

**EMOTIONALLY COMPETENT NORMS AND
WORK GROUP EFFECTIVENESS**

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As a partial test of our socioemotional theory of group effectiveness, we present two studies examining the influence of six emotionally competent group norms on group effectiveness (ECG norms: interpersonal understanding, confronting members who break norms, team self-evaluation, proactive problem solving, organizational understanding, and building external relationships). Study one is a longitudinal examination of 48 MBA work teams whose performance is examined one month and six months after norm assessment. Results revealed that with the exception of confronting members who break norms, all ECG norms linked to group effectiveness. Study two tested a model of group effectiveness that incorporated two elements of group social capital as mediating the link between ECG norms and effectiveness in 109 teams in six organizations. Results showed that social capital elements of group safety and group efficacy mediated the relation between ECG norms and effectiveness.

Employee participation in workgroups has become standard in most work organizations (Lawler 1998). This has created a need for information about the actions and behaviors that increase workgroup effectiveness. A recent survey asked the leaders of 100 of the most innovative companies in the United States (as defined by the *Work In America Institute*) to name the workplace challenges they most wanted research to address; 95% of respondents identified -- creating and sustaining effective work teams -- as their #1 challenge (Farren 1999). Although group dynamics and group effectiveness have been studied for over five decades, there remains an absence of theory and research on the actions and behaviors that underlie the development and sustenance of group effectiveness (Cannon-Bowers, Tannenbaum et al. 1995; Cohen and Bailey 1997). Lately, a number of group scholars have argued that identifying the behaviors that increase group effectiveness requires understanding the role of emotion and relationships in groups (Edmondson 1999; Keyton 1999; Kelly and Barsade 2001).

We developed a socioemotional theory of group effectiveness to fill this void (Druskat and Wolff 2001; Druskat and Wolff 2001; Wolff and Druskat 2002). Our theory proposes that the task focused behaviors directly related to group effectiveness (e.g., cooperation, effort) grow out of a set of emotionally competent group norms (ECG norms) that predict the emergence of group social capital (i.e., the value added by the structure and quality of relationships), which predicts engagement in the task focused behaviors. Although other theories of group effectiveness recognize the importance of social and emotional forces (e.g. Hackman 1987) our theory differs from previous theories of group effectiveness in two important ways: 1) we explain the social and emotional processes in detail and integrate them into the model of effectiveness, and 2) we define an emotional structure (i.e., a set of emotionally competent group norms) associated with

effectiveness. The purpose of the research reported here was to test hypotheses generated from this theory.

We begin by presenting a brief overview of our socioemotional theory. Second, we present six hypotheses derived from the theory. These predict that ECG norms will be associated with group effectiveness and are tested in Study 1 using a longitudinal correlational study. Third, we present a second set of hypotheses in the form of a model that predicts two elements of social capital mediate between ECG norms and group effectiveness, and predicts specific links among ECG norms. These are tested in Study 2 using a second sample and structural equation modeling.

OVERVIEW OF THE SOCIOEMOTIONAL THEORY OF GROUP EFFECTIVENESS

In our earlier work, we developed the following arguments to support our socioemotional theory of group effectiveness: (1) emotion influences behavior in groups, (2) ECG norms supporting awareness and management of emotion create an emotionally capable group culture and help build group social capital (e.g., group psychological safety, group efficacy), (3) social capital facilitates engagement in appropriate task-focused processes; and (4) appropriate task processes enable group success. Our theory differs from previous theory by integrating and explaining the influences of emotion, cognitive/affective states, and relationships on group outcomes. As shown in Figure 1, the cornerstone of our theory is a set of emotionally competent group norms. The research we present in this paper focuses on these norms and their links to group effectiveness.

Insert Figure 1 about here

Emotionally Competent Group Norms

Behavior in groups is not random; it is structured through norms defined as standards or informal rules adopted by group members to ensure predictability in member behavior (Feldman 1984; Stryker and Statham 1985). Group norms emerge from member interactions that actively create expectations about how members should think, behave, and work together (Bettenhausen and Murnighan 1985). Norms are known to shape the patterns of behavior that determine a group's level of effectiveness (Hackman 1987; Sundstrom, De Meuse et al. 1990), yet they are usually discussed in general terms; specific norms are rarely defined in group theory (Cohen 1994).

The interpersonal interactions that are at the core of group work are also the source of many emotions, e.g., joy, contentment, fear, anger, and embarrassment (Kemper 1978). This means that emotions have an unavoidable and pervasive effect in groups (Barsade 1998). Therefore, it is not surprising that groups develop norms about behaviors that influence positive and negative emotions (see Bales 1950; Kelly and Barsade 2001) and that these norms affect group functioning (Bales 1950; Tuckman 1965). Bales (1950) revealed that well-functioning groups had norms about maintaining a balance between behaviors generating negative emotion (e.g., showing tension or disagreement) and those generating positive emotion (e.g., raising others' status, giving help, showing understanding).

