. These relationships held true for both homogenous organizations (fire fighters) and heterogeneous organizations (navy personnel).

Lindell and Whitney (1995) found a relationship between climate scales, measured using only the perceptions of LEPC Chairs, and structural variables, including LEPC staffing, federal emergency planning resources, LEPC Association membership, community support, and size of the LEPC, using only the perceptions of LEPC chairs. In voluntary organizations like LEPCs, size may be a measure of the organization's ability to attract and reward members. This finding is expected to be replicated here using climate data collected from LEPC members (as opposed to LEPC Chairs).

Hypothesis 1a: The number of members within the LEPC will be positively related to the level of quality on leadership subscales of climate.

Hypothesis 1b: The number of members within the LEPC will be positively related to the level of quality on team subscales of climate.

Hypothesis 1c: The number of members within the LEPC will be positively related to the level of quality on role subscales of climate.

Dedobeleer & Beland (1991) also used surveys to examine climate for safety. A total of 384 workers in 9 nonresidential construction sites were surveyed. The authors utilized two linear structural relations procedures to examine the goodness of fit of their model. They found that two factors, management commitment to safety and workers' involvement in safety, to be indicative of a good climate for safety in construction sites. For LEPCs, management commitment at the level of the organization comes from the support shown by local elected officials.

Hypothesis 2a: The degree to which elected officials are supportive of the efforts of the LEPC will be positively related to quality on leadership subscales of climate.

Hypothesis 2b: The degree to which elected officials are supportive of the efforts of the LEPC will be positively related to quality on team subscales of climate.

Hypothesis 2c: The degree to which elected officials are supportive of the efforts of the LEPC will be positively related to quality on role subscales of climate.

Hypothesized Antecedents of Climate Consensus

Payne and Pugh (1976) suggest that climates emerge from objective aspects of the work environment, such as organization size, centralization of authority, number of hierarchical levels, technology, and degree to which rules and policies constrain individual behavior. Organizational climate develops as members converge on their perceptions of their surroundings (i.e., as members solidify their impressions and variation in perceptions is

minimized). Therefore, Payne and Pugh's (1976) assertion would suggest that these objective aspects of the organization will lead to greater climate consensus.

Moreover, Porter, Lawler, and Hackman (1975) suggest that socialization involves experiences and learning with the policies and practices involved in enforcing the rules of the organization. If organizations have made these policies explicit through a formal orientation process, then, socialization should occur more quickly, allowing new members to converge with the group on climate perceptions. The end result of this process should be greater consensus on perceptions of climate.

Despite the obvious implications of these theoretical positions (see also James, et al., 1984), no research to date has systematically examined the relationships between climate consensus and organizational factors related to its development. The one study that did examine $r_{wg(j)}$ as a dependent variable was conducted by Kozlowski and Hults (1987) who hypothesized all the organizations they examined would have high values of $r_{wg(j)}$. However, like most other organizations, the ones in their sample had close and continuing interdependencies among members and operated at least forty hours per week. The organizational climate would be expected to be much more developed in such organizations, although there are factors, such as lack of communication, which can affect this development.

As noted previously, LEPCs vary in their stages of organizational development. Some have met frequently and have been continually active since 1987; others are virtually moribund (Adams, et al., 1994). Thus, LEPCs vary considerably in the frequency of their meetings, allowing differences in the time members have to move through the stages of socialization or to undergo similar experiences concerning the organization and its processes. Alternatively, the more meetings an LEPC holds, the more likely climate consensus is to form. The presence of

subcommittees in LEPCs should have a similar effect on climate consensus. Subcommittees must meet periodically, thus allowing for more interaction between group members.

An examination of climate consensus may prove fruitful because relationships between work environment variables and climate have not uniformly been supported by previous studies (Schneider & Reichers, 1983). For example, Lindell and Whitney (1995) found the climates of emergency planning teams were related to their community support and federal emergency planning resources, but not to the availability of automated technology or their community's hazard vulnerability. One possible explanation for their failure to find a relationship between climate and technology is that technology might only affect the development of climate (and, thus, consensus), not its quality. This point is equally applicable to other studies of the relationships between environmental aspects and climate quality (the degree to which climate is positive or negative). These studies also have failed to address the relationships of antecedent variables to climate consensus (the degree to which members are in agreement) as Payne and Pugh (1976) suggest.

It is important to note that defining climate in terms of members' perceptions of the organizational environment implicitly places as much emphasis on perceptual processes as it does on the characteristics of the organization itself. Because individuals' perceptual judgments are strongly influenced by their values, the more formalized the organization's socialization process, the more entrenched its values and norms are likely to become within members. As organizations vary in terms of the formalization and length of their socialization processes, so too should the development of climates within these organizations.

> Hypothesis 3a: The existence of subcommittees will be positively related to the amount of consensus on leadership subscales of climate.

Hypothesis 3b: The existence of subcommittees will be positively related to the amount of consensus on team subscales of climate.

Hypothesis 3c: The existence of subcommittees will be positively related to the amount of consensus on role subscales of climate.

Hypothesis 4a: LEPCs which have formalized meetings (regular meeting places, meeting times, and meeting dates) will have higher levels of consensus on leadership subscales of climate.

Hypothesis 4b: LEPCs which have formalized meetings (regular meeting places, meeting times, and meeting dates) will have higher levels of consensus on team subscales of climate.

Hypothesis 4c: LEPCs which have formalized meetings (regular meeting places, meeting times, and meeting dates) will have higher levels of consensus on role subscales of climate.

Hypothesis 5a: The more meetings an LEPC has per year, the higher will be the level of consensus on leadership subscales of climate.

Hypothesis 5b: The more meetings an LEPC has per year, the higher will be the level of consensus on team subscales of climate.

Hypothesis 5c: The more meetings an LEPC has per year, the higher will be the level of consensus on role subscales of climate.

Hypothesis 6a: LEPCs which have a formal orientation process will experience higher levels of consensus on leadership subscales of climate.

Hypothesis 6b: LEPCs which have a formal orientation process will experience higher levels of consensus on team subscales of climate.

Hypothesis 6c: LEPCs which have a formal orientation process will experience higher levels of consensus on role subscales of climate.

Hypothesis 7a: The use of computer technology (for community hazard vulnerability and resource analyses) will be positively related to consensus on leadership subscales of climate.

Hypothesis 7b: The use of computer technology (for community hazard vulnerability and resource analyses) will be positively related to consensus on team subscales of climate.

Hypothesis 7c: The use of computer technology (for community hazard vulnerability and resource analyses) will be positively related to consensus on role subscales of climate.

Organizations require resources to develop. LEPCs derive most of the resources they need from the surrounding community. Thus, the more community resources an LEPC has, the faster it can develop as an organization. As mentioned previously, organizational climate is thought to develop along with the organization.

Hypothesis 8a: The amount of community resources will be positively related to the level of consensus on leadership subscales of climate.

Hypothesis 8b: The amount of community resources will be positively related to the level of consensus on team subscales of climate.

Hypothesis 8c: The amount of community resources will be positively related to the level of consensus on role subscales of climate.

Direct experiences with emergencies and emergency exercises give the LEPC members greater opportunity to interact with one another and work together toward a specific group goal. This facilitates the socialization process by forcing individuals to work together as a closely-linked team, thus providing an opportunity for the perceptions of individual members to coalesce. Thus, the emergency situations are proposed to facilitate the development of climate consensus.

Hypothesis 9a: Direct experience with emergencies or emergency exercises will be positively related to consensus on leadership subscales of climate.

Hypothesis 9b: Direct experience with emergencies or emergency exercises will be positively related to consensus on team subscales of climate.

Hypothesis 9c: Direct experience with emergencies or emergency exercises will be positively related to consensus on role subscales of climate.

Hypothesized Consequences of Climate Quality

Previous studies have found relationships between climate quality and outcome measures at the individual and organizational levels. Kopelman, Brief, & Guzzo (1990) state that organizational climate does have an impact on measures of productivity. Moreover, in relation to individual outcomes, Schneider and Bowen (1985) examined the level of climate quality among bank employees and concluded that climate for service, as rated by employees and customers, is related to the turnover intentions of both groups. In Zohar (1980), climate for safety was found to be related to safety program effectiveness and accident prevention. Two factors were important in determining the quality of climate for safety, including workers' perceptions of management attitudes about safety and their perceptions regarding the relevance of safety in general production processes. Hackman and Oldham (1975) and Kopelman, Brief and Guzzo (1990) found climate to be related to measures of member satisfaction. James and Jones (1974, 1976) found that organizational climate is related to several outcome measures including productivity and turnover. James and Tetrick (1986) and James and Jones (1980) found reciprocal relationships between organizational climate and individual satisfaction. Smith, Organ, and Near (1983) found leader support (one dimension of climate in this study) to be related to citizenship behaviors.

Hypothesis 10a: Quality on leadership subscales of climate will be negatively related to members' intentions to turnover.

Hypothesis 10b: Quality on team subscales of climate will be negatively related to members' intentions to turnover.

Hypothesis 10c: Quality on role subscales of climate will be negatively related to members' intentions to turnover.

Hypothesis 11a: Quality on leadership subscales of climate will be positively correlated with citizenship behaviors of LEPC members.

Hypothesis 11b: Quality on team subscales of climate will be positively correlated with citizenship behaviors of LEPC members.

Hypothesis 11c: Quality on role subscales of climate will be positively correlated with citizenship behaviors of LEPC members.

Hypothesis 12a: Quality on leadership subscales of climate will be positively correlated with the attendance of LEPC members.

Hypothesis 12b: Quality on team subscales of climate will be positively correlated with the attendance of LEPC members.

Hypothesis 12c: Quality on role subscales of climate will be positively correlated with the attendance of LEPC members.

Hypothesis 13a: Quality on leadership subscales of climate will be positively related to members' perceived rewards of participating in the LEPC.

Hypothesis 13b: Quality on team subscales of climate will be positively related to members' perceived rewards of participating in the LEPC.

Hypothesis 13c: Quality on role subscales of climate will be positively related to members' perceived rewards of participating in the LEPC.

Hypothesis 14a: Quality on leadership subscales of climate will be positively related to members' self-reported effort.

Hypothesis 14b: Quality on team subscales of climate will be positively related to members' self-reported effort.

Hypothesis 14c: Quality on role subscales of climate will be positively related to members' self-reported effort.

At the organizational level, Kozlowski and Hults (1987) examined relationships between climate for technical updating and outcome variables. Results indicated climate for

technical updating was related to overall effectiveness, technical performance, updating orientation, growth satisfaction, organizational commitment, and job involvement. More recently, Lindell and Whitney (1995) examined climate as a mediator between some structural variables and effectiveness measures in Local Emergency Planning Committees (LEPCs). Chairs from 48 LEPCs were surveyed as to their perceptions of climate, factors of the external environment, and outcome variables. Moderately strong relationships were found between climate and factors in the external environment (community support and emergency planning resources), internal environment (staffing and structure), and overall organizational effectiveness. However, because climate data were only collected from LEPC Chairs, consensus among members could not be assessed. In addition, the measures used to assess climate also were derived from the LEPC Chair and used response scales similar to those used for assessing organizational effectiveness data. This creates an opportunity for method effects to inflate true measures of relationships between these variables, a problem that was recognized by the authors, and addressed by examining the correlations between climate and objective archival measures obtained from the State Emergency Response Commission (SERC). The climate measures were found to have lower correlations with the SERC archival measures than with LEPC Chair self-reports, but the relationships with both types of criterion measures were statistically and practically significant. These results suggest a further examination of the relationship between climate (measured at the individual-level) and organizational effectiveness measured by organizational level data on turnover, attendance, planning quality, and general effectiveness ratings given by the State Emergency Response Commission.

> Hypothesis 15a: Quality on leadership subscales of climate will be negatively related to actual turnover in LEPCs.

Hypothesis 15b: Quality on team subscales of climate will be negatively related to actual turnover in LEPCs.

Hypothesis 15c: Quality on role subscales of climate will be negatively related to actual turnover in LEPCs.

Hypothesis 16a: Quality on leadership subscales of climate will be positively related to organizational ratings given by the staff of the State Emergency Response Commission.

Hypothesis 16b: Quality on team subscales of climate will be positively related to organizational ratings given by the staff of the State Emergency Response Commission.

Hypothesis 16c: Quality on role subscales of climate will be positively related to organizational ratings given by the staff of the State Emergency Response Commission.

Hypothesis 17a: Quality on leadership subscales of climate will be positively related to LEPC Chairs' judgments of the quality of emergency planning activities.

Hypothesis 17b: Quality on team subscales of climate will be positively related to LEPC Chairs' judgments of the quality of emergency planning activities.

Hypothesis 17c: Quality on role subscales of climate will be positively related to LEPC Chairs' judgments of the quality of emergency planning activities.

Hypothesis 18a: Quality on leadership subscales of climate will be positively related to actual member attendance at LEPC meetings.

Hypothesis 18b: Quality on team subscales of climate will be positively related to actual member attendance at LEPC meetings.

Hypothesis 18c: Quality on role subscales of climate will be positively related to actual member attendance at LEPC meetings.

Hypothesized Consequences of Climate Consensus

As noted earlier, only one climate study to date has made any predictions at all using consensus as a dependent variable (Kozlowski & Hults, 1987). This study demonstrated some

interest in trying to predict *degree* of consensus, as the organizations were predicted to have high values of $r_{wg(j)}$. Although the hypothesis was confirmed, no data were collected on organizational factors that might have influenced inter-organizational variation in the level of $r_{wg(j)}$, as the study's design intent was predicated on finding high consensus.

Climate consensus may be related to some outcome measures, but because level of consensus has not been previously considered, there is no empirical basis for any specific predictions. However, research on group performance (e.g., Zander, 1994) indicates that groups must allow their members to interact freely, depend upon each other, and desire to remain in the group to achieve their goals. Because all of these conditions imply some degree of consensus about conditions in the organization, a general prediction is that climate consensus will lead to greater levels of individual and organizational outcomes when climate quality is better than average.

> Hypothesis 19a: Consensus on leadership subscales of climate will be related to both individual (e.g., effort, turnover intentions, and citizenship behaviors) and organizational (e.g., actual turnover, attendance, and LEPC task effectiveness) outcome measures such that it will add information over that explained by climate quality.

> Hypothesis 19b: Consensus on team subscales of climate will be related to both individual (e.g., effort, turnover intentions, and citizenship behaviors) and organizational (e.g., actual turnover, attendance, and LEPC task effectiveness) outcome measures such that it will add information over that explained by climate quality.

> Hypothesis 19c: Consensus on role subscales of climate will be related to both individual (e.g., effort, turnover intentions, and citizenship behaviors) and organizational (e.g., actual turnover, attendance, and LEPC task effectiveness) outcome measures such that it will add information over that explained by climate quality.

METHOD

Subjects and Procedures

A list of LEPC Chairs was obtained from the State Emergency Response Commissions in Illinois, Indiana, and Michigan. A total of 296 LEPC Chairs were sent surveys containing a cover sheet explaining the study and requesting participation, a five page questionnaire, and a self-addressed stamped envelope (see Appendix A). Those Chairs not returning the initial copy of the questionnaire were sent a reminder postcard and as many as two follow-up copies of the questionnaire. A total of 180 LEPC Chairs returned completed instruments, for an overall response rate of 60.8% (42.3% in Illinois, 68.5% in Indiana, and 73.9% in Michigan).

A list of LEPC members was obtained either from the SERC or through requests to LEPC chairs for address lists of members. Those members for whom we received address information were sent a cover sheet explaining the study and requesting participation, a six page questionnaire, and a self-addressed stamped envelope (see Appendix B). As was the case for the LEPC Chairs, subsequent mailings were sent to those members not responding to the initial survey. Surveys were sent to 367 LEPC members in Illinois, 884 LEPC members in Indiana, and 1,193 LEPC members in Michigan. A total of 1,196 surveys were returned in usable condition -- 162 from Illinois, 456 from Indiana, and 578 from Michigan. This resulted in response rates of 44.14%, 51.58%, and 48.45% respectively, with the average within-group response rate estimated to be 51.%. The actual compliance of LEPC members in this study might be higher than indicated by the response rates, however. A number of individuals whose

names appeared on LEPC rosters indicated they believed they should not have been selected for participation in this study. These individuals reported they had retired, were brand new members who had not yet attended an LEPC meeting, or did not know what an LEPC was. An unknown number of nonrespondents might have been in similar situations, yet not reported this information to the research team as a reason for declining to return a questionnaire.

A summary of the sources of measures used in this study can be found in Table 1.

Table 1: Sources of Information

Measure	Chair Survey	Member Survey	SERC	Census Data
subcommittees	X			
community support				X
direct experience	X			
formalized meetings	X			
number of meetings	X			
formal orientation	X			
technology	X			
LEPC size	X			
support of elected officials	X			
climate		X		
actual turnover	X			
planning quality	X			
effectiveness			X	
turnover intentions		X		
citizenship behavior		X		
commitment		X		
perceived rewards		X		

While there is potential for method bias in some of the relationships assessed, the use of different data collection formats, times, and subjects, should reduce the effects in many of the relationships (Spector, 1975; Williams, Cote, & Buckley, 1989, Crampton & Wagner, 1994). As Table 1 indicates, the sources of information on antecedent variables were the LEPC Chairs and census data; climate measures were collected from the members of the LEPC; and outcome variable measures were taken from the LEPC Chair survey, the LEPC member survey, and the SERC.

Measures

The LEPC Chair questionnaires collected data on the number of meetings held in 1993, number of members (size), length of meetings, regular scheduling of meetings (date, time, place, agenda), presence of subcommittees, turnover, specificity of instructions given to members (formalization of group processes), formal orientation program for members, goal setting and feedback, support of elected officials, experience with emergencies or emergency exercises, and use of technology (see Appendix A). All of these variables were assessed directly using objective questions except support of elected officials, which was measured using a 8 item scale derived from James' leader goal emphasis and support scales (James & Jones, 1980; James & Sells, 1981).

The survey sent to LEPC members assessed multiple dimensions of climate including teamwork, affect, roles, tasks, and leader behaviors, as well as some individual outcome measures. Five-point Likert scales were used for all of the items except individual demographic characteristics (gender, age, and organization represented). Teamwork was assessed using four scales, including team coordination (items 7a-7h), team cohesion (items 10a-10f & 10h), team pride (items 11a-11c), and team task-orientation (items 8a-8c, 8f, 8h & 9c). Items for the first

three scales were adapted from an instrument previously developed by James and his colleagues (James & Sells, 1981). The team task-orientation scales was derived from instruments devised by Seers (1989) and Bales (1950), and was intended to provide a group level analogue of the leader initiating structure scale from the LBDQ. Team coordination contained 8 items and exhibited an internal consistency reliability of $\alpha = .95$. Team cohesion contained 8 items and demonstrated an internal consistency reliabilities of $\alpha = .86$. Team pride contained 3 items and exhibited an internal consistency reliability of $\alpha = .92$. Team task orientation contained 8 items and displayed an internal consistency reliability of $\alpha = .89$.

