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ORGANIZATIONAL COMMITMENT IN A VOLUNTARY ORGANIZATION

By

David John Whitney

A THESIS

**Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of**

MASTER OF ARTS

Department of Psychology

1993

Major Professor: Dr. Michael K. Lindell

ABSTRACT

ORGANIZATIONAL COMMITMENT IN A VOLUNTARY ORGANIZATION

By

David John Whitney

The present study examined the antecedents and consequences of affective and continuance organizational commitment in voluntary organizations. Affective and continuance commitment were hypothesized to be differentially related to turnover intentions, attendance and perceived effort. A model of organizational commitment was proposed which hypothesized the relationship between antecedents, commitment, individual level outcomes, and group performance. Additionally, the study examined the appropriateness of a proposed classification system for the antecedents. Two hundred four members of Michigan's Local Emergency Planning Committees served as subjects. Results provide evidence for the generalizability of findings pertaining to organizational commitment conducted in traditional work settings, although the voluntary nature of the organizations used in the present study led to some unique findings. Although the results failed to support the proposed classification system for the antecedents of organizational commitment, limited support was provided for the proposed model. Future research directions are discussed.

ACKNOWLEDGMENTS

Despite success in past academic endeavors, I approached my Master's thesis with more than a bit of self-doubt and trepidation. Luckily for me, I selected a chairperson who unhesitatingly provided needed encouragement and positive reinforcement. For this, I feel deeply indebted to Dr. Michael K. Lindell. Mike's imaginative theoretical incites combined with his supportive interpersonal style greatly influenced the current form of this document. The remaining members of my thesis committee -- Dr. Steve Kozlowski and Dr. Neal Schmitt -- provided essential criticisms and suggested improvements which I feel have not only helped in the production of this thesis, but will likely prove invaluable to my future research.

I continue to enjoy a high degree of both financial and emotional support from my parents and sisters. For this I feel very undeserving, but thankful nonetheless.

Two important friends at MSU deserve special recognition. I'd like to thank AJ Alejano for her untiring patience and unquestioning moral support. The smiles you have brought to me have made even the worst of times bearable. Finally, I'd like to thank Dennis Devine for the many gripe sessions, laughs, and general acceptance of my weirdness.

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The construct of organizational commitment has often been examined in traditional work organizations. In this context, research has examined a wide variety of antecedents. Research has also determined that organizational commitment can help increase attendance, reduce turnover, and even increase perceptions of expended effort. Although these outcomes would be desired in any organization, research appears to have neglected examination of organizational commitment in voluntary organizations. These organizations are increasingly important to our society, yet their members cannot be assumed to be influenced by the very same factors that influence motivation in members of traditional work organizations. For example, by their very nature voluntary organizations do not provide extrinsic rewards in the form of monetary compensation. The influence of motivational factors may be very different, therefore, upon members of volunteer organizations than for compensated employees. The present study examines the antecedents to and consequences of organizational commitment for organizations composed of volunteer members. Additionally, a model of organizational commitment is tested which relates the antecedent variables to organizational commitment, which in turn is predicted to be related to both individual and group-level outcomes. As a part of this model a new classification scheme is developed and tested for the antecedents of organizational commitment, based upon the theoretical connection between the variables.

Definition of Organizational Commitment

The search for attitudinal influences upon an individual's behavior in an organizational setting has long occupied the interest of Industrial/Organizational psychologists. An impressive history of research has elucidated a connection between individuals' commitment to an organization and their subsequent behavior expended toward satisfying the goals of the organization (Angle & Perry, 1981; Meyer, Paunonen, Gellatly, Goffin, & Jackson, 1989; O'Reilly & Chatman, 1986; Porter, Steers, Mowday & Boulian, 1974; Steers, 1977). Porter, Steers, Mowday, and Boulian (1974) define organizational commitment as "the strength of an individual's identification with and involvement in a particular organization" (p.604). Porter et al., (1974) further indicate several factors characterizing organizational commitment including: a) a strong belief in and acceptance of the organization's goals and values, b) a willingness to exert considerable effort on behalf of the organization, and c) a strong desire to maintain membership in the organization. These components of organizational commitment can be abbreviated as identification, performance, and affiliation.

The construct of organizational commitment should be clearly differentiated from the concept of organizational citizenship behavior. These latter behaviors are composed of actions which are not formally prescribed, yet are desired by an organization. Examples include helping others, punctuality, and volunteering for things that are not required. Additionally, organizational citizenship behaviors include those actions that a person may refrain from doing

which are considered negative to the organization, such as finding fault with other employees or expressing resentment. Perhaps the best way to delineate the difference between organizational commitment and organizational citizenship behavior is to invoke the three basic behavior types essential to a functioning organization (Katz, 1964). According to Katz (1964), (a) people must be induced to enter and remain in the system; (b) they must carry out specific requirements in a dependable fashion; and (c) there must be spontaneous and innovative activity that goes beyond role prescriptions. This third type of behavior suggested by Katz clearly refers to citizenship behaviors. Considering Porter, Steers, Mowday and Boulian's (1974) definition of organizational commitment, commitment would be concerned with the first two of Katz' basic types of behavior essential to a functioning organization.

Outcomes of Organizational Commitment

Researchers have examined the connection between an individual's organizational commitment and a variety of subsequent behaviors including turnover, attendance, job search activities, and performance. According to Mathieu and Zajac (1990), when used as an antecedent, organizational commitment has most often been used to predict withdrawal behaviors. The relationship between organizational commitment and attendance, for example, has often been investigated. McFarlane-Shore, Newton, and Thornton (1990) found a correlation of $r = .33$ between organizational commitment and attendance intentions for workers in a university setting. Angle

and Perry (1981), however, found a near zero relationship between organizational commitment and attendance. In a recent meta-analysis of over 200 articles pertaining to organizational commitment, Mathieu and Zajac (1990) concluded the relationship between organizational commitment and attendance has a weak but positive correlation ($r = .102$). Research examining the relationship between turnover and organizational commitment has generally indicated a stronger relationship. Porter et al. (1974), for example, employed the use of psychiatric technician trainees to investigate the relationship between organization commitment and turnover. As hypothesized, these investigators found organizational commitment was a better predictor of turnover than such variables as satisfaction with work or pay. Rusbult and Farrell (1983) utilized a longitudinal design in their study of job satisfaction, commitment, and turnover of professional technical workers. These researchers found the process of declining commitment was the most important process of change in influencing turnover decisions. In the Mathieu and Zajac (1990) meta-analysis impressive negative correlations were found between organizational commitment and two turnover-related intentions: intention to leave one's job ($r = -.464$) and intention to search for job alternatives ($r = -.599$). Analyses of studies utilizing actual turnover measures were somewhat less impressive, however, with a correlation between organizational commitment and turnover of $r = -.277$. This smaller correlation for the actual turnover measure as opposed to the behavioral intention measures may be due to the influence of uncontrollable obstacles such as economic realities, non-

work factors (e.g. family obligations), lack of available work alternatives, etc. Even so, organizational commitment has proven to be an extremely useful predictor of organizational turnover.

What little research that has been done examining the relationship between organizational commitment and performance has not been quite as promising. Steers (1977) examined the antecedents to and consequences of organizational commitment in two samples: hospital employees and laboratory researchers. In the hospital sample, immediate supervisors rated performance according to work quality, work quantity, promotion readiness, and overall performance. The commitment - performance relationship for the hospital employees was marginal for work quantity ($r = .11$) and promotion readiness ($r = .10$), and trivial for the other two measures. In the sample of laboratory researchers, supervisor ratings of overall job performance served as the only measure of performance. As with the hospital employees, commitment was statistically unrelated to global performance, ($r = .05$). Mathieu and Zajac's (1990) meta-analysis provided further indication of a lack of a strong commitment - performance relationship. Those studies utilizing performance ratings as the criterion found a correlation of .135 between commitment and performance.

The reasons for these low correlations between commitment and performance may be similar to those accounting for low correlations between commitment and turnover. As noted earlier, the correlation of commitment with actual turnover is substantially lower than its correlation with turnover intention because uncontrollable obstacles

intervene between intentions and behavior. Similarly, obstacles may intervene between intentions to work hard and actual performance, thus resulting in a lower correlation between commitment and actual performance than a measure of the commitment - intention to perform relationship (McFarlane-Shore et. al., 1990). This explanation is supported by Mathieu and Zajac's (1990) finding that the correlation between commitment and performance shrunk to $r = .054$ when output measures were used as the performance measure.

Developments in the organizational commitment construct

Criticism has been levelled against much of the early work on organizational commitment for failing to recognize that the construct may be multi-dimensional. O'Reilly and Chatman (1986) suggested that three factors may determine an individual's attachment to an organization: compliance, identification, and internalization. O'Reilly and Chatman define compliance as involvement for specific, extrinsic rewards; identification as involvement based on a desire for affiliation; and internalization as involvement based on congruence between individual and organizational values. These three factors of organizational attachment are reminiscent of Alderfer's (1969) ERG theory of work motivation. Alderfer views the individual as possessing three basic needs: existence, relatedness, and growth. Existence needs, which parallel O'Reilly and Chatman's compliance factor of commitment, involve material needs such as pay. Relatedness needs, similar to the concept of identification, are needs that deal with maintaining interpersonal relationships, such as with

co-workers. Finally, growth needs are manifested in the individual's attempt to seek opportunities for unique personal development. We will return to Alderfer's theory later in this paper in relation to the categorization of antecedents to organizational commitment.

O'Reilly and Chatman (1986) administered twenty-one items thought to represent the dimensions of compliance, identification, and internalization to eighty-two office workers. These items were either created by the authors or taken from previous studies examining organizational commitment. An example of an item for each of the hypothesized dimensions is presented below:

Compliance: "How hard I work for the organization is directly linked to how much I am rewarded"

Identification: "I am proud to tell others I am part of this organization."

Internalization: "The reason I prefer this organization to others is because of what it stands for, its values."

Factor analysis of the twenty-one items identified three independent factors each of which was consistent with the authors' hypothesized factor structure.

O'Reilly and Chatman (1986) also asked subjects to complete a short questionnaire assessing their participation in in-role behaviors ("I do what my boss says without complaint") and extra-role behaviors ("I help new people even though it's not required"). Finally, turnover intentions and actual turnover were examined. The authors used these measures to examine the pattern of relationships between the hypothesized dimensions of commitment and subjects' behavioral self-reports. Results indicated differences between the

dimensions in how they related to the behavioral self-report measures. The internalization dimension of commitment was shown to be significantly related to both intra-role and extra-role behaviors, and negatively related to both intentions to quit and actual turnover. Identification was shown to be related to extra-role behavior, turnover intentions, and turnover. Commitment based on compliance, however, was not found to be significantly related to intra- or extra- role behavior or turnover, but did demonstrate a negative relationship with intent to remain. The authors conclude that there are strong links between pro-social behaviors and commitment based on identification or internalization, but no such link for commitment based on compliance.

Support for most of O'Reilly and Chatman's (1986) findings was provided by Vandenberg and Seo (1991). These authors used confirmatory factor analysis to compare items from the commonly used Organizational Commitment Questionnaire (OCQ) (Mowday, Steers, & Porter, 1979) with the internalization and compliance scales of O'Reilly and Chatman (1986). Their findings indicated compliance and internalization do appear to tap different dimensions of the commitment construct, since both possessed significant associations with the OCQ but did not possess a significant relationship with one another. It is important to note Vandenberg and Seo (1991) chose not to include O'Reilly and Chatman's concept of identification in their study. They provide several reasons for this omission. First, the items used by O'Reilly and Chatman (1986) to measure identification do not accurately reflect the definition these authors provided for

identification. Secondly, and even more convincing, Vandenberg and Seo defended their decision to omit identification based on Caldwell, Chatman, and O'Reilly's (1989) admission that the current measurement of identification is not representing a unique construct and requires major revision.

Other investigations have also sought to go beyond the Porter et al (1974) conceptualization by conceiving of organizational commitment as a multi-dimensional construct. Meyer and Allen (1984), for example, noted research on organizational commitment has examined two different types of commitment: continuance and affective. Continuance commitment was seen in terms of Becker's (1960) theory that commitment resulted from the accumulation of side bets. Side bets are anything of value the individual has invested in an organization that would be lost if an individual were to leave the organization. This threat of loss results in commitment to the organization. It is obvious continuance commitment is very similar to O'Reilly and Chatman's conceptualization of compliance. Meyer and Allen point out that a second way that researchers have conceptualized commitment is as an emotional orientation to an organization. This type of commitment was termed affective commitment, and can be viewed as a composite of O'Reilly and Chatman's internalization and identification dimensions.

Meyer, Paunonen, Gellatly, Goffin, and Jackson (1989) reexamined the organizational commitment-performance relationship employing the use of the concepts affective and continuance commitment. Meyer et al. hypothesized that employees

with a high degree of affective commitment desire to remain in the organization and are willing to exert considerable effort for the goals of the organization because of their emotional attachment.

Employees' with high continuance commitment, on the other hand, are willing to work hard and stay with the organization only to obtain financial or other tangible rewards. These employees, hypothesized Meyer et al (1989), would do no more than is explicitly required to remain a part of the organization. Ninety managers in a food service organization were administered affective and continuance commitment scales. Performance was measured by a composite of six supervisor effectiveness ratings (public relations, administration practices, preparation of reports and verbal communication, following of operational policies, and conducting of routine job tasks), as well as ratings of overall performance and promotability. Correlations were utilized to examine the commitment-performance relationships. A positive correlation was found between affective commitment and each of the performance measures. However, only overall performance and promotability comparisons with affective commitment reached significance. Correlations between continuance commitment and the three performance measures, on the other hand, were all significantly negative. This finding led Meyer and his associates to conclude that the consequences of an employee's commitment for an organization is dependent upon the nature of that commitment. Employees high in affective commitment seem likely to translate that commitment into high performance. This is not true for employees high in

continuance commitment, whose commitment motivates them to remain in the job but fails to motivate performance beyond minimum requirements.

Antecedents of organizational commitment

Considering the impact organizational commitment can possibly have on the performance and tenure of an organization's employees, the immediate question becomes, what are the antecedents of organizational commitment? Fortunately, a great deal of research has examined this very question. Steers (1977) organized research on the antecedents of organizational commitment into three categories: personal characteristics, job characteristics, and work experiences. Personal characteristics are variables that are particular to the individual, such as age, education, and need for achievement. Variables considered job characteristics include job challenge, task identity, and opportunity for feedback. Finally, the nature and quality of work experiences include group attitudes toward the organization, perceptions of personal importance to the organization, and opportunity for rewards. Steers (1977) provided support, consistent with previous research, that all three categories of antecedents were in fact related to organizational commitment. However, in his samples of both hospital employees and scientists, work experiences provided the strongest associations with commitment. The importance of work experience variables was confirmed in a study by Dornstein and Matalon (1989). These researchers formed five categories of antecedent variables including

individual characteristics, role-related characteristics, structural characteristics, work experience and extra-organizational factors. Two hundred fifty technical army personnel served as subjects. Once again, the work experience category exhibited the strongest relationship with organizational commitment, as measured according to the Organizational Commitment Questionnaire of Mowday, Steers, and Porter (1979).

In their recent meta-analysis Mathieu and Zajac (1990) examined research on 26 proposed antecedents of organizational commitment. Unlike most of the earlier studies, Mathieu and Zajac (1990) define organizational commitment in terms of both affective and continuance commitment. Antecedent variables included in their meta-analysis, therefore, were taken from studies which measured either affective or continuance commitment. The authors grouped the antecedents into five categories: personal characteristics, role states (such as role ambiguity, role conflict), job characteristics, group/leader relations (such as group cohesiveness, leader consideration), and organizational characteristics (such as organizational size). This classification is simply an expansion of Steers' (1977) original antecedent categorization of personal, job, and work experience variables. In particular, Steers' work experience category has been transformed into two categories: group/leader relations and organizational characteristics. Likewise, job characteristics have been broken down into job characteristics and role states. Those variables which exhibited the largest relationships to organizational commitment included: age ($r = .201$), perceived

personal competence ($r = .630$), salary ($r = .182$), protestant work ethic ($r = .289$), skill variety ($r = .207$), challenge ($r = .349$), job scope ($r = .503$), task interdependence ($r = .220$), leader-initiating structure ($r = .289$), leader communication ($r = .454$), leader consideration ($r = .335$), participative leadership ($r = .386$), role ambiguity ($r = -.218$), role conflict ($r = -.271$) and role overload ($r = -.206$). Mathieu and Zajac (1990) suggested that relationships between the antecedents and organizational commitment may in some cases be moderated by yet unknown variables. Further research, therefore, was encouraged despite the large number of previous investigations.