Similar to Bales findings that group norms regulate emotion, cultural anthropologists and scholars studying organizational culture have found that cultural norms influence: 1) an individual's interpretation and awareness of emotion and 2) the individual's belief about the appropriate response to specific emotions (see Ekman 1980; Lutz 1988; Fineman 1993; Martin, Knopoff et al. 1998). For example, in Tahiti the emotion interpreted as sadness by Western cultures is interpreted as fatigue and the expected appropriate response to this emotion differs (Levy 1984). Moreover, in

research on organizational culture, it has been found that newly hired employees watch interpersonal interactions to learn how to interpret emotion-eliciting events and to learn the norms and “display rules” that define socially acceptable responses to specific emotions in that organization (e.g. Salancik and Pfeffer 1978; Louis 1980).

Group cultural norms also influence individual awareness and response to emotion in groups. We label the aspect of group culture that influences awareness of emotion and response to emotion-- the emotional structure. This emotional structure is manifested in a set of norms we label emotionally competent group norms (ECG norms) because they emerge from emotionally aware interactions; contribute to the development of an emotionally capable group culture that recognizes, monitors, and influences emotion at multiple levels (see Huy 1999); and because they have positive emotional consequences through their contribution to group social capital. Furthermore, because dynamics in a group occur at multiple levels including individual, group, and cross-boundary (Arrow, McGrath et al. 2000), the emotional structure contains norms that influence awareness and response to emotion at each level. In sum, we propose that the emotional structure has six categories of ECG norms. Each category influences either: (1) awareness of emotion or (2) response to emotion at one of three levels: (a) individual, (b) group, or (c) cross-boundary. We also suggest that ECG norms are particularly important for groups conducting interdependent, long-term tasks where the quality of member relationships and the capacity to address rather than avoid emotional threat or challenge are likely to influence group effectiveness (see Druskat and Kayes 2000). Below we define specific ECG norms in each of the six categories. We propose that these norms are linked to the development of social capital in groups. Thus, before we present the ECG norms and the hypotheses for Study 1, we present a brief overview of social capital.

Social Capital

Social capital represents the value added by the structure and quality of social relationships (Nahapiet and Ghoshal 1998). Unlike other forms of capital (e.g., financial or human), social capital is jointly held by the parties in relationship (Burt 1992), yet, “like other forms of capital, social capital is productive, making possible the achievement of certain ends that in its absence would not be possible” (Coleman 1988: 98). For example, a group within which there exists a psychological sense of safety (an element of social capital) is able to accomplish more than a comparable group in which safety does not exist.

Nahapiet and Goshal (1998) organize the elements of social capital into three dimensions: (1) structural, (2) relational, and (3) cognitive. The structural dimension represents networks of connections; for example, network ties and the configuration of those ties. The relational dimension represents factors related to the quality of relationships. An example is group psychological safety, defined as the degree to which the social climate in the group is conducive to interpersonal risk (Edmondson 1999). The cognitive dimension refers to “resources providing shared representations, interpretations, and systems of meaning” (Nahapiet and Ghoshal 1998). An example is group efficacy, defined as the collective belief that a group can be effective (Lindsley, Brass et al. 1995). Two features are common across all three dimensions of social capital: (1) each constitutes some aspect of the social structure, and (2) each facilitates interactions that lead to desirable outcomes (Nahapiet and Ghoshal 1998).

Group Effectiveness

Measures of group effectiveness should consider both current and future performance (Hackman 1987; Sundstrom, De Meuse et al. 1990). Groups focused exclusively on current performance run the risk of ignoring team and member well-being and development, which in the

long-run can impair a group's viability and performance (Hackman 1987). Hackman (1987) proposed a multidimensional definition that defines team effectiveness as considering both customer satisfaction and a team's ability to continue working together effectively. In the studies reported here, we define group effectiveness as a multidimensional composite of productivity, work quality, performance compared to other groups, the group's ability to be self-directed, and the group's ability to continue working together effectively in the future.

HYPOTHESES FOR STUDY 1

To test our ideas about the influence of ECG norms on group effectiveness we conducted two studies. The first study examines the relationship between six ECG norms and group effectiveness over time as we follow a group of work teams for a seven-month period. The second study then further examines our ideas about ECG norms by testing hypotheses about the role of three elements of social capital (group psychological safety, group efficacy, and network ties) as mediators between ECG norms and group effectiveness. Including these elements of social capital in our model will increase our ability to predict group effectiveness because it represents a more complete model of the processes by which group effectiveness is created.

Below we present six emotionally competent group norms that influence awareness and response to emotion at the individual, group, and cross-boundary levels (interpersonal understanding, confronting members who break norms, team self-evaluation, proactive problem solving, organizational understanding, and building external relationships). We discuss why we hypothesize that each norm will be directly associated with group effectiveness.

Interpersonal Understanding

A group norm of interpersonal understanding promotes group awareness of emotions at the individual member level. It encourages behavior that seeks awareness of individual member talents,

preferences, needs, and feelings. Research has found that team members who feel their teammates know and understand them receive higher supervisor ratings of creativity and self-report lower levels of absenteeism than members who feel they are not known or understood (Thatcher 2000). Another recent study found that interpersonal congruence, defined as the degree to which team members feel other members accurately know and understand them personally, was linked to high levels of social integration and group identification within the team, and low levels of emotional conflict (Polzer, Milton et al. In press). The same study also found that in teams with high levels of interpersonal congruence, team member diversity enhanced creative task performance. McAllister (1995) showed that interpersonally attentive behavior within a group helps build interpersonal trust and safety, which have been found to trigger the cooperation and knowledge sharing (Larkey 1996; Rousseau, Sitkin et al. 1998) that increase group effectiveness (Campion, Medsker et al. 1993). Therefore, we offer the following hypothesis:

Hypothesis 1: The strength of a group's norm of interpersonal understanding will be positively related to group effectiveness.