Scales used to measure role and task characteristics included role clarity (items 4a-4e), role conflict (items 5a-5g), and role overload (items 6a-6d). Role clarity and role conflict scales were modified from scales developed by Rizzo, House, and Lirtzman (1970). Role clarity contained five items and exhibited an internal consistency of $\alpha = .92$, while role conflict contained seven items and demonstrated an internal consistency of $\alpha = .83$. Role overload was derived from studies performed by James and colleagues (James & Jones, 1979; James & Sells, 1981). This scale contained 4 items (items 6a-6d) and exhibited an internal consistency of $\alpha = .71$.

Three leadership dimensions were assessed including leader communication (items 1a-1h), leader consideration (items 2a-2h), and leader initiating structure (items 3a-3h). Leader communication consisted of an eight item scale adapted from the leader goal facilitation and support scales of James' Climate Questionnaire (James & Jones, 1979; James & Sells, 1981). Leader consideration consisted of eight items adapted from the leader consideration subsection of the Leader Behavior Description Questionnaire (LBDQ) (Stogdill, 1963). The leader initiating structure scale was taken directly from the leader initiating structure subscale of the

Leader Behavior Description Questionnaire (LBDQ) (Stogdill, 1963). These three scales exhibited internal consistencies of α = .95, .93, and .87 respectively.

Antecedent variables were derived from the Chair questionnaire and census data. Existence of subcommittees (question 12b), was assessed on the LEPC chair survey. Three items (items 7a-7c) were combined into a scale to assess the formalization of meetings. This scale exhibited internal consistency of α = .85. To determine the number of meetings in 1993, LEPC chairs were asked to circle the months in which meetings were held (question 4), for a resulting scale of 0-12. The LEPC chairs were asked to fill out a five item scale concerning formal orientation of LEPC members (items 9a-9d, 12a). The internal consistency of this scale was α = .79. LEPC chairs were asked three items concerning use of technology and computers in their LEPCs (items 16a, 16b, 21l). This scale exhibited internal consistency of α = .87. Direct experience with emergencies was assessed by summing three items (items 13a-c) concerning experience with natural, fixed cite, and transportation emergencies in the past five years. This scale had a range of 0 to 3 and a reliability of α =.46. LEPC size was derived from the LEPC Chairs' reports of the total number of members in their LEPCs (item 6a). Support from elected officials was assessed using an 8 item scale (items 20a-h) with internal consistency of α = .92. Community resources were assessed from 1982 census data on the number of police and firefighters, and the population of each county (1987 Census of Governments). The number of public safety personnel per capita was then computed by dividing the population by the sum of police and firefighters.

Criterion variables were assessed in three ways: (a) the Chair questionnaire; (b) the member questionnaire; and (c) the State Emergency Response Commission archives. Organization-level variables assessed on the Chair questionnaire include actual turnover (item

8), percent attending meetings (item 6a divided by item 6b), and quality of LEPC planning activities (13 items: 28a-28m, scale α =.92). Individual-level outcomes assessed on the member questionnaire include intention to turnover (3 items: 22a-22c), effort (5 items: 18a-18e, scale α = .75), attendance taken from Whitney and Lindell (1995) (4 items: 21a-21c & 27, α = .85), perceived rewards (9 items: 14a-14i, α = .89), and citizenship behavior derived from Organ (1988) (5 items: 19a-e, scale α = .83). LEPC effectiveness ratings for Michigan LEPCs were derived from the Michigan SERC archives and were based on overall ratings on a 1 to 5 Likert scale.

Principal components factor analysis of the items in the member questionnaire yielded 25 factors having eigenvalues greater than 1.00 and 16 factors accounting for more than 1.0% of the variance. A scree plot of the eigenvalues suggested a 17 factor solution, but a varimax rotation yielded only 12 interpretable factors (i.e., 3 or more items having factor loadings greater than .35 and a theoretically defensible commonality of content). Factor 1 was defined by all of the items from the scales for leader initiating structure, leader consideration, leader communication, role clarity, team coordination, team task orientation and team cohesion. Factor 2 was defined by the items from the effort and citizenship scales, while factor 3 was defined by perceived rewards. Factor 4 consisted of the role conflict and role overload scales, and factor 5 consisted of items from the normative commitment scale. Factor 6 consisted of the job characteristics items, factor 7 was defined by the attendance items, factor 8 consisted of the team social/emotional items, and factor 9 was comprised of self efficacy items. Factor 10 was defined by the task significance items, factor 11 consisted of the job satisfaction and turnover intentions items, and factor 12 was comprised of the planning efficacy items. Factor 13 had only one item with loading greater than .35, factor 14 consisted of three personal affect

items in the team cohesion scale (10b, 10e, and 10f), and factor 15 picked up a few cross-loaded items from the team coordination and team task orientation scales (7g, 7h, 8a, and 8c). Finally, factor 16 was defined by two measures of organizational membership, while factor 17 was defined by tenure on the LEPC and age.

Scale reliabilities were first examined for each of the climate subscales using internal consistencies measured by coefficient alpha. Scales with coefficients less than .70 were further examined to determine whether their reliabilities can be improved by deleting irrelevant items or partialling out distinct subscales. Interrater consensus on climate measures was then assessed using the calculation for $r_{wg(j)}$. Scores on hypothesized antecedent variables were correlated with the variance on climate perceptions within the organization to test hypotheses about the antecedents of climate consensus. Variances were used because all climate items were measured on 5 point Likert scales; thus, using climate variance as the dependent variable would produce the same results as analyzing values of $r_{wg(j)}$, but would be computationally simpler. Moderated regression analyses were performed to test hypotheses 10a through 10c by first entering the climate quality values, then the climate consensus values, then the interaction variable. Mean substitution was used to account for missing data, as it is a conservative, yet dependable estimate of the relationships.

Method of Aggregation

Items within all ten climate scales were examined for every individual. If more than 30% of the items were missing, the other items within the scale were removed for that individual, on the assumption that the items did not make sense as a scale for that person. Thus no scale score was derived for those subjects missing more than 30% of the items. Scale scores were then calculated for each individual by taking the average of the item scores.

Equation 2 was then used to examine the consensus within each LEPC on the 10 climate scales. The relationship between the number of respondents and the values given by $r_{wg(j)}$ was examined to determine a cutoff point for the size of groups to be examined at the group level. After examining this relationship graphically and the resulting number of groups which would be available for analysis, it was determined that organizations with fewer than 7 members would not be examined at the group level. This step was performed because $r_{wg(j)}$ is known to becomes increasingly biased downward as the size of the group decreases (James, et al., 1984). The remaining groups were screened to eliminate those groups with values of $r_{wg(j)}$ less than .70 from analyses for the particular scales (James, 1982b). Organizations with values of $r_{wg(j)}$ outside the expected range for agreement (.00 to 1.0) were also eliminated from analyses for the particular scales.

This process of screening out organizations lacking adequate levels of climate consensus produced moderate (34%) to severe (60%) attrition in sample size. Because small sample sizes introduce lower power into the statistical tests as a plausible explanation for nonsignificant results, tables of correlations also are displayed that do not screen out LEPCs having inadequate levels of consensus.

RESULTS

Analysis of Climate Scales

Appendix C contains information concerning scales used in this study. The climate scales, when aggregated to the organizational level, are almost all highly correlated. The only exceptions are role conflict and role overload, which are themselves highly correlated. These results indicate that there is little reason to expect subsequent analyses of climate facets (leader, team, and role characteristics) to show strong patterns of differential relationships with antecedents and consequences. Also included in Appendix C are tables displaying information for scales used as antecedents and outcomes.

Distributions of $r_{wg(j)}$ values

Appendix D includes frequency distributions of $r_{wg(j)}$ values across the LEPCs having adequate amount (i.e., n >=7) of individual data. Consensus generally was greatest on leader characteristics, somewhat less on the team characteristics, and least on role characteristics. It is noteworthy that some values of $r_{wg(j)}$ appeared outside the proper interval ($0<=r_{wg(j)}<=1$) for all scales. Values obtained that fell outside this interval were set to -1.00 on the graphs for purposes of clarity and display.

Correlations Between Organization Level Antecedents and Organizational Climate Quality

> Hypothesis 1a: The number of members within the LEPC will be positively related to the level of quality on leadership subscales of climate.
>
> Hypothesis 1b: The number of members within the LEPC will be positively related to the level of quality on team subscales of climate.

Hypothesis 1c: The number of members within the LEPC will be positively related to the level of quality on role subscales of climate.

Hypothesis 2a: The degree to which elected officials are supportive of the efforts of the LEPC will be positively related to quality on leadership subscales of climate.

Hypothesis 2b: The degree to which elected officials are supportive of the efforts of the LEPC will be positively related to quality on team subscales of climate.

Hypothesis 2c: The degree to which elected officials are supportive of the efforts of the LEPC will be positively related to quality on role subscales of climate.

Results show the number of members within LEPCs was not significantly correlated with climate consensus on any of the climate scales, while the presence of support by local officials was only correlated with climate quality on the role overload scale (see Table 2a). This indicates that LEPCs do not need a large number of members to have a positive climate, but the support of local officials may make a difference in the quality of at least one aspect of the climate in LEPCs.

Table 2a: Organization-Level Antecedents and Organizational Climate Quality After Calculating $r_{wg(j)}$

Measure	L_{ini}	L_{comm}	L_{cns}	T_{coor}	T_{coh}	T_{pri}	T_{to}	R_{clar}	R_{conf}	R_{over}
LEPC size	-.010	-.086	-.024	-.069	-.136	.066	-.085	-.161	-.056	-.104
	(75)	(77)	(78)	(64)	(70)	(63)	(69)	(69)	(64)	(57)
support from elected officials	.097	.118	.073	.060	.087	.198	.025	.033	-.229	-.361**
	(71)	(71)	(73)	(59)	(65)	(59)	(63)	(64)	(59)	(56)

♦The Pearson correlation coefficient was computed for each of the climate scales which have values of $r_{wg(j)}$ greater than .70 and 7 or more respondents.
♦ Sample size is indicated in parentheses.

Table 2b: Organization-Level Antecedents and Organizational Climate Quality Before Calculating $r_{wg(j)}$

Measure	L_{ini}	L_{comm}	L_{cns}	T_{coor}	T_{coh}	T_{pri}	T_{to}	R_{clar}	R_{conf}	R_{over}
LEPC size	.129	.082	.134	.152	.059	.230*	.069	.136	-.002	-.054
	(114)	(114)	(114)	(114)	(114)	(114)	(113)	(114)	(114)	(114)
support from elected officials	.242**	.268**	.162	.190*	.221*	.335**	.183*	.217*	-.207*	-.330**
	(116)	(116)	(116)	(116)	(116)	(116)	(115)	(116)	(116)	(116)

♦The Pearson correlation coefficient was computed for each of the climate scales which have values of $r_{wg(j)}$ greater than .70 and 7 or more respondents.
♦ Sample size is indicated in parentheses.

Key:

L_{ini} = leader initiating structure
L_{comm} = leader communication
L_{cns} = leader consideration
T_{coor} = team coordination
T_{coh} = team cohesion
T_{pri} = team pride
T_{to} = team task orientation
R_{clar} = role clarity
R_{conf} = role conflict
R_{over} = role overload

Interestingly, the correlations between support from local officials and climate quality before calculating $r_{wg(j)}$ are much higher (Table 2b). This may indicate that the relationships between measures of climate and this antecedent variable may be different for LEPCs with fewer members, as the groups with less than 7 members were screened out during the aggregation process. That is, it may be more important for small LEPCs to have strong support from local officials.

Correlations Between Organizational Level Antecedents and Organizational Climate Consensus

The correlations between antecedent variables and climate consensus for most of the scales are not significant (see Table 4a). In fact, the number of significant findings (10) is only slightly above what would be expected by chance (7 of 70 correlations, or 10%). However, there do seem to be patterns in the data, which may indicate these relationships are not solely explainable by chance fluctuations in the data.

> Hypothesis 3a: The existence of subcommittees will be positively related to the amount of consensus on leadership subscales of climate.
>
> Hypothesis 3b: The existence of subcommittees will be positively related to the amount of consensus on team subscales of climate.
>
> Hypothesis 3c: The existence of subcommittees will be positively related to the amount of consensus on role subscales of climate.

The existence of subcommittees is significantly correlated with climate consensus on the leader consideration ($p<.01$), team coordination ($p < .01$), and team cohesion ($p < .05$). Thus, having subcommittees may increase climate consensus on team and leadership dimensions of climate.

> Hypothesis 4a: LEPCs which have formalized meetings (regular meeting places, meeting times, and meeting dates) will have higher levels of consensus on leadership subscales of climate.

Hypothesis 4b: LEPCs which have formalized meetings (regular meeting places, meeting times, and meeting dates) will have higher levels of consensus on team subscales of climate.

Hypothesis 4c: LEPCs which have formalized meetings (regular meeting places, meeting times, and meeting dates) will have higher levels of consensus on role subscales of climate.

The existence of formalized meetings is positively correlated with consensus on leader consideration ($p < .01$) and team cohesion ($p < .01$). This may indicate that climate consensus for leadership and team dimensions of climate are affected by the degree to which LEPC meetings are formalized.

Hypothesis 5a: The more meetings an LEPC has per year, the higher will be the level of consensus on leadership subscales of climate.

Hypothesis 5b: The more meetings an LEPC has per year, the higher will be the level of consensus on team subscales of climate.

Hypothesis 5c: The more meetings an LEPC has per year, the higher will be the level of consensus on role subscales of climate.

The number of meetings an LEPC held in 1993 is positively correlated with consensus on leader consideration ($p < .01$) and team coordination ($p < .05$). As with Hypotheses 1 and 2, the leader and team dimensions of climate may be affected by the number of meetings held per year.

Hypothesis 6a: LEPCs which have a formal orientation process will experience higher levels of consensus on leadership subscales of climate.

Hypothesis 6b: LEPCs which have a formal orientation process will experience higher levels of consensus on team subscales of climate.

Hypothesis 6c: LEPCs which have a formal orientation process will experience higher levels of consensus on role subscales of climate.

Having a formal orientation process is not significantly correlated with consensus on any of the climate subscales. This finding may be due to socialization involving a great deal of *informal* orientation as well. Simply understanding the rules of the organization does not inform new members about the implicit norms and values of the organization's members.

> Hypothesis 7a: The use of computer technology (for community hazard vulnerability and resource analyses) will be positively related to consensus on leadership subscales of climate.
>
> Hypothesis 7b: The use of computer technology (for community hazard vulnerability and resource analyses) will be positively related to consensus on team subscales of climate.
>
> Hypothesis 7c: The use of computer technology (for community hazard vulnerability and resource analyses) will be positively related to consensus on role subscales of climate.

The use of technology was not significantly correlated with consensus on any of the climate scales except leader consideration ($p<.01$).

> Hypothesis 8a: The amount of community resources will be positively related to the level of consensus on leadership subscales of climate.
>
> Hypothesis 8b: The amount of community resources will be positively related to the level of consensus on team subscales of climate.
>
> Hypothesis 8c: The amount of community resources will be positively related to the level of consensus on role subscales of climate.

The amount of community resources was significantly correlated with consensus on leader consideration ($p < .01$) and role overload ($p < .01$). Interestingly, these findings were opposite the hypothesized relationships, with more community resources leading to greater dissensus on these two scales.

> Hypothesis 9a: Direct experience with emergencies or emergency exercises will be positively related to consensus on leadership subscales of climate.
>
> Hypothesis 9b: Direct experience with emergencies or emergency exercises will be positively related to consensus on team subscales of climate.

Hypothesis 9c: Direct experience with emergencies or emergency exercises will be positively related to consensus on role subscales of climate.

Direct experience with emergencies was not correlated with consensus on any of the climate scales.

Comparing the results obtained after $r_{wg(j)}$ was used to screen groups not demonstrating consensus (Table 3a) to those obtained before $r_{wg(j)}$ was calculated (Table 3b) shows some interesting differences. While the socialization factors are important to forming consensus on leader consideration and team coordination in both tables, team cohesion seems to be important as well before $r_{wg(j)}$ calculations eliminated many of the groups. This may indicate a difference in results for smaller groups or those with less agreement on climate measures.

Table 3a: Correlations Between Organization-Level Antecedents and Organizational Climate Consensus

Measure	L_{ini}	L_{comm}	L_{cns}	T_{coor}	T_{coh}	T_{pri}	T_{to}	R_{clar}	R_{conf}	R_{over}
subcommittees	-.063	.054	-.315**	-.248**	-.233*	-.032	-.000	.018	.077	-.159
	(114)	(113)	(115)	(112)	(113)	(114)	(113)	(113)	(111)	(111)
formalized meetings	-.138	.058	-.536**	-.097	-.349**	.023	-.043	.035	-.011	-.182
	(115)	(114)	(116)	(113)	(114)	(115)	(114)	(114)	(112)	(112)
number of meetings	-.144	.010	-.310**	-.240*	-.078	.055	-.068	-.087	.006	.068
	(112)	(112)	(112)	(109)	(110)	(111)	(110)	(111)	(110)	(110)
formal orientation	.005	.090	-.150	.084	-.072	.023	.003	.095	.061	.012
	(115)	(114)	(116)	(113)	(114)	(115)	(114)	(114)	(112)	(112)
technology	-.067	.113	-.249**	-.041	-.125	-.039	.084	.043	.064	-.177
	(117)	(116)	(118)	(115)	(116)	(117)	(116)	(116)	(114)	(114)
community resources	.142	-.037	.365**	.161	.102	.146	.086	-.009	-.053	.258**
	(112)	(111)	(112)	(109)	(110)	(111)	(109)	(111)	(109)	(110)
direct experience	.025	.094	-.061	.040	-.157	-.104	.034	-.073	-.109	-.021
	(113)	(112)	(110)	(111)	(112)	(113)	(112)	(112)	(110)	(110)

♦ Negative correlations indicate the antecedent is related to higher consensus.

♦ Sample sizes are indicated in parentheses.