Meta-analysis combines the results of individual studies in order to determine whether differences among study outcomes might be due to statistical artifacts. Thus, meta-analytic techniques are useful only when several studies have examined the relationship between the same set of variables. In the Mathieu and Zajac (1990) review, several possible antecedent variables were not included because there were too few studies examining the antecedent - organizational commitment relationship to allow meta-analytic investigation. These "neglected" variables include an individual's interests outside the focal organization. Randall (1988) hypothesized outside interests may adversely affect commitment to an organization. Over 450 employees at a large university completed questionnaires assessing interests outside of work and commitment to the university (as measured by the Organizational Commitment Questionnaire of Mowday, Porter, and Steers, 1979). Results indicated no relationship

between organizational commitment to the focal organization and effort devoted to hobbies, and religious or other organizations. This suggests one's interests outside of an organization do not interfere with organizational commitment at work. A serious qualification, however, was found by Randall (1988). Those employees with outside jobs did experience lower levels of organizational commitment. Furthermore, as the perceived importance of the outside job increased, the organizational commitment to the focal organization decreased. Thus, according to the results of this study, conflicting demands between an individual's primary and secondary jobs can be expected to be detrimental to organizational commitment.

Organizational commitment & voluntary organizations

The vast majority of the studies discussed above examined subjects who were gainfully employed in mostly private organizations in rather traditional positions: nurses, managers, researchers, etc. Published research examining organizational commitment in voluntary organizations appears to be non-existent. This current paucity of research addressing antecedents and consequences of organizational commitment in voluntary organizations should be rectified. Voluntary organizations are of great import to American society. With the current trend to reduce governmental spending the importance of voluntary organizations in providing necessary social, ecological, and educational services is likely to increase. Yet despite their obvious importance, voluntary organizations are often neglected by researchers. Voluntary

organizations are faced with many of the same problems in meeting their goals as other organizations. Compounding these problems, however, is the fact that sufficient staffing (i.e., volunteers) may not always be available. Even when sufficient staffing is available, volunteers are likely to be motivated by factors different than non-volunteers. Volunteers, unlike their paid counterparts, do not join or remain in their organization for remuneration purposes. According to Pearce (1983) members often join and remain in a voluntary organization because they are attracted to its activities. Pearce (1983) also found volunteers are more likely than traditionally compensated workers to have high intrinsic satisfaction. Working conditions within a voluntary organization tend to differ from other organizations as well. Typically, voluntary organizations have less aversive working conditions, and supervision within these organizations is not often emphasized. Finally, the behaviors of volunteers may be very different from paid workers. For example, Mahoney and Pechora (1980) found volunteers act primarily in accordance with their own values. This finding suggests volunteers may be less likely to conform to role-prescriptions. Would not the dynamics of a volunteer relationship with a particular organization have a different effect on one's commitment to the organization than would a traditional employment relationship? Specifically, would the antecedents to organizational commitment be different for volunteers? Furthermore, would organizational commitment have a similar impact on turnover and performance in voluntary organizations, or would it possess an even greater (or lesser) impact

upon actual behavior? It would seem that the only thing that is clear among this multitude of questions is that an investigation into the causes and effects of organizational commitment in voluntary organizations is warranted.

Local Emergency Planning Committees

A prime example of volunteer organizations that have experienced great difficulty in reaching their goals are Local Emergency Planning Committees (Lindell & Meier, in press). In order to promote local preparedness for chemical emergencies, the United States Congress passed the Emergency Preparedness and Community Right to Know Act as Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA Title III). This act required the EPA to identify the most dangerous industrial chemicals, so-called Extremely Hazardous Substances (EHSs). An accidental release of any EHS in significant quantities has the potential to do catastrophic harm to life and property (U.S. Environmental Protection Agency, 1988). Such an accidental release may occur for a variety of reasons, including train derailment, industrial plant explosion, or improper or faulty storage. SARA Title III required industries to inform communities of hazardous materials on site. In order to coordinate this information, as well as plan emergency response to a chemical release from one of the industrial plants, SARA Title III stipulated the formation of both state and local committees. At the local level these committees are referred to as Local Emergency Planning Committees (LEPCs). Specifically, the function of the LEPC is to evaluate available resources for preparing

for and responding to a potential chemical accident (National Response Team, 1987). The deadline for submission of a comprehensive emergency response plan was given as October 17, 1988. After this time, LEPCs were expected to submit updated plans on an annual basis. Comprehensive emergency plans were expected to address information submitted by each facility manufacturing, storing, transporting, or utilizing Extremely Hazardous Substances (Lindell & Meier, in press).

Ninety-seven Local Emergency Planning Committees were formed in the state of Michigan. Despite the mandated deadline of October 17, 1988 for submission of comprehensive emergency response plans, by May, 1990 only one-third of Michigan's LEPCs had done so (Lindell & Meier, in press). This low rate of compliance stands in contrast to Drabek's (1986) emphasis on the importance of comprehensive emergency response plans. Based on his extensive review of disaster research, he contended that when disaster demands have been anticipated and response functions assigned prior to the disaster, less confusion exists concerning performance responsibilities and channels of communication. Lindell and Meier (in press) indicate the critical question to be addressed is exactly what constitutes an effective emergency planning process and what factors influence the development of comprehensive emergency plans. One such factor that may have an important impact in the achievement of these plans is organizational commitment. The present study was designed to examine the antecedents of organizational commitment in these important voluntary

organizations, as well as the impact of individuals' organizational commitment upon their subsequent effort expended and turnover intentions. Finally, the present study will examine the impact of an individual's perceptions of effort expended, attendance and intentions to turnover upon the achievement of the LEPC's goals.

It is important to understand that the members of the Local Emergency Planning Committee are volunteers in a rather distinctive way. Some members, in fact, may be assigned by local government officials to participate in the activities of the LEPC. For the purposes of this study, however, all LEPC members were considered volunteers based on three reasons. First, although some LEPC members may be assigned to participate in the LEPC, work that constitutes an LEPC member's full-time job is not lessened and is expected to be completed *in addition to* LEPC membership. Secondly, appraisals of work performance in a member's full-time job is not in any way based upon performance as an LEPC member. Finally, LEPC members perform LEPC duties without direct extrinsic reward such as pay or additional benefits.

Before investigating what factors may contribute to organizational commitment and performance in LEPCs, it is important to first examine several problems that these organizations face. The first of these problems is the complexity of planning for all possible chemical emergencies within the community. Since SARA Title III requires planning for emergencies before they happen, LEPCs must deal with major uncertainties about the type and quantity of toxic chemical, the timing and location of the release, and the location of

the areas affected (Lindell & Perry, 1992). This uncertainty about the agent-generated demands of a chemical emergency is compounded by the response-generated demands of coordinating the actions of different agencies and different levels of government (city, county, state, and federal).

Secondly, disaster planning is frequently considered unimportant (relative to other concerns) by local and state governments concerned about today's demands from constituents for public safety, health and social services. Budgetary constraints have resulted in extremely limited funding. Thus, expensive equipment such as computers which might prove helpful in the planning process frequently cannot be afforded by the LEPC. The limited funding can itself serve to cause the public to think of the LEPC's activities as unimportant. Another reason disaster planning can be considered by some as unimportant are beliefs that planning is not justifiable. Those sharing this belief may feel "No one can prepare for disaster", or, at the other end of the spectrum, "There is no real threat". If the public feels that LEPC's efforts are not worthwhile, opportunity for individual and group reward by recognition is unlikely. The public's perception may in turn influence the LEPC members to consider their endeavors unimportant.

A third source of possible problems experienced by LEPCs stems from the fact that they are voluntary organizations. The majority of LEPC members possess outside jobs which place their own demands upon on the individual. Members are likely to experience role

conflict, therefore, as they attempt to balance LEPC work with their full-time occupation and other responsibilities.

A fourth difficulty in achieving LEPC goals stems from the nature of the goals themselves. These organizations are preparing plans for emergency response in the event of a chemical accident. Of course, these accidents are (thankfully) rare events. This would provide members with an outcome evaluation of their work in only those rare incidents when an accident occurs. Even then, however, external factors prevent LEPC members from drawing clear conclusions about the effectiveness of their emergency response plan. For example, the number of injuries resulting from an accidental chemical release will be affected not only by the quality of emergency response plans, but also by the location of the spill, the time of the spill, and wind patterns. The members of the LEPC, therefore, are unable to receive unequivocal outcome feedback from their work. The only sort of feedback that LEPCs can hope to achieve is process feedback, as they accomplish each of the several tasks required by federal mandate.

Each of the above difficulties experienced by members of the LEPC demonstrate the unique character of these organizations. LEPCs certainly do not fit the mold of the organization typically examined by psychologists. Local Emergency Planning Committees are public, as opposed to private organizations. As has been stated repeatedly, LEPCs are composed of volunteers. And, although they may share some commonalities with the highly researched quality circles and autonomous work groups (Barrick & Alexander, 1987; Ledford,

Lawler, & Mohrman, 1988), LEPCs are in fact very different. Quality circles were created in order to improve production efficiency in the work place. Although participation in quality circles is largely voluntary, its members meet on company time to discuss what is essentially company business. LEPCs are similar to autonomous work groups in that both are responsible for directing their own efforts. However, like quality circles, the purpose of the autonomous work group is to improve conditions for work for which the employee is paid.

Since the Local Emergency Planning Committees themselves are unique, the factors influencing the members of the LEPC are likely to be quite different from the influence on other, highly researched, organizations. The variables examined in this study - the antecedents and consequences of organizational commitment - have in fact often been examined in the typically researched private organization with paid employees. However, little evidence has been provided concerning the generalizability of previous findings of organizational commitment to voluntary organizations. Local Emergency Planning Committees provide a unique sample for which to examine the generalizability of previous research on organizational commitment.

Previous research (Lindell & Meier, in press; Lindell & Whitney, in press) on factors affecting performance of Local Emergency Planning Committees has resulted in several important findings for our consideration of antecedents of commitment in these organizations. First, Lindell and Meier (in press) investigated the

relationship between the staffing and structure of Michigan LEPCs and planning outcomes (whether plans were submitted and vulnerable zones computed, and the degree of completion and satisfaction with emergency planning activities). Results indicated slightly over one-third of the Michigan LEPCs had incorporated subcommittees in their structure. A significant positive relationship was found between possession of subcommittees and performance ($r = .29$). Those LEPCs with subcommittees were more likely to have submitted plans and to have conducted hazard analyses than those without them. One possible explanation for this finding provided by Lindell and Meier is that assignment to subcommittees for which they are best qualified may enhance LEPC members' perceptions of the meaningfulness of their work and responsibility for its outcomes. As has been previously discussed, perceptions of meaningfulness is often a major antecedent of organizational commitment. A second finding by Lindell and Meier pertained to a significant relationship between community support and emergency planning outcomes ($r = .48$). As was stated above, one problem faced by LEPC members is the little opportunity for intrinsic or extrinsic reward as a result of their service. LEPCs that receive a fair amount of support from the local community, however, may enable their members to gain a sense of pride in their volunteerism, thus increasing their affective commitment to the organization. Finally, Lindell and Meier (in press) found a significant relationship between emergency planning outcomes and recency of evacuation experience ($r = .45$). This finding was in keeping with the finding by Kartez and Lindell (1987,

1990) that in jurisdictions with disaster experience, a significantly greater number of anticipatory arrangements for dealing with problems were adopted than in jurisdictions without disaster experience. Evacuation experience may increase one's affective commitment to the LEPC by increasing perceptions of the importance of emergency planning. In each of these cases increased commitment, in turn, may yield higher individual performance. Perceptions of community support, evacuation experience, and possession of subcommittees within the LEPC, therefore, were considered particularly important antecedents to organizational commitment.

A note must also be made concerning the impact of a previous finding by Lindell and Meier (in press) on an expected outcome of organizational commitment. Contrary to the assumption that turnover is an inherently bad occurrence, Lindell and Meier found only a weak relationship ($r = .04$) between a measure of turnover and an outcome measure of plan completion. However, the turnover measure used by Lindell and Meier consisted of the LEPC chair's interpretation of "the extent turnover limited progress" rather than a measure of actual turnover. Further examination of the relationship between turnover and performance in LEPCs is warranted. An important point for consideration of the findings by Lindell and Meier (in press) is that their study was conducted at the organization level of analysis, using LEPC chairmen as knowledgeable informants. The proposed study will for the first time examine factors affecting individual LEPC members' perceptions and subsequent behaviors.

The present study

Due to the wealth of antecedents to organizational commitment that have been examined in the literature, it was impractical to attempt an inclusion of all possible antecedents in the present study. Rather, an attempt was made to include only those variables that met with one of three initial criteria. The first criterion was that the antecedent was shown to relate to organizational commitment in previous research over a variety of settings. These variables were included only if they would demonstrate variance across the sample of Local Emergency Planning Committees. In order to fulfill the first criterion, antecedents which correlated above .200 in the Mathieu and Zajac (1990) meta-analysis were examined. Fourteen antecedents correlated above .200, including: age, perceived personal competence, protestant work ethic, challenge, job scope, task interdependence, leader initiating structure, leader consideration, leader communication, participative leadership, skill variety, role ambiguity, role conflict, and role overload. Of these variables, job challenge, job scope, skill variety, and participative leadership were excluded based on the expectation that there would exist little variance across LEPCs for these variables. The antecedent "perceived personal competence" was measured as job-related self-efficacy in the present study since the variables are very similar theoretically.

The second criterion for inclusion in the present study as a possible antecedent was that the variable had been previously

shown to relate to performance measures in Local Emergency Planning Committees. The second criterion was met by three variables Lindell and Meier (in press) found to be important determinants of LEPC performance: subcommittee structure, community support, and evacuation experience. Unlike the proximal antecedents which have demonstrated strong empirical or theoretical relationships to organizational commitment, the variables suggested by the Lindell and Meier (in press) study have not previously been shown to be empirically related to organizational commitment. Moreover, these variables are distinctly different in character from variables reviewed by Mathieu and Zajac (1990). Whereas the proximal antecedents are related to the processes within an organization, the distal antecedents refer to contextual factors in which the LEPC is embedded. Indeed, these community and organizational characteristics may act to influence the proximal antecedents. Despite these differences between proximal and distal antecedents, both types of antecedent variables were expected to contribute to the prediction of organizational commitment. Therefore, no distinction between these variables were made concerning their hypothesized relationships with organizational commitment.

The third criterion for inclusion of antecedent variables in the present study was necessitated by a strong theoretical implication, as will be explained below. The variables included in the present study due to this third criterion are identification with organizational goals and perceived reward opportunity.

Once each of the antecedent variables had been selected by meeting one of the above three criteria, they were subjected to one final criterion before inclusion in the present study: ability to promote change. Although this criterion precludes examination of enduring personality variables in the present study, this was deemed necessary due to the practical goal of the present research - which is to identify factors that increase commitment to voluntary organizations. Since selection is often impractical in such organizations, little practical significance will result from investigation of enduring personality variables. Based upon this criterion, two variables were excluded: protestant work ethic and age.

Table 1 provides a listing of the antecedents examined in the present study arranged according to Steers' (1977) theoretical categories of personal characteristics, job characteristics, and work experiences. Despite the usefulness of Steers' (1977) categorization of antecedents, a new attempt was made to order the antecedents not according to which aspect of the work environment they affect (i.e. person, job, or work) but rather based upon an understanding of why the antecedents relate to organizational commitment. It was thought that a re-categorization of the antecedents of organizational commitment according to theoretical similarities might be more useful for future research. In order to achieve this new classification, each of the several antecedents was initially examined individually to determine possible ways in which the variable could be linked theoretically to commitment. In many cases previous

Table 1
Antecedents arranged by Steers' (1977) categories

Personal	Job	Work
Goal Identification	Leadership Variables Role Ambiguity Role Conflict Subcommittee Membership	Community Support Evacuation Experience Job-related Self-efficacy Perceived Opportunity for Reward

research has suggested a possible reason why a certain antecedent is associated with commitment. For those remaining antecedents that previous researchers have empirically but not theoretically linked to organizational commitment, a possible explanation was provided by the present author.

Community Support: The relationship between community support and organizational commitment seems likely to result from the probability that community support is in itself rewarding, especially in a voluntary organization. Therefore, lack of reward opportunities may cause decreased organizational commitment as one searches for activities more rewarding of effort.