Confronting Members Who Break Norms

A group norm of confronting members who break norms promotes group management of emotion (i.e., response to emotion) at the individual level. It encourages constructive feedback and the candid confrontation of individuals whose actions disturb group operations. The norm helps build the emotional capability and capacity (i.e., the willingness to deal with difficult emotion, see Holmer 1994) to cope with the difficult feelings that might result from candid feedback. Groups that ignore inappropriate member behavior in an attempt to avoid conflict decrease their ability to solve problems that are often conspicuous. Avoiding conflict frequently results in hostility and reduced performance (Nemeth and Staw 1989). Murnighan and Conlon (1991) found that members of

successful string quartets confronted rather than avoided problematic member behavior. When done skillfully, confronting members who break norms builds trust and safety in the team by promoting honest, trustworthy, predictable behavior, which increases group effectiveness (Campion, Medsker et al. 1993). Therefore, we offer the following hypothesis:

Hypothesis 2: The strength of a group's norm of confronting members who break norms will be positively related to group effectiveness.

Team Self-Evaluation

A group norm of team self-evaluation promotes group awareness of emotions and issues at the group level. It encourages behavior that seeks awareness of group-level strengths, needs, preferences, and resources. It helps build the emotional capability to address the discomfort or anxiety that often accompanies self-evaluation. A norm of team self-evaluation encourages the surfacing and evaluation of routines or habits that may be compromising team effectiveness. Evaluating the “status quo” is a prerequisite for positive team development and team effectiveness (Gersick and Hackman 1990; Louis and Sutton 1991). The self-correction and improvement that can come out of a norm of team self-evaluation also helps build a group’s sense of efficacy and stimulates group effectiveness by encouraging behavior that makes group efficacy self-fulfilling (Shea and Guzzo 1987; Lindsley, Brass et al. 1995). Therefore, we offer the following hypothesis:

Hypothesis 3: The strength of a group's norm of team self-evaluation will be positively related to group effectiveness.

Proactive Problem Solving

A group norm of proactive problem solving promotes group management of emotion (i.e., response to emotion) at the group level. It encourages coping with problems, potential problems, or impending difficulties in a "can-do" way. It helps build the emotional capability and capacity to

address potentially tough situations proactively, rather than rigidly or reactively as often seen in human systems (Staw, Sandelands et al. 1981). Research has demonstrated a link between proactive behavior in teams and team effectiveness (Ancona and Caldwell 1992). Proactive problem solving contributes to a group's sense of control over its future and its sense of efficacy, thereby facilitating group effectiveness (Shea and Guzzo 1987; Campion, Medsker et al. 1993). Therefore, we offer the following hypothesis:

Hypothesis 4: The strength of a group's norm of proactive problem solving will be positively related to group effectiveness.

Organizational Understanding

A group norm of organizational understanding promotes group awareness of emotions and issues at the cross-boundary level. It encourages behavior that seeks information from the larger organization and that attempts to understand the needs, preferences, perspectives, and behaviors of important individuals and groups outside of the group's boundary. These preferences and feelings may be very different from the group's needs and concerns. Therefore, such behavior helps the group learn the conceptual frameworks and language used by important organizational members, a crucial step toward building networks of external relationships (Tushman and Scanlan 1981) that can provide information, resources, and support from the larger organization (Ancona and Caldwell 1992; Yan and Louis 1999). Theory building research with self-managing manufacturing teams found that the highest performing teams exhibited a norm of organizational understanding (Druskat 1996). Therefore, we offer the following hypothesis:

Hypothesis 5: The strength of a group's norm of organizational understanding will be positively related to group effectiveness.

Building External Relationships

A group norm of building external relationships promotes group management of emotion (i.e., response to emotion) at the cross-boundary level. It encourages actions that build relationships with individuals and groups that can help the group achieve its goals. Such actions have been directly linked to team effectiveness (Yan and Louis 1999). Research specifically reveals that team effectiveness is highest in teams with strategies that involve engaging and working with colleagues in the larger organization to acquire information, resources, and support; effectiveness is lowest in teams with non-aggressive and non-existent external boundary strategies (Ancona 1990; Ancona and Caldwell 1992). Thus, we offer the following hypothesis:

Hypothesis 6: The strength of a group's norm of building external relationships will be positively related to group effectiveness.