Key:

L_{ini} = leader initiating structure
L_{comm} = leader communication
L_{cns} = leader consideration
T_{coor} = team coordination
T_{coh} = team cohesion
T_{pri} = team pride
T_{to} = team task orientation
R_{clar} = role clarity
R_{conf} = role conflict
R_{over} = role overload

Table 3b: Correlations Between Organization-Level Antecedents and Organizational Climate Consensus After Calculating $r_{wg(j)}$

Measure	L_{ini}	L_{comm}	L_{cns}	T_{coor}	T_{coh}	T_{pri}	T_{to}	R_{clar}	R_{conf}	R_{over}
subcommittees	-.154	.066	-.297**	-.299*	.038	.078	-.121	-.082	.035	.003
	(70)	(70)	(72)	(58)	(64)	(58)	(62)	(63)	(58)	(55)
formalized meetings	-.125	.071	-.319**	.058	-.115	.163	-.160	.034	-.154	.069
	(71)	(72)	(74)	(59)	(66)	(60)	(64)	(64)	(60)	(56)
number of meetings	-.021	-.005	-.318**	-.085	-.004	.220	-.117	.115	-.134	-.041
	(71)	(72)	(74)	(59)	(66)	(60)	(64)	(64)	(60)	(56)
formal orientation	.073	.121	.209	.018	.212	.042	-.048	.037	.255*	.145
	(71)	(71)	(73)	(59)	(65)	(59)	(63)	(64)	(59)	(56)
technology	-.173	.140	-.068	.034	.158	-.019	.173	.277*	-.159	-.172
	(71)	(72)	(74)	(59)	(66)	(60)	(64)	(64)	(60)	(56)
community resources	.177	-.037	.138	.115	.101	.076	.040	-.001	-.147	.064
	(61)	(63)	(63)	(53)	(58)	(52)	(57)	(56)	(55)	(44)
direct experience	-.126	.106	-.010	-.272*	-.169	.002	-.033	-.087	.017	-.212
	(71)	(71)	(73)	(59)	(65)	(59)	(63)	(64)	(59)	(56)

♦ Negative correlations indicate the antecedent is related to higher consensus.

♦Sample size is indicated in parentheses.

Key:

L_{ini} = leader initiating structure
L_{comm}= leader communication
L_{cns} = leader consideration
T_{coor} = team coordination
T_{coh} = team cohesion
T_{pri} = team pride
T_{to} = team task orientation
R_{clar} = role clarity
R_{conf} = role conflict
R_{over} = role overload

Correlations Between Organizational Climate Quality and Individual Level Outcomes

Hypothesis 10a: Quality on leadership subscales of climate will be negatively related to members' intentions to turnover.

Hypothesis 10b: Quality on team subscales of climate will be negatively related to members' intentions to turnover.

Hypothesis 10c: Quality on role subscales of climate will be negatively related to members' intentions to turnover.

Hypothesis 11a: Quality on leadership subscales of climate will be positively correlated with citizenship behaviors of LEPC members.

Hypothesis 11b: Quality on team subscales of climate will be positively correlated with citizenship behaviors of LEPC members.

Hypothesis 11c: Quality on role subscales of climate will be positively correlated with citizenship behaviors of LEPC members.

Hypothesis 12a: Quality on leadership subscales of climate will be positively correlated with the attendance of LEPC members.

Hypothesis 12b: Quality on team subscales of climate will be positively correlated with the attendance of LEPC members.

Hypothesis 12c: Quality on role subscales of climate will be positively correlated with the attendance of LEPC members.

Hypothesis 13a: Quality on leadership subscales of climate will be positively related to members' perceived rewards of participating in the LEPC.

Hypothesis 13b: Quality on team subscales of climate will be positively related to members' perceived rewards of participating in the LEPC.

Hypothesis 13c: Quality on role subscales of climate will be positively related to members' perceived rewards of participating in the LEPC.

Hypothesis 14a: Quality on leadership subscales of climate will be positively related to members' self-reported effort.

Hypothesis 14b: Quality on team subscales of climate will be positively related to members' self-reported effort.

Hypothesis 14c: Quality on role subscales of climate will be positively related to members' self-reported effort.

Table 4a: Correlations Between Psychological Climate Quality and Individual Level Criteria

Measure	L_{ini}	L_{comm}	L_{cns}	T_{coor}	T_{coh}	T_{pri}	T_{to}	R_{clar}	R_{conf}	R_{over}
turnover intentions	-.217**	-.286**	-.253**	-.245**	-.323**	-.321**	-.250**	-.318**	.150**	.160**
item 1	(1155)	(1157)	(1166)	(1051)	(1143)	(1144)	(1092)	(1149)	(1063)	(1081)
turnover intentions	-.272**	-.296**	-.288**	-.336**	-.350**	-.386**	-.319**	-.354**	.255**	.275**
item 2	(1148)	(1149)	(1160)	(1044)	(1135)	(1137)	(1087)	(1142)	(1058)	(1076)
turnover intentions	-.174**	-.249**	-.212**	-.203**	-.232**	-.247**	-.222**	-.275**	.195**	.194**
item 3	(1143)	(1145)	(1154)	(1042)	(1132)	(1133)	(1083)	(1139)	(1057)	(1072)
citizenship behavior	.311**	.303**	.327**	.362**	.418**	.387**	.347**	.487**	.050	.088**
	(1154)	(1157)	(1166)	(1052)	(1144)	(1144)	(1094)	(1148)	(1067)	(1085)
perceived effort	.409**	.445**	.420**	.422**	.546**	.484**	.434**	.454**	-.174**	-.146**
	(1156)	(1157)	(1169)	(1052)	(1144)	(1146)	(1093)	(1149)	(1064)	(1083)
perceived rewards	.510**	.540**	.502**	.577**	.618**	.627**	.558**	.565**	-.255**	-.120**
	(1151)	(1153)	(1164)	(1053)	(1139)	(1142)	(1092)	(1145)	(1062)	(1082)
commitment	.344**	.378**	.342**	.359**	.468**	.397**	.364**	.365**	-.131**	-.089**
	(1156)	(1157)	(1169)	(1052)	(1144)	(1146)	(1093)	(1149)	(1064)	(1083)

♦Sample size is indicated in parentheses.

Key:

L_{ini} = leader initiating structure
L_{comm} = leader communication
L_{cns} = leader consideration
T_{coor} = team coordination
T_{coh} = team cohesion
T_{pri} = team pride
T_{to} = team task orientation
R_{clar} = role clarity
R_{conf} = role conflict
R_{over} = role overload

Table4b: Correlations Between Organizational Climate Quality After Calculating $r_{wg(j)}$ and Individual Level Criteria

Measure	L_{ini}	L_{comm}	L_{cns}	T_{coor}	T_{coh}	T_{pri}	T_{to}	R_{clar}	R_{conf}	R_{over}
turnover intentions item 1	-.127** (934)	-.116** (902)	-132** (913)	-.087* (733)	-137** (833)	-.223** (442)	-.110** (789)	-.123** (708)	.144** (694)	.160** (576)
turnover intentions item 2	-.175** (869)	-.185** (896)	-.200** (907)	-.195** (728)	-.205** (827)	-.239** (439)	-.207** (786)	-.215** (705)	.181** (692)	.176** (573)
turnover intentions item 3	-.0755* (866)	-.092** (893)	-.088** (905)	-.034 (727)	-.077* (825)	-.124** (438)	-.066 (783)	-.066 (702)	.118** (692)	.185** (573)
citizenship behavior	.209** (876)	.159** (904)	.172** (915)	.196** (736)	.240** (837)	.244** (445)	.189** (793)	.248** (707)	-.112** (700)	-.069 (580)
perceived effort	.221** (877)	.197** (904)	.199** (916)	.187** (736)	.235** (836)	.238** (455)	.197** (793)	.221** (707)	-.158** (699)	-.135** (579)
perceived rewards	.292** (876)	.279** (904)	.277** (913)	.280** (739)	.301** (836)	.333** (443)	.300** (795)	.288** (708)	-.250** (698)	-.1394** (580)
commitment	.193** (877)	.154** (904)	.163** (916)	.142** (736)	.176** (836)	.175** (455)	.154** (793)	.180** (707)	-.120** (699)	-.085* (579)

Key:

L_{ini} = leader initiating structure
L_{comm} = leader communication
L_{cns} = leader consideration
T_{coor} = team coordination
T_{coh} = team cohesion
T_{pri} = team pride
T_{to} = team task orientation
R_{clar} = role clarity
R_{conf} = role conflict
R_{over} = role overload

Table4c: Correlations Between Organizational Climate Quality Before Calculating $r_{wg(j)}$ and Individual Level Criteria

Measure	L_{ini}	L_{comm}	L_{cns}	T_{coor}	T_{coh}	T_{pri}	T_{to}	R_{clar}	R_{conf}	R_{over}
turnover intentions item 1	.1544** (1155)	.1642** (1157)	.1619** (1166)	.1433** (1051)	.1767** (1143)	.1761** (1144)	.1524** (1092)	.1578** (1149)	-.0785* (1063)	-.0860** (1081)
turnover intentions item 2	-.1948** (1148)	-.2122** (1149)	-.2161** (1160)	-.1937** (1044)	-.2152** (1135)	-.2268** (1137)	-.1984** (1087)	-.2224** (1142)	.1514** (1058)	.1686** (1076)
turnover intentions item 3	-.1311** (1143)	-.1542** (1145)	-.1324** (1154)	-.1032** (1042)	-.1375** (1132)	-.1605** (1133)	-.1263** (1083)	-.1327** (1139)	.0968** (1057)	.1179** (1072)
citizenship behavior	.2205** (1154)	.1873** (1157)	.1948** (1166)	.2062** (1052)	.2411** (1144)	.1848** (1144)	.2111** (1094)	.2580** (1148)	-.0110 (1067)	-.0096 (1085)
perceived effort	.2666** (1156)	.2567** (1157)	.2352** (1169)	.2392** (1052)	.2710** (1144)	.2267** (1146)	.2410** (1093)	.2475** (1149)	.0926** (1064)	-.1131** (1083)
perceived rewards	.2941** (1151)	.2948** (1153)	.2744** (1164)	.2770** (1053)	.3324** (1139)	.3079** (1142)	.3106** (1092)	.3008** (1145)	-.2001** (1062)	-.2032** (1082)
Commitment	.2227** (1156)	.2090** (1157)	.1898** (1169)	.1898** (1052)	.2146** (1144)	.1705** (1146)	.1946** (1093)	.2011** (1149)	-.0643* (1064)	-.0686** (1083)

Key:

L_{ini} = leader initiating structure
L_{comm} = leader communication
L_{cns} = leader consideration
T_{coor} = team coordination
T_{coh} = team cohesion
T_{pri} = team pride
T_{to} = team task orientation
R_{clar} = role clarity
R_{conf} = role conflict
R_{over} = role overload

All five of the hypotheses were confirmed, regardless of whether the test involved psychological climate (Table 4a), organizational level measures of climate after screening for $r_{wg(j)}$ (Table 4b), or organizational level measures of climate before screening for $r_{wg(j)}$ (Table 4c). The quality of the climate scales (as indicated by the mean scale scores for each LEPC) were all highly correlated with outcome variables at the member level including turnover intentions, citizenship behaviors, perceived effort, perceived rewards, and attendance, although the magnitude of the correlations declined when the climate measures were aggregated to the organizational level and subsequently screened for consensus. The fact that all climate and individual level outcomes were derived from the same instrument would seem to be grounds for caution in interpreting these results. However, the lack of significant finding for role conflict and citizenship behavior in Table 4a, and turnover intentions item 3 and team coordination, team task orientation, and role clarity in Table 4b, suggests that the very high values for the other correlations are not solely caused by a common method artifact. Indeed, even if one assumes that the correlations involving the role conflict and role overload scales are nothing more than a pure measure of method variance, and partialled out this variance from the other correlations, the latter would remain statistically and practically significant.

Correlations Between Climate Quality and Organization Level Criteria

The quality of climate scales (as indicated by the mean of members' scale scores within an LEPC) exhibited significant effects on the organization level criteria (see Table 5) despite the low sample sizes for the SERC ratings.

> Hypothesis 15a: Quality on leadership subscales of climate will be negatively related to actual turnover in LEPCs.

Hypothesis 15b: Quality on team subscales of climate will be negatively related to actual turnover in LEPCs.

Hypothesis 15c: Quality on role subscales of climate will be negatively related to actual turnover in LEPCs.

Actual turnover was not related to climate quality on any of the scales except role clarity ($p<.05$). This could be due in part to membership not being entirely voluntary. In other words, membership on LEPCs is required for many of the members as part of their primary jobs. Thus, some members may not be able to leave.

Hypothesis 16a: Quality on leadership subscales of climate will be positively related to organizational ratings given by the staff of the State Emergency Response Commission.

Hypothesis 16b: Quality on team subscales of climate will be positively related to organizational ratings given by the staff of the State Emergency Response Commission.

Hypothesis 16c: Quality on role subscales of climate will be positively related to organizational ratings given by the staff of the State Emergency Response Commission.

The ratings given by the State Emergency Response Commission were significantly correlated only with leader communication and team pride ($p<.05$ for both). This may be due in part to the smaller sample size, as only Michigan LEPCs were rated ($n = 20$ to 34).

Hypothesis 17a: Quality on leadership subscales of climate will be positively related to LEPC Chairs' judgments of the quality of emergency planning activities.

Hypothesis 17b: Quality on team subscales of climate will be positively related to LEPC Chairs' judgments of the quality of emergency planning activities.

Hypothesis 17c: Quality on role subscales of climate will be positively related to LEPC Chairs' judgments of the quality of emergency planning activities.

Climate quality on the following scales was significantly related to the quality of emergency planning activities: leader initiating structure, leader communication, leader

consideration, team pride, role conflict, and role overload. Of particular interest are planning activities A (organizing and administering the LEPC), D (developing site specific emergency plans), and H (developing training programs for local emergency responders) which are significantly related to most or all of the climate scales. Conversely, leader consideration, team pride, role conflict, and role overload are especially important components of climate because they are significantly correlated with most of the emergency planning activities. This is consistent with the correlation pattern seen at the scale level.

Hypothesis 18a: Quality on leadership subscales of climate will be positively related to actual member attendance at LEPC meetings.

Hypothesis 18b: Quality on team subscales of climate will be positively related to actual member attendance at LEPC meetings.

Hypothesis 18c: Quality on role subscales of climate will be positively related to actual member attendance at LEPC meetings.

Climate quality on leader initiating structure, leader communication, leader consideration, team cohesion, team coordination, and team task orientation scales is significantly correlated with actual member attendance. Thus, the team and leader aspects seem to play an important role in the attendance at meetings, while characteristics of roles do not.

Table 5: Organizational Climate Quality After Calculating $r_{wg(j)}$ and Organization Level Criteria

Measure	L_{ini}	L_{comm}	L_{ens}	T_{coor}	T_{orh}	T_{pri}	T_{to}	R_{clar}	R_{conf}	R_{over}
actual turnover	-.143	-.184	-.128	-.193	-.204	-.133	-.151	-.196	-.110	-.117
	(64)	(65)	(66)	(55)	(59)	(31)	(57)	(52)	(50)	(45)
percent attendance	.316**	.286*	.282*	.290*	.407**	.197	.279*	.117	-.101	-.050
	(70)	(71)	(72)	(60)	(64)	(34)	(62)	(55)	(55)	(47)
SERC ratings	.257	.365*	.201	.352	.155	.519*	.297	.389*	-.414*	.028
	(32)	(34)	(33)	(28)	(30)	(17)	(29)	(26)	(25)	(15)
planning quality scale	.309**	.275*	.267*	.215	.126	.400*	.108	.161	-.422**	-.373**
	(69)	(70)	(71)	(59)	(63)	(33)	(61)	(54)	(54)	(46)
planning activity A	.328**	.251*	.295**	.176	.170	.540**	.184	.145	-.430**	-.475**
	(68)	(69)	(70)	(58)	(62)	(33)	(60)	(53)	(54)	(46)
planning activity B	.152	.040	.137	.042	-.043	.279	-.009	.046	-.276*	-.329*
	(69)	(70)	(71)	(59)	(63)	(33)	(61)	(54)	(54)	(46)
planning activity C	.236*	.270*	.243*	.195	.188	.219	.143	.169	-.347**	-.294*
	(68)	(69)	(70)	(58)	(62)	(33)	(60)	(53)	(54)	(46)
planning activity D	.322**	.315**	.334**	.262*	.235	.344*	.215	.316*	-.360**	-.252
	(67)	(68)	(69)	(57)	(61)	(32)	(59)	(52)	(53)	(46)
planning activity E	.225	.198	.113	.159	.100	.314	.102	.121	-.252	-.036
	(67)	(68)	(69)	(57)	(61)	(33)	(59)	(52)	(54)	(46)
planning activity F	.297*	.220	.292**	.173	.104	.368*	.052	.173	-.334**	-.315*
	(68)	(69)	(70)	(58)	(62)	(33)	(60)	(53)	(53)	(45)
planning activity G	.176	.090	.102	.078	-.044	.240	-.011	.037	-.264*	-.249
	(68)	(69)	(70)	(58)	(62)	(33)	(60)	(53)	(54)	(46)
planning activity H	.365**	.298**	.243*	.296*	.257*	.387*	.249	.202	-.413**	-.381**
	(67)	(68)	(69)	(57)	(61)	(33)	(59)	(52)	(53)	(45)
planning activity I	.217	.233	.167	.158	.099	.250	.029	.111	-.238	-.170
	(66)	(67)	(68)	(56)	(60)	(32)	(58)	(53)	(52)	(45)
planning activity J	.136	.148	.130	.136	-.012	.159	.043	-.083	-.189	-.264
	(67)	(68)	(69)	(57)	(61)	(33)	(59)	(52)	(53)	(45)
planning activity K	.014	.041	.056	.036	-.104	.025	-.086	-.024	-.123	-.032
	(66)	(67)	(68)	(56)	(60)	(31)	(58)	(52)	(53)	(44)
planning activity L	.190	.196	.188	.120	.143	.149	.033	.182	-.386**	-.369**
	(67)	(68)	(69)	(57)	(61)	(32)	(59)	(53)	(53)	(45)
planning activity M	.147	.135	.148	.147	.083	.262	.032	.042	-.145	-.266
	(68)	(69)	(70)	(58)	(62)	(33)	(60)	(53)	(54)	(46)

Correlations Between Organizational Climate Consensus and Criteria

The most direct test of hypotheses 19a through 19c would involve inspection of the zero-order correlations between the climate consensus scores for each of the scales and each of the outcome measures. However, these direct tests would be theoretically unreasonable because they implicitly assume that high consensus is just as effective when climate quality is bad as when it is good. A more appropriate test of these hypotheses would recognize that the relationship between climate consensus and outcomes is moderated by climate quality. Accordingly, moderated regression analyses were conducted in which climate quality was entered first followed by climate consensus and, last, by the product of these two terms.

> Hypothesis 19a: Consensus on leadership subscales of climate will be related to both individual (e.g., effort, turnover intentions, and citizenship behaviors) and organizational (e.g., actual turnover, attendance, and LEPC task effectiveness) outcome measures.
>
> Hypothesis 19b: Consensus on team subscales of climate will be related to both individual (e.g., effort, turnover intentions, and citizenship behaviors) and organizational (e.g., actual turnover, attendance, and LEPC task effectiveness) outcome measures.
>
> Hypothesis 19c: Consensus on role subscales of climate will be related to both individual (e.g., effort, turnover intentions, and citizenship behaviors) and organizational (e.g., actual turnover, attendance, and LEPC task effectiveness) outcome measures.

Individual Level Criteria. Climate consensus did not add significantly to the explained variance for almost all of the criteria variables over the variance explained by climate quality (see Table 6a through 6g). The few relationships where climate consensus was found to add significantly to prediction may be attributed to chance. There were even

fewer cases in which the interaction term contributed significance to the prediction of individual level criteria.