Evacuation Experience: Experience with previous evacuations may affect organizational commitment in two ways. First, experience with natural or technological hazards raises one's awareness of importance of emergency planning (Kartez & Lindell, 1990), thus causing one to identify with LEPC goals. Secondly, experience with natural or technological hazards can be expected to raise one's perceptions of competence in dealing with further emergencies.

Goal Identification: Identification with an organization's goals should increase organizational commitment since acceptance of organizational goals increases one's willingness to remain with the organization as well as one's willingness to exert effort on behalf of the organization.

Leader Communication: Leaders who provide more accurate and timely types of communication enhance the work environment and

thereby increase employees' commitment to the organization (Bruning & Snyder, 1983). This accurate, timely communication may be seen as increasing congruence between the individual's perceptions and organizational goals.

Leader Consideration: Leaders who possess a high regard for the comfort, well-being, and contribution of his or her subordinates are likely to persuade workers to accept organizational goals.

Leader-initiating Structure: Leaders who clearly define their own goals as well as fully explicate what is expected of subordinates will allow subordinates to reduce feelings of ambiguity and conflict, and increase perceptions of competence.

Perceived Opportunity for Reward: Lack of reward opportunities causes one to search for activities more rewarding of effort, thus decreasing organizational commitment.

Job-related Self-efficacy: Social learning theory posits that the extent to which people believe they possess the necessary skills and abilities to accomplish a goal in the face of adversity affects subsequent attitudes and behavior toward the accomplishment of the goal (Bandura, 1977). Self-efficacy toward one's job refers specifically to those beliefs pertaining to skills and abilities necessary for adequate job performance (Jones, 1986). Perceptions of competence, therefore, should increase organizational commitment.

Role Ambiguity and Role Conflict: According to Steers and Porter (1987), role ambiguity and role conflict interfere with the establishment of a clear sense of direction in which to allocate one's

efforts. Lack of clear role knowledge may decrease one's perceptions of competence in the organization.

Subcommittee Structure: Creation of a subcommittee structure within a voluntary organization may increase organizational commitment for two possible reasons. First, the subcommittee structure has the potential to decrease role stress by maximizing the effectiveness of the limited amount of time members have available to allocate to LEPC activities. Secondly, a subcommittee structure may increase in perceptions of the meaningfulness of work by increasing responsibilities for outcomes (Lindell & Meier, *in press*).

Next, the theoretical relationships of each antecedent to organizational commitment were themselves examined. Antecedents with similar theoretical relationships were grouped together. The resulting three category classification is found in Table 2. The new classification of antecedents provides a theoretical tie between antecedents and commitment. The first two categories -- organizational goal identification and job-related self-efficacy -- are hypothesized to be related to affective commitment. The third category of antecedents -- perceived opportunity for reward -- is expected to be related to continuance commitment. Note that within an antecedent category, proximal and distal variables have been identified.

Both "identification with organizational goals" and "perceived opportunity for reward" have long been considered essential ingredients to organizational commitment. "Goal identification" is equivalent to O'Reilly and Chatman's (1986) "internalization", while

Table 2
Hypothesized Antecedent Categories

Affective Commitment		Continuance Commitment
Organizational Goal Identification	Job-related Self-efficacy	Perceived Opportunity for Reward
<i>Proximal Antecedents</i>		
Goal Identification	Job-related Self-efficacy	Perceived Opportunity for Reward
Leader Communication	Leader-initiating Structure	
Leader Consideration	Role Ambiguity Role Conflict	
<i>Distal Antecedents</i>		
Evacuation Experience	Evacuation Experience Subcommittee Structure	Community Support
Subcommittee Structure		

"reward" is the same as their "compliance". The importance of job-related self-efficacy is at first glance more difficult to relate to organizational commitment because it does not correspond to O'Reilly and Chatman's (1986) concept of "identification", which refers to a desire for affiliation. However, self-efficacy is rooted in the idea that the individual contributes effort and talents to accomplish tasks which in turn benefit the organization. Bandura (1977) proposed that the extent to which a person believes that he or she possesses the necessary skills and abilities to accomplish a goal in the face of adversity is closely bound to the effort expenditure and level of accomplishment of that person. Considering the "willingness to exert considerable effort on behalf of the organization" component of the definition of organizational commitment (Porter et al., 1974), job-related self-efficacy is likely to have a very important role in the determination of organizational commitment.

Several comments need to be made concerning these new antecedent categories. First, several antecedents fall into more than one category. Evacuation experience, for example, falls both into the organizational goal identification category as well as the perceived opportunity for reward category. This dual placement reflects the potential for multiple psychological impacts an antecedent may have.

A second comment concerning the hypothesized antecedent categories is their apparent similarity to the components of Alderfer's (1969) ERG theory. The category "identification with organizational goals", for example, is similar to Alderfer's relatedness needs in that both are concerned with identification with entities

other than oneself. The category "perceived reward opportunity", like Alderfer's existence needs, is concerned with satisfaction of material needs. Finally, both Alderfer's growth needs and the antecedents that compose the "job-related self-efficacy" category in the proposed classification are concerned with factors affecting the individual's capabilities. Therefore, despite the apparent novelty of the proposed classification system, it shares commonalities with a theory that has been previously used to explain work motivation. Alderfer conceptualized his need categories along a continuum, with existence needs as the most concrete and growth needs as the least concrete. Alderfer hypothesized abstract needs would be fulfilled only after satisfaction of the concrete needs. Thus, growth needs would exert importance only after existence and relatedness needs are satisfied. Further, if abstract needs are unfulfilled, the individual will place greater desire in concrete needs. Thus, those who are incapable of fulfilling relatedness needs will become more desirous of satisfying existence needs. How does this relate to organizational commitment? It would suggest that individuals who remain committed to an organization despite lack of fulfillment of their relatedness or growth needs will place great emphasis in existence needs. These are the people who remain committed solely due to the extrinsic reward for their service. In the term used by Meyer and Allen (1984), these people experience continuance commitment. In a voluntary organization such as an LEPC these people would not have the opportunity to achieve great extrinsic reward, and would thus be likely to turnover quickly or reduce their effort if they cannot

terminate membership. On the other hand, those individuals who have fulfilled their existence needs and subsequently attempt to satisfy relatedness or growth needs are likely to remain committed to the organization due to affective reasons. It is these individuals who are expected to be most highly motivated to achieve organizational goals.

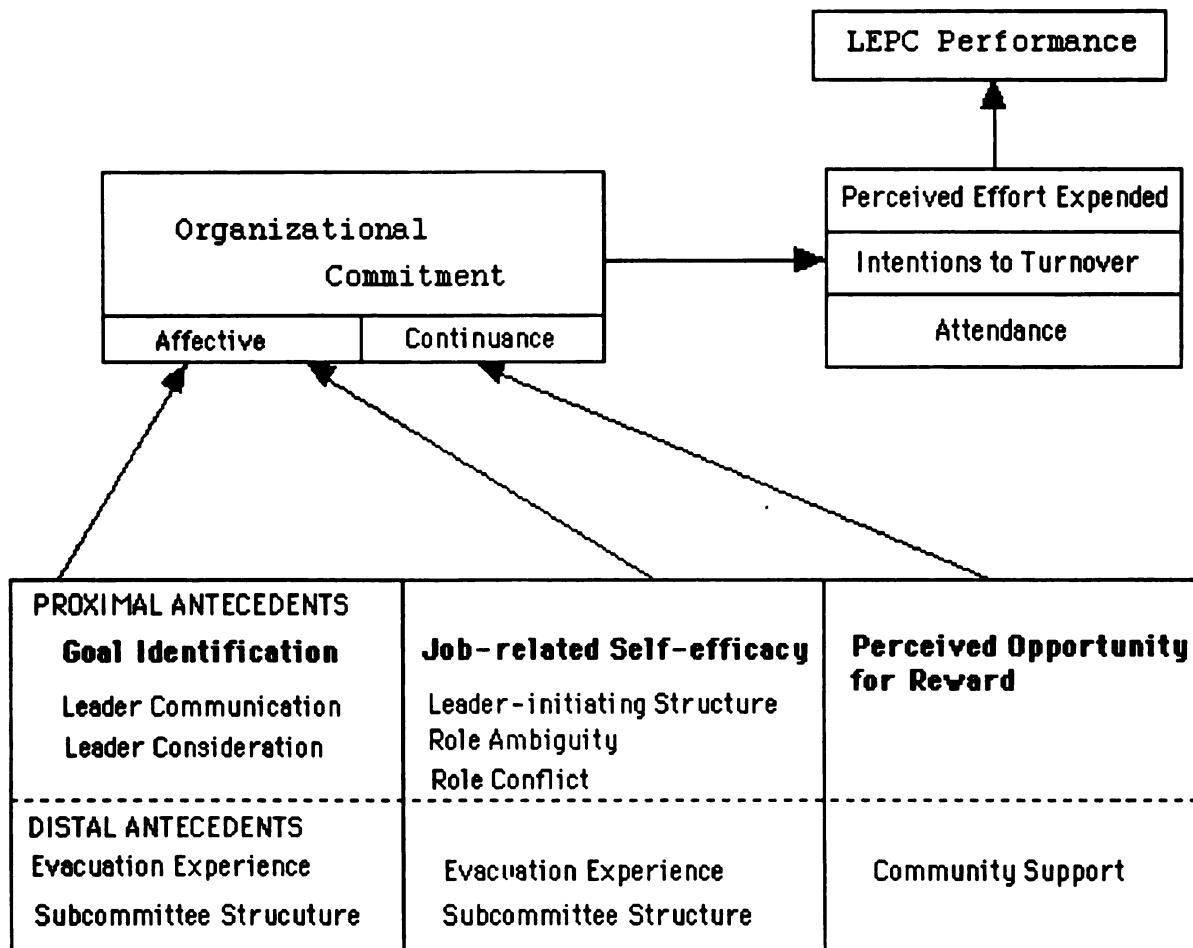
Figure 1 graphically depicts the hypothesized model, which consists of seven distinct propositions. The first two hypotheses are concerned primarily with the proposed antecedent categories.

H1: Variables within a category of antecedents (e.g., goal identification, job related self-efficacy, and perceived opportunity for reward) will be sufficiently related to one another, and sufficiently unrelated to other antecedent variables, to form separate factors.

This hypothesis examines whether the arrangement of antecedent variables in the proposed classification system, which was based upon the grouping of antecedents according to theoretical similarity, will receive empirical validation.

The second hypothesis is concerned with the underlying construct that is believed to be measured by each of the three categories (goal identification, job-related self-efficacy, and

Figure 1
A Model of the Proposed Research



perceived opportunity for reward) of the proposed classification system.

H2: The primary antecedents (the variables which name each category) will be more strongly related to commitment than will the other antecedent variables.

Limited initial support for this hypothesis can be found in the Mathieu and Zajac (1990) meta-analysis. Of those antecedents in the job-related self-efficacy category examined by Mathieu and Zajac, perceived personal competence had the highest correlation to organizational commitment ($r=.63$). Unfortunately, neither identification with organizational goals nor perceived opportunity for reward were included in the Mathieu and Zajac (1990) study.

It is expected that the antecedent categories in the proposed classification will be differentially related to commitment.

H3a: The categories of goal identification and job-related self-efficacy will be related to affective commitment.

H3b: The category of perceived opportunity for reward is expected to be related to continuance commitment.

These hypotheses are supported by the definitions of affective and continuance commitment (Meyer & Allen, 1984). Affective commitment represents an emotional attachment to an organization, which both "goal identification" and "job-related self-efficacy" would presumably influence. Continuance commitment is defined as a

desire to remain a part of an organization in order to avoid loss of investments in the organization, including pay or benefits. Certainly one's possession of continuance commitment would be dependent upon one's "perceived opportunity for reward".

It was assumed that affective commitment would far outweigh the prevalence of continuance commitment in a voluntary organization, since few, if any, extrinsic rewards can be accrued from voluntary involvement. This prediction had an impact on each of the hypotheses concerning the outcomes of organizational commitment.

H4a: Affective commitment is predicted to be negatively related to intentions to turnover, but positively related to effort expended and attendance.

Lindell and Meier (in press) found that the average LEPC lost slightly less than one third of its members annually to turnover. Although turnover is expected to be relatively high considering the lack of many extrinsic rewards (and therefore lack of continuance commitment), positive affect toward the organization should lower intentions to turnover. The prediction that attendance and perceived effort will relate positively to affective commitment is in keeping with the findings of Meyer et. al. (1989) that affective commitment increases individual performance.

H4b: Continuance commitment is expected to be related negatively to turnover intentions, but have no association with attendance or perceived effort expended.

Continuance commitment, although unlikely to be strong in a voluntary organization due to few extrinsic rewards, will by definition cause a person to desire to remain a part of the organization. However, as Meyer et. al. (1989) found, people high in continuance commitment are motivated to work only hard enough to remain a part of the organization and would thus be expected to exert little effort. In a voluntary organization where one is unlikely to be penalized for poor attendance, it is expected that no significant relationship will exist between continuance commitment and attendance.

The next hypothesis examines the relationship between the antecedent variables, commitment variables, and individual-level outcome variables.

H5: The relationship between the antecedent variables and the outcome variables of turnover intentions, attendance and perceived effort will be mediated by affective and continuance commitment.

The research literature examining organizational commitment in traditional work settings has found the relationship between the several antecedent and outcome variables to be mediated by affective and continuance commitment. This hypothesis will allow an examination of whether such a mediated relationship between these variables also exists for a voluntary organization.

The final hypothesis examines the influence of organizational commitment on the performance of the entire group.

H6: The relationship between organizational commitment and LEPC performance will be mediated by intentions to turnover, attendance, and perceived effort expended.

As was discussed above, research has indicated a weak but positive relationship between commitment and measures of actual performance. This might suggest that researchers should stop relating organizational commitment and performance. However, the ultimate goal of applied research is to examine variables which are important to the organization's goals. Surely performance is essential to an organization. In the sample used in the present study -- Local Emergency Planning Committees -- group performance *is* organizational performance. Commitment researchers have often found a relationship between organizational commitment and such individual variables as turnover and attendance. Yet a weaker relationship is consistently found between organizational commitment and actual performance. Although this finding is consistent in traditional organizations, no research has examined the relationship between performance and commitment in voluntary organizations. The present study re-examines the organizational commitment-performance relationship, this time in a voluntary setting. However, unlike previous organizational commitment research (e.g., Lee & Mowday, 1987; McFarlane-Shore & Martin, 1989; Steers, 1977), Figure 1 posits that the relationship between organizational commitment and performance is not a direct relationship, but rather is mediated by turnover intentions,

attendance, and perceived effort. According to the model, an individual's increased attendance and effort, and decreased intention to leave the organization will lead to increased performance for the team. In Local Emergency Planning Committees the variables of turnover intentions, attendance, and perceived effort are expected to be closely related to performance due to several factors. LEPCs are small organizations, with a mean size of about 10 members. Thus, each individual is more directly responsible for the outcomes of the group than in large organizations. Taken to the extreme, if very few members attended LEPC meetings, and those that did attend demonstrated little effort and/or desired to leave the organization, then the LEPC would get no work accomplished at all. However, due to the few members of each LEPC, it is expected that even if only a few members exhibit poor attendance, poor effort, and high turnover intentions, then LEPC performance as a whole will suffer. Despite the low correlations typically observed between commitment and performance, therefore, the present study hypothesizes that a commitment and performance will be indirectly related through the mediation of the individual level outcome variables of attendance, perceived effort, and intentions to turnover.

METHOD

Respondents and Procedures

Pre-test

One hundred twenty-seven pre-test subjects recruited from a large midwestern university pre-tested the questionnaire packet. Two samples of college students served as subjects for the pre-test. The first sample consisted of individuals who regularly participated in volunteer service organizations. The second sample consisted of individuals with part-time jobs in the fast food industry. Samples with these characteristics were selected in order to assess groups that possess two of the distinctive characteristics of LEPCs - voluntary and part-time membership - and are likely to have varying levels of affective and continuance commitment. Subjects were recruited by in-class notification and posters describing the study, and were administered each of the scales in the LEPC questionnaire with one exception. The goal identification scale was not included since this scale contains goals specific to Local Emergency Planning Committees. Subjects were instructed to complete the questionnaire according to their feelings and opinions concerning their target organization, i.e. service organization or part-time job. For those scales with items including the words "LEPC" or "LEPC chair", the referent of the items was changed to maintain equivalence of item meaning. For example, in each of the items on the leader communication scale, the words "LEPC chair" were changed to "supervisor". The pre-test of the LEPC questionnaire was

conducted to serve two purposes. The first objective was to determine internal consistency of the items in each of the various scales within the questionnaire. This was necessary because several of these scales (e.g., attendance, perceived effort, and turnover intention) have been created for the present study, and, thus, have no previous assessment of their reliability. Other scales require internal consistency assessment because they have undergone modifications ranging from a slight word change in an item to the addition of several items to the scale. Reliabilities of the modified scales must be re-estimated to ensure that they have not decreased. Finally, since brevity of testing time was an important constraint in the present study, accurate determination of scale internal consistency estimates was necessary in order to allow removal of unnecessary or inadequate items.