STUDY 1

Method

Participants and setting. Three hundred and eighty-two full-time MBA students, comprising 48 groups, taking a series of required management courses took part in this study. Groups were composed during the first semester of the MBA program (August) and remained intact working on small or large projects in each course until the end of the first academic year (May). Classes were all lock-step and standardized so that all students took the same courses in the same order using standardized syllabi. Faculty in the organizational behavior department composed the groups with the goal of maximizing each group's diversity. Participation in the study was voluntary. Students were ensured confidentiality and to ensure that participation would not affect course grades, signed permissions were kept in an envelope until after grades were turned in. Ninety-two percent of students agreed to participate in the study. The percentage of

members responding from each team ranged from 50% (1 group) to 100% (19 groups), with a mean of 84%. Missing data was due mostly to random absences from classes. Groups ranged in size from seven to ten members with most groups (27) having eight members and only one group having ten members. The sample consisted of 270 males and 112 females who ranged in age from 20 to 52 with a mean age of 27.54 ($SD = 4.11$) and a median age of 27.

Throughout the first academic year, student groups were self-managing; that is, they held full responsibility for executing their work and for monitoring and managing their own process (Hackman and Walton 1986). In the first semester, each group was assigned an instructor/consultant in a course that made heavy use of the student groups including experiential team building exercises. During class sessions, the consultants, who worked with more than one group in each class, sat with groups to serve as a resource, add occasional comments during group discussions, and to step in if the group requested help.

In the second semester, the faculty member for the required Human Values in Organizations course took over the consultation role because of the course content and because students were required to complete a large semester-long group project for that course. Project grades were group-level grades so that all members of a group received the same grade. Group project grades comprised 35% of individual course grades. The project, which was designed to foster group interdependence, required solving an organizational problem through library and action research, e.g., observations and interviews within an organization. It culminated in a final written and oral report with recommendations for solving the problem. For most groups, written and oral reports were presented to their class and to their participating organizations.

Emotionally competent group norms. Questionnaires for measuring group norms were administered in mid November of the first semester at which point team members had been

working together in all their classes for three months. Scales to measure the six ECG norms were developed and pretested using two sections of MBA students that were not used in the present study. In the final questionnaire, interpersonal understanding was measured with four items, e.g., "On our team there is a clear sense of knowing and understanding each other." Confronting members who break norms was measured with five items, e.g., "In our team we will inform a member if his or her behavior is unacceptable by team standards." Team self-evaluation was measured with four items, e.g., "On our team we often discuss what is helping or hurting our performance." Proactive problem solving was measured with four items, e.g., "In our team we work hard to anticipate problems that might occur." Organizational understanding was measured with four items, e.g., "Members in our team have good insight into how decisions are made by our professors." Building external relations was measured with five items, e.g., "We build relationships with teams that can help make a difference in our performance." All constructs were measured using 7-point Likert scales ranging from 1 (Very Inaccurate) to 7 (Very Accurate), with some items reverse scored.

A factor analysis of the 26 items with oblique rotation produced six factors with eigen values greater than 1. Each factor corresponded to one of the group norms. Two of the scales had one item that loaded most strongly onto a different factor. In one, the item had its second highest loading (.40) in the correct factor. Based on the factor analysis, we kept all original scales intact.

Group Effectiveness. Group effectiveness ratings were collected twice -- at the end of the first semester (mid December) and at the end of the second semester (May). For both sets of ratings, we sought out the instructors we felt had had the most contact with the groups and the greatest ability to see the quality of their performance. In the first semester, ratings were obtained from the management instructors who served as group consultants. In the second semester, ratings

were obtained from the instructor of the “Human Value in Organizations course,” which as mentioned above, had involved a semester-long group project. To measure our multidimensional definition of group effectiveness, we collected instructor ratings of effectiveness on four dimensions: group product quality, performance compared to other groups, the group’s ability to be self-directed, and the group’s ability to continue working together effectively in the future. The item response format ranged from 1 (Poor) to 7 (Outstanding). A factor analysis of the ratings yielded a single underlying factor, thus, instructor ratings were averaged to form a single score.

Results

Descriptive statistics, validity and reliability. Group norms were obtained by aggregating individual group member responses to questionnaire items. Since norms are group specific and the items in our questionnaire were worded at the group-level, we expected the variance in member responses between groups to significantly exceed the variance within groups, thus supporting our concepts as group level variables and indicating that aggregation was appropriate (Rousseau 1985). To test whether aggregation was appropriate, we used the intraclass correlations statistic (ICCs, see Table 1 for values) (Shrout and Fleiss 1979) because it is a conservative test; significance requires within-group variance to be low and between-group variance to be high. The ICCs revealed that for all norms between-group variance was significantly greater ($F_{48,279} > 1.9$, $p < .001$) than the within-group variance. A group-level variable for each norm was thus obtained by taking the mean of individual responses.

 Insert Table 1 about here

Tests of hypotheses. Hypotheses 1 to 6 state that higher levels of emotionally competent norms will lead to higher ratings of effectiveness. Table 1 presents correlations among the norms

and team effectiveness ratings one month (December) and six months (May) after collection of questionnaire data. Cronbach's alpha reliabilities for the scales measuring the norms are shown along the diagonal. At the one-month effectiveness assessment, all norms except confronting members who break norms were significantly correlated with instructor ratings of team effectiveness. This supported Hypotheses 1 (interpersonal understanding), 3 (team self-evaluation), 4 (proactive problem solving), 5 (organizational understanding), and 6 (building external relationships). At the six-month effectiveness assessment, team self-evaluation was also no longer significantly correlated to instructor ratings of team effectiveness. In sum, hypotheses 1, 4, 5, and 6 were supported. Overall, Hypothesis 3 was partially supported.