Table 6a: Moderated Regression Results for Turnover Intentions, Item 1

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Intention to Turnover - Item 1				
	leader initiating structure	Climate Quality	.022**	
		Climate Consensus	.024**	.002
		Interaction	.024**	.000
	leader consideration	Climate Quality	.024**	
		Climate Consensus	.026**	.002
		Interaction	.026**	.000
	leader communicaton	Climate Quality	.025**	
		Climate Consensus	.025**	.000
		Interaction	.025**	.000
	team cohesion	Climate Quality	.029**	
		Climate Consensus	.029**	.000
		Interaction	.029**	.000
	team coordination	Climate Quality	.018**	
		Climate Consensus	.018**	.000
		Interaction	.018**	.000
	team pride	Climate Quality	.029**	
		Climate Consensus	.029**	.000
		Interaction	.029**	.000
	team task-orientation	Climate Quality	.020**	
		Climate Consensus	.022**	.000
		Interaction	.025**	.003
	role clarity	Climate Quality	.023**	
		Climate Consensus	.023**	.000
		Interaction	.023**	.000
	role conflict	Climate Quality	.005**	
		Climate Consensus	.008**	.003
		Interaction	.008**	.000
	role overload	Climate Quality	.007**	
		Climate Consensus	.009**	.002
		Interaction	.010**	.001

N = 1209 for all variables

Table 6b: Moderated Regression Results for Turnover Intentions, Item 2

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Turnover Intentions Item 2				
	leader initiating structure	Climate Quality	.034**	
		Climate Consensus	.037**	.003
		Interaction	.038**	.001
	leader consideration	Climate Quality	.043**	
		Climate Consensus	.046**	.003
		Interaction	.046**	.000
	leader communicaton	Climate Quality	.042**	
		Climate Consensus	.042**	.000
		Interaction	.042**	.000
	team cohesion	Climate Quality	.042**	
		Climate Consensus	.043**	.001
		Interaction	.043**	.000
	team coordination	Climate Quality	.031**	
		Climate Consensus	.031**	.000
		Interaction	.033**	.002
	team pride	Climate Quality	.047**	
		Climate Consensus	.047**	.000
		Interaction	.047**	.000
	team task-orientation	Climate Quality	.033**	
		Climate Consensus	.033**	.000
		Interaction	.035**	.002
	role clarity	Climate Quality	.044**	
		Climate Consensus	.044**	.000
		Interaction	.046**	.002
	role conflict	Climate Quality	.020**	
		Climate Consensus	.021**	.001
		Interaction	.021**	.000
	role overload	Climate Quality	.025**	
		Climate Consensus	.029**	.004*
		Interaction	.030**	.001

Table 6c: Moderated Regression Results for Turnover Intentions, Item 3

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Turnover Intentions Item 3				
	leader initiating structure	Climate Quality	.015**	
		Climate Consensus	.017**	.002
		Interaction	.017**	.000
	leader consideration	Climate Quality	.016**	
		Climate Consensus	.019**	.003*
		Interaction	.019**	.000
	leader communicaton	Climate Quality	.022**	
		Climate Consensus	.022**	.000
		Interaction	.022**	.000
	team cohesion	Climate Quality	.017**	
		Climate Consensus	.018**	.001
		Interaction	.019**	.001
	team coordination	Climate Quality	.009**	
		Climate Consensus	.009**	.000
		Interaction	.011**	.002
	team pride	Climate Quality	.024**	
		Climate Consensus	.024**	.000
		Interaction	.024**	.000
	team task-orientation	Climate Quality	.013**	
		Climate Consensus	.014**	.001
		Interaction	.017**	.003
	role clarity	Climate Quality	.016**	
		Climate Consensus	.016**	.000
		Interaction	.017**	.001
	role conflict	Climate Quality	.008**	
		Climate Consensus	.009**	.001
		Interaction	.009**	.000
	role overload	Climate Quality	.012**	
		Climate Consensus	.014**	.002
		Interaction	.016**	.002

Table 6d: Moderated Regression Results for Citizenship Behavior

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Citizenship Behavior				
	leader initiating structure	Climate Quality	.045**	
		Climate Consensus	.050**	.005**
		Interaction	.057**	.007**
	leader consideration	Climate Quality	.035**	
		Climate Consensus	.037**	.002
		Interaction	.038**	.001
	leader communicaton	Climate Quality	.033**	
		Climate Consensus	.042**	.009**
		Interaction	.045**	.003*
	team cohesion	Climate Quality	.054**	
		Climate Consensus	.059**	.004*
		Interaction	.059**	.000
	team coordination	Climate Quality	.036**	
		Climate Consensus	.037**	.001
		Interaction	.037**	.000
	team pride	Climate Quality	.031**	
		Climate Consensus	.036**	.005**
		Interaction	.037**	.001
	team task-orientation	Climate Quality	.038**	
		Climate Consensus	.040**	.002
		Interaction	.040**	.002
	role clarity	Climate Quality	.060**	
		Climate Consensus	.068**	.008**
		Interaction	.070**	.002
	role conflict	Climate Quality	.001	
		Climate Consensus	.003	.002
		Interaction	.002	-.001
	role overload	Climate Quality	.001	
		Climate Consensus	.001	.000
		Interaction	.005	.004*

Table 6e: Moderated Regression Results for Perceived Effort

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Perceived Effort				
	leader initiating structure	Climate Quality	.064**	
		Climate Consensus	.065**	.001
		Interaction	.065**	.001
	leader consideration	Climate Quality	.052**	
		Climate Consensus	.052	.000
		Interaction	.053	.000
	leader communicaton	Climate Quality	.060**	
		Climate Consensus	.061**	.001
		Interaction	.063**	.002
	team cohesion	Climate Quality	.066**	
		Climate Consensus	.070**	.004*
		Interaction	.070**	.000
	team coordination	Climate Quality	.047**	
		Climate Consensus	.047**	.000
		Interaction	.047**	.000
	team pride	Climate Quality	.047**	
		Climate Consensus	.047**	.000
		Interaction	.047**	.000
	team task-orientation	Climate Quality	.049**	
		Climate Consensus	.051**	.002
		Interaction	.052**	.001
	role clarity	Climate Quality	.054**	
		Climate Consensus	.054**	.000
		Interaction	.057**	.003
	role conflict	Climate Quality	.008**	
		Climate Consensus	.008**	.000
		Interaction	.008*	.000
	role overload	Climate Quality	.011**	
		Climate Consensus	.012**	.000
		Interaction	.012**	.000

Table 6f: Moderated Regression Results for Perceived Rewards

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Perceived Rewards				
	leader initiating structure	Climate Quality	.079**	
		Climate Consensus	.084**	.005**
		Interaction	.085**	.001
	leader consideration	Climate Quality	.070**	
		Climate Consensus	.071**	.001
		Interaction	.071**	.000
	leader communicaton	Climate Quality	.081**	
		Climate Consensus	.082**	.001
		Interaction	.085**	.003*
	team cohesion	Climate Quality	.101**	
		Climate Consensus	.101**	.000
		Interaction	.102**	.001
	team coordination	Climate Quality	.065**	
		Climate Consensus	.068**	.003*
		Interaction	.070**	.002
	team pride	Climate Quality	.088**	
		Climate Consensus	.089**	.001
		Interaction	.091**	.002
	team task-orientation	Climate Quality	.084**	
		Climate Consensus	.086**	.002
		Interaction	.087**	.001
	role clarity	Climate Quality	.082**	
		Climate Consensus	.082**	.000
		Interaction	.082**	.000
	role conflict	Climate Quality	.034**	
		Climate Consensus	.034**	.000
		Interaction	.034**	.000
	role overload	Climate Quality	.036**	
		Climate Consensus	.036**	.000
		Interaction	.036**	.000

Table 6g: Moderated Regression Results for Attendance

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Attendance				
	leader initiating structure	Climate Quality	.045**	
		Climate Consensus	.045**	.000
		Interaction	.046**	.001
	leader consideration	Climate Quality	.004	
		Climate Consensus	.004	.000
		Interaction	.004	.000
	leader communicaton	Climate Quality	.040**	
		Climate Consensus	.041**	.001
		Interaction	.043**	.002
	team cohesion	Climate Quality	.041**	
		Climate Consensus	.044**	.003*
		Interaction	.045**	.001
	team coordination	Climate Quality	.030**	
		Climate Consensus	.030**	.000
		Interaction	.030**	.000
	team pride	Climate Quality	.026**	
		Climate Consensus	.026**	.000
		Interaction	.027**	.001
	team task-orientation	Climate Quality	.032**	
		Climate Consensus	.032**	.000
		Interaction	.032**	.000
	role clarity	Climate Quality	.035**	
		Climate Consensus	.035**	.000
		Interaction	.037**	.002
	role conflict	Climate Quality	.004	
		Climate Consensus	.004	.000
		Interaction	.004	.000
	role overload	Climate Quality	.005**	
		Climate Consensus	.006*	.001
		Interaction	.006	.000

Organization Level Criteria. Climate consensus failed to add significantly to the explained variance for almost all of the criteria variables over the variance explained by climate quality (see Tables 7a through 7q). The few relationships where climate consensus was found to add significantly to prediction may be attributed to chance. As was the case for individual level criteria, there were even fewer cases in which the interaction term contributed significantly to the prediction of individual level criteria.

Table 7a: Moderated Regression Results for Turnover

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Turnover				
	leader initiating structure	Climate Quality	.001	
		Climate Consensus	.013	.012
		Interaction	.023	.010
	leader consideration	Climate Quality	.001	
		Climate Consensus	.002	.001
		Interaction	.003	.001
	leader communicaton	Climate Quality	.000	
		Climate Consensus	.000	.000
		Interaction	.001	.001
	team cohesion	Climate Quality	.002	
		Climate Consensus	.005	.003
		Interaction	.017	.012
	team coordination	Climate Quality	.005	
		Climate Consensus	.005	.000
		Interaction	.006	.001
	team pride	Climate Quality	.001	
		Climate Consensus	.029	.028*
		Interaction	.030	.001
	team task-orientation	Climate Quality	.002	
		Climate Consensus	.005	.003
		Interaction	.007	.002
	role clarity	Climate Quality	.002	
		Climate Consensus	.023	.021
		Interaction	.023	.000
	role conflict	Climate Quality	.004	
		Climate Consensus	.004	.000
		Interaction	.007	.003
	role overload	Climate Quality	.010	
		Climate Consensus	.016	.006
		Interaction	.024	.018

Table 7b: Moderated Regression Results for Planning Quality

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality				
	leader initiating structure	Climate Quality	.073**	
		Climate Consensus	.096**	.023
		Interaction	.104**	.008
	leader consideration	Climate Quality	.035*	
		Climate Consensus	.053*	.018
		Interaction	.061*	.008
	leader communicaton	Climate Quality	.050**	
		Climate Consensus	.060**	.010
		Interaction	.106**	.046**
	team cohesion	Climate Quality	.032*	
		Climate Consensus	.050*	.018
		Interaction	.057*	.007
	team coordination	Climate Quality	.045**	
		Climate Consensus	.053*	.008
		Interaction	.056*	.003
	team pride	Climate Quality	.100**	
		Climate Consensus	.107**	.007
		Interaction	.127**	.020
	team task-orientation	Climate Quality	.036*	
		Climate Consensus	.040	.004
		Interaction	.040	.004
	role clarity	Climate Quality	.048**	
		Climate Consensus	.056*	.008
		Interaction	.057*	.001
	role conflict	Climate Quality	.059**	
		Climate Consensus	.085**	.026*
		Interaction	.085**	.000
	role overload	Climate Quality	.131**	
		Climate Consensus	.132**	.001
		Interaction	.132**	.000

Table 7c: Moderated Regression Results for Planning Quality, Item A

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item A				
	leader initiating structure	Climate Quality	.117**	
		Climate Consensus	.121**	.004
		Interaction	.130	.009
	leader consideration	Climate Quality	.066**	
		Climate Consensus	.132**	.066**
		Interaction	.146**	.014
	leader communicaton	Climate Quality	.073**	
		Climate Consensus	.091**	.028*
		Interaction	.118**	.027*
	team cohesion	Climate Quality	.052**	
		Climate Consensus	.075**	.023
		Interaction	.081**	.006
	team coordination	Climate Quality	.086**	
		Climate Consensus	.109**	.023
		Interaction	.119**	.010
	team pride	Climate Quality	.142**	
		Climate Consensus	.147**	.005
		Interaction	.153**	.006
	team task-orientation	Climate Quality	.088**	
		Climate Consensus	.090**	.002
		Interaction	.091**	.001
	role clarity	Climate Quality	.057**	
		Climate Consensus	.063**	.006
		Interaction	.068*	.005
	role conflict	Climate Quality	.046**	
		Climate Consensus	.046*	.000
		Interaction	.046	.000
	role overload	Climate Quality	.090**	
		Climate Consensus	.105**	.015
		Interaction	.105**	.015

Table 7d: Moderated Regression Results for Planning Quality, Item B

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item B				
	leader initiating structure	Climate Quality	.045**	
		Climate Consensus	.050*	.005
		Interaction	.055*	.005
	leader consideration	Climate Quality	.021	
		Climate Consensus	.086**	.065**
		Interaction	.086**	.000
	leader communicaton	Climate Quality	.011	
		Climate Consensus	.022	.011
		Interaction	.030	.008
	team cohesion	Climate Quality	.005	
		Climate Consensus	.028	.023
		Interaction	.032	.004
	team coordination	Climate Quality	.026	
		Climate Consensus	.044*	.018
		Interaction	.046	.002
	team pride	Climate Quality	.072**	
		Climate Consensus	.076**	.004
		Interaction	.097**	.021
	team task-orientation	Climate Quality	.032*	
		Climate Consensus	.034	.002
		Interaction	.040	.006
	role clarity	Climate Quality	.031*	
		Climate Consensus	.032	.001
		Interaction	.032	.000
	role conflict	Climate Quality	.040*	
		Climate Consensus	.047*	.007
		Interaction	.047	.000
	role overload	Climate Quality	.108**	
		Climate Consensus	.118**	.010
		Interaction	.133**	.015

Table 7e: Moderated Regression Results for Planning Quality, Item C

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item C				
	leader initiating structure	Climate Quality	.062**	
		Climate Consensus	.066**	.004
		Interaction	.069*	.003
	leader consideration	Climate Quality	.038*	
		Climate Consensus	.055*	.017
		Interaction	.060*	.005
	leader communicaton	Climate Quality	.069**	
		Climate Consensus	.098**	.029*
		Interaction	.109**	.011
	team cohesion	Climate Quality	.037*	
		Climate Consensus	.047*	.010
		Interaction	.049	.002
	team coordination	Climate Quality	.044**	
		Climate Consensus	.047*	.003
		Interaction	.050	.003
	team pride	Climate Quality	.060**	
		Climate Consensus	.063**	.003
		Interaction	.065*	.003
	team task-orientation	Climate Quality	.052**	
		Climate Consensus	.053*	.001
		Interaction	.053	.000
	role clarity	Climate Quality	.053**	
		Climate Consensus	.053*	.000
		Interaction	.056*	.003
	role conflict	Climate Quality	.025	
		Climate Consensus	.048*	.023
		Interaction	.050	.002
	role overload	Climate Quality	.028*	
		Climate Consensus	.031	.003
		Interaction	.040	.009

Table 7f: Moderated Regression Results for Planning Quality, Item D

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item D				
	leader initiating structure	Climate Quality	.042**	
		Climate Consensus	.094**	.052**
		Interaction	.096**	.002
	leader consideration	Climate Quality	.022	
		Climate Consensus	.030	.008
		Interaction	.044	.014
	leader communicaton	Climate Quality	.036*	
		Climate Consensus	.042*	.006
		Interaction	.080**	.038*
	team cohesion	Climate Quality	.008	
		Climate Consensus	.013	.005
		Interaction	.013	.000
	team coordination	Climate Quality	.026	
		Climate Consensus	.026	.000
		Interaction	.029	.003
	team pride	Climate Quality	.042*	
		Climate Consensus	.074**	.032*
		Interaction	.074**	.000
	team task-orientation	Climate Quality	.018	
		Climate Consensus	.026	.008
		Interaction	.029	.003
	role clarity	Climate Quality	.030*	
		Climate Consensus	.051*	.021
		Interaction	.052	.001
	role conflict	Climate Quality	.032*	
		Climate Consensus	.042*	.010
		Interaction	.044	.002
	role overload	Climate Quality	.012	
		Climate Consensus	.012	.000
		Interaction	.015	.003

Table 7g: Moderated Regression Results for Planning Quality, Item E

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item E				
	leader initiating structure	Climate Quality	.039*	
		Climate Consensus	.063**	.024**
		Interaction	.064*	.001
	leader consideration	Climate Quality	.007	
		Climate Consensus	.007	.000
		Interaction	.008	.001
	leader communicaton	Climate Quality	.028*	
		Climate Consensus	.034	.006
		Interaction	.041	.007
	team cohesion	Climate Quality	.009	
		Climate Consensus	.010	.001
		Interaction	.026	.016
	team coordination	Climate Quality	.006	
		Climate Consensus	.007	.001
		Interaction	.009	.002
	team pride	Climate Quality	.047**	
		Climate Consensus	.063**	.016
		Interaction	.081**	.018
	team task-orientation	Climate Quality	.004	
		Climate Consensus	.015	.011
		Interaction	.015	.000
	role clarity	Climate Quality	.029*	
		Climate Consensus	.033	.004
		Interaction	.047	.014
	role conflict	Climate Quality	.023	
		Climate Consensus	.029	.006
		Interaction	.029	.000
	role overload	Climate Quality	.063**	
		Climate Consensus	.067**	.004
		Interaction	.067*	.000

Table 7h: Moderated Regression Results for Planning Quality, Item F

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item F				
	leader initiating structure	Climate Quality	.043**	
		Climate Consensus	.058*	.015
		Interaction	.065*	.007
	leader consideration	Climate Quality	.028*	
		Climate Consensus	.042*	.014
		Interaction	.048	.006
	leader communicaton	Climate Quality	.044**	
		Climate Consensus	.050*	.005
		Interaction	.068*	.018
	team cohesion	Climate Quality	.011	
		Climate Consensus	.018	.007
		Interaction	.023	.005
	team coordination	Climate Quality	.021	
		Climate Consensus	.022	.001
		Interaction	.032	.010
	team pride	Climate Quality	.046**	
		Climate Consensus	.059*	.013
		Interaction	.063*	.004
	team task-orientation	Climate Quality	.014	
		Climate Consensus	.023	.009
		Interaction	.025	.002
	role clarity	Climate Quality	.026	
		Climate Consensus	.033	.007
		Interaction	.033	.000
	role conflict	Climate Quality	.045**	
		Climate Consensus	.059*	.014
		Interaction	.065*	.006
	role overload	Climate Quality	.078	
		Climate Consensus	.079	.001
		Interaction	.082	.003