The pre-test also enabled the examination of any difficulties a pilot group experienced with the questionnaire package, such as failure to respond according to given scales, following of instructions, and the amount of time to complete the entire package. Although it was originally intended to pre-test the questionnaire packet on one hundred part-time workers and one hundred volunteers, volunteers were extremely difficult to recruit. Indeed, of the 127 total pre-test subjects, only 15 of these were members of volunteer organizations. Therefore, the pre-test subjects were mainly part-time job holders.

LEPC

The members of selected LEPCs in Michigan served as subjects in the second phase of the study. The state of Michigan possesses 97

Local Emergency Planning Committees, with an average of about 10 members per LEPC. Due to budgetary constraints in the present study, it was not possible to survey all 1,000 members of Michigan's LEPCs. However, in order to ensure representation from all LEPCs, eight members of each LEPC in Michigan were randomly selected to participate in the study. For LEPCs with less than eight members, every member of the LEPC was asked to participate in the study. This resulted in sending approximately 570 questionnaire packets to the members of Local Emergency Planning Committees in Michigan.

Addresses of the selected LEPC members were obtained from the Michigan SERC. Each of these individuals were mailed the following:

1 - A cover sheet explaining the study; 2 - The revised LEPC questionnaire; and 3 - A self-addressed stamped return envelope. Those individuals who failed to return the completed questionnaire within three weeks were sent a post card reminding them of the study and requesting their completion of the questionnaire.

Questionnaires were once again be sent to those individuals who had not yet returned completed questionnaires two weeks after the postcard was sent. Attempts were then made to contact non-responders by telephone and encourage them to fill out and return the questionnaire.

Two hundred four of these members returned completed usable surveys, resulting in a response rate of 36%. Of the responders, 84% were male, 16% were female. This is very close to the gender breakdown of the sample (85% were male, 15% were female). The mean age of respondents was 47 years, with a standard

deviation of 9.4. On the average respondents had served their LEPC for 33 months, with a standard deviation of 15. Ninety-one percent of LEPC respondents possessed a full-time job. The vast majority of these occupations involved public service (elected official, civil defense, law enforcement, etc), education, or operation of local manufacturing facilities.

Measures

The LEPC questionnaire utilized in the present study is found in Appendix A. The various components comprising the questionnaire are listed below.

Antecedent Variables:

Goal Identification. The measure of goal identification was developed by the present author in order to provide statements that are sufficiently general that they are likely to be shared by all Local Emergency Planning Committees, yet specific enough to differentiate LEPCs from other organizations. The scale contains nine items scored on a seven point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Leader Communication. Leader communication was assessed by a modified version of the leader trust and support subsection of James' Climate Questionnaire (James & Sells, 1981; Jones & James, 1979). The scale contains nine items scored on a five point Likert-type scale ranging from 1 (Not at all) to 5 (To a very great extent).

Leader Consideration. Leader consideration was assessed by use of a modified version of the leader consideration subsection of

the Leader Behavior Description Questionnaire (LBDQ) (Stogdill, 1963). Past research has indicated a Spearman-Brown internal reliability estimate of .89 (Szilagyi & Keller, 1976). The scale contains ten items scored on a five point Likert-type scale ranging from 1 (Never) to 5 (Always).

Leader Initiating Structure. Leader initiating structure was assessed by use of the leader-initiating structure subsection of the Leader Behavior Description Questionnaire (LBDQ) (Stogdill, 1963). Past research has indicated a Spearman-Brown internal reliability estimate of .87 (Szilagyi & Keller, 1976). The scale contains 10 items scored on a five point Likert-type scale ranging from 1 (Never) to 5 (Always).

Perceived Reward Opportunity. The amount of reward subjects' perceived they were likely to experience as a result of their participation as a member of the LEPC was measured using a modified version of a scale drawn from the Michigan Organizational Assessment Program (Lawler & Camman, 1980). The scale contains 11 items scored on a seven point Likert-type scale ranging from 1 (Not at all likely) to 7 (Extremely likely).

Role Ambiguity. The degree to which subjects experienced role ambiguity as a result of their participation in the LEPC was measured by a scale developed by Rizzo, House, and Lirtzman (1970). The scale contains 6 items scored on a seven point Likert-type scale ranging from 1 (Very true) to 7 (Very false). Valenzi and Dessler (1978) determined Cronbach's alpha for the scale to be .76, and Schriesheim

and Von Glinow (1977) determined a Kuder-Richardson internal consistency reliability of .89.

Role Conflict. The degree to which subjects experienced role conflict (including role overload) as an LEPC member was assessed by a scale developed by Rizzo, House, and Lirtzman (1970). The scale contains 6 items scored on a seven point Likert-type scale ranging from 1 (very false) to 7 (very true). Szilagyi, Sims and Keller (1976) provided evidence of a Spearman-Brown internal reliability of .90.

Job-related Self-Efficacy. Self-efficacy was assessed using a modified version of the Jones (1986) scale measuring self-efficacy to one's job, as well as items adapted from a scale by Major (1990). The scale contained 11 items scored on a seven point Likert-type scale ranging from 1 (strongly disagree) to 7 (Strongly agree).

Commitment Variables:

Affective Commitment. Affective commitment was measured using the scale by Meyer and Allen (1984). The scale contains eight items scored on a seven point Likert-type scale ranging from 1 (strongly agree) to 7 (strongly disagree). Research has demonstrated this scale to be highly reliable, with a Cronbach's alpha equal to .88.

Continuance Commitment. Continuance commitment was measured using the scale by Meyer and Allen (1984), which has been shown to have a Cronbach's alpha equal to .73. The scale contains eight items scored on a seven point Likert-type scale ranging from 1 (strongly agree) to 7 (strongly disagree).

Outcome Variables:

Attendance. Perceived attendance was measured by a four item scale developed by the present author. Items are scored on a seven point Likert-type scale ranging from 1 (strongly disagree) to 7 (Strongly agree).

Perceived Effort. The amount of effort subjects' perceived they exerted on behalf of the LEPC was measured using a three item scale developed by the present author. Items were scored on a seven point Likert-type scale ranging from 1 (strongly disagree) to 7 (Strongly agree).

Turnover Intentions. Turnover intentions were measured using a three item scale developed by the present author. Items were scored on a seven point Likert-type scale ranging from 1 (strongly disagree) to 7 (Strongly agree).

A special note must be made considering the use of the measures of continuance commitment and turnover intentions. Cursory examination of these measures might produce an appearance of item overlap. Item overlap would, of course, lead to an inflated correlation between the two variables. However, despite the similarity in the items, the measures do assess distinct constructs. For example, the continuance commitment item, "It would be very hard for me to leave my organization right now, even if I wanted to" is very similar to the turnover intention item, "I'd discontinue serving as a member of my LEPC if it was possible to leave". In this example, the continuance commitment item measures one's ability to leave the organization while the turnover intention item measures an

individual's actual desire to quit. The importance of including a measure of turnover intentions in the present study is based in part on the long utilization of turnover intentions as a standard outcome measure of organizational commitment. In the studies examined in the Mathieu and Zajac (1990) meta-analysis, turnover intentions were used more frequently as an outcome of organizational commitment than any other variable. This is not surprising considering the definition of organizational commitment, which indicates a person with high commitment would also have high desire to remain in the organization. Theoretically, therefore, the relationship between commitment and turnover intentions is very important. Indeed, Mowday, Porter, and Steers (1982, cf. Mathieu and Zajac, 1990), predicted the strongest and most important predictable behavioral consequence of employee commitment should be lower turnover rates.

Each of the above constructs was measured using a Likert-type response format. Whenever similar response formats are utilized the possibility of achieving biased results due to method variance should be considered. In order to assess the possibility of biased findings resulting from the influence of method variance in the present study, intercorrelations of all variables were examined. Evidence of method variance is indicated if variables which are conceptually dissimilar exhibit moderate to high intercorrelations (Kozlowski & Doherty, 1989). Additionally, item content of all scales was examined to eliminate conceptual overlap as much as possible. Interestingly, Spector (1987) has suggested that the problem of method variance

may be largely mythical. Based upon an examination of 10 multi-trait multi-method matrices of published data, Spector concluded that correlations between bias measures and measures designed to assess constructs of interest tend to be very small and rarely statistically significant. However, Spector (1987) does suggest method variance may be a much larger problem in single item or poorly designed scales.

Additional Measures:

Information regarding the degree of community support for the LEPC, evacuation experience, and possession of subcommittee structure were obtained from data obtained by Lindell and Meier (in press). The performance of the LEPC was determined by whether or not the LEPC had produced the emergency response plans dictated by SARA Title III. Information regarding the degree of emergency response plan completion was obtained from the Michigan State Emergency Response Commission (SERC). These data are a matter of public record and are routinely compiled and reported by the staff of the SERC. Additionally, the LEPC chair's ratings of LEPC performance were obtained from Lindell & Meier (in press). These ratings were the chair's judgments of the total hours members had worked for the LEPC in the past year, amount of work accomplished by members of the LEPC, and satisfaction with amount of work the LEPC accomplished. In order to disaggregate this data to the individual-level, each individual within an LEPC was assigned the score for his/her LEPC. Every member of a particular LEPC, therefore, received the same values for each of the independent variables of

community support, evacuation experience, and possession of subcommittee structure, as well as the dependent variables of plan submission and LEPC ratings of amount of work accomplished, total hours worked, and satisfaction with LEPC achievements.

Analyses

Data were entered into a computer file and initial analyses consisting of frequency tabulations were conducted to check the data for human error. Subsequent examinations included scale and regression analyses. Scale analyses provided reliability estimates for each of the several scales.

A list of the hypotheses and a brief explanation of how each hypothesis was tested is presented in Table 3. The initial hypotheses pertain to the proposed classification of antecedents of organizational commitment. Antecedent variables within a particular category were expected to be more highly associated with antecedents within their category than to those in another category. In order to test this hypothesis, confirmatory factor analysis was conducted to test whether the antecedent variables loaded highly within their hypothesized categories. If the antecedents did not load as expected, the proposed classification of antecedents to organizational commitment would be revised.

The second hypothesis is that within a particular category of antecedents, the primary antecedent will be more highly related to one of the commitment measures than any of the other antecedents in the category. This hypothesis was tested through multiple

regression between the antecedents, used as predictors, and the measures of affective and continuance commitment, used as criteria. Additionally, this hypothesis was tested by means of the statistical significance of the difference between correlations.

The third hypothesis is concerned with the relationship between each of the proposed categories of antecedents and their relationship to commitment. It is proposed that the categories of goal-identification and job-related self-efficacy will relate to affective commitment, while the antecedent category of perceived opportunity for reward will be associated with continuance commitment. Regression analyses of the relationship between the antecedent variables and the two (affective and continuance) commitment variables served to test this hypothesis.

The fourth hypothesis investigates the relationship between each of the two commitment variables and the primary outcome variables of attendance, turnover intentions, and perceived effort expended. Affective commitment was expected to be negatively related to intentions to turnover, but positively related to effort expended and attendance. Continuance commitment was expected to be negatively related to turnover intentions, but unrelated to attendance and perceived effort. This hypothesis was tested through multiple regression between the commitment variables, used as predictors, and the primary outcome variables of attendance, turnover intentions and perceived effort, used as criteria.

The fifth hypothesis examines the relationship between antecedents, commitment, and outcomes at the individual level of

Table 3
Hypotheses and How They Are Tested

Hypothesis	Test of hypothesis
H1: Variables within a category will be sufficiently related to one another, and sufficiently unrelated to other antecedents, to form separate factors.	All antecedent variables will be entered into a confirmatory factor analysis.
H2: The primary antecedent (the variable that gives a category its name) in each of the categories will be more strongly related to organizational commitment (affective or continuance respectively) than any other antecedent in the category.	Multiple regression between the antecedents, used as predictors, and the measures of affective and continuance commitment, used as criteria.
H3a: The categories of goal identification and self-efficacy will be related to affective commitment. H3b: The category of perceived opportunity for reward is expected to be related to continuance commitment.	Regression analyses of the relationship between the antecedent variables and the two commitment variables will serve to test this hypothesis.
H4a: Affective commitment is predicted to be negatively related to turnover intentions, and positively related to perceived effort expended and attendance. H4b: Continuance commitment is expected to be negatively related to turnover intentions, but have no association with attendance or perceived effort.	Multiple regression between the commitment variables, used as predictors, and the individual level outcome variables of attendance, turnover intentions, and perceived effort, used as criteria.
H5: The relationship between the antecedent variables and the outcome variables of turnover intentions, perceived effort, and attendance will be mediated by affective and continuance commitment.	The proposed mediation model will be tested through the use of hierarchical regression.
H6: The relationship between organizational commitment and LEPC performance will be mediated by turnover intentions, attendance, and perceived effort.	The proposed mediation model will be tested through the use of hierarchical regression.

analysis. In order to examine the hypothesized mediated relationship between possible antecedents of organizational commitment and the primary outcome measures of attendance, intention to turnover and perceived effort expended, hierarchical regression techniques were used. In accord with James and Brett (1984), the following steps were taken:

- 1) The antecedent and organizational commitment variables were used to predict attendance, intention to turnover, and perceived effort. The relevance of these variables was established if they predicted a statistically significant portion of the variance in the outcome variables.
- 2) In order to test the proposed mediation model, two additional regression analyses were performed predicting the outcomes from antecedent variables alone and also from the commitment variables alone. If the relationship between antecedents and outcomes is completely mediated by commitment, the R square for the commitment variables alone would be significantly different from zero, but not significantly different from the R square for the composite (antecedents and commitment variables) model tested in step 1. In addition, the R square for the antecedent variables alone would ideally be nonsignificantly different from zero. If the R square for the antecedent variables was significantly different from zero, the R square for the composite would be significantly greater than for the antecedents alone, while the R square for the composite would not be significantly greater than for the commitment variables alone.

The sixth hypothesis is that the relationship between organizational commitment and LEPC performance would be mediated by the individual level outcomes of turnover intentions, attendance, and perceived effort. Since both organizational commitment and the individual-level outcome variables are by definition individual-level variables, it was considered inappropriate to aggregate these variables to the group-level of analysis. Examination of this hypothesis, therefore, required a cross-level analysis.

This hypothesis was tested by hierarchical regression analyses, following the same procedure outlined for hypothesis six. Specifically, the following methods were employed:

- 1) The commitment, turnover intention, attendance and perceived effort variables were used to predict LEPC performance. The relevance of the commitment and individual outcome variables (turnover intentions, attendance and perceived effort) was established if they predicted a statistically significant portion of the variance in the outcome variables.
- 2) In order to test the proposed mediation model, two additional regression analyses were performed predicting LEPC performance from commitment variables alone and also from the individual outcome variables. If the relationship between commitment and LEPC performance was completely mediated by the individual outcome variables, the R square for the individual outcome variables alone would be significantly different from zero, but not significantly different from the R square for the composite (commitment and

individual outcome variables) model tested in step 1. In addition, the R square for the commitment variables alone would ideally be nonsignificantly different from zero. If the R square for the commitment variables was significantly different from zero, the R square for the composite would be significantly greater than for the commitment variables alone, while the R square for the composite would not be significantly greater than for the individual outcome variables.

Results

Pre-test

A reliability estimate based upon undergraduate pre-test subjects was computed for each of the scales. The internal consistency estimates appeared to be in acceptable ranges, and it was determined that no changes in the scales was indicated based upon these initial findings.

The pre-test included sufficient numbers of subjects from voluntary organizations to conclude these subjects did not have any difficulty responding to the wording in any of the items which compose the scales. At no point did any pre-test subject -- whether a member of a voluntary organization or a part-time job holder -- express concern or confusion with a particular item.