DISCUSSION

Study 1 provides support for the proposition that the emotionally competent group norms of interpersonal understanding, proactive problem solving, organizational understanding, and building external relationships are associated with team effectiveness over time. The ECG norm of team self-evaluation, however, was found to be associated with effectiveness only early in the team's history (at 4 months, but not at 8 months) and confronting members who break norms was not found to be related to effectiveness. The results suggest that the norm of team self evaluation may be most important during the early stages of group development. The gain from team self-evaluation appears to diminish over time. The lack of a connection between confronting members who break norms and effectiveness may have occurred for several reasons. The fact that groups have a norm to confront disruptive members does not ensure that they do so effectively or well. Moreover, groups that had to continually confront (and scored themselves as having a strong norm to confront problem members) may have been those that had the most performance problems.

HYPOTHESES FOR STUDY 2

Study 1 provided some support for our hypotheses that ECG norms are associated with group outcomes. Study 2 was conducted in a field setting and examines the more fine-grained structure of our theory, specifically that the relation between ECG norms and outcomes is mediated by social capital. These relations were discussed in the literature review of study 1 and are briefly reiterated below. The hypotheses presented in this section are shown in Figure 2.

 Insert Figure 2 about here

Psychological Safety

Group psychological safety is a relational form of group social capital that is defined as the degree to which the social climate in the group is conducive to interpersonal risk (Edmondson 1999). Willingness to take interpersonal risks improve group learning and effectiveness by facilitating question-asking, feedback seeking, and the discussion of errors or mistakes (Edmondson 1999). Since these behaviors enable a deeper level of openness and analysis, it is no wonder that safety has been found to be related to individual engagement in the task (Kahn 1990) and group innovation (Burningham and West 1995). Thus, like other forms of social capital in groups, safety is a resource that adds value by enabling group member interaction that leads to effective task processes.

Our discussion of individual-level ECG norms revealed that a sense of trust and safety leads to group effectiveness and develops from interpersonal understanding, and skillfully confronting members who break norms, thus:

Hypothesis 1: The strength of a group's norm of interpersonal understanding is positively related to group safety.

Hypothesis 2: The strength of a group's norm of confronting members who break norms is positively related to group safety.

Hypothesis 3: Group psychological safety is positively related to group effectiveness.

Group Efficacy

A cognitive form of social capital necessary for work group effectiveness is group efficacy. Group efficacy is the collective belief within a group that the group can perform effectively (Lindsley, Brass et al. 1995). Gibson (1999) suggests that group efficacy grows out of group member interactions focused on the acquisition, organization, and exchange of information about each other, and about the group's task context, process, and past performance. Such interactions permit the development of a shared sense of the group's potential for success. Others (Mischel and Northcraft 1997) have argued that group efficacy emerges from a more specific assessment of the resources available within a group. An empirical examination of the question by Larson and LaFasto (1989) led to their conclusion that group efficacy grew out of member assessment of the adequacy of the technical and interpersonal skills existing in a group, and through confidence that the skills present would enable effective performance.

These arguments suggest that group efficacy develops from group-focused ECG norms that promote group self-awareness and group self-regulation including: team self-evaluation and proactive problem solving. These ECG norms support group efficacy through two paths. The first is through assessment, which as discussed above is a prerequisite for group efficacy beliefs because it enables timely self-correction and adjustment (Lindsley, Brass et al. 1995). The second path to group efficacy is through ECG norms that make possible an positive view of the future. The ECG norm of proactive problem solving provides a group with a sense that it can address and overcome challenges it faces. Our previous discussion of group-level ECG norms suggested that

group efficacy leads to group effectiveness and develops from team self evaluation and proactive problem solving, thus:

Hypothesis 4: The strength of a group's norm of team self evaluation is positively related to group efficacy.

Hypothesis 5: The strength of a group's norm of proactive problem solving is positively related to group efficacy.

Hypothesis 6: Group efficacy is positively related to group effectiveness.

Network Ties

A structural element of social capital raised repeatedly by social capital theorists is networks (Nahapiet and Ghoshal 1998). In his discussion of the strength of social capital, Burt (1997) argues that networks of contacts within and beyond an individual's firm can provide a manager with important opportunities. Although often considered a resource that benefits individuals, research has determined that networks of contacts are also important to business units (Tsai and Ghoshal 1998) and groups (Argote 1989; Ancona and Caldwell 1992; Druskat and Wheeler 2003). This research reveals that groups who build relationships with other groups (Argote 1989; Ancona and Caldwell 1992), and important individual's outside of their group boundary (Ancona and Caldwell 1992; Druskat and Wheeler 2003), increase their effectiveness through the receipt of resources and support not given to more isolated groups.

Hypothesis 7: Group network ties are positively related to group effectiveness.

A team that is aware of the context in which it operates and its dependency on other persons and teams outside its boundary is more likely to attempt to build relations with others to engage the resources needed to successfully accomplish its task, thus:

Hypothesis 8: The strength of a group's norm of organizational understanding is positively related to the strength of a group's network ties.