Table 7i: Moderated Regression Results for Planning Quality, Item G

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item G				
	leader initiating structure	Climate Quality	.030*	
		Climate Consensus	.042*	.012
		Interaction	.068*	.026
	leader consideration	Climate Quality	.004	
		Climate Consensus	.019	.015
		Interaction	.019	.000
	leader communicaton	Climate Quality	.013	
		Climate Consensus	.020	.007
		Interaction	.043	.023
	team cohesion	Climate Quality	.014	
		Climate Consensus	.022	.008
		Interaction	.035	.013
	team coordination	Climate Quality	.005	
		Climate Consensus	.007	.002
		Interaction	.010	.003
	team pride	Climate Quality	.044**	
		Climate Consensus	.047*	.003
		Interaction	.052	.005
	team task-orientation	Climate Quality	.006	
		Climate Consensus	.011	.005
		Interaction	.011	.000
	role clarity	Climate Quality	.019	
		Climate Consensus	.023	.004
		Interaction	.023	.000
	role conflict	Climate Quality	.035*	
		Climate Consensus	.061**	.026
		Interaction	.062**	.001
	role overload	Climate Quality	.109**	
		Climate Consensus	.110**	.001
		Interaction	.113**	.003

Table 7j: Moderated Regression Results for Planning Quality, Item H

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item H				
	leader initiating structure	Climate Quality	.084**	
		Climate Consensus	.107**	.023
		Interaction	.108**	.001
	leader consideration	Climate Quality	.028*	
		Climate Consensus	.034	.006
		Interaction	.035	.001
	leader communicaton	Climate Quality	.069**	
		Climate Consensus	.069**	.000
		Interaction	.091**	.022
	team cohesion	Climate Quality	.035*	
		Climate Consensus	.037	.002
		Interaction	.054	.017
	team coordination	Climate Quality	.051**	
		Climate Consensus	.052*	.001
		Interaction	.054	.002
	team pride	Climate Quality	.114**	
		Climate Consensus	.121**	.007
		Interaction	.136**	.015
	team task-orientation	Climate Quality	.031*	
		Climate Consensus	.038	.007
		Interaction	.042	.004
	role clarity	Climate Quality	.051**	
		Climate Consensus	.058*	.007
		Interaction	.076**	.014
	role conflict	Climate Quality	.058**	
		Climate Consensus	.067**	.009
		Interaction	.067*	.000
	role overload	Climate Quality	.109**	
		Climate Consensus	.117**	.008
		Interaction	.118**	.001

Table 7k: Moderated Regression Results for Planning Quality, Item I

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item I				
	leader initiating structure	Climate Quality	.041*	
		Climate Consensus	.043*	.002
		Interaction	.044	.001
	leader consideration	Climate Quality	.016	
		Climate Consensus	.018	.002
		Interaction	.027	.009
	leader communicaton	Climate Quality	.039*	
		Climate Consensus	.046*	.007
		Interaction	.068*	.022
	team cohesion	Climate Quality	.007	
		Climate Consensus	.017	.010
		Interaction	.021	.004
	team coordination	Climate Quality	.007	
		Climate Consensus	.012	.005
		Interaction	.012	.000
	team pride	Climate Quality	.041*	
		Climate Consensus	.046*	.005
		Interaction	.054*	.008
	team task-orientation	Climate Quality	.007	
		Climate Consensus	.007	.000
		Interaction	.008	.001
	role clarity	Climate Quality	.028*	
		Climate Consensus	.030	.002
		Interaction	.038	.008
	role conflict	Climate Quality	.033*	
		Climate Consensus	.054*	.021
		Interaction	.054	.000
	role overload	Climate Quality	.080**	
		Climate Consensus	.082**	.002
		Interaction	.091**	.009

Table 7l: Moderated Regression Results for Planning Quality, Item J

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item J				
	leader initiating structure	Climate Quality	.015	
		Climate Consensus	.026	.011
		Interaction	.029	.003
	leader consideration	Climate Quality	.007	
		Climate Consensus	.011	.004
		Interaction	.013	.002
	leader communicaton	Climate Quality	.014	
		Climate Consensus	.032	.018
		Interaction	.049	.017
	team cohesion	Climate Quality	.014	
		Climate Consensus	.017	.003
		Interaction	.031	.014
	team coordination	Climate Quality	.020	
		Climate Consensus	.022	.002
		Interaction	.022	.000
	team pride	Climate Quality	.047**	
		Climate Consensus	.049*	.002
		Interaction	.095**	.046**
	team task-orientation	Climate Quality	.008	
		Climate Consensus	.009	.001
		Interaction	.013	.004
	role clarity	Climate Quality	.007	
		Climate Consensus	.012	.005
		Interaction	.017	.005
	role conflict	Climate Quality	.009	
		Climate Consensus	.041	.032*
		Interaction	.042	.001
	role overload	Climate Quality	..067**	
		Climate Consensus	.069**	.002
		Interaction	.072*	.003

Table 7m: Moderated Regression Results for Planning Quality, Item K

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item K				
	leader initiating structure	Climate Quality	.009	
		Climate Consensus	.031	.022
		Interaction	.033	.002
	leader consideration	Climate Quality	.004	
		Climate Consensus	.007	.003
		Interaction	.017	.010
	leader communicaton	Climate Quality	.007	
		Climate Consensus	.009	.002
		Interaction	.015	.006
	team cohesion	Climate Quality	.000	
		Climate Consensus	.004	.004
		Interaction	.016	.012
	team coordination	Climate Quality	.002	
		Climate Consensus	.006	.004
		Interaction	.008	.002
	team pride	Climate Quality	.005	
		Climate Consensus	.012	.007
		Interaction	.046	.034*
	team task-orientation	Climate Quality	.000	
		Climate Consensus	.000	.000
		Interaction	.001	.001
	role clarity	Climate Quality	.006	
		Climate Consensus	.019	.013
		Interaction	.028	.009
	role conflict	Climate Quality	.020	
		Climate Consensus	.034	.014
		Interaction	.039	.005
	role overload	Climate Quality	.031*	
		Climate Consensus	.035	.004
		Interaction	.038	.003

Table 7n: Moderated Regression Results for Planning Quality, Item L

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item L				
	leader initiating structure	Climate Quality	.031*	
		Climate Consensus	.031	.000
		Interaction	.032	.001
	leader consideration	Climate Quality	.022	
		Climate Consensus	.024	.002
		Interaction	.041	.017
	leader communicaton	Climate Quality	.031*	
		Climate Consensus	.064**	.033*
		Interaction	.076**	.012
	team cohesion	Climate Quality	.022	
		Climate Consensus	.035	.013
		Interaction	.038	.003
	team coordination	Climate Quality	.015	
		Climate Consensus	.041	.026
		Interaction	.043	.002
	team pride	Climate Quality	.030*	
		Climate Consensus	.030	.000
		Interaction	.050	.020
	team task-orientation	Climate Quality	.013	
		Climate Consensus	.016	.003
		Interaction	.016	.000
	role clarity	Climate Quality	.034*	
		Climate Consensus	.035	.001
		Interaction	.035	.001
	role conflict	Climate Quality	.032*	
		Climate Consensus	.036	.004
		Interaction	.036	.000
	role overload	Climate Quality	.064**	
		Climate Consensus	.070**	.006
		Interaction	.074**	.004

Table 7o: Moderated Regression Results for Planning Quality, Item M

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Planning Quality Item M				
	leader initiating structure	Climate Quality	.023	
		Climate Consensus	.026	.003
		Interaction	.045	.019
	leader consideration	Climate Quality	.005	
		Climate Consensus	.016	.011
		Interaction	.027	.011
	leader communicaton	Climate Quality	.013	
		Climate Consensus	.013	.000
		Interaction	.019	.006
	team cohesion	Climate Quality	.014	
		Climate Consensus	.046*	.032*
		Interaction	.047	.001
	team coordination	Climate Quality	.007	
		Climate Consensus	.039	.032*
		Interaction	.048	.009
	team pride	Climate Quality	.031*	
		Climate Consensus	.031	.000
		Interaction	.036	.005
	team task-orientation	Climate Quality	.005	
		Climate Consensus	.006	.001
		Interaction	.020	.014
	role clarity	Climate Quality	.015	
		Climate Consensus	.015	.000
		Interaction	.016	.001
	role conflict	Climate Quality	.002	
		Climate Consensus	.008	.006
		Interaction	.008	.000
	role overload	Climate Quality	.053**	
		Climate Consensus	.057*	.004
		Interaction	.057*	.000

Table 7p: Moderated Regression Results for Percent Attendance

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
Percent Attendance				
	leader initiating structure	Climate Quality	.008	
		Climate Consensus	.014	.006
		Interaction	.021	.007
	leader consideration	Climate Quality	.014	
		Climate Consensus	.014	.000
		Interaction	.023	.009
	leader communicaton	Climate Quality	.024	
		Climate Consensus	.037	.013
		Interaction	.039	.002
	team cohesion	Climate Quality	.045**	
		Climate Consensus	.046*	.001
		Interaction	.047	.001
	team coordination	Climate Quality	.004	
		Climate Consensus	.006	.002
		Interaction	.007	.001
	team pride	Climate Quality	.010	
		Climate Consensus	.011	.001
		Interaction	.012	.001
	team task-orientation	Climate Quality	.011	
		Climate Consensus	.012	.001
		Interaction	.030	.018
	role clarity	Climate Quality	.000	
		Climate Consensus	.000	.000
		Interaction	.001	.001
	role conflict	Climate Quality	.016	
		Climate Consensus	.020	.004
		Interaction	.021	.001
	role overload	Climate Quality	.018	
		Climate Consensus	.021	.003
		Interaction	.025	.004

Table 7q: Moderated Regression Results for SERC Ratings

Criterion Measure	Climate Subscale	Variable Entered	R^2	Increment in R^2
SERC Ratings				
	leader initiating structure	Climate Quality	.202**	
		Climate Consensus	.207**	.005
		Interaction	.207**	.000
	leader consideration	Climate Quality	.176**	
		Climate Consensus	.177**	.001
		Interaction	.178**	.001
	leader communicaton	Climate Quality	.162**	
		Climate Consensus	.173**	.011
		Interaction	.173**	.000
	team cohesion	Climate Quality	.094**	
		Climate Consensus	.152**	.058*
		Interaction	.164**	.012
	team coordination	Climate Quality	.146**	
		Climate Consensus	.151**	.005
		Interaction	.151**	.000
	team pride	Climate Quality	.376**	
		Climate Consensus	.390**	.014
		Interaction	.420**	.030
	team task-orientation	Climate Quality	.128**	
		Climate Consensus	.141**	.013
		Interaction	.142**	.001
	role clarity	Climate Quality	.112**	
		Climate Consensus	.114**	.002
		Interaction	.146**	.032
	role conflict	Climate Quality	.020	
		Climate Consensus	.029	.009
		Interaction	.050	.021
	role overload	Climate Quality	.042	
		Climate Consensus	.042	.000
		Interaction	.043	.000

* $F_{(3, 138)}$ for turnover, planning quality, and percent attendance
* $F_{(3, 71)}$ for SERC ratings

DISCUSSION

All of the scales used to represent the climate construct in this study exhibited high internal consistencies. The scales used as antecedents and outcomes also demonstrated high internal consistencies, with the exception of experience with emergencies. This latter result is best explained by noting that natural (e.g., floods), fixed site, and transportation emergencies are low frequency events that are relatively independent of each other. Thus, a low level of internal consistency in the scale is not theoretically troubling even though it is psychometrically problematic.

Climate quality does not seem to be affected by the size of the LEPC. Although this does not support the hypothesized relationship, it is a positive outcome for LEPCs in general, as the number of members within LEPCs varies widely. Climate quality also does not seem to be affected by the support of local officials - at least in LEPCs with 7 or more members. This relationship is somewhat more ambiguous for smaller LEPCs, as correlations between climate quality before using $r_{wg(j)}$ as a screening device for agreement and support of local officials were highly significant. This may indicate that those LEPCs with fewer members or those still struggling to move throughout the developmental phase may need the support of local officials more than those in which agreement on climate measures is high. Future research should not only examine the differences between this and other relationships in smaller and larger LEPCs, but should examine the extent to which screening out groups using $r_{wg(j)}$ may cloud true strength of relationships. In addition, it is possible that a negatively excellerated curvilinear

relationship exists between organization size and climate quality, with climate quality increasing rapidly when organizational size is low, moderately when size is medium, and plateauing when size is large. Research on antecedents of organizational climate should examine this possibility.

Climate quality is related to both organizational (percent attendance, effectiveness ratings, planning quality, and actual turnover) and individual level outcomes (turnover intentions, perceived effort, perceived rewards, citizenship behaviors and attendance). This demonstrates the importance of having a positive climate within an organization to create effective outcomes at both the organizational and individual levels. Another possible explanation is that the individual level results are attributable to percept-percept bias, as both the climate measures and the criteria measures were derived from the same questionnaire. This seems unlikely, as there was differential prediction in the relationships studied and the correlations themselves would indicate otherwise; even if the lowest of the correlations was attributed solely to percept-percept bias, partialling out that value from the other correlations would still yield significant results.

Previous research has regarded climate subscales uniformly in hypothesized relationships with other variables. This paper examined three subsets of scales for each hypothesis. While the data generally support the conceptualization of these scales as a single construct through factor analysis and examination of correlations between scales, there were some distinct differences in relationships with other constructs. This may suggest that each of the subcategories should be examined separately, as leadership climate, teamwork climate, and role climate. Such an approach would fall midway between Schneider's and James' theoretical positions. The low correlations between role conflict and role overload with the other eight scales, however, indicates that there may be evidence for more than one construct within the

climate measure. The data suggest that the separation of constructs within climate may not be as clear as separating the scales along the lines of leadership climate, teamwork climate, and role climate. Unfortunately, it is not clear whether results apply only for this study, only for LEPCs, only for volunteer organizations, or for all organizations. Future research should address the construct validity of climate measures in general, and within different types of organizations specifically.

Examining climate consensus as a distinct variable is new to the climate literature. Thus, all of the findings pertaining to this issue further our knowledge of organizational climate. Specifically, the results of this study indicate that aspects of climate consensus are related to the presence of subcommittees, formalized meetings, number of meetings, the use of technology, and direct experience with emergencies, but not to community resources. Thus, the socialization process does appear to have an effect on the formation of organizational climate. This would indicate that climate consensus may be improved by altering aspects of the which foster the informal socialization of members organization (i.e., by having more opportunity for interaction). Incorporating a *formalized* orientation process, however, seems to have little effect. Future studies should examine the effects of various socialization processes on climate consensus. It would also be interesting to examine relationships between demographic characteristics of the LEPC, such as average tenure and the extent to which group members are similar, and climate consensus.

Results of stepwise regressions indicate that climate consensus does not add unique variance to the prediction of either individual or organizational outcomes after entering climate quality into the equation. Thus, team performance on the types of planning tasks performed by LEPCs does not require member consensus on climate in the range of consensus found in this

study (recall that the distributions of $r_{wg(j)}$ displayed in Appendix D show that almost all LEPCs had high levels of consensus about their organizational climate). From a practical standpoint, this would imply that making an organization effective does not depend on members having similar perceptions of their work environment, only that the group as a whole has a generally positive view of the climate. Such a conclusion requires testing on a sample of organizations with a greater range of climate consensus, although it is not clear if extremely low levels of consensus can exist in a volunteer organization without jeopardizing the viability of the organization itself. Further research is needed to generate more conclusive information concerning the relationship between climate consensus and outcomes in various types of organizations, particularly those involving these factors.

It is worth noting that LEPCs with consensually negative climate may tend to disappear because volunteer organizations depend on internal rewards such as friendship or sense of accomplishment, not external rewards such as money. Thus, it is not likely to find many LEPCs with a situation where climate quality is low and the climate consensus is high, because those LEPCs simply dissolve. In the current study, less than 1.0% of the LEPCs examined experience climates of low quality and high consensus. Future research should examine the extent to which this is true in other organizations - particularly those of a non-profit nature - and the effects of this phenomenon on the ability of organizations to survive over time.

It is noteworthy that the present study replicated Lindell and Whitney's (1995) finding of a significant correlation between LEPC climate and effectiveness. This is interesting in that while Lindell and Whitney (1995) used only the LEPC Chairs for estimates of organizational climate quality, the present study used aggregated perceptions of LEPC members for this purpose. The replication of results indicates that the two methods are both effective, lending

some support to Glick's (1985, 1988) assertion that either organizational members or expert informants can be used. While it is true that organizations do not cognize, an individual informant may be in a position to accurately estimate the cognitive impressions of the members within the group. This finding suggests that further research should be conducted on the conditions under which expert informants' judgments are sufficient.

Results indicate that $r_{wg(j)}$ may have some serious problems in measuring agreement within groups, as noted previously by Kozlowski & Hults (1992) and James, Demaree & Wolf (1993). While most of the calculations resulted in expected values for agreement between 0 and 1.00, several of the estimations were negative or above 1.00. In fact, one LEPC had a value of -1243.0 for leader initiating structure! This problem seems to occur when the item variances for the group are extremely high and the number of group members is low. The calculation does not appear to have difficulties with sample sizes above 10, but as the samples decrease from 10 down to 2 the estimate of agreement seems to increasingly fluctuate beyond the expected range of 0 to 1.0 for more and more groups. Thus, as other researchers have suggested previously (Kozlowski & Hults, 1987; James, Demaree, & Wolf, 1984) it is recommended that $r_{wg(j)}$ not be used for small groups. This restriction can cause many groups to be eliminated from analyses as in the current study.

Screening out those groups with low agreement is performed to deal with two potential situations: (a) members may have formed opinions but not agree on the measure in question; or (b) the members could be randomly responding because the questions do not make sense in relation to their situation or group. In either case, the mean for those groups with low consensus will be very close to the midpoint of the scale by definition. Ordinarily one would expect to find attenuated correlations if such groups are included in the analyses. Therefore,

the correlations should be lower before screening for agreement than they are afterwards. This was not always the case in this study. The question, then, is what is the distribution of climate quality before and after screening for agreement. Obviously it is not the same in both cases. This difference could occur because of psychological or methodological reasons. Psychologically, smaller groups may have more of a chance for interactions to occur between group members, thus allowing them a better chance to develop similar opinions. Methodologically, one would expect groups with small samples to have more similar responses by chance as small samples tend to underestimate the values of the population variance. It is not clear which of these two explanations applies to the results obtained in this study. Future research should examine this question.

Affect was not examined as a part of climate in this study. As mentioned in the introduction, previous research has attempted to separate the cognitive aspects of climate from affective constructs such as global and facet job satisfaction. However, the finding of strong correlations among climate dimensions in this study is quite consistent with James and James' (1989) explanation of a single, higher-order factor as being related to individuals' appraisals of the significance of these climate dimensions for their personal well-being. This consistent pattern of strong correlations among climate dimensions suggests that the role of affective responses to climate perceptions be examined more thoroughly in future research.