The pre-test helped to determine a potential source of difficulty -- the anchors of one scale were in the opposite direction of the anchors of all other scales used in the packet. Evidence indicated some pre-test subjects failed to notice this change in anchor polarity. Therefore, the polarity of the anchors of this scale was made consistent with the anchors of the other scales.

LEPC Sample

Two hundred four of these members of Local Emergency Planning Committees returned completed usable surveys, resulting in a response rate of 36%. An analysis was undertaken in order to examine whether response rates differed according to LEPC performance, as determined by the submission of an emergency

response plan to the Michigan State Emergency Response Commission (SERC). This analysis determined that members of successfully performing LEPCs were slightly more likely to respond than members from unsuccessful LEPCs. Although 57% of the questionnaires were sent to members of unsuccessful LEPCs, these members represented only 46% of the actual responders.

Data Assessment:

Data were entered into a computer file and screened for accuracy. Frequency analyses were run to further check the accuracy of the data. Frequency analyses determined that for several variables which had a 5 point Likert-type scale, some respondents rated an item with a seven. It was reasoned that these subjects wished to rate the item at the extreme, but had failed to observe the 5 point scale. Accordingly, these cases were recoded from a "7" to a "5". Although it could be argued that other respondents also failed to notice the change in scale anchoring, there is no way of detecting such miscues.

Further inspection of the data revealed a large number of missing cases for some outcome variables. This was expected, considering that some criterion data was unavailable for some LEPCs from which subjects were recruited. Although randomly selected members from each LEPC were sent questionnaires in the present study, criterion data for the outcome variables rated by the LEPC chair (e.g., satisfaction, total hours worked, and percentage of work completed) was limited to those LEPCs in which the chairman had

responded to the Lindell and Whitney (in press) study. The effect of missing values on the analyses was examined by first computing intercorrelations using pairwise deletions, and, subsequently, by replacing missing values with the mean for all responses to that item. A comparison of these two procedures revealed that observed intercorrelations were nearly identical. To preserve an adequate sample size, all further analyses were conducted using the mean substitution for all missing values. According to Hertel (1976) this method is a conservative procedure for coping with item non-response.

Scale analyses:

Scale reliabilities were examined using coefficient alpha internal consistency estimates. Initial estimates of internal consistency reliability ranged from $\alpha = .35$ to $\alpha = .95$ across scales (See Table 4). Item-total correlations were examined to determine whether some of the scales exhibiting lower internal consistency estimates might be altered to increase reliability. Items were deleted from a scale if they possessed low item-total correlations and also were deemed to significantly differ in content from the other items in the scale. It is worthy of note that the majority of items that were dropped were contained in scales not previously tested. Final reliabilities for each of the scales were in the .70s or above, with the exception of continuance commitment, which had a reliability of $\alpha = .54$. This low level of internal consistency is somewhat surprising because the items in this scale were used in previous studies which

reported much higher reliability estimates (e.g., Meyer & Allen, 1984; Meyer et. al., 1989). There are two possible reasons for the low reliability for the version of continuance commitment used in the present study: either the scale's reliability suffered because the scale was shortened in an attempt to make it sensible for volunteers, or the voluntary nature of LEPC service made even the shortened scale nonsensical to respondents. Continuance commitment, by definition, pertains to financial or other external incentives to remain with an organization. The low reliability of the continuance commitment scale suggests that subjects from a voluntary organization had a difficult time responding in a coherent fashion to the items in this scale. The intercorrelations for each of the variables in the present study are provided in Table 5.

Factor analyses:

A confirmatory factor analysis using LISREL (Joreskog & Sorbom, 1985) was performed in order to test the proposed factor structure of antecedents as presented in Hypothesis 1 (See Table 2). The LISREL confirmatory factor analysis produced a test statistic of $\chi^2(39) = 437.15$ ($p < .01$). Furthermore, the goodness of fit index of the hypothesized model was only .773. Both of these fit indices strongly suggest that the hypothesized model provides a poor fit to the data, indicating the antecedent variables should not be categorized as proposed. The LISREL estimates for the lambda X and phi matrices are presented in Table 6. Subsequent exploratory factor analyses were conducted in order to identify a factor structure that would provide a better fit to the data. Principal axis factor analyses

Table 4
Reliability Estimates

Scale	Initial Reliability Estimate	Final Reliability Estimate
Affective Commitment	.85	.89
Attendance	.77	.77
Continuance Commitment	.35	.54
Goal Identification	.78	.80
Job-related Self-efficacy	.74	.76
Leader Communication	.95	.95
Leader Consideration	.66	.91
Leader-initiating Structure	.95	.95
Leadership factor	--	.97
Perceived Effort	.46	.74
Perceived Opportunity for Reward	.86	.86
Role Ambiguity	.92	.92
Role Conflict	.83	.83
Turnover	.88	.88

Table 5
Means, Standard Deviations, and Variable Intercorrelations

		X	SD	1	2	3	4	5	6	7	8	9	10
	Commitment Variables												
1.	Affective	4.06	1.33	1.0	.30	.14	.09	.33	.20	.43	.46	.45	.57
2.	Continuance	3.45	1.18		1.0	.04	.02	.09	.19	.12	.16	.14	.18
	Antecedent Variables												
3.	Community Supp.	.46	.45		1.0	.20	-.04	-.05	.00	.06	.06	.07	.07
4.	Evacuation Exp.	.57	.56		1.0	.07	.16	-.02	-.02	-.03	-.03	.00	
5.	Goal Identif.	5.51	.90		1.0	.08	.17	.15	.15	.13	.13	.19	
6.	Job-related SE.	4.79	.86		1.0	.01	.02	-.06	-.06	.03			
7.	Leader Commun.	4.05	.80		1.0	.83	.80	.88					
8.	Leader Consid.	3.81	.75		1.0	.80	.88						
9.	Leader-init Str.	3.44	.87		1.0	.89							
10.	Leadership Factor	3.94	.84		1.0	.49	.47	.46	.53				
11.	Perceived Reward	4.52	.12	.63	.21	.09	.09	.35	.08	.49	.47	.46	
12.	Role Clarity	4.47	1.43	.58	.19	.09	.05	.20	.08	.59	.59	.61	.86
13.	Role Conflict	1.84	1.12	-.15	.02	-.03	.00	-.06	.00	-.34	-.32	-.29	-.33
14.	Subcomm Str.	.66	.35	.06	.00	.07	.14	.01	.07	-.04	-.07	-.04	-.02
	Outcome Variables												
15.	Attendance	5.56	1.27	.44	.14	.03	.13	.24	.16	.27	.30	.26	.37
16.	Perc. Effort	3.92	.98	.51	.33	.12	.07	.25	.20	.22	.28	.25	.34
17.	% Attendance	83.80	21.43	.42	.20	.07	.11	.19	.25	.15	.18	.13	.24
18.	Turnover Int.	4.97	1.74	-.45	-.17	.02	-.03	-.22	-.23	-.21	-.24	-.19	-.29
19.	Donework	32.98	18.18	.13	.10	.03	.39	.09	-.03	.15	.17	.17	.16
20.	Planin	.54	.50	.02	.11	-.10	.03	.13	.12	.09	.01	.00	.05
21.	Satisfied	2.86	.80	.17	.17	.04	-.03	.14	-.04	.23	.24	.21	.22
22.	Total Hours	332.74	257.91	.08	.09	-.23	.16	-.01	.19	-.03	.01	-.05	-.03

Table 5 (cont'd.)

	11	12	13	14	15	16	17	18	19	20	21	22
Antecedent Variables												
11. Perceived Reward	1.0	.45	-.10	-.07	.27	.37	.20	-.29	.23	-.06	.16	-.13
12. Role Clarity	1.0	-.24	.03	.30	.37	.39	.32	.10	.06	.13	-.02	
13. Role Conflict	1.0	-.01	-.22	.06	-.13	-.12	-.18	-.08	-.24	-.10		
14. Subcomm Str.	1.0	.00	.02	.05	.01	-.15	.01	.01	.01	.27		
Outcome Variables												
15. Attendance	1.0	.46	.67	-.43	.05	.06	.01	-.01				
16. Perc. Effort	1.0	.39	-.34	-.11	-.06	-.14	-.01					
17. % Attendance	1.0	-.42	-.07	.02	.00	.00	.07					
18. Turnover Int.	1.0	-.12	-.10	-.18	.09							
19. Donework	1.0	.23	.65	.11								
20. Planin	1.0	.30	.12									
21. Satisfied	1.0	.24										
22. Total Hours	1.0											

N = 204

All correlations whose absolute value is .14 or larger are significant at $\alpha = .05$
 All correlations whose absolute value is .18 or larger are significant at $\alpha = .01$

Table 6
LISREL Estimates for Lambda X and Phi Matrices for a Three-Factor Model of Antecedents to Organizational Commitment

<u>Clusters</u>			
<u>Antecedents</u>	<u>Goal ID</u>	<u>Efficacy</u>	<u>Reward</u>
Community Supp.	.000	.000	.096
Evacuation Exp.	.061	.114	.000
Goal Identif.	.160	.000	.000
Job-related S.E.	.000	-.278	.000
Leader Comm.	.739	.000	.000
Leader Consid.	.717	.000	.000
Leader-init. Struct.	.000	.048	.000
Perc. Reward	.000	.000	.606
Role Clarity	.000	-.099	.000
Role Conflict	.000	-.158	.000
Subcomm. Str.	.003	.030	.000
Efficacy	-.644		
Reward	1.031	-.002	

Table 7

Principal Components Factor Analysis for the Antecedent Variables

	Factor			
	1	2	3	4
Leader Communication	.90	.14	-.04	-.04
Leader Consideration	.89	.14	.00	-.06
Leader-Init. Struct.	.89	.10	.04	-.11
Role Clarity	.73	.23	.10	.09
Role Conflict	.54	-.29	-.06	.20
Goal Identification	.09	.76	-.04	.07
Perceived Opp. Reward	.49	.64	.15	-.06
Community Support	.06	-.08	.87	-.11
Evacuation Experience	-.06	.21	.59	.44
Job-related Self-efficacy	-.01	.30	-.17	.69
Subcommittee Struct.	.02	-.26	.17	.66

with varimax rotation of 3, 4, and 5 factors revealed that the antecedents do not have a simple structure. A principal axis factor analysis with specification of eigenvalues greater than 1.0 produced 4 factors, and is presented in Table 7. Examination of the factor loadings of the antecedent variables (e.g., goal identification, subcommittee structure, job-related self-efficacy, etc.) in particular leads to the conclusion that they cannot be represented within the common factor space defined by the leadership variables of leader communication, leader consideration, and leader-initiating structure. Additionally, the variables of role clarity and role conflict loaded on this factor. Examination of the intercorrelation of these variables as presented in Table 5 reveals that role clarity correlates substantially more highly with the leadership variables of communication, consideration, and initiating-structure ($r = .59, .59, .61$, respectively) than with role conflict ($r = -.24$). The intercorrelations of role conflict with the leadership variables of communication, consideration and initiating-structure were $r = -.34, -.32$, and $-.29$. Because of the factor loadings and relatively impressive intercorrelations, the items in each of these scales were examined to determine if they could be combined into a single scale. The items measuring role conflict are clearly different from those assessing the leadership variables. Whereas the leadership variables seem concerned with the leader's specification and clarification of the work to be done, the role conflict scale seems to be concerned with the degree to which LEPC members view different projects within the LEPC as competing with one another in terms of time, effort, and

resources. It was decided, therefore, that role conflict would not be combined with these variables to create a new factor. Inspection of the role clarity items, on the other hand, revealed that these items are similar to the leadership variables in that both sets of items are concerned with the establishment of clear work-related responsibilities. The major difference between the leadership items and the role clarity items is that the former assess the leader's influence in the creation of the latter. It was decided based upon the similar theme and high intercorrelations that the role clarity scale and leadership variables would be combined to form a single factor. These four variables produced a leadership factor with an internal consistency reliability of .97. The new leadership factor was used in place of the three separate leader variables and role clarity in all subsequent analyses. The relatively low intercorrelations between the remaining antecedent variables suggests that these antecedents should not be grouped as factors.

Regression analyses

To test hypothesis 2, tests of significance of the differences between correlations were performed in order to determine whether the primary variables among the antecedents were more strongly related to commitment than were the other antecedent variables. The strength of the relationship between each of the primary antecedents (e.g., goal identification, job-related self-efficacy, and perceived opportunity for reward) and both affective and continuance commitment was compared with the strength of the relationships between each of the other antecedent variables (e.g.,

community support, evacuation experience, leadership, role ambiguity, role conflict, and subcommittee structure) and both forms of commitment. In order to perform these analyses, each of the predictor variables was corrected for unreliability. The results of these analyses are reported in Tables 8 (affective commitment) and 9 (continuance commitment). It is clear that perceived opportunity for reward exhibits a significantly greater relationship with affective commitment than do any of the non-primary antecedent variables. The relationship between perceived opportunity for reward and continuance commitment is also stronger than the relationship between continuance commitment and any of the non-primary antecedents, with the exception of the leadership factor. Thus, hypothesis two is mainly supported for the primary antecedent 'perceived opportunity for reward'.

The relationship between goal identification and affective commitment was also shown to be significantly greater than between affective commitment and any of the non-primary antecedents, again with the exception of leadership. However, none of the comparisons of the relationship with continuance commitment between goal identification and the non-primary antecedents reached significance.

In comparisons of the relationship between job-related self-efficacy and affective commitment with the relationships between affective commitment and the non-primary antecedents, none of the comparisons reached significance. The relationship between job-related self-efficacy and continuance commitment was significantly greater than three of the five relationships between continuance

Table 8
 Comparisons of the Relationships Between the Antecedents and
 Affective Commitment

<u>Variable</u>	<u>r</u>	<u>t</u>
<i>Goal Identification</i>	.37	
vs. Community Support	.14	2.44*
vs. Evacuation Experience	.09	4.08*
vs. Leadership	.58	-1.77
vs. Role Conflict	-.16	2.35*
vs. Subcommittee Struct.	.06	3.33*
<i>Job-related Self-Efficacy</i>	.23	
vs. Community Support	.14	0.90
vs. Evacuation Experience	.09	1.58
vs. Leadership	.58	-3.24*
vs. Role Ambiguity	-.10	1.37
vs. Role Conflict	-.16	0.72
vs. Subcommittee Struct.	.06	1.81
<i>Perceived Opp. for Reward</i>	.68	
vs. Community Support	.14	7.74*
vs. Evacuation Experience	.09	8.42*
vs. Leadership	.58	2.20*
vs. Role Conflict	-.16	7.55*
vs. Subcommittee Struct.	.06	8.18*

r = correlation between antecedent and affective commitment after correction for unreliability in the antecedent

t = the t statistic of the comparison of the differences between two correlations, calculated using the procedure by Downie & Heath (1970)

* indicates significant, $p < .05$

N = 204

Table 9

Comparisons of the Relationships Between the Antecedents and
Continuance Commitment

<u>Variable</u>	<u>r</u>	<u>t</u>
<i>Goal Identification</i>	.10	
vs. Community Support	.04	0.59
vs. Evacuation Experience	.02	0.83
vs. Leadership	.18	-0.92
vs. Role Conflict	.02	0.83
vs. Subcommittee Struct.	.00	1.00
<i>Job-related Self-Efficacy</i>	.22	
vs. Community Support	.04	1.78
vs. Evacuation Experience	.02	2.25*
vs. Leadership	.18	0.42
vs. Role Conflict	.02	2.04*
vs. Subcommittee Struct.	.00	2.33*
<i>Perceived Opp. for Reward</i>	.23	
vs. Community Support	.04	2.04*
vs. Evacuation Experience	.02	2.26*
vs. Leadership	.18	.79
vs. Role Conflict	.02	2.28*
vs. Subcommittee Struct.	.00	2.26*

r = correlation between antecedent and continuance commitment after correction for unreliability in the antecedent

t = the *t* statistic of the comparison of the differences between two correlations, calculated using the procedure by Downie & Heath (1970)

* indicates significant, *p* < .05

N = 204

commitment and the non-primary antecedents. Specifically, the job-related self-efficacy and continuance commitment relationship was significantly greater than the relationships between continuance commitment and evacuation experience, role ambiguity, role conflict, and subcommittee structure.

The calculation of the significance of the differences between correlations leads one to conclude that hypothesis two received only partial support. Although the variables hypothesized to be primary antecedents were significantly more strongly related to both affective and continuance commitment than were many of the antecedent variables, the comparisons of these relationships did not always reach significance. Furthermore, the strength of the relationship between the leadership factor and commitment was surprisingly strong. In one case leadership had a stronger relationship with commitment than the variables hypothesized to be primary antecedents.