STUDY 2

Method

Participants and setting. The sample was drawn from six organizations located in the Midwestern United States, including four Fortune 1000 firms. The sample represented diverse industries including industrial and consumer goods manufacturers, financial services, transportation, and product design and development. The average number of teams per organization was 20.7 with a range of 8-40. Teams had a mean of 11.95 team members (Range = 4-29; Median = 8).

Our full sample consisted of 905 respondents representing 145 teams from six organizations. However, we were only able to obtain objective performance data for 119 of the teams (despite our best efforts to negotiate the need for good objective data prior to data collection, some organizations did not have objective data that could be broken down by specific teams). We received subjective effectiveness data from managers of 112 of the 119 with objective data. Our final sample included 109 teams (as described below, three teams were dropped for low participation rates) for which we had both objective and subjective effectiveness data.

Of the team members in the final sample, 26% had high school degrees, 36% had attended some college or technical school, 19% had college degrees, and 9% had graduate work or degrees. Average company tenure was 7 years and team tenure was 2 years. Age was fairly evenly distributed, with 16% under 25 years of age, 31% between 26 and 35, 21% between 36 and 45, 23% between 46 and 55, and 7% over 56 years of age. More than half (61%) was female.

Procedure. Employees were invited to participate in a study about “how teams work” and were told that their responses were confidential and that completion of the questionnaire was voluntary. Questionnaires were distributed by, and returned directly to one or more of the authors during regular working hours at each organization. Only one individual explicitly declined to participate. However, for various reasons (e.g., travel, illness) a number of employees were not present on the designated dates for data collection. We used a 50% member participation rate as our cut off for using a team in the study. Only three teams were dropped from the study because their member participation rates were less than 50% of their total membership. In the final sample, member participation rates ranged from 50% to 100% with a mean of 73% and a median of 70%.

Emotionally competent group norms. Scales identical to those used in Study 1 were administered to team members in a questionnaire to assess the six ECG norms.

Social capital. Group psychological safety was measured using three items from Edmondson’s (1999) scale, e.g., “It is safe to take a risk on this team.” Group Efficacy was measured with three items used by Druskat and Kayes (1999), e.g., “Our team would deliver outstanding performance on any task.”

We could find no existing scale to measure group network ties. While working to develop our own scale, we recognized the similarity between the concept of network ties and the building external relationships variable we had been using as our sixth group norms, for example, items in that scale include “Our team feels it is important to get along well with our neighboring teams” and “Our team tries hard to build good relationships with other teams.” We therefore chose for Study 2 to drop building external relationships from our list of norms and to instead use it as a structural measure of social capital. However, so as not to create confusion, we continue to refer to the variable as “building external relationships”.

Group effectiveness. Effectiveness was measured through two sources: (1) objective performance numbers for each team and (2) subjective performance ratings completed by the manager of each team. To measure objective performance, we asked contacts in each company to provide us with the metrics they used as the most important and accurate indicators of team performance. Examples of these include: number of defective parts; percentage of production goals met; percentage of revenue goals met, and turn-around times. We felt that some companies set goals that were easier to attain than others, thus we chose to standardize the metrics within companies. Objective performance for each team was then recorded as performance relative to all other teams in their company. Objective performance data was collected for a mean of 8.6 months (SD = 1.9; Mdn = 10; Range = 6 to 10 months). This included a mean of 4.14 (SD = 1.68) months of performance data after team questionnaire administration (Mdn = 4; Range = 3 to 7 months).

For the subjective performance measures, the manager responsible for each team was sent a rating form one month after team questionnaire administration. The form was exactly the same as that used for subjective performance assessment in Study 1. It asked managers to provide an evaluation of their team on four dimensions using a 7-point Likert scale format: group product quality, performance compared to other teams, the group's ability to be self-directed, and the group's ability to continue working together effectively in the future. Responses were tallied to produce a mean subjective effectiveness rating for each team. Responses were collected on average 2.25 months after team questionnaire administration (Range = 1 to 4 months).

Results

Descriptive statistics, validity and reliability. A confirmatory factor analysis was performed to verify the scales used in the study. The analysis indicated a good fit with $\chi^2 = 816$, $df = 436$, $p = .00$, $RMSEA = .09$, $NFI = .95$, $RFI = .93$ (Tabachnick and Fidell 2001). As in Study 1, we used intraclass correlations (ICCs; Shrout and Fleiss 1979) to test whether individual data could be aggregated to obtain group-level variables. Again, between group variance significantly exceeded within group variance for all factors showing that aggregation was appropriate ($F_{108,785} > 1.5$, $p < .001$) (Rousseau 1985). Descriptive statistics and ICCs are shown in Table 2.

 Insert Table 2 about here

Cronbach alpha internal reliabilities were assessed for each scale. All eight scales had acceptable reliabilities (see Vogt 1999): interpersonal understanding, $\alpha = .75$; confronting members who break norms, $\alpha = .73$; team self-evaluation, $\alpha = .73$; proactive problem solving, $\alpha = .78$; organizational understanding, $\alpha = .71$; building external relationships, $\alpha = .82$; psychological safety, $\alpha = .77$, and group efficacy, $\alpha = .76$.