This study demonstrates that climate consensus may be worth examining in terms of the development of climate. While it is important to distinguish between a fully developed organizational climate at one level and the psychological climate perceived by individual group members at a second level, it is also important to address questions about how climate moves from the individual level to the organizational level. While the results found here indicate that

socialization may be related to the development of climate to some extent - particularly in forming impressions about leader consideration - there are other factors unaccounted for here that must play a role in climate development as well. Future research should attempt to uncover these relationships.

There were several limitations in the present study which are typically found in any field research. First, the individual level criteria were assessed on the same questionnaire as the climate measures. This could result in percept-percept inflation. Results obtained at the organizational level would suggest that, while there may have been some increase in the correlations due to percept-percept inflation, this probably did not account for all of the variance as many of the correlations with organizational level variables (measured in a separate questionnaire) were also very high. Second, many of the organizations in Illinois did not respond to the questionnaire, which could have produced sampling bias. The overall response rate, however, was consistent with those usually obtained in survey research. Third, the role overload scale contained only three items with low internal consistency ($\alpha = .71$), which caused many of the $r_{wg(j)}$ values to fall outside of the .70 to 1.00 range. Having low reliability within a scale is similar to having few members in a group in that they both seem to affect the results obtained in calculating $r_{wg(j)}$. Third, several of the LEPCs were removed from the data set because of low agreement or inadequate sample size within organizations. This naturally will cause some attrition in the data but cannot be ignored because of the implications of including such data on results derived from $r_{wg(j)}$ calculations. Fourth, the inability to get accurate information about the number of members within the LEPC was problematic. The information obtained for this variable was clearly inaccurate, as several persons to whom member surveys were sent contacted us to determine what, exactly, an LEPC is. These and other persons listed

as LEPC members indicated that they were not members of an LEPC. Fifth, this study is limited in the ability to make causal inferences because this is cross-sectional data. In order to make such inferences, three criteria must be met: (a) need to have reliable covariation; (b) temporal precedence must be established; and (c) the study must have the ability to rule out rival hypotheses. The first criterion was met for all of the statistically significant correlations, and the third criterion was met in part by casting doubt on the potential of method variance to cause all of the results. This study does not, however, have temporal precedence for all of the relationships. We do have some information indicating that climate preceded and is independent of SERC ratings and organizational characteristics reported by the Chair because of the timing of data collection.

While this study clearly has its limitations, it is different from most survey studies in several ways. First, as mentioned previously, this study has more power to make causal inferences than most survey studies. Specifically, four sources of data (census data, LEPC Chairs, LEPC members, and the Michigan SERC) and two methods of data collection (objective data, surveys) were used in an attempt to minimize bias. Second, the results are likely to generalize to LEPCs across the country, as the conditions under which these LEPCs operate are true for most others as well (Adams, 1994). Third, this study examined data at both the individual and the organizational level, allowing for a broader examination of relationships.

Although results of this study did not demonstrate that climate consensus adds significantly to the variance explained by climate quality, this lack of findings may be attributable to the type of sample examined, not the construct. LEPCs are clearly in various stages of development, thus they are a viable sample for examining the relationships between

antecedents and climate consensus (which were significant in this study). However, LEPC functions may not require high interdependency among group members for tasks to be completed. For example, a site-specific emergency response plan could be written by a single person, with the remainder of the LEPC only reviewing the work. Interdepedency within groups may be a key requirement for climate consensus to have an effect on outcomes at either the individual or organizational level. Climate consensus should be examined in groups where interdependency is required among members to successfully complete tasks to determine if this variable truly is a viable construct to study. There also may be other ways to examine this construct other than the method used here, such as requesting that key informants estimate the climate consensus of the group as well as the climate quality.

In summary, this study examined the relationships of climate consensus and climate quality with both antecedent and outcome variables. Organizational outcomes were examined at both the individual and the organizational level. Several socialization factors have been shown to be related to climate consensus, but climate quality does not appear to be affected by size or support of local officials. Climate quality clearly has implications for organizational effectiveness, while climate consensus did not add significantly to the relationships between climate quality and outcomes for this set of organizations. Of particular interest are the findings for climate consensus, as this variable has not been examined in previous research. Much more research is needed to examine the viability of this construct and the extent to which the findings here are true for other organizations.

The understanding of levels of analysis in research on climates has rapidly progressed during the past ten years. There is a much greater understanding now about the differences between variables at the individual and the organizational level. More could be learned about

the progression of constructs from lower levels to higher ones. This study shows that examining the consensus of group members may be one potential method of accomplishing that goal.

APPENDIX A

Survey of LEPC Chairs

APPENDIX A

Survey of LEPC Chairs

MICHIGAN STATE UNIVERSITY
1994 SURVEY OF LEPC CHAIRS

Professor Michael K. Lindell
Principal Investigator
Community Emergency Preparedness Project

Person completing this survey _____

Phone number (_____)_____

1. Which of the following organizations participate in your LEPC? Check all that apply.

____Civil Defense/Emergency Services
____Chief Administrative Officer's Staff
____State/Local Elected Officials
____Emergency Medical/Hospitals
____Municipal/County Attorney's Office
____Public Works/Engineering
____Truck/Rail Carriers
____Environmental Agency
____Planning/Community Development
____Red Cross/Volunteer Groups
____Firefighting
____Law Enforcement
____Labor Groups
____Public Health
____Schools
____Local Industry
____Newsmedia
____Community Groups
____Agriculture
____Other

2a. To which of the above organizations does the LEPC chair belong? _____

b. Does the LEPC chair head the organization he/she represents on the LEPC?
____ No ____ Yes (If No, go to question 3)

c. How many supervisory levels are there between the chair of the LEPC and the most senior person in the organization he or she represents? _____ levels

3. How long has the current LEPC chair...	Less than 1 year	1 - 2 years	2 - 3 years	More than 3 years
a. been a member of the LEPC	1	2	3	4
b. been chair of the LEPC	1	2	3	4

4. Circle the months in which your LEPC or any of its subcommittees held a meeting *during 1993*. (You do not need to make any additional marks if more than one meeting was held in a single month.)

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

5. On average, how long do LEPC meetings usually last? _____ hours

6a. How many members make up your LEPC? _____ members

b. On average, how many usually attend meetings of the LEPC? _____ members

7. How often do your LEPC's meetings have each of the following...

		Never				Always
a.	regularly scheduled meeting dates (e.g., always on the same day of the month)?	1	2	3	4	5
b.	meeting times routinely scheduled to start at the same time of day?	1	2	3	4	5
c.	meeting location regularly scheduled for the same place?	1	2	3	4	5
d.	an agenda circulated in advance?	1	2	3	4	5
e.	reports from subcommittees?	1	2	3	4	5
f.	written minutes of the meeting ?	1	2	3	4	5
g.	guest speakers?	1	2	3	4	5
h.	training films or videotapes?	1	2	3	4	5

8. What is the total number of members who left your LEPC *in 1993?* Please include anyone who left without being replaced *and also* any replacements who themselves later left.
_____ **members**

9. What type of instructions do LEPC members receive about these aspects of LEPC functioning...

		Specific written description	Specific oral description	General oral description	No description
a.	job duties	1	2	3	4
b.	hierarchy of authority	1	2	3	4
c.	LEPC policies	1	2	3	4
d.	work rules and procedures	1	2	3	4

10a. Does your LEPC have any full- or part-time staff specifically assigned to support the LEPC?
____ No ____ Yes (If No, go to question 10)

b. How many hours per week do they work for the LEPC? _____ hours

c. Which organization pays this staff? _____

11. Does your jurisdiction fund SARA Title III planning activities by charging fees to facilities filing Material Safety Data Sheets, Tier 1 or Tier 2 reports?..... ____ No ____ Yes

12. Does your LEPC...

a.	have a formal orientation program for new members?	____ No	____ Yes
b.	have any subcommittees?	____ No	____ Yes
a.	set annual goals and objectives for itself?	____ No	____ Yes
b.	set annual goals and objectives for its subcommittees?	____ No	____ Yes
c.	assess its performance annually or more frequently?	____ No	____ Yes
d.	discuss this performance appraisal within the LEPC?	____ No	____ Yes
e.	present the performance appraisal orally or in writing to local appointed or elected officials?	____ No	____ Yes

13. In the past 5 years, has your community had a major emergency requiring members of the public to evacuate their homes or businesses resulting from...
    a. a natural hazard (e.g., flood)? ____ No ____ Yes
    b. an incident at a fixed site facility? ____ No ____ Yes
    c. a transportation incident? ____ No ____ Yes

14. How many facilities in your area exceed the Threshold Planning Quantity of Extremely Hazardous Substances? _____ facilities

15. For how many facilities in your area have you calculated the size of the Vulnerable Zone (e.g., using EPA's *Technical Guidance for Hazards Analysis*)? _____ facilities

16. Has your LEPC installed a computerized data base for tracking...
    a. hazard data (e.g., MSDSs, Tier 1 and Tier 2 reports)? ____ No ____ Yes
    b. community emergency response resources? ____ No ____ Yes

17. Is your LEPC a member of a statewide LEPC Association? ____ No ____ Yes

18. Have any of the following taken place in your jurisdiction *supporting* SARA Title III emergency planning?
    a. local resolutions or commitments by elected officials ____ No ____ Yes
    b. editorials by local newsmedia ____ No ____ Yes
    c. actions by community groups ____ No ____ Yes
    d. legal opinions on LEPC member liability ____ No ____ Yes

19. Have any of the following taken place in your jurisdiction *opposing* SARA Title III emergency planning?
    a. local resolutions or commitments by elected officials ____ No ____ Yes
    b. editorials by local newsmedia ____ No ____ Yes
    c. actions by community groups ____ No ____ Yes
    d. legal opinions on LEPC member liability ____ No ____ Yes

20. How much do elected officials and department heads in your jurisdiction...

		Not at all				Very great extent
a.	encourage LEPC members to give their best efforts?	1	2	3	4	5
b.	emphasize high standards of performance for the LEPC?	1	2	3	4	5
c.	set specific goals for the LEPC?	1	2	3	4	5
d.	make it clear how they will evaluate the performance of the LEPC?	1	2	3	4	5
e.	treat LEPC members with respect for the job being done?	1	2	3	4	5
f.	pay close attention to the LEPC's progress?	1	2	3	4	5
g.	recognize and reward good performance?	1	2	3	4	5
h.	always comment on mistakes, but rarely on successes?	1	2	3	4	5

21. Please rate the degree to which your LEPC has used each of the following resources in SARA Title III emergency planning.

	Resource	Not at all				Very great extent
a.	National Response Team *Hazardous Materials Emergency Planning Guide (NRT-1)*	1	2	3	4	5
b.	EPA *Technical Guidance for Hazards Analysis*	1	2	3	4	5
c.	EPA *Computer Systems for Chemical Emergency Planning*	1	2	3	4	5
d.	State emergency planning agency hazardous materials planning manuals	1	2	3	4	5
e.	Chemical Manufacturers Association *Community Awareness & Emergency Response Program Handbook*	1	2	3	4	5
f.	FEMA *Emergency Education Network* broadcasts	1	2	3	4	5
g.	Chemical Manufacturers Association videotapes	1	2	3	4	5
h.	FEMA or EPA training courses	1	2	3	4	5
i.	State emergency planning agency training courses	1	2	3	4	5
j.	Chemical Manufacturers Association training courses	1	2	3	4	5
k.	State environmental agency *Toxic Release Inventory* data	1	2	3	4	5
l.	CAMEO, ARCHIE, or other computer software	1	2	3	4	5

22. Has your jurisdiction contacted the International City/County Management Association (ICMA) about its Peer Exchange Program?
____ No ____ Yes, we received assistance ____ Yes, we provided assistance

23. Approximately how many public requests for information did your LEPC receive *during 1993?* _____ requests

24. Approximately how many talks did your LEPC give to community groups *during 1993?*
_____ talks

25. How frequently were the following topics related to SARA Title III covered in your local newspapers, radio or television *during 1993?*

Topics	Not at all	1-2 times/ year	3-4 times/ year	More than 4/ year
a. SARA Title III requirements	1	2	3	4
b. Hazardous facilities in your jurisdiction	1	2	3	4
c. LEPC emergency planning activities	1	2	3	4

26. How frequently was your LEPC in contact (telephone, letter or face-to-face) with each of the following *during 1993?*

Contacts	Not at all	1-2 times/ year	3-4 times/ year	More than 4/ year
a. FEMA regional staff	1	2	3	4
b. EPA regional staff	1	2	3	4
c. State emergency management agency	1	2	3	4
d. State environmental agency	1	2	3	4
e. LEPCs in adjacent jurisdictions	1	2	3	4
f. LEPCs in other jurisdictions of your state	1	2	3	4
g. LEPCs in other states	1	2	3	4

27. To what extent did your LEPC *spend time in 1993* in each of the following activities?

	Not at all				Very great extent
a. organizing and administering the LEPC	1	2	3	4	5
b. collecting and filing hazard data (e.g., MSDSs, Tier 1 and Tier 2 reports)	1	2	3	4	5
c. conducting site-specific vulnerable zone analyses	1	2	3	4	5
d. developing site-specific emergency plans	1	2	3	4	5
e. organizing and equipping HAZMAT response teams	1	2	3	4	5
f. inventorying local emergency response resources	1	2	3	4	5
g. acquiring and maintaining emergency communications	1	2	3	4	5
h. developing training programs for local emergency responders	1	2	3	4	5
i. developing protective action decision guides	1	2	3	4	5
j. acquiring and maintaining warning systems	1	2	3	4	5
k. analyzing air infiltration rates for local structures	1	2	3	4	5
l. analyzing evacuation time for local populations	1	2	3	4	5
m. promoting community toxic chemical hazard awareness	1	2	3	4	5

28. How satisfied are you with the *quality of the results* that your LEPC has achieved in each of the following activities?	Not very satisfied				Very satisfied
a. organizing and administering the LEPC	1	2	3	4	5
b. collecting and filing hazard data (e.g., MSDSs, Tier 1 and Tier 2 reports)	1	2	3	4	5
c. conducting site-specific vulnerable zone analyses	1	2	3	4	5
d. developing site-specific emergency plans	1	2	3	4	5
e. organizing and equipping HAZMAT response teams	1	2	3	4	5
f. inventorying local emergency response resources	1	2	3	4	5
g. acquiring and maintaining emergency communications	1	2	3	4	5
h. developing training programs for local emergency responders	1	2	3	4	5
i. developing protective action decision guides	1	2	3	4	5
j. acquiring and maintaining warning systems	1	2	3	4	5
k. analyzing air infiltration rates for local structures	1	2	3	4	5
l. analyzing evacuation time for local populations	1	2	3	4	5
m. promoting community toxic chemical hazard awareness	1	2	3	4	5

29. Did your LEPC conduct an emergency exercise during 1993?..... ____ No ____ Yes

30. Please list any suggestions you have for improving the effectiveness of SARA Title III emergency planning.

_____

_____

_____

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Thank you for the time that you have taken in filling out this questionnaire.

APPENDIX B

Survey of LEPC Members

APPENDIX B

Survey of LEPC Members

MICHIGAN STATE UNIVERSITY
1994 SURVEY OF LEPC MEMBERS

Professor Michael K. Lindell
Principal Investigator
Community Emergency Preparedness Project

In the following questions, *LEPC leaders* include those in positions such as the LEPC chair, vice-chair, secretary, and subcommittee chairs.

1.	To what extent do your LEPC leaders...	Never				Always
a.	let group members know what is expected of them?	1	2	3	4	5
b.	encourage the use of uniform procedures?	1	2	3	4	5
c.	ask that LEPC members follow standard rules and regulations?	1	2	3	4	5
d.	assign group members to particular tasks?	1	2	3	4	5
e.	decide what shall be done and how it will be done?	1	2	3	4	5
f.	make sure each member of the LEPC understands his or her part ?	1	2	3	4	5
g.	schedule the work to be done?	1	2	3	4	5
h.	maintain definite standards of performance?	1	2	3	4	5

2.	To what extent do your LEPC leaders...	Not at all				Very great extent
a.	act without consulting other LEPC members?	1	2	3	4	5
b.	do little things to make it pleasant to be a member of the LEPC?	1	2	3	4	5
c.	put suggestions made by LEPC members into operation?	1	2	3	4	5
d.	treat all LEPC members as their equals?	1	2	3	4	5
e.	give advance notice of changes?	1	2	3	4	5
f.	keep to themselves?	1	2	3	4	5
g.	look out for the personal welfare of LEPC members?	1	2	3	4	5
h.	make changes willingly?	1	2	3	4	5
i.	act friendly and approachable?	1	2	3	4	5
j.	refuse to explain their actions?	1	2	3	4	5

3.	To what extent ...	Not at all				Very great extent
a.	do you usually trust statements made by LEPC leaders?	1	2	3	4	5
b.	are LEPC leaders willing to listen to your problems?	1	2	3	4	5
c.	are LEPC leaders eager to recognize and to reward good performance?	1	2	3	4	5
d.	are LEPC leaders friendly and easy to approach?	1	2	3	4	5
e.	do LEPC leaders provide timely information?	1	2	3	4	5
f.	do LEPC leaders provide accurate answers to your questions?	1	2	3	4	5
g.	do LEPC leaders pay attention to what you say?	1	2	3	4	5
h.	do LEPC leaders promote good communication with the members of the LEPC?	1	2	3	4	5

4.	How much do you agree with the following statements about your role on your LEPC?	Strongly disagree				Strongly agree
a.	I know that I have divided my time properly among tasks.	1	2	3	4	5
b.	I know what my responsibilities are	1	2	3	4	5
c.	I know exactly what is expected of me	1	2	3	4	5
d.	Explanations are clear of what has to be done	1	2	3	4	5
e.	It is easy to get accurate information about the policies and procedures I must follow	1	2	3	4	5

5.	How much do you agree with the following statements about your role on your LEPC?	Strongly disagree				Strongly agree
a.	I receive an assignment without the personnel to complete it	1	2	3	4	5
b.	I have to buck a rule or policy in order to complete a task	1	2	3	4	5
c.	I work with two or more groups who operate quite differently	1	2	3	4	5
d.	I receive incompatible requests from two or more people.	1	2	3	4	5
e.	I do things that are apt to be accepted by one person and not accepted by others.	1	2	3	4	5
f.	I have to perform a task without adequate resources and materials to execute it.	1	2	3	4	5
g.	My work on the LEPC interferes with my family life.	1	2	3	4	5

6.	To what degree do you believe that...	Not at all				Very great extent
a.	the amount of work you have to do on the LEPC keeps you from doing the best job you can?	1	2	3	4	5
b.	there are not enough people on the LEPC to get the work done?	1	2	3	4	5
c.	you are asked to do things for which you are notfully qualified?	1	2	3	4	5
d.	you are under heavy pressure to get LEPC work done?	1	2	3	4	5