In order to determine which of the antecedents was most predictive of organizational commitment, regression analyses were performed. Regressing affective commitment upon the antecedents using a step-wise procedure, the only four variables to enter the equation were opportunity for reward, leadership, job-related self-efficacy, and goal identification. These four variables produced a multiple R of .71 ($F(4,199) = 50.93, p <.01$), indicating that together these 4 variables account for approximately 50% of the variance in affective commitment. Interestingly, three of these four variables were indeed hypothesized to be primary antecedents. Only

leadership, which was the second variable to enter the equation, was not hypothesized to be a primary antecedent. When continuance commitment was regressed upon the antecedents, only two variables entered the equation: perceived opportunity for reward and job-related self-efficacy. Both of these variables were hypothesized to be primary antecedents. The resulting multiple R is .27 ($F(2,201) = 8.00, p < .01$). The standardized regression coefficients for these analyses are presented in Table 10.

In order to determine whether inclusion of variables hypothesized to be primary antecedents (e.g., goal identification, job-related self-efficacy, and perceived opportunity for reward) was necessary to predict organization commitment accurately, a second series of regression analyses was performed. First, commitment was regressed upon all of the non-primary antecedents. In a second step, the primary antecedents entered the regression equation. If the change in R was significant for this step, the inclusion of the variables hypothesized to be primary antecedents would be necessary to achieve accurate prediction. When affective commitment was regressed upon the non-primary antecedents, the resulting multiple R was .59 ($F(5,198) = 20.61, p < .01$). After the addition of the primary variables the multiple R rose to .72, ($F(8,195) = 26.40, p < .01$). The change in F was significant, $F_{Chg}(3,195) = 24.05, p < .05$, indicating that inclusion of the primary antecedents significantly increases predictive accuracy of affective commitment. This regression analysis is presented in Table 11.

Table 10
Hypothesis 2: Regression Results

Dependent Variable: Affective Commitment

<u>Predictors</u>	Beta	Total R ²	Change R ²
Perc. Opp. for Reward	.63	.40**	.40**
Leadership Factor	.33	.47**	.08**
Job-related Self-effic.	.15	.50**	.02**
Goal Identification	.11	.51**	.01*

Dependent Variable: Continuance Commitment

<u>Predictors</u>	Beta	Total R ²	Change R ²
Perc. Opp. for Reward	.21	.04**	.04**
Job-related Self-effic.	.17	.07**	.03*

* denotes p < .05

** denotes p < .01

N = 204

Table 11
Hypothesis 2: Regression Results

Dependent Variable: Affective Commitment

<u>Predictors</u>	<u>Beta</u>	<u>Total R²</u>	<u>Change R²</u>
Community Support	.08		
Evacuation Exp.	.05		
Leadership Factor	.58		
Role Conflict	-.04		
Subcommittee Str.	.06		
		.34**	
Goal Identification	.11		
Job-related Self-effic	.15		
Perc. Opp. for Reward	.40		
		.52**	.18**

* denotes p < .05

** denotes p < .01

N = 204

74
Table 12
Hypothesis 2: Regression Results

<u>Predictors</u>	<u>Beta</u>	<u>Total R²</u>	<u>Change R²</u>
Community Support	.03		
Evacuation Exp.	.02		
Leadership Factor	.20		
Role Conflict	-.09		
Subcommittee Str.	.00		
		.04	
Goal Identification	.01		
Job-related Self-effic	.18		
Perc. Opp. for Reward	.13		
		.09*	.05*

* denotes $p < .05$

** denotes $p < .01$

N = 204

This procedure was repeated regressing continuance commitment on the antecedents. Entering only the non-primary antecedents resulted in a multiple $R = .20$, ($F(5,198) = 1.63$, $p > .05$). Following the entering of the primary antecedents the multiple $R = .29$, ($F(8,195) = 2.32$, $p < .05$). The change in F was significant, $F_{\text{Chg}}(3,195)=3.38$, $p < .05$. This result indicates that continuance commitment is more accurately predicted when the primary variables are included. This regression analysis is presented in Table 12.

These analyses provide evidence that the variables of goal identification, job-related self-efficacy, and perceived opportunity for reward are indeed important predictors of both affective and continuance commitment. However, other antecedents (in particular, leadership) also play an important role in the prediction of organizational commitment.

Affective vs. Continuance Commitment

Due to the voluntary nature of Local Emergency Planning Committees, it was hypothesized that subjects would be more likely to experience affective than continuance commitment. Evidence supporting this hypothesis is found in how well the antecedents predicted the two types of organizational commitment. The multiple correlation for affective commitment ($R = .68$) is significantly larger than the multiple correlation for continuance commitment ($R = .27$).

Hypothesis 4 predicted the relationships between the affective and continuance components of organizational commitment and the individual-level outcome measures. Specifically, affective commitment was expected to be positively related to perceived effort expended and attendance, but negatively related to turnover intentions. Continuance commitment was also predicted to be negatively related to turnover intentions, but uncorrelated with attendance or perceived effort due to the voluntary nature of LEPCs. The portion of hypothesis 4 concerning affective organizational commitment was completely supported. The intercorrelations between affective commitment and the outcome variables of turnover, attendance, percentage of attendance, and perceived effort were -.45, .44, .42, and .59, respectively. All of these were significant at $p < .01$. The hypothesized relationship between turnover and continuance commitment was supported, $r = -.17$. Contrary to hypothesis 4, significantly positive relationships were found between continuance commitment and the other individual-level outcome variables of attendance, percentage of attendance, and perceived effort ($r = .14, .20$, and $.33$, respectively). Utilizing the procedure suggested by Downie and Heath (1970), t-tests were used to compare correlations between the individual outcomes and both organizational commitment variables, following correction for unreliability in the commitment variables. The difference between each of the corresponding correlations was significant. Comparing

the disattenuated correlations between each of the commitment variables and turnover intentions ($r_{Aff} = -.45$; $r_{Cont} = -.23$) produced $t(197) = 3.75$, $p < .01$. Comparing the disattenuated correlations between each of the commitment variables and attendance ($r_{Aff} = .47$; $r_{Cont} = .19$) produced $t(197) = 4.27$, $p < .01$. Comparing the disattenuated correlation between each of the commitment variables and the percentage of attendance ($r_{Aff} = .45$; $r_{Cont} = .27$) produced $t(197) = 2.65$, $p < .01$. Finally, comparing the disattenuated correlations between each of the commitment variables and perceived effort ($r_{Aff} = .63$; $r_{Cont} = .45$), yielded $t(197) = 3.15$, $p < .01$. Thus, affective commitment more strongly influenced each of the individual level outcome variables than did continuance commitment.

The intercorrelations of the individual outcome variables were examined to determine whether these variables might form a single scale. Although all intercorrelations for these individual-level outcome variables were generally high, initial internal consistency reliability estimates were low due to the inclusion of a single item assessing the respondents' self-report of the LEPC meetings he or she attended in the past year. Inspection of the means and standard deviations of the variables revealed the four scales utilizing a Likert-type scale (e.g., attendance, perceived effort, and turnover intentions) to have means around 5.0, with standard deviations near 1.0. This pattern was strongly contrasted by the percentage of

attendance variable, which possessed a mean of 83.8, with a standard deviation of 21.4. The percentage of attendance variable was therefore standardized using z-scores. The resulting internal consistency reliability of the factor representing individual level outcomes was $\alpha = .85$. It was thought that by combining the individual-level variables in this manner the factor would more accurately capture the motivational and attitudinal processes underlying each of the components of the individual-level outcome variables. The disattenuated correlation between the individual-level outcome factor and affective organizational commitment was $r = .64$. The disattenuated correlation between the individual-level outcome factor and continuance commitment was $r = .38$. These two correlations were significantly different, $t(197) = 4.45$, $p < .05$.

Tests of the Model

Hierarchical regression was used to test the proposed mediating relationship between the antecedents, organizational commitment, and individual outcomes (hypothesis 5), using the method suggested by James and Brett (1984). Initially, hypothesis 5 was tested using the individual outcome factor as the dependent variable. Table 13 provides the results obtained in the test of hypothesis 5. In the first equation the individual outcome factor was initially regressed onto the antecedents. This produced a multiple $R = .55$ ($F(8, 195) = 10.39$, $p < .01$). Next, affective and continuance

commitment entered the equation, resulting in a multiple $R = .64$, ($F(10,193) = 13.71$, $p < .01$). The change in F was significant, $F_{Chg}(2,193) = 19.24$, $p < .01$. The second equation again regresses the individual outcome factor onto the antecedent and commitment variables, but this time the order of entry was switched, such that commitment entered the equation before the antecedents. Affective and continuance commitment were shown to explain a significant proportion of variance in individual outcomes, multiple $R = .61$ ($F(2,201) = 59.15$, $p < .01$). Finally, the antecedents were entered into the equation, producing a multiple $R = .64$, ($F(10,193) = 13.71$, $p < .01$). However, the F change was not significant, $F_{Chg}(8,193) = 1.85$, $p > .05$. This result, together with the significant prediction of the commitment variables from the antecedent variables, supports the assertion that organizational commitment indeed mediates the relationship between the antecedents and individual outcomes.

In order to combine the individual-level outcome variables into a single factor, it was assumed that each was governed by the same psychological processes. However, it is possible that each of the variables of attendance, turnover intentions, and perceived effort are distinct behaviors, governed by different psychological processes. If this were the case, the above test of mediation would be conceptually meaningless. Therefore, further tests of hypothesis 5 were conducted by using each of the components of the individual-level outcome factor as dependent variables. In the first of these

Table 13
Hypothesis 5: Hierarchical Regression Results

Dependent Variable: Individual Outcome Factor			
<u>Predictors</u>	Beta	Total R ²	Change R ²
<i>Equation 1</i>			
Community Support	.03		
Evacuation Exp.	.04		
Goal Identification	.17		
Job-related Self-effic	.22		
Leadership Factor	.30		
Perc. Opp. for Reward	.15		
Role Conflict	.00		
Subcommittee Str.	.00		
		.30**	
Affective Commitment	.46		
Continuance Commit.	.08		
		.42**	.12**
<i>Equation 2</i>			
Affective Commitment	.57		
Continuance Commit.	.10		
		.37**	
Community Support	-.01		
Evacuation Exp.	.04		
Goal Identification	.12		
Job-related Self-effic	.14		
Leadership Factor	.14		
Perc. Opp. for Reward	-.05		
Role Conflict	.01		
Subcommittee Str.	-.03		
		.42**	.04

* signifies p < .05

** signifies p < .01

N = 204

Table 13 (cont'd)

Dependent Variable: Attendance

<u>Predictors</u>	<u>Beta</u>	<u>Total R²</u>	<u>Change R²</u>
<i>Equation 1</i>			
Community Support	.00		
Evacuation Exp.	.10		
Goal Identification	.15		
Job-related Self-effic	.12		
Leadership Factor	.27		
Perc. Opp. for Reward	.04		
Role Conflict	.11		
Subcommittee Str.	-.02		
		.20**	
Affective Commitment	.32		
Continuance Commit.	.01		
		.26**	.05**
<i>Equation 2</i>			
Affective Commitment	.43		
Continuance Commit.	.01		
		.19**	
Community Support	-.03		
Evacuation Exp.	.10		
Goal Identification	.12		
Job-related Self-effic	.07		
Leadership Factor	.16		
Perc. Opp. for Reward	-.09		
Role Conflict	.12		
Subcommittee Str.	-.04		
		.26**	.06*

* signifies p < .05

** signifies p < .01

N = 204

Table 13 (cont'd)

Dependent Variable:	Percentage of Attendance		
Predictors	Beta	Total R²	Change R²
<i>Equation 1</i>			
Community Support	.06		
Evacuation Exp.	.04		
Goal Identification	.13		
Job-related Self-effic	.23		
Leadership Factor	.17		
Perc. Opp. for Reward	.03		
Role Conflict	.06		
Subcommittee Str.	.03		
		.15**	
Affective Commitment	.39		
Continuance Commit.	.07		
		.23**	.08**
<i>Equation 2</i>			
Affective Commitment	.39		
Continuance Commit.	.08		
		.18**	
Community Support	.02		
Evacuation Exp.	.05		
Goal Identification	.08		
Job-related Self-effic	.16		
Leadership Factor	.03		
Perc. Opp. for Reward	-.14		
Role Conflict	.07		
Subcommittee Str.	.00		
		.23**	.05

* signifies p < .05

** signifies p < .01

N = 204

Table 13 (cont'd)

Dependent Variable: Perceived Effort

<u>Predictors</u>	<u>Beta</u>	<u>Total R²</u>	<u>Change R²</u>
<i>Equation 1</i>			
Community Support	.10		
Evacuation Exp.	.00		
Goal Identification	.13		
Job-related Self-effic	.17		
Leadership Factor	.26		
Perc. Opp. for Reward	.18		
Role Conflict	-.17		
Subcommittee Str.	.02		
		.24**	
Affective Commitment	.34		
Continuance Commit.	.17		
		.34**	.09**
<i>Equation 2</i>			
Affective Commitment	.45		
Continuance Commit.	.19		
		.29**	
Community Support	.06		
Evacuation Exp.	.00		
Goal Identification	.09		
Job-related Self-effic	.09		
Leadership Factor	.13		
Perc. Opp. for Reward	.02		
Role Conflict	-.16		
Subcommittee Str.	.00		
		.34**	.04

* signifies p < .05

** signifies p < .01

N = 204

Table 13 (cont'd)

Dependent Variable: Turnover Intentions

<u>Predictors</u>	<u>Beta</u>	<u>Total R²</u>	<u>Change R²</u>
<i>Equation 1</i>			
Community Support	-.03		
Evacuation Exp.	-.01		
Goal Identification	.12		
Job-related Self-effic	.21		
Leadership Factor	.18		
Perc. Opp. for Reward	.13		
Role Conflict	.04		
Subcommittee Str.	.00		
		.17**	
Affective Commitment	.39		
Continuance Commit.	.02		
		.24**	.07**
<i>Equation 2</i>			
Affective Commitment	.44		
Continuance Commit.	.04		
		.20**	
Community Support	-.07		
Evacuation Exp.	-.01		
Goal Identification	.07		
Job-related Self-effic	.15		
Leadership Factor	.05		
Perc. Opp. for Reward	-.03		
Role Conflict	.04		
Subcommittee Str.	-.04		
		.24**	.04

* signifies p < .05

** signifies p < .01

N = 204

subsequent analyses the percentage of attendance variable was used as the dependent variable. In the first equation each of the antecedent variables entered the equation, producing an $R = .38$ ($F(8,195) = 4.18$, $p < .01$). The commitment variables then entered the equation, producing an R of $.48$ ($F(10,193) = 5.79$, $p < .01$). The change in F was significant, $F_{Chg}(2,193) = 10.59$, $p < .01$. In the second equation the order in which these independent variables entered the equation was switched. Entering the commitment variables into the equation predicting percentage of attendance yield an $R = .43$ ($F(2,201) = 22.44$, $p < .01$). After the addition of the antecedent variables the multiple R rose slightly to $.48$ ($F(10,193) = 5.79$, $p < .05$). The F change was not significant, $F_{Chg}(8,193) = 1.51$, $p < .05$.

Hypothesis 5 was next tested using the attendance scale as the dependent variable. In the first equation each of the antecedent variables entered the equation, producing an $R = .45$ ($F(8,195) = 6.27$, $p < .01$). The commitment variables then entered the equation, producing an R of $.51$ ($F(10,193) = 6.64$, $p < .01$). The change in F was significant, $F_{Chg}(2,193) = 6.66$, $p < .01$. In the second equation the order in which these independent variables entered the equation was switched. Entering the commitment variables into the equation predicting percentage of attendance yield an $R = .44$ ($F(2,201) = 23.75$, $p < .01$). After the addition of the antecedent variables the multiple R rose slightly to $.51$ ($F(10,193) = 6.64$, $p < .05$). The F change was significant, $F_{Chg}(8,193) = 2.10$, $p > .05$.

Hypothesis 5 was next tested using turnover intentions as the dependent variable. In the first equation each of the antecedent variables entered the equation, producing an $R = .41$ ($F(8,195) = 4.89$, $p < .01$). The commitment variables then entered the equation, producing an R of $.49$ ($F(10,193) = 6.11$, $p < .01$). The change in F was significant, $F_{Chg}(2,193) = 9.35$, $p < .01$. In the second equation the order in which these independent variables entered the equation was switched. Entering the commitment variables into the equation predicting percentage of attendance yield an $R = .45$ ($F(2,201) = 25.89$, $p < .01$). After the addition of the antecedent variables the multiple R rose slightly to $.49$ ($F(10,193) = 6.11$, $p < .05$). The F change was not significant, $F_{Chg}(8,193) = 1.14$, $p > .05$.