Tests of Hypotheses. The hypotheses were tested using AMOS4 structural equation modeling. Before obtaining results we tested for violations of assumptions that might cause difficulty in interpreting the results. The three variables in Figure 2 that predict performance (safety, group efficacy, and building external relations) showed multicollinearity problems. To address this issue, Bentler and Chou (1988) suggest to modify the model. So that we could test the hypotheses as defined, we ran three separate models as shown in Figure 3. However, because we were also interested in the general premise that GEC norms lead to social capital, which in turn leads to performance, we created a two-level factor for social capital as shown in Figure 4. We

included building external relations as a first-level factor being predicted by the second-level social capital factor. This makes sense structurally and theoretically. The model shown in Figure 4, thus, allows us to test whether safety, group efficacy, and network ties are dimensions of the underlying factor of social capital and whether social capital, in general, is related to performance.

Insert Figures 3 and 4 about here

To test the models for fit, a number of indicators were examined beginning with the χ^2 statistic and degrees of freedom. A good fitting model has a χ^2 value approaching the degrees of freedom and a non-significant p-value (Jöreskog and Sörbom 1993), thus this indicator does not indicate a fit. However, for large sample sizes the χ^2 statistic is overly sensitive (Tabachnick and Fidell 2001). Also, the chi-squared measure assumes that the model fits perfectly in the population; it does not take parsimony into account (Jöreskog and Sörbom 1993). For these reasons, Tabachnick & Fidell (2001) and Jöreskog & Sörbom (1993) suggest that additional indications of model fit be examined including the Root Mean Square Error of Approximation (RMSEA), the normed fit index (NFI) and the relative fit index (RFI). The RMSEA does not assume perfect fit in the population and examines the error per degree of freedom. Using RMSEA, a poor fitting model occurs when the RMSEA is greater than .10 (Tabachnick and Fidell 2001). By this measure, all models tested represent a good fit. The NFI and RFI are indices that, using different criteria, measure how much better the model fits than “no model at all.” The closer these indices are to 1.0, the better the fit of the model. When these indices are greater than .90 the model is considered acceptable (Arbuckle and Wothke 1999). Both the NFI and RFI also indicate a reasonably good fit for all models.

All hypotheses except hypothesis 2 (confronting members who break norms is positively related to safety) are supported at $p < .05$ by the separate models shown in Figure 3 and the full model shown in Figure 4. Hypothesis 2 was significant in the full model but not in the separate model, however, the relationship was negative.

Overall, the study findings support our fundamental premise that ECG norms are related to the development of social capital, which in turn predicts group effectiveness. However, we did not find our hypothesized positive relationship between confronting members who break norms and team psychological safety.

DISCUSSION

The results of the two studies support our hypotheses that interpersonal understanding and proactive problem solving are positively related to group effectiveness. There is also strong partial support for the hypothesis that organizational understanding is positively related to group effectiveness. Study 1 shows a significant correlation between organizational understanding and group effectiveness ($p < .05$). In Study 2 and the correlation is approaching significance ($p < .1$).

The general structure of our theory is also supported by the results of Study 2, which shows that social capital mediates the relation between ECG norms and group effectiveness. These findings provide support for our socioemotional theory of group effectiveness; however, a longitudinal study is necessary to verify that the relationships among the norms and between the norms and elements of social capital are causal.

The two studies do not support the hypothesis that confronting members who break norms is connected to social capital or group effectiveness. It may be that confronting members diminishes safety within the group. Providing negative feedback, even if it is constructive, so that it can be heard without destroying social capital is not easy and must be done skillfully. We were

not aware of any of the groups we studied receiving training in how to give constructive feedback. Moreover, when providing feedback to the organizations we studied in Study 2, managers and team members consistently commented that constructive feedback among members was usually avoided, which contributed to group problems. Thus, the combination of avoiding the behavior and engaging in it in an unskilled way may have reduced social capital. The two studies do not support the hypothesis that there is a direct positive relationship between team self-evaluation and group effectiveness, however, Study 2 shows that team self evaluation is important for creating the social capital element of group efficacy. Thus, self-evaluation by itself may not be sufficient to improve effectiveness; it must lead to a sense that the group can tackle its problems (group efficacy). The frame of reference within which team self-evaluation occurs may be as important as the process itself.

Implications for Theory and Practice

Overall, the studies presented in this paper make a number of contributions to theory on group effectiveness. A number of scholars have pointed out the tendency for group researchers to discuss productive constructs such as group trust and task-focused processes (i.e., effort and cooperation) as if they can be commanded (Kelly and Barsade 2001; Marks, Mathieu et al. 2001). Few group researchers have examined the behaviors and norms that underlie the emergence of these productive activities. The research we present here supports hypotheses about how productive emergent states such as psychological safety and group efficacy emerge. The model we test specifies for theorists and practitioners how to build safety and efficacy.

Moreover, most theories of group effectiveness propose that contextual factors (e.g., job design, rewards, leadership) influence desirable emergent states and task processes (Hackman

1987; Kirkman and Rosen 1999; Wageman 2001). We agree with those theories. However, the results of the present study support our idea that specific emotionally competent norms also account for significant variance in predicting desirable emergent states and team effectiveness.