7.	To what extent do members of your LEPC...	Not at all				Very great extent
a.	let other members know what help they need?	1	2	3	4	5
b.	work as a group to make decisions and solve problems?	1	2	3	4	5
c.	share information about important events and situations?	1	2	3	4	5
d.	plan together and coordinate group efforts?	1	2	3	4	5
e.	recognize how to use the knowledge and skills of other members?	1	2	3	4	5
f.	understand the problems other members have to deal with?	1	2	3	4	5
g.	ask others for suggestions about how to solve difficult problems?	1	2	3	4	5
h.	ask others for input when they have to make decisions that affect the rest of the group?	1	2	3	4	5

8.	How much do members of your LEPC...	Not at all				Very great extent
a.	cooperate to get the job done?	1	2	3	4	5
b.	distribute the workload fairly among members?	1	2	3	4	5
c.	help each other out when they have problems?	1	2	3	4	5
d.	have a lot of friction in their interactions?	1	2	3	4	5
e.	hold back from expressing their real views?	1	2	3	4	5
f.	listen to everyone's opinions ?	1	2	3	4	5
g.	have negative feelings that tend to pull the group apart?	1	2	3	4	5
h.	have a lot of respect for other members' contributions?	1	2	3	4	5

9.	The meetings of my LEPC focus mostly on....	Strongly disagree				Strongly agree
a.	personal issues and general socializing.	1	2	3	4	5
b.	abstract theoretical issues of emerency preparedness	1	2	3	4	5
c.	specific issues relevant to the tasks I work on.	1	2	3	4	5
d.	internal politics of the LEPC	1	2	3	4	5
e.	external political issues involving other organizations	1	2	3	4	5

10.	How much do you agree with the following statements about your role on your LEPC?	Strongly disagree				Strongly agree
a.	I have confidence and trust in the members of my LEPC	1	2	3	4	5
b.	Everyone in my LEPC fits my idea of a good member	1	2	3	4	5
c.	I feel I am included by the LEPC in all of its activities	1	2	3	4	5
d.	If most of the members decided to dissolve the LEPC by leaving, I would try to talk them out of it	1	2	3	4	5
e.	If I went to work on another project like this one, I would like to be with the same people who are in my LEPC	1	2	3	4	5
f.	I like the members of this LEPC much more than the people I have dealt with in other organizations.	1	2	3	4	5
g.	The work I turn out depends largely on the performance of members of my LEPC other than the LEPC leaders	1	2	3	4	5
h.	I receive very useful information and advice from members of the LEPC other than the LEPC leaders	1	2	3	4	5

11.	How much do you...	Not at all				Very great extent
a.	feel your LEPC is one of the best in the state?	1	2	3	4	5
b.	tell other people you are proud to be on the LEPC?	1	2	3	4	5
c.	believe that your LEPC is doing a great job?	1	2	3	4	5

12.	How much do you agree with the following statements?	Strongly disagree				Strongly agree
a.	My role in the LEPC is well within the scope of my abilities.	1	2	3	4	5
b.	I have not had problems in adjusting to work in this LEPC.	1	2	3	4	5
c.	I feel I am overqualified for the work I am doing on the LEPC.	1	2	3	4	5
d.	I have all the technical knowledge I need to deal with my LEPC work, all I need now is practical experience.	1	2	3	4	5
e.	I feel confident that my skills and abilities equal or exceed those of my colleagues on the LEPC.	1	2	3	4	5
f.	My past experiences and accomplishments increase my confidence that I will be able to perform successfully in this LEPC.	1	2	3	4	5
g.	I could handle a more challenging role than the one I am doing on the LEPC	1	2	3	4	5

13.	To what extent does your LEPC job allow you to...	Not at all				Very great extent
a.	choose your own method of working?	1	2	3	4	5
b.	judge your work performance, right away, when actually doing LEPC work?	1	2	3	4	5
c.	do a whole and complete piece of work?	1	2	3	4	5
d.	use of a lot of skill and effort to do it well?	1	2	3	4	5
e.	work on tasks that are very different from your day-to-day job?	1	2	3	4	5
f.	try to solve difficult and challenging problems?	1	2	3	4	5
g.	work on all aspects of LEPC activities rather than specializing in one area?	1	2	3	4	5

14.	How likely is it that doing good work on the LEPC will lead to each of these outcomes?	Not at all likely				Extremely likely
a.	You will feel better about yourself as a person	1	2	3	4	5
b.	You will have an opportunity to develop your skills and abilities.	1	2	3	4	5
c.	You will be given chances to learn new things	1	2	3	4	5
d.	You feel you've accomplished something worthwhile	1	2	3	4	5
e.	You will have the opportunity to interact with other people	1	2	3	4	5
f.	Your LEPC leaders will recognize your efforts	1	2	3	4	5
g.	Other LEPC members will appreciate what you do	1	2	3	4	5
h.	Residents within your community will think your work is worthwhile	1	2	3	4	5
i.	You will be more likely to be rewarded in your regular job	1	2	3	4	5

15.	How much do you agree with the following statements?	Strongly disagree				Strongly agree
a.	My community is highly vulnerable to toxic chemical hazards	1	2	3	4	5
b.	My community is likely to have a major fixed-site toxic chemical release in the next 5 years	1	2	3	4	5
c.	My community is likely to have a major transportation related toxic chemical release in the next 5 years	1	2	3	4	5
d.	Emergency planning is really not necessary considering the small likelihood of a chemical emergency in my community	1	2	3	4	5
e.	Emergency planning would definitely limit damage to life and property in an actual chemical emergency	1	2	3	4	5
f.	Emergency planning requires more time and money than is worthwhile	1	2	3	4	5
g.	Training through emergency drills and exercises is unlikely to have much impact during an actual disaster	1	2	3	4	5
h.	The biggest reason for having an LEPC in my community is because it is required by federal law	1	2	3	4	5

16.	How much do you agree with the following statements?	Strongly disagree				Strongly agree
a.	I do not feel "emotionally attached" to this LEPC	1	2	3	4	5
b.	This LEPC has a great deal of personal meaning for me	1	2	3	4	5
c.	I feel a strong sense of belonging to my LEPC	1	2	3	4	5
d.	I do not feel like "part of the family" at this LEPC	1	2	3	4	5
e.	I enjoy discussing my LEPC with people outside it	1	2	3	4	5
f.	I really feel as if this LEPC's problems are my own	1	2	3	4	5

17.	How much do you agree with the following statements?	Strongly disagree				Strongly agree
a.	I do not feel any obligation to remain with my LEPC	1	2	3	4	5
b.	Even if it were to my advantage, I do not feel it would be right to leave my LEPC now	1	2	3	4	5
c.	I would feel guilty if I left my LEPC now	1	2	3	4	5
d.	This LEPC deserves my loyalty	1	2	3	4	5
e.	I would not leave my LEPC right now because I have a sense of obligation to the people in it	1	2	3	4	5
f.	I owe a great deal to my LEPC	1	2	3	4	5

18. How much do you agree with the following statements?	Strongly disagree				Strongly agree
a. I work to the best of my ability toward achieving the goals of my LEPC.	1	2	3	4	5
b. I could work much harder for the LEPC if I really wanted.	1	2	3	4	5
c. I work harder than most LEPC members to achieve the goals of this LEPC.	1	2	3	4	5
d. I exert a great deal of effort toward accomplishing the work of this LEPC.	1	2	3	4	5
e. I work hard to to accomplish the mission of my LEPC.	1	2	3	4	5

19. How much do you agree with the following statements?	Strongly disagree				Strongly agree
a. I often volunteer for extra work on the LEPC.	1	2	3	4	5
b. I often help orient new LEPC members.	1	2	3	4	5
c. I help others on the LEPC who have heavy work loads.	1	2	3	4	5
d. I always give advance notice if unable to attend LEPC meetings.	1	2	3	4	5
e. I frequently meet with others to perform LEPC business outside regular LEPC meetings.	1	2	3	4	5

20. How much do you agree with the following statements?	Strongly disagree				Strongly agree
a. All in all, I am satisfied with my role in this LEPC.	1	2	3	4	5
b. In general, I don't like my LEPC work.	1	2	3	4	5
c. All things considered, I like being on this LEPC.	1	2	3	4	5

21. How much do you agree with the following statements about your attendance at LEPC meetings?	Strongly disagree				Strongly agree
a. I never miss the meetings of my LEPC.	1	2	3	4	5
b. I am always on time when the meetings of the LEPC start.	1	2	3	4	5
c. I never leave the meetings of the LEPC early.	1	2	3	4	5

22. How much do you agree with the following statements?	Strongly disagree				Strongly agree
a. I plan on staying with my LEPC indefinitely.	1	2	3	4	5
b. I'd discontinue serving as a member of my LEPC if it was possible to leave.	1	2	3	4	5
c. I plan on quitting serving as as member of this LEPC within the next year.	1	2	3	4	5

23. Do you have a full-time job?____ No ____ Yes
If yes, what is your occupation? _____

24. What was your age on your last birthday? _____ years

25. What is your sex?____ Male ____ Female

26. How long have you been a member of this LEPC? _____ **months**

27. What percent of the LEPC meetings have you attended in the past year? _____**%**

28. Do you have an official leadership role on your LEPC?____ No ____ Yes

29. Which of the following organizations do you represent as a member of your LEPC?

____Civil Defense/Emergency Services
____Chief Administrative Officer's Staff
____State/Local Elected Officials
____Emergency Medical/Hospitals
____Municipal/County Attorney's Office
____Public Works/Engineering
____Truck/Rail Carriers
____Environmental Agency
____Planning/Community Development
____Red Cross/Volunteer Groups
____Firefighting
____Law Enforcement
____Labor Groups
____Public Health
____Schools
____Local Industry
____Newsmedia
____Community Groups
____Agriculture
____Other

Do you have any further comments concerning your LEPC and/or toxic chemical emergency planning that you think might be helpful?

_____

_____

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Thank you for the time you have taken to fill out this questionnaire.

APPENDIX C

Scale Statistics

APPENDIX C

Scale Statistics

Correlation Matrix for Climate Scales with Alphas on the Diagonals

	mean	SD	l_{ini}	l_{cns}	l_{comm}	t_{coh}	t_{coor}	t_{pride}	t_{to}	r_{clar}	r_{conf}	r_{over}
l_{ini}	28.33	6.23	.87	.79**	.87**	.71**	.83**	.78**	.82**	.85**	-.23**	-.21**
l_{cns}	28.09	7.46	.79**	.93	.83**	.72**	.81**	.74**	.76**	.76**	-.32**	-.19*
l_{comm}	30.90	6.84	.87**	.83**	.95	.77**	.81**	.78**	.79**	.82**	-.27**	-.18*
t_{coh}	24.05	5.56	.71**	.72**	.77**	.86	.79**	.81**	.76**	.70**	-.29**	-.24**
t_{coor}	27.77	7.81	.83**	.81**	.81**	.79**	.95	.78**	.91**	.74**	-.28**	-.16*
t_{pride}	9.90	3.50	.78**	.74**	.78**	.81**	.78**	.92	.74**	.74**	-.35**	-.34**
t_{to}	21.80	4.87	.82**	.76**	.79**	.76**	.91**	.74**	.90	.75**	-.29**	-.22**
r_{clar}	16.66	5.04	.85**	.76**	.82**	.70**	.74**	.74**	.75**	.92	-.23**	-.22**
r_{conf}	15.36	5.68	-.23**	-.32**	-.27**	-.29**	-.28**	-.35**	-.29**	-.23**	.84	.66**
r_{over}	8.64	3.37	-.21**	-.19*	-.18*	-.24**	-.16*	-.34**	-.22**	-.22**	.66**	.71

+ sample size = 140

Key:

L_{ini} = leader initiating structure
L_{comm} = leader communication
L_{cns} = leader consideration
T_{coor} = team coordination
T_{coh} = team cohesion
T_{pri} = team pride
T_{to} = team task orientation
R_{clar} = role clarity
R_{conf} = role conflict
R_{over} = role overload

Correlation Matrix for Individual Level Scales with Alphas on the Diagonals

	mean	SD	citizen	partic	perefft	reward
citizen	2.73	.91	.83	.45**	.43**	.37**
partic	3.09	.65	.45**	.85	.56**	.90**
perefft	3.30	.86	.43**	.56**	.75	.48**
reward	3.45	.77	.37**	.90**	.48**	.89

+ sample size = 1161

Key:
citizen = citizenship behavior
partic = participation
perefft = perceived effort
reward = perceived rewards

Correlation Matrix for Organization Level Scales with Alphas on the Diagonals

	mean	SD	meet	orien	tech	emer	elect	plan
meet	3.87	1.31	.85	-.22**	.32**	.12	.26**	.35**
orien	1.95	.86	-.22**	.79	-.19**	-.14	-.21**	-.23**
tech	-.01++	.89	.32**	-.19**	.87	.28**	.26**	.35**
emer	.04++	.66	.12	-.14	.28**	.48	.19*	.28**
elect	2.11	.93	.26**	-.21**	.26**	.19*	.92	.51**
plan	2.46	.90	.35**	-.23**	.35**	.28**	.51**	.92

+ sample size = 168
++ standardized

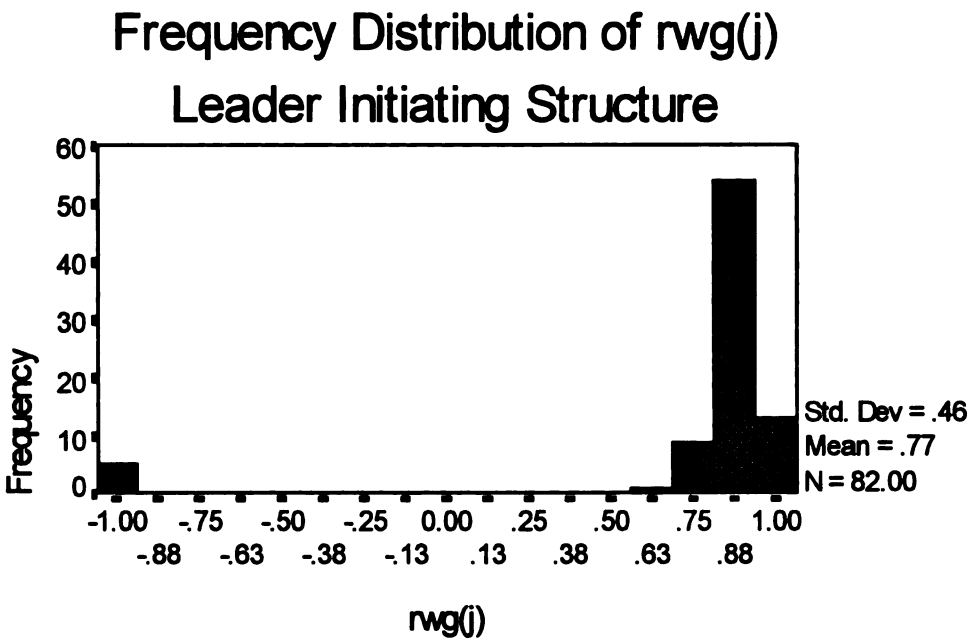
Key:
meet = number of meetings
orien = formal orientation
tech = technology
emer = experience with emergencies
elect = support of local officials
plan = planning quality