Finally, the last of the individual-level outcome variables (perceived effort) was used as a dependent variable to test the mediating relationship. In the first equation each of the antecedent variables entered the equation, producing an $R = .49$ ($F(8,193) = 7.82$, $p < .01$). The commitment variables then entered the equation, producing an R of $.58$ ($F(10,193) = 9.82$, $p < .01$). The change in F was significant, $F_{Chg}(2,193) = 13.76$, $p < .01$. In the second equation the order in which these independent variables entered the equation was switched. Entering the commitment variables into the equation predicting percentage of attendance yield an $R = .54$ ($F(2,201) = 41.78$, $p < .01$). After the addition of the antecedent variables the multiple R rose slightly to $.58$ ($F(10,193) = 9.82$, $p < .05$). The F change was not significant, $F_{Chg}(8,193) = 1.59$, $p < .05$.

In summary, the above analyses using the individual-level outcome variables of attendance, turnover intentions and perceived effort consistently provide support for the assertion in hypothesis 5 that organizational commitment mediates the relationship between the antecedents and the individual-level outcomes. This same conclusion can be reached using just the individual-level outcome factor. Although the size of the multiple R for the relationship between the antecedents, commitment, and individual-level outcome factor of .64 is slightly larger than the R for the relationship between antecedents, commitment and actual individual-level outcome variables (R around .50), this probably resulted from the increased stability of the underlying factor when attendance, turnover intentions, and perceived effort were combined. If a single psychological process does underlie each of the variables of attendance, turnover intentions and perceived effort, then the composite factor would be expected to have greater stability than any of the individual components.

Hypothesis 6 examines the relationship between organizational commitment, individual-level outcomes, and group-level outcomes. In order to test this hypothesis cross-level hierarchical regression analyses were planned. However, in order to support a mediating relationship between several variables, the variables themselves must be related. Examination of the intercorrelations between the group-level outcomes and organizational commitment variables found in Table 5 reveals only very slight correlations, generally in the range of $r = .05$ to $r = .10$. The correlation between the

individual-level and group-level outcome is even lower, around an $r = .04$. Given these correlations, it is obvious that hypothesis 6 did not receive empirical support.

Discussion

This study examined antecedents to and consequences of organizational commitment in organizations composed of volunteer members. Additionally, the study assessed the appropriateness of a proposed re-categorization of the antecedents of organizational commitment. The results provide evidence for the generalization of findings from organizational commitment research in traditional work-related settings to voluntary organizations, although the volunteer nature of membership in the present study did contribute to some unique findings. Not all of the proposed hypotheses were empirically supported. In the next section the major findings of the present study will be discussed. The theoretical and practical implications of these findings will then be considered, along with the limitations of the present study. Finally, further research directions will be explored.

Study Results

Steers (1977) suggested a classification of the antecedents to organizational commitment based upon the component of the work environment they are believed to affect. These three work components are, in decreasing proximity to an employee, -- person, job, and work variables. Although Steers (1977) provides a useful organization of the antecedents, his categorization fails to consider the theoretical connections between the antecedents within a category. Noting the lack of theoretical organization of the proposed antecedents of organizational commitment, an attempt was made to

provide a theoretical framework for these antecedents. The proposed re-categorization of the antecedent variables considered possible reasons why each antecedent might affect organizational commitment. Variables having common theoretical attachments to organizational commitment were then grouped together, producing three new categories. These three antecedent categories were labelled perceived opportunity for reward, job-related self-efficacy, and identification with organizational goals. Examination of the factor structure of the antecedents provided no evidence in support of this proposed re-categorization of the antecedents of organizational commitment. Indeed, factor analysis suggested that only those antecedents which assessed leadership variables (i.e., leader communication, consideration, and initiating-structure) and role clarity should be combined into a single factor. Empirical evidence suggested the remaining antecedent variables are distinct factors. Thus, the proposed re-categorization of antecedents to organizational commitment failed due to lack of empirical support for the notion of similarities in underlying theoretical attachments.

The finding that the antecedents are generally uncorrelated casts doubt on the success of any future re-categorization efforts based upon theoretical similarities of the relationship between the antecedents and commitment. Perhaps, then, the contribution of Steers (1977) in the classification of antecedents to organizational commitment according to three aspects of the work environment should be retained. The present study suggests the supposed weakness of Steers' classification is not easily overcome. Whether

the typology proposed here is incorrect, or simply does not apply to volunteer organizations cannot be determined. Further research is needed to determine if the typology presented in the present study, or other classifications based upon theoretical similarities of the antecedents, work with other organizations. In the interim, Steers' simplistic classification remains a defensible categorization.

Although previous research has indicated that organizational commitment is a multi-dimensional construct (e.g., Vandenberg and Seo, 1991; O'Reilly and Chatman, 1986; Meyer and Allen, 1984), it was hypothesized that organizational commitment in a voluntary organization would be better viewed as unidimensional. Meyer and Allen (1984) propose that organizational commitment can be described according to one's accumulation of investments (e.g., salary, benefits) that would be lost if an individual were to leave an organization (continuance commitment) and one's emotional orientation to the organization (affective commitment). Volunteers are unlikely to experience continuance commitment since they are unlikely to accumulate many investments within a voluntary organization. The present study partially supports this hypothesis. The low coefficient alpha reliability estimate for the continuance commitment scale indicates that subjects had difficulty responding in a consistent fashion to these items. Additionally, although the antecedent variables explained 46% of the variance of affective commitment, these same variables account for only 7% of the variance in continuance commitment. However, it is important to note the antecedents do account for a statistically significant amount

of variance in continuance commitment, indicating continuance commitment does exist, even in voluntary organizations. Even after corrections for unreliability, the prediction of individual outcome variables (e.g., attendance, perceived effort, and turnover intentions) was more accurate using affective than continuance commitment. It is clear that affective commitment is a more useful construct than continuance commitment for members of voluntary organizations.

In their meta-analysis of the organizational commitment literature Mathieu and Zajac (1991) found that job challenge and scope, leadership variables, perceived personal competence, and role variables (conflict, ambiguity, overload) were the antecedents most highly related to organizational commitment. In the present study two of these variables were found to relate highly to affective commitment: job-related self-efficacy ($r = .43$) and the leadership factor ($r = .57$), suggesting the findings of previous studies may be generalizable to voluntary organizations. (Note that the leadership factor includes a role variable, clarity, which correlated .58 with affective commitment). The voluntary nature of LEPC membership may be reflected in the high correlations between affective commitment with the perceived opportunity for reward ($r = .64$) and identification with organizational goals ($r = .33$). Continuance commitment in Local Emergency Planning Committees was shown to be most highly related to job-related self-efficacy and opportunity for reward. Perhaps organizational commitment in voluntary organizations is in part dependent upon the volunteer's belief that their efforts are worthwhile in terms of personal rewards, and in

part dependent upon their beliefs in the importance of their contribution to society. Personal rewards can be achieved through intrinsic rewards (i.e., perceived opportunity for reward) or extrinsic rewards which can in part be obtained by a leader who provides encouragement and praise. Volunteers' beliefs that their contributions are significant can be determined by perceptions of both ability to contribute (i.e., self-efficacy) and the worthiness of making a contribution (i.e., goal identification). The impact of the leader is clearly important in the establishment of affective commitment in voluntary organizations. Leaders that are considerate, good communicators, and provide adequate structure are likely to provide volunteers not only with a clear sense of both the own responsibilities and the goals of the organization, but a strong sense of the significance of their own personal contribution as well.

Previous research has indicated significant relationships exist between the antecedent variables and organizational commitment, and between organizational commitment and the individual outcome variables of attendance, effort, and turnover intentions (e.g., Mathieu and Zajac, 1991). The model in Figure 1 hypothesized organizational commitment mediates the relationship between the antecedents and individual outcome variables in voluntary organizations. This part of the model received empirical validation.

The model in Figure 1 further asserts the individual outcome variables will mediate the relationship between organizational commitment and group performance. This part of the model was not

supported by the data. Indeed, the group performance variables measured by the LEPC chair's rating of the quantity and quality of work accomplished by the LEPC, total amount of hours worked, and an objective measure of performance assessed by submission of emergency response plans to the State Emergency Response Commission failed to show significant correlations with any of the individual outcome variables or commitment variables. Thus, no evidence was gathered supporting the proposition that organizational commitment either directly, or indirectly through its impact on individual outcome variables, influences group outcomes. The finding that individual outcomes are unrelated to group outcomes is especially surprising. Logically, one would expect that an individual's increased attendance, reduced turnover intentions, and increased effort would increase the achievement of group outcomes in a organization. One possible explanation for the non-significant relationship between individual and group outcomes is the cross-level nature of this analysis. Outcomes pertaining to an individual were correlated with performance outcomes pertaining to the entire group. Although we might expect an individual's increased attendance, effort, and decreased turnover intentions to increase group performance, the individual's contribution to the group is limited by contributions of other group members. Thus, attendance, turnover intentions, and perceived effort of the group are more likely to be related to group performance outcomes. Eight members of each LEPC were sent questionnaires in the present study. The number of actual respondents from each LEPC was considerably less

($n < 3$). Thus, low response rates made it very difficult to aggregate individual performance to the group-level, and then examine the relationships of group attendance, turnover intentions and effort with group performance outcomes. Such an analysis, if attempted in the present study, would have so little power as to virtually preclude the possibility of achieving any significant findings. Further research is warranted to examine the relationships between "average" commitment in the organization, aggregated attendance, turnover, and effort measures, and group performance.

The model depicted in Figure 1 represents a logical extension of the organizational commitment literature. However, organizational commitment is inherently an individual level variable. Although the present study and others have shown that individual level outcomes such as turnover intentions and perceived effort are clearly empirically linked to organizational commitment, much less positive findings are consistently found when organizational commitment is related to group outcomes. Perhaps a more complex model which accurately portrays group processes is necessary to explain how an individual's commitment to an organization impacts upon group performance. Many models of team performance currently exist (e.g., Hackman, 1983; Gersick, 1988; Morgan et. al., 1986). Recently, Salas, Dickinson, Converse, & Tannenbaum (1992) proposed an integration of several popular models of team performance. Adapting an input-throughput-output perspective, this model posits that individual characteristics such as motivations and attitudes (including variables such as organizational commitment) interact

with work characteristics (e.g., norms, work structure, communication structure), team characteristics (e.g., member homogeneity, cohesiveness), and task characteristics (e.g., task complexity, task type) to affect team processes such as coordination, communication and teamwork skills. These team processes, in turn, influence team performance. Additionally, the Salas et. al. model hypothesizes a dynamic feedback relationship between output and input constructs, suggesting that changes in team performance could change the level of individual commitment. Furthermore, organizational and situational characteristics such as availability of resources and application of reward systems are posited to exert an influence on each of the above processes. The Salas et. al. (1992) model leads to several recommendations for the researcher who hopes to relate organizational commitment with group or team performance. Specifically, researchers cannot examine the relationship between individuals' affective states in isolation and group performance and expect significant correlations. Rather, many factors pertaining to the team and environment in which the team is embedded need to be considered. Measures of group performance such as communication, coordination, and cooperation should be included in future studies in order to examine empirically the model proposed by Salas et. al. (1992). The leader's role in establishing the structure, communication and climate of a voluntary organization may be particularly fruitful. The findings of the present study suggest supervisors within a voluntary organization play a pivotal role in how members view their long-term commitment to the

organization. Clearly, the relationship between team performance and individual-level variables such as commitment is not as simple as research has hypothesized it to be. By adapting a broader perspective such as that proposed by the team effectiveness literature, future research on organizational commitment need not be limited to only individual level outcomes.

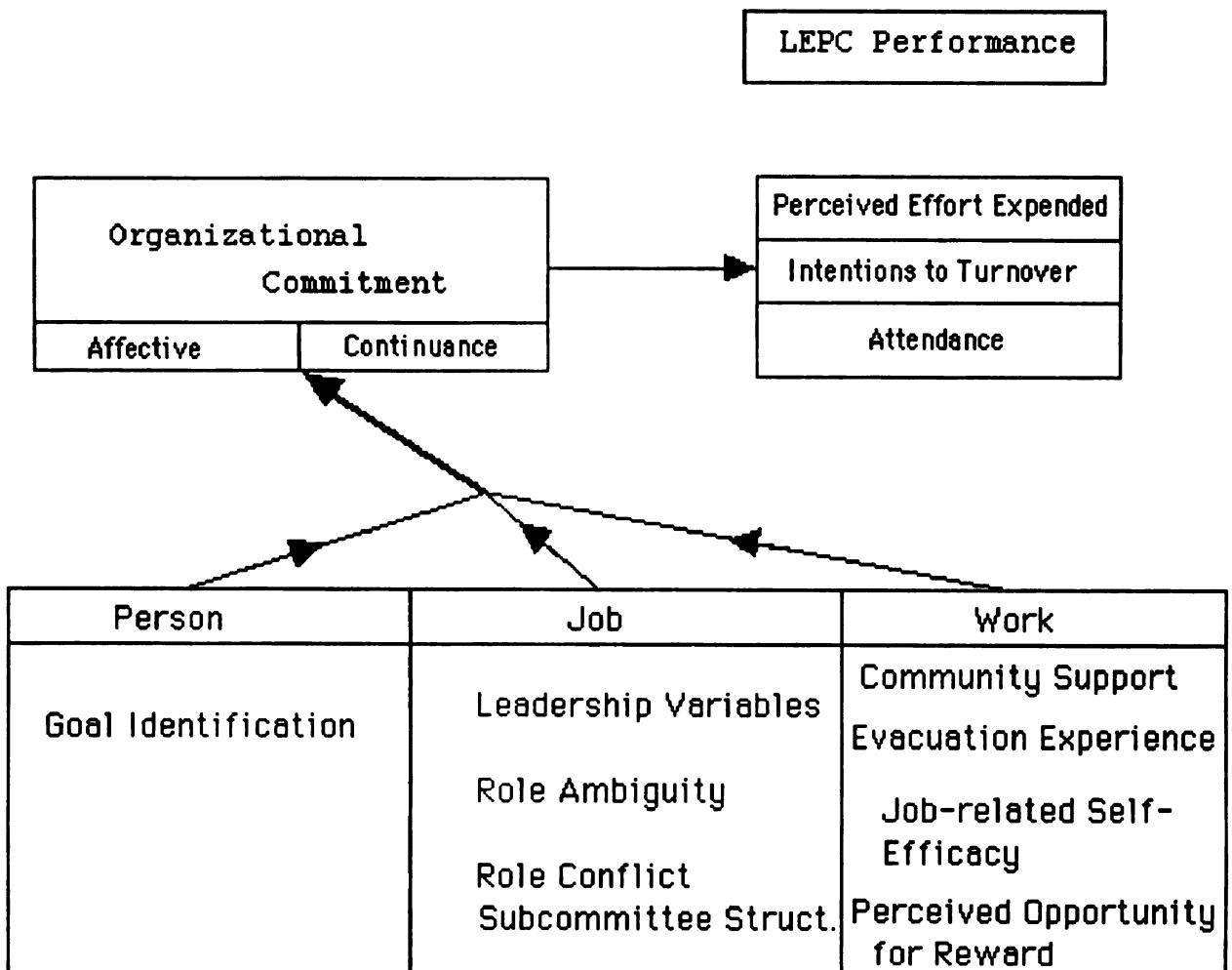
Theoretical Implications

Past research has too often looked at either the antecedents of commitment, or the outcomes, but not both concurrently (e.g., Dornstein & Matalon, 1989; Meyer et al., 1989; Rusbult & Farrell, 1983). The present study examined a testable model of the relationships between antecedent variables, organizational commitment, individual-, and group-level outcomes. Data collected from the voluntary organizations used in this study support the hypothesis concerning the mediation of organizational commitment between antecedents and individual-level outcome variables. Although this may seem an intuitive finding, it is a useful conceptual addition to the organizational commitment literature. The data fails to support two components of the model, however. Specifically, the data supported neither the proposed classification of antecedents nor the hypothesized mediating relationship between organizational commitment, individual-level outcome variables, and group-level outcome variables. Figure 2 presents a new model of organizational commitment based upon the findings in the present study. The antecedents used in this revised model continue to be categorized according to Steers' (1977) classification based upon work context.

The new model reflects the direct effect of the antecedents upon attendance, turnover intentions, and perceived effort. Although group outcomes are included in Figure 2, based on the results of the present study as well as the literature on team effectiveness, no direct paths are indicated between these variables and commitment or individual-level outcomes.

Industrial/organizational psychological research examining the influences on performance in voluntary organizations is sparse. The present study examined whether past research on organizational commitment would generalize to voluntary organizations. The answer to this question is a qualified "yes". Several of the findings in the present study of voluntary organizations replicate previous findings in traditional work organizations. For example, antecedents which have been shown to have a strong relationship to commitment in past research have a strong relationship in this study and commitment was shown to relate to individual-level outcome variables. However, the distinctiveness of voluntary organizations is demonstrated by an examination of the findings regarding the organizational commitment construct. All recent commitment research has examined two components of commitment -- affective and continuance commitment. As expected, volunteers in the present study were more influenced by affective than continuance commitment. However, continuance commitment was significantly predicted by job-related self-efficacy and opportunities for reward.

Figure 2
The Revised Model



The opportunities for reward scale was mainly composed of items assessing intrinsic rewards (e.g., "You will feel better about yourself as a person"). Thus, in the present study it seems that continuance commitment resulted from the belief that one could adequately perform the volunteer tasks combined with perceptions of intrinsic reward as a result of performance. This is in contrast to the traditional conception of continuance commitment, which is viewed as the result of extrinsic motivation to remain in the organization. Future research examining continuance commitment should emphasize intrinsic rewards as well as extrinsic motivations.

Practical Implications

Voluntary organizations face a constant struggle in their attempt to recruit new and maintain current members. The present study suggests volunteers who are committed to their organization have increased attendance and decreased turnover intentions. These highly committed volunteers further report exerting greater effort on behalf of the organization. The present study suggests several steps a voluntary organization might take to positively influence the commitment of its members. First, the organization should help stimulate intrinsic rewards by promoting the benefits of membership. The opportunity to learn new things, the opportunity to interact with people of similar interests, and feeling better about oneself are all rewards that can be gained through voluntarism which might be emphasized to members. The organization should also attempt to increase motivation through the promotion of public recognition for its employees. A clear statement of organizational

goals may be useful in stimulating volunteers' identification with organizational objectives, which in turn may increase commitment. How is the organization supposed to communicate all of this to its volunteer members? The present study suggests the type of leadership within the organization is a key component of the promotion of organizational commitment. The data showed leadership which incorporates a high degree of communication, coordination, and initiating-structure is positively related to organizational commitment. The leader, or immediate supervisor, within an organization may be the best person to provide the type of environment (high in communication, consideration, and clear structure) necessary to facilitate an identification of organizational goals and perceptions of the available of personal rewards. Finally, a voluntary organization which hopes to promote commitment among its volunteers should consider the significant positive relationship between job-related self-efficacy and commitment. In order to promote self-efficacy the organization could either choose to classify volunteers into jobs for which they are best suited, or train volunteers to perform jobs which are most needed. Both strategies are likely to increase self-perceptions of competence in the individuals who perform the jobs, and thus increase organizational commitment.

Study Limitations

Consideration of several limitations of the present study is warranted. First, although the present study sought to examine the generalizability of the organizational commitment literature to

voluntary organizations, the volunteer organizations used in the present study were all of a single type: Local Emergency Planning Committees. Stronger arguments for the generalizability of the present results could be made if members of several types of volunteer organizations (e.g., American Red Cross, United Way, crisis hotlines, etc.) were utilized. A further limitation of this sample is that Local Emergency Planning Committees are volunteer organizations in a special sense. In 1986 passage of SARA Title III by the United States Congress required chemical emergency planning by all communities. Communities nationwide responded by forming LEPCs, which are generally composed of local officials and other professionals in the community. These volunteers are likely to be very different from members of other volunteer organizations. Indeed, since many of the LEPC members are themselves professionals, they are likely to be more demographically similar to the individuals examined in traditional work organizations than to typical members of volunteer organizations.

A second possible limitation of the present study concerns the respondents themselves. Although respondents were similar to non-respondents on demographic characteristics, there was a slight overrepresentation of members from successful LEPCs. To the degree that members from successful LEPCs are unrepresentative of the "average" LEPC member, the results of the present study may be questioned.

Since many of the variables used in the present study were measured by subjects' responses to items on Likert-type scales, the

potential influence of method variance should also be considered as a possible limitation. Method variance can bias results by artificially inflating the observed correlations between variables. Kozlowski and Doherty (1989) suggested that examination of variable intercorrelations would be helpful in determining whether method variance due to common source and format similarity is problematic in a particular study. If variables which are theoretically dissimilar correlate highly, evidence of method variance exists. Examination of the intercorrelation matrix in Table 5 indicates that conceptually distinct variables are not highly correlated. Indeed, in several cases variables which were hypothesized to be theoretically related are modestly correlated at best! Kozlowski and Doherty (1989) further assert that in order to demonstrate independence among conceptual domains, scales can be submitted to a principal-axis factor analysis. If method variance is problematic, this analysis would yield a single global factor. As demonstrated by the test of Hypothesis 1, the variables in the present study do not form a single factor. Although method variance cannot be completely ruled out as a possible explanation for the obtained results, these analyses suggest that method variance is not a likely explanation for the results in the present study.

Future Research Directions

Sample limitations in the present study precluded a resolution of several interesting questions. Future research which includes a larger sample of individuals from each organization would enable an examination of the influence of aggregated commitment, attendance,

turnover, and effort on group outcomes. This would perhaps provide a better test of the mediating relationship as presented in Hypothesis 6 than the cross-level analysis performed here. As noted above, future research examining the generalizability of the findings of this study should include members from diverse volunteer organizations.

Randall (1988) found that possession of a career job was detrimental to one's organizational commitment in a second job. The possibility that this may be true for organizational commitment to a voluntary organization could not be properly assessed in the present study since nearly all respondents (91%) possessed full-time jobs. Interestingly, LEPCs, as well as other volunteer organizations, deliberately draw their staff from other organizations in order to acquire needed knowledge and skills. Is it better to have volunteer members who hold an outside job or who are not job-holders? Volunteers with full-time jobs may bring needed knowledges and skills to the voluntary organization, while members without full-time jobs may be able to commit greater energy and provide increased flexibility on behalf of the organization. Further research examining whether differences exist between the affective commitment and performance of job holding and non-job holding volunteers could be enlightening.

Further research examining the conceptual and measurement characteristics of continuance commitment is also suggested by the present study. Although past research has viewed continuance commitment as resulting from any personal investments which can lead to a threat of loss if an individual were to leave the organization,

the measurement of continuance commitment has focussed on external rewards: salary, medical benefits, seniority, etc. The results of the present study suggest continuance commitment is also strongly influenced by the intrinsic rewards which can be gained from organizational membership.

The present study serves as a reminder that the domain of Industrial/Organizational Psychology is not limited to traditional work organizations. The findings suggest that although much of the literature on traditional work organizations may generalize to volunteer organizations, the study of these organizations produces some unique findings as well. Industrial/Organizational psychologists should actively pursue the investigation of factors which influence the effectiveness of voluntary organizations. Topics of research which might be particularly well-suited for the investigation of differences between traditional work organizations and voluntary organizations include motivation, climate, and individual difference variables.

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APPENDIX A

Scales Used in the Study

APPENDIX A

Commitment Variables**Affective Commitment**

Directions: Indicate your level of agreement to each of the following statements concerning your LEPC. Record all answers on the blank to the left of each statement. Use the following scale:

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

_____ I do not feel "emotionally attached" to this LEPC.
 _____ This LEPC has a great deal of personal meaning for me.
 _____ I feel a strong sense of belonging to my LEPC.
 _____ I do not feel like "part of the family" at this LEPC.
 _____ I would be very happy to spend the rest of my career at this LEPC.
 _____ I enjoy discussing my LEPC with people outside it.
 _____ I really feel as if this LEPC's problems are my own.
 _____ I think I could easily become as attached to another (volunteer) organization as I am to this LEPC.

Continuance Commitment

Directions: Indicate your level of agreement to each of the following statements concerning your LEPC. Record all answers on the blank to the left of each statement. Use the following scale:

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

_____ Right now, staying with my LEPC is a matter of necessity as much as desire.
 _____ It would be very hard for me to leave my LEPC right now, even if I wanted to.
 _____ Too much in my life would be disrupted if I left my LEPC now.
 _____ It wouldn't be too costly for me to leave my LEPC in the near future.

Antecedent Variables

Goal Identification

Directions: Indicate your level of agreement to each of the following statements concerning your LEPC. Record all answers on the blank to the left of each statement. Use the following scale:

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

_____ Emergency planning is useless because circumstances during an actual emergency are likely to be different from what has been planned for.

_____ My community is highly vulnerable to toxic chemical hazards.

_____ My community is likely to have a major fixed site toxic chemical release in the next 5 years.

_____ My community is likely to have a major transportation-related toxic chemical release in the next 5 years.

_____ Emergency planning would definitely limit damage to life and property in the event of an actual chemical emergency.

_____ Emergency planning requires more time and money than is worthwhile.

_____ Chemical disasters can be handled effectively if the community develops emergency response plans.

_____ Training through emergency drills and exercises is unlikely to have much impact during an actual disaster.

_____ The biggest reason for having an LEPC in my community is because it is required by federal law.

_____ Emergency planning is really not necessary considering the small likelihood of a chemical emergency in my community.

_____ If all communities in the US had emergency preparedness plans chemical emergencies would cause much less damage in this country.

_____ Hazardous chemicals pose a real threat to most communities in this country.

Job-related Self-efficacy

Directions: Indicate your level of agreement to each of the following statements concerning your LEPC. Record all answers on the blank to the left of each statement. Use the following scale:

1	2	3	4	5	6	7
				Strongly Agree		
Strongly Disagree						

_____ My role in the LEPC is well within the scope of my abilities.

_____ I have not had problems in adjusting to work in this LEPC.

_____ I feel I am overqualified for the work I am doing on the LEPC.

_____ I have all the technical knowledge I need to deal with my LEPC work, all I need now is practical experience.

_____ I feel confident that my skills and abilities equal or exceed those of my colleagues on the LEPC.

_____ My past experiences and accomplishments increase my confidence that I will be able to perform successfully in this LEPC.

_____ I could handle a more challenging role than the one I am doing on the LEPC.

_____ Professionally speaking, my role in the LEPC exactly satisfies my expectations of myself.

_____ My educational background has provided me with the confidence that I can perform my LEPC tasks.

_____ Skills developed throughout my career have adequately prepared me for my role in the LEPC.

_____ LEPC training has given me the assurance that I can accomplish my work goals in the LEPC.

Leader Communication

Directions: For each of the following, consider the chairman of your LEPC. Record all answers on the blank to the left of each statement. Use the following scale:

1	2	3	4	5
				To a very great extent
Not at all				

_____ To what extent do individuals usually trust statements made by the chairman of your LEPC?

_____ To what extent is the chairman willing to listen to your problems?

Leader Communication cont'd

- To what extent is the chairman eager to recognize and to reward good performance?
- To what extent is the chairman friendly and easy to approach?
- To what extent does the chairman provide timely information?
- To what extent does the chairman provide accurate answers to your questions?

Record all answers on the blank to the left of each statement. Use the following scale:

1	2	3	4	5
Practically never				Almost Always

- How often does the chairman pay attention to what you say?
- To what extent does the chairman promote good communication with the members of the LEPC?
- When you talk with the chairman, to what extent does (s)he pay attention to what you're saying?

Leader Consideration

Directions: To what degree does each of the following statements describe the chairman of your LEPC? Record all answers on the blank to the left of each statement. Use the following scale:

1	2	3	4	5
Never				Always

- Is friendly and approachable.
- Does little things to make it pleasant to be a member of the LEPC.
- Puts suggestions made by LEPC members into operation.
- Treats all LEPC members as his or her equals.
- Gives advance notice of changes.
- Keeps to himself or herself.
- Looks out for the personal welfare of LEPC members.
- Is willing to make changes.
- Refuses to explain his or her action.
- Acts without consulting the other LEPC members.

Leader-initiating Structure

Directions: Rate the degree to which the chairman in your LEPC does each of the following. Record all answers on the blank to the left of each statement. Use the following scale:

1	2	3	4	5
Never				Always

- Lets group members know what is expected of them.
- Encourages the use of uniform procedures.
- Tries out his or her ideas in the group.
- Makes his or her attitudes clear to the group.
- Decides what shall be done and how it will be done.
- Assigns group members to particular tasks.
- Makes sure that his or her part in the LEPC is understood by members.
- Schedules the work to be done.
- Maintains definite standards of performance.
- Asks that LEPC members follow standard rules and regulations.

Perceived Opportunity for Reward

Directions: For each of the following, consider how likely this outcome will result due to your participation as a member of your Local Emergency Planning Committee (LEPC). Record all answers in the blank next to each statement. Use the following scale:

1	2	3	4	5	6	7
Not at all	Likely				Extremely	Likely

- You will feel better about yourself as a person.
- You will have an opportunity to develop your skills and abilities.
- You will be given chances to learn new things.
- You will get a feeling you've accomplished something worthwhile.
- You will receive public recognition for your efforts.
- You will have the opportunity to interact with other people.

Role Ambiguity

- I feel certain about how much authority I have.
- Clear, planned goals and objectives exist for my role in the LEPC.
- I know that I have divided my time properly.
- I know what my responsibilities are.
- I know exactly what is expected of me.
- Explanations are clear of what has to be done.

Role Conflict

Directions: Complete the following in consideration of your role in the LEPC. Record all answers on the blank to the left of each statement. Use the following scale:

1	2	3	4	5	6	7
Very True						Very False

- I have to do things that should be done differently.
- I receive an assignment without the personnel to complete it.
- I have to buck a rule or policy in order to carry out an assignment.
- I work with two or more groups who operate quite differently.
- I receive incompatible requests from two or more people.
- I do things that are apt to be accepted by one person and not accepted by others.
- I receive an assignment without adequate resources and materials to execute it.
- I work as directed on unnecessary things.

Outcome Variables**Attendance**

Directions: Indicate your level of agreement to each of the following statements concerning your LEPC. Record all answers on the blank to the left of each statement. Use the following scale:

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

- I never miss the meetings of my LEPC.
- I am always on time when the meetings of the LEPC start.
- I never leave the meetings of the LEPC early.
- I am often absent from LEPC meetings.

Perceived Effort

Directions: Indicate your level of agreement to each of the following statements concerning your LEPC. Record all answers on the blank to the left of each statement. Use the following scale:

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

_____ I work to the best of my ability toward achieving the goals of my LEPC.
 _____ I could work much harder for the LEPC if I really wanted to.
 _____ When performing LEPC tasks I work harder than I do on my main job.
 _____ I work harder than most LEPC members to achieve the goals of this LEPC.
 _____ I exert a great deal of effort toward accomplishing the work of this LEPC.
 _____ I work hard to accomplish the mission of my LEPC.

Turnover Intentions

Directions: Indicate your level of agreement to each of the following statements concerning your LEPC. Record all answers on the blank to the left of each statement. Use the following scale:

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

_____ I plan on staying with my LEPC indefinitely.
 _____ I'd discontinue serving as a member of my LEPC if it was possible to leave.
 _____ I plan on quitting serving as a member of this LEPC within the next year.

Demographic Information & Short Answer Items

Age: _____

Circle your sex: Male Female

I have been a member of this Local Emergency Planning Committee for:

_____ months

I attend _____ % of the meetings of the LEPC.

120

Which of the following areas of the community do you represent as a member of your Local Emergency Planning Committee? (check all that apply):

- | | |
|--|--|
| <input type="checkbox"/> elected official | <input type="checkbox"/> transportation |
| <input type="checkbox"/> law enforcement | <input type="checkbox"/> broadcast and print media |
| <input type="checkbox"/> civil defense | <input type="checkbox"/> community groups |
| <input type="checkbox"/> firefighting | <input type="checkbox"/> facility owner/operator |
| <input type="checkbox"/> first aid | <input type="checkbox"/> organized labor |
| <input type="checkbox"/> health | <input type="checkbox"/> education |
| <input type="checkbox"/> local environmental personnel | <input type="checkbox"/> agriculture |
| <input type="checkbox"/> hospital personnel | |

Do you have a full-time job? yes no

If yes, what is your occupation? _____

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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