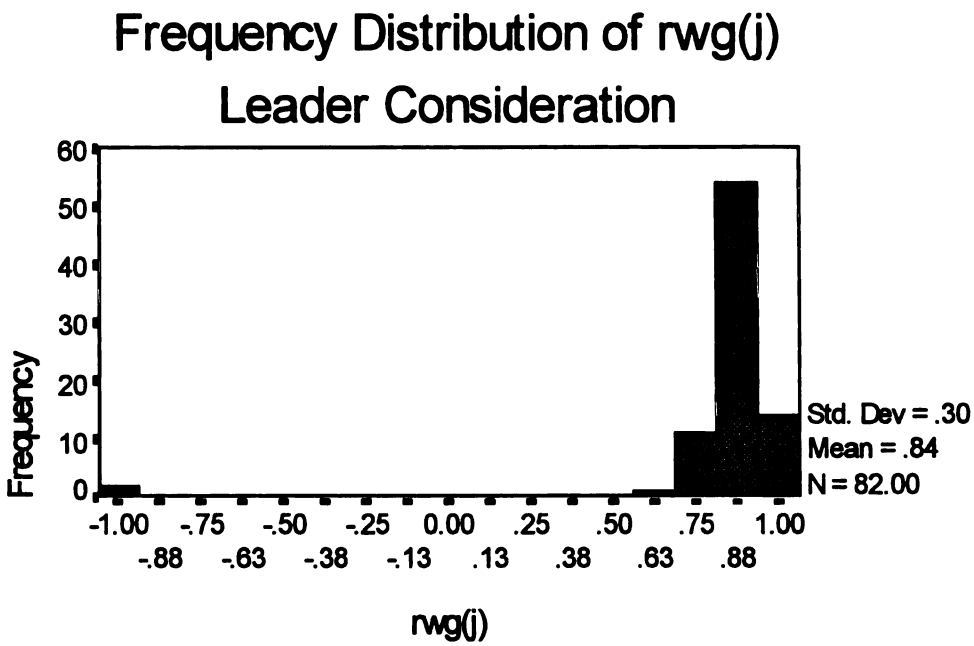
APPENDIX D

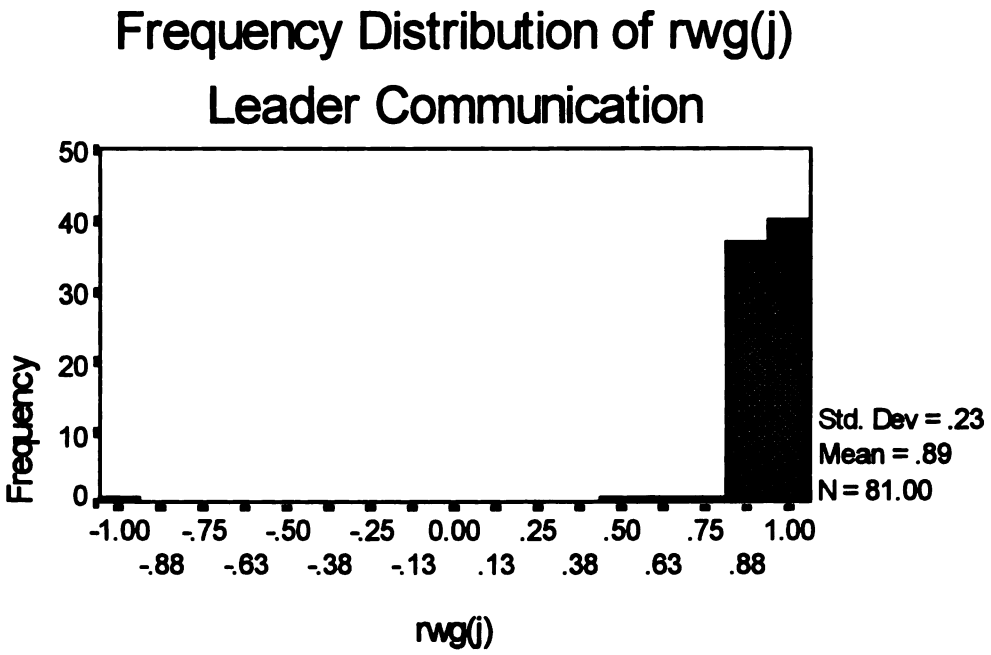
Frequency Distributions of $r_{ws(i)}$

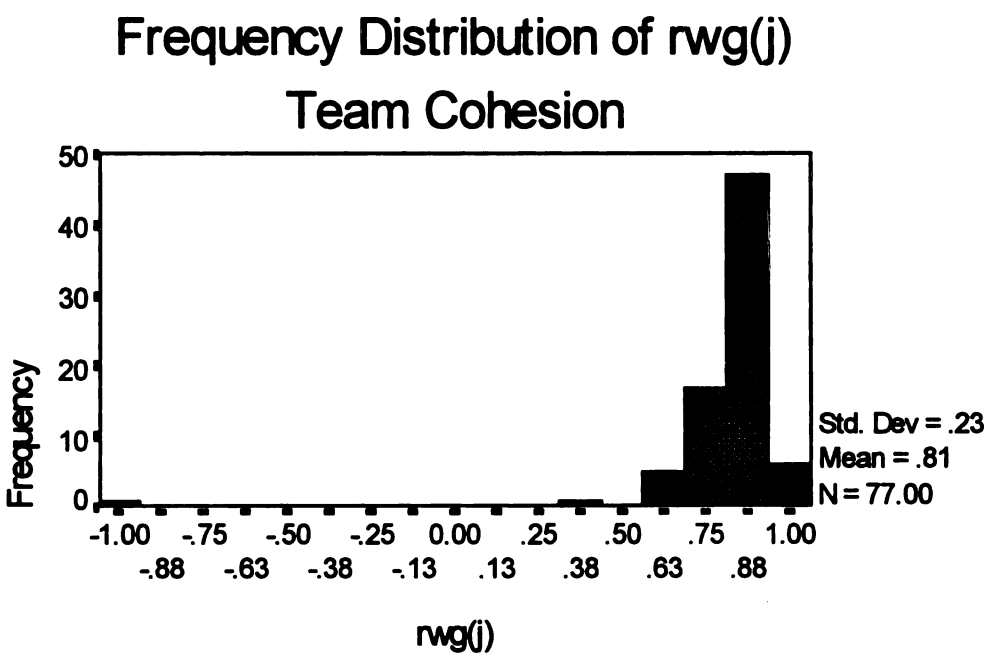
APPENDIX D

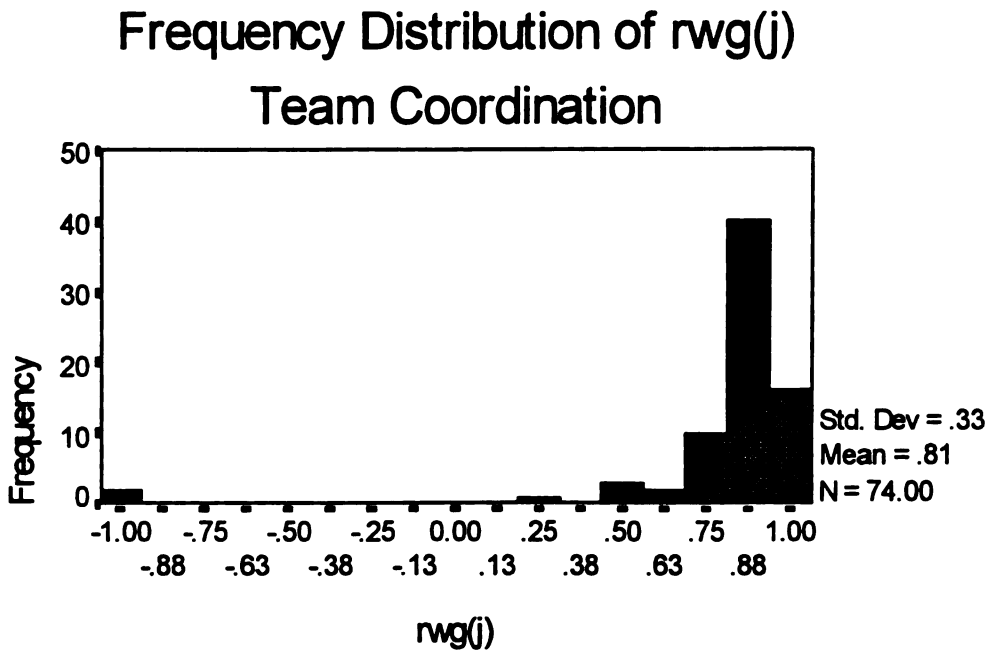
Frequency Distributions of $r_{wg(j)}$

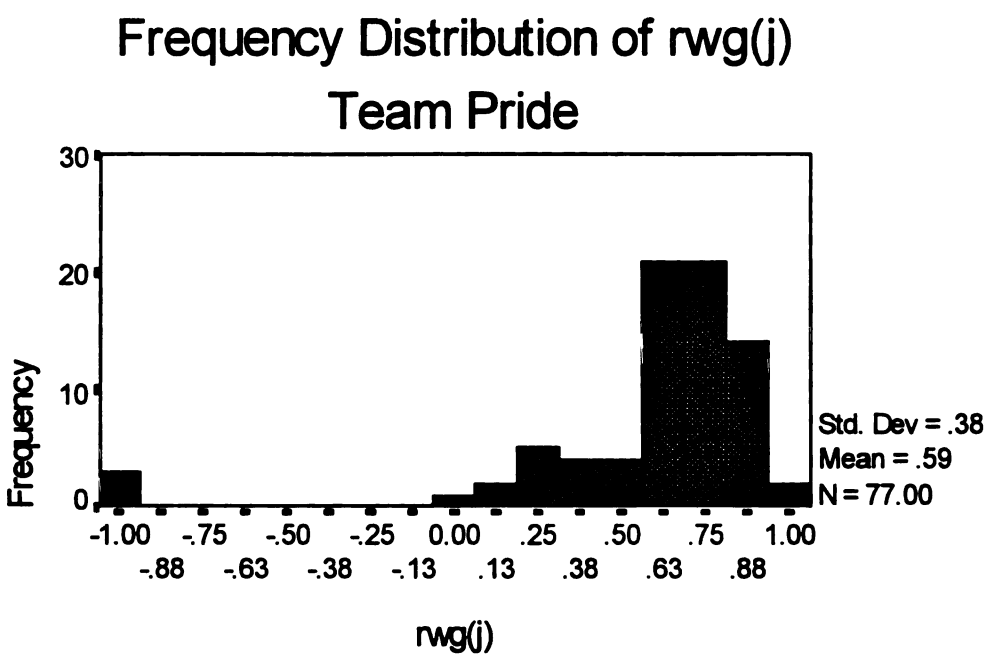


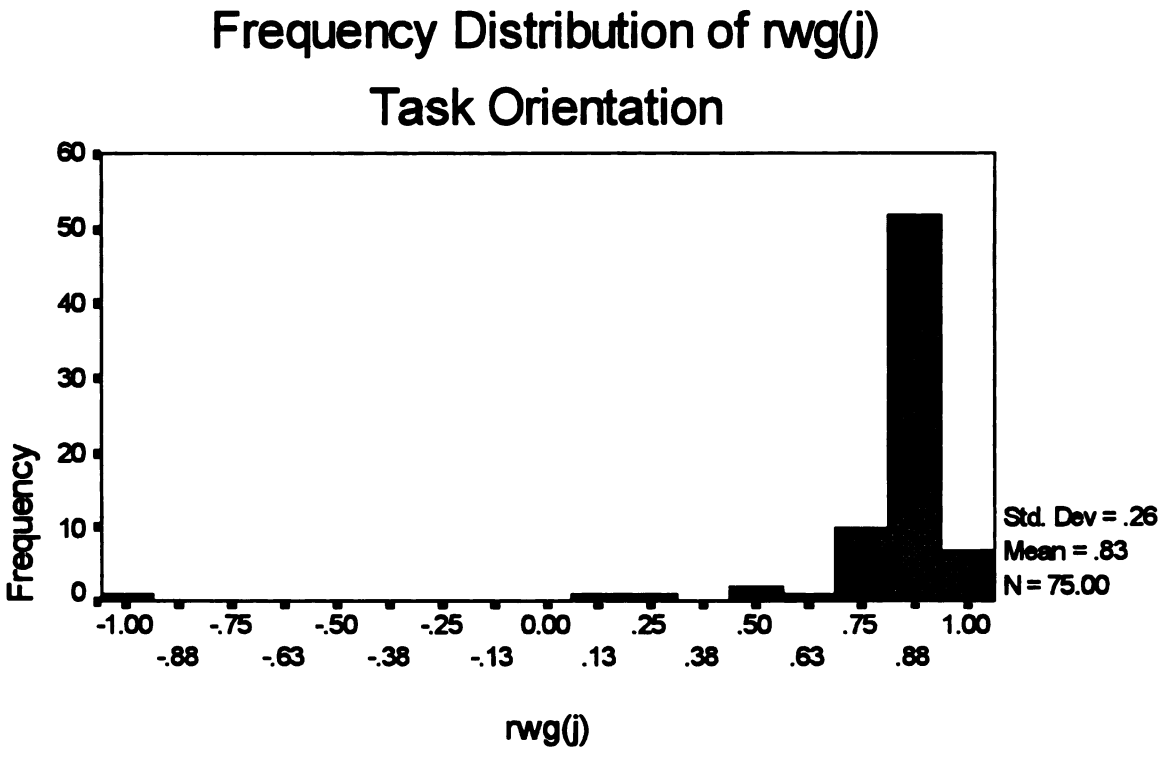


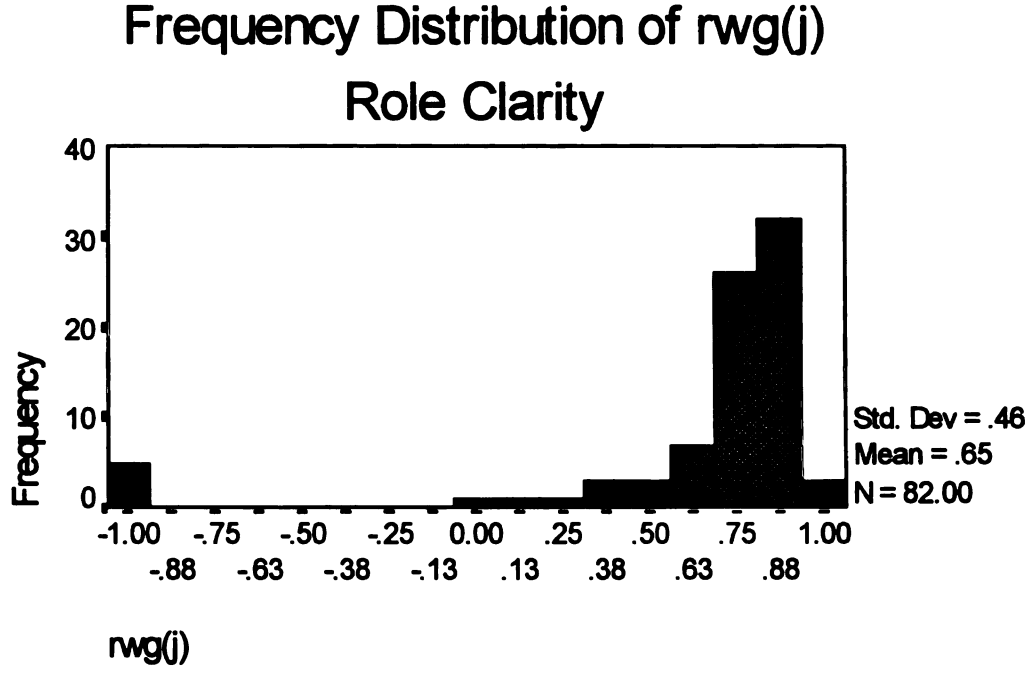

Frequency Distribution of rwg(j)
Leader Communication
Frequency
50
40
30
20
10
0
-1.00 -.75 -.50 -.25 0.00 .25 .50 .75 1.00
-.88 -.63 -.38 -.13 .13 .38 .63 .88
rwg(j)
Std. Dev = .23
Mean = .89
N = 81.00

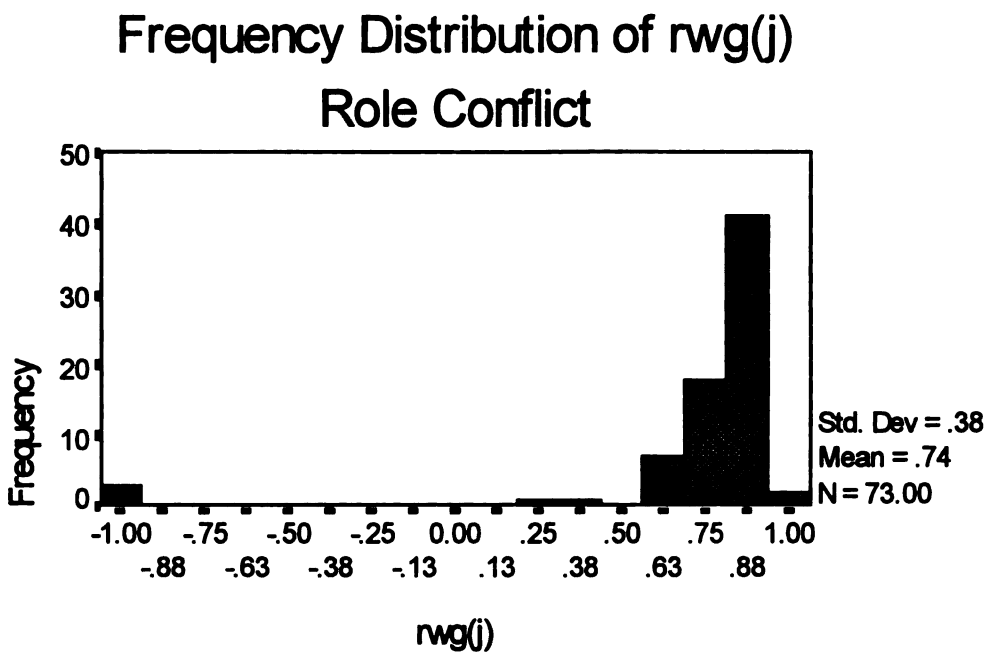

Frequency Distribution of rwg(j)
Team Cohesion
Frequency
50
40
30
20
10
0
-1.00 -.75 -.50 -.25 0.00 .25 .50 .75 1.00
-.88 -.63 -.38 -.13 .13 .38 .63 .88
rwg(j)
Std. Dev = .23
Mean = .81
N = 77.00

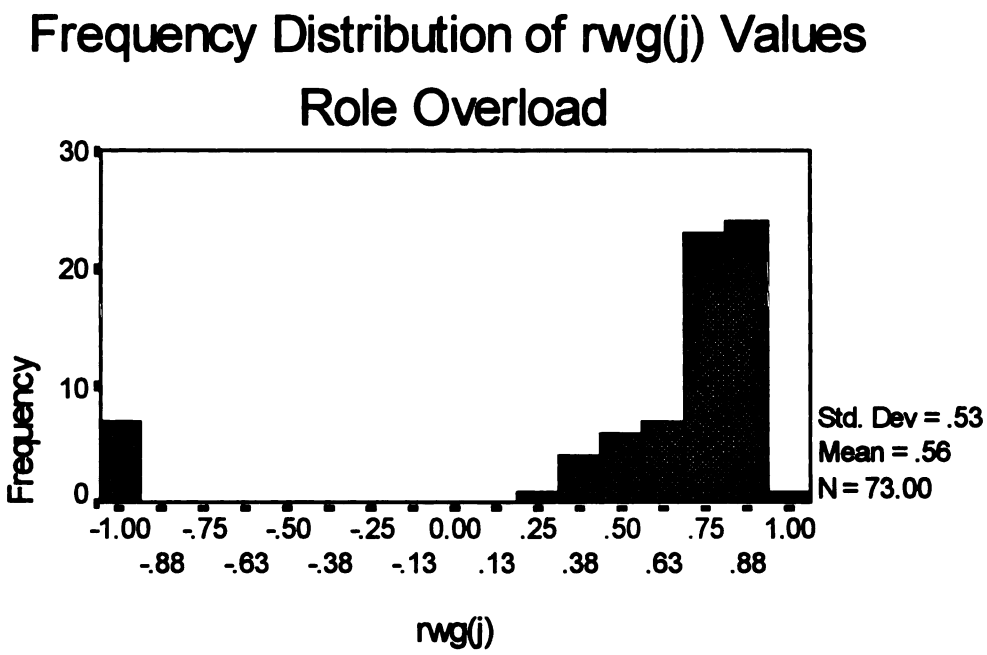

Frequency Distribution of rwg(j)
Team Coordination
Frequency
50
40
30
20
10
0
-1.00 -.75 -.50 -.25 0.00 .25 .50 .75 1.00
-.88 -.63 -.38 -.13 .13 .38 .63 .88
rwg(j)
Std. Dev = .33
Mean = .81
N = 74.00


Frequency Distribution of rwg(j)
Team Pride
Frequency
30
20
10
0
-1.00 -.75 -.50 -.25 0.00 .25 .50 .75 1.00
-.88 -.63 -.38 -.13 .13 .38 .63 .88
rwg(j)
Std. Dev = .38
Mean = .59
N = 77.00


Frequency Distribution of rwg(j)
Task Orientation
Frequency
60
50
40
30
20
10
0
-1.00
-.88
-.75
-.63
-.50
-.38
-.25
-.13
0.00
.13
.25
.38
.50
.63
.75
.88
1.00
Std. Dev = .26
Mean = .83
N = 75.00
rwg(j)


Frequency Distribution of rwg(j)
Role Clarity
Frequency
40
30
20
10
0
-1.00
-.88
-.75
-.63
-.50
-.38
-.25
-.13
0.00
.13
.25
.38
.50
.63
.75
.88
1.00
Std. Dev = .46
Mean = .65
N = 82.00
rwg(j)


Frequency Distribution of rwg(j)
Role Conflict
Frequency
50
40
30
20
10
0
-1.00 -.75 -.50 -.25 0.00 .25 .50 .75 1.00
-.88 -.63 -.38 -.13 .13 .38 .63 .88
rwg(j)
Std. Dev = .38
Mean = .74
N = 73.00


Frequency Distribution of rwg(j) Values
Role Overload
Frequency
30
20
10
0
-1.00 -.75 -.50 -.25 0.00 .25 .50 .75 1.00
-.88 -.63 -.38 -.13 .13 .38 .63 .88
rwg(j)
Std. Dev = .53
Mean = .56
N = 73.00

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