Another contribution made by this research is the support it provides for the relevance of emotion to group effectiveness. Awareness that emotions are “integral to the work of work teams” (Barsade and Gibson 1998: 98) is growing, yet emotion and its influence has been infrequently studied in work team settings since the early work of Bales (1953) and Homans (1950). The study of the influence of emotion on behavior has been increasing in the social sciences (see Salovey, Bedell et al. 2000), yet this is one of the first studies to examine and support the relevance of the existence of an emotional structure and the significance of emotionally competent norms to group effectiveness.

Yet another contribution made by this research is its support for the relevance of an emotional structure for understanding how to develop effective teams. Focusing team building interventions on task processes or social capital may not provide the team with the emotional foundation necessary to develop social capital and sufficiently engage in effective task processes. The identification of an emotional structure provides a road map that teams can use to develop an effective culture. Knowing the norms can guide behavior so as to create those norms.

Limitations and Directions for Future Research

A strength of our research methodology was that both studies were longitudinal, with respect to group questionnaire administration and the collection of team effectiveness data. A weakness in Study 2 was that norm data and social capital data were collected in the same questionnaire. As discussed above, causal relationships cannot be inferred unless data is longitudinal. One of the strengths of our socioemotional theory of group effectiveness is that it

presents a model revealing how specific norms (ECG norms) predict productive emergent states (social capital), which predict engagement in effective task-focused processes and group effectiveness. Now that the two studies reported here have shown support for many of the predicted relationships, future research should take the time to test some or all of the causal predictions longitudinally.

Future theory and research should also examine in greater detail the link between confronting members who break norms, social capital, and team effectiveness. This research might seek to differentiate effective from problematic confrontation and then identify the norms and behaviors that best support confrontation that changes behavior and builds social capital and team effectiveness. Future research might also test whether an intervention focusing on developing skills in giving and receiving effective feedback influences the relationship between confronting members who break norms, group psychological safety and group effectiveness.

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TABLE 1

Study 1: Descriptive Statistics, Reliabilities, ICCs and Correlations (n=48)

	Mean	SD	ICC	1	2	3	4	5	6	7	8
1. Interpersonal Understanding	4.79	0.60	.22***	(0.77) ^a							
2. Confronting Members	4.22	0.59	.18***	.66**	(0.77)						
3. Team Self-Evaluation	4.60	0.55	.14***	.55**	.48**	(0.70)					
4. Proactive Problem Solving	4.82	0.57	.16***	.73**	.53**	.55**	(0.73)				
5. Organizational Understanding	4.63	0.49	.15***	.53**	.29*	.33*	.56**	(0.70)			
6. Building Relationships	4.41	0.54	.15***	.66**	.52**	.37**	.67**	.56**	(0.72)		
7. Instructor Rating of Team Effectiveness One Month After Norm Assessment	5.06	0.99	--	.45**	.16	.30*	.49**	.56**	.35*	(.83)	
8. Instructor Rating of Team Effectiveness Six Months After Norm Assessment	5.12	1.13	--	.32*	-.02	.11	.40**	.34*	.30*	.52**	(.86)

Note. ^a Numbers in parentheses along the diagonal represent Cronbach's alpha for the scales.

The intraclass correlation (ICC) statistic (Shrout & Fleiss, 1979) tests whether variance in member responses between groups significantly exceed the variance within groups. Significant coefficients support aggregation of individual responses to group-level constructs.

* $p < .05$. ** $p < .01$. *** $p < .001$.

TABLE 2

Study 2: Descriptive Statistics, Reliabilities, ICCs and Correlations (n=109)

	Mean	SD	ICC ₁	ICC ₂	1	2	3	4	5	6	7	8
1. Interpersonal Understanding	4.72	.53	.11***	.45***	(.75) ^a							
2. Confronting Members	4.38	.70	.17***	.58***	.31**	(.73)						
3. Team Self-Evaluation	4.47	.59	.14***	.54***	.32**	.45***	(.73)					
4. Proactive Problem Solving	4.72	.57	.07***	.34***	.65***	.40***	.55***	(.78)				
5. Organizational Understanding	4.64	.65	.16***	.57***	.61***	.36**	.40***	.71***	(.71)			
6. Building Relationships	4.78	.62	.14***	.52***	.64***	.41***	.62***	.77***	.65***	(.82)		
7. Group Efficacy	4.97	.72	.18***	.61***	.58***	.28*	.56***	.75***	.54***	.72***	(.76)	
8. Team Safety	4.80	.65	.16***	.56***	.69***	.27*	.25*	.70***	.73***	.63***	.62***	(.77)
9. Team Effectiveness	-.01	.78	--	--	.32**	.06	.14	.28*	.21 [†]	.26*	.41***	.27*

Note. ^a Numbers in parentheses along the diagonal represent Cronbach's alpha for the scales. These were calculated using unaggregated data (n=905).

The intraclass correlation (ICC) statistic (Shrout & Fleiss, 1979) tests whether variance in member responses between groups significantly exceed the variance within groups. Significant coefficients support aggregation of individual responses to group-level constructs. These were calculated using unaggregated data (n=905).

[†] p < .1. * p < .05. ** p < .01. *** p < .001.

FIGURE 1
Simplified Socio-emotional Model of Group Effectiveness (Druskat & Wolff, 2001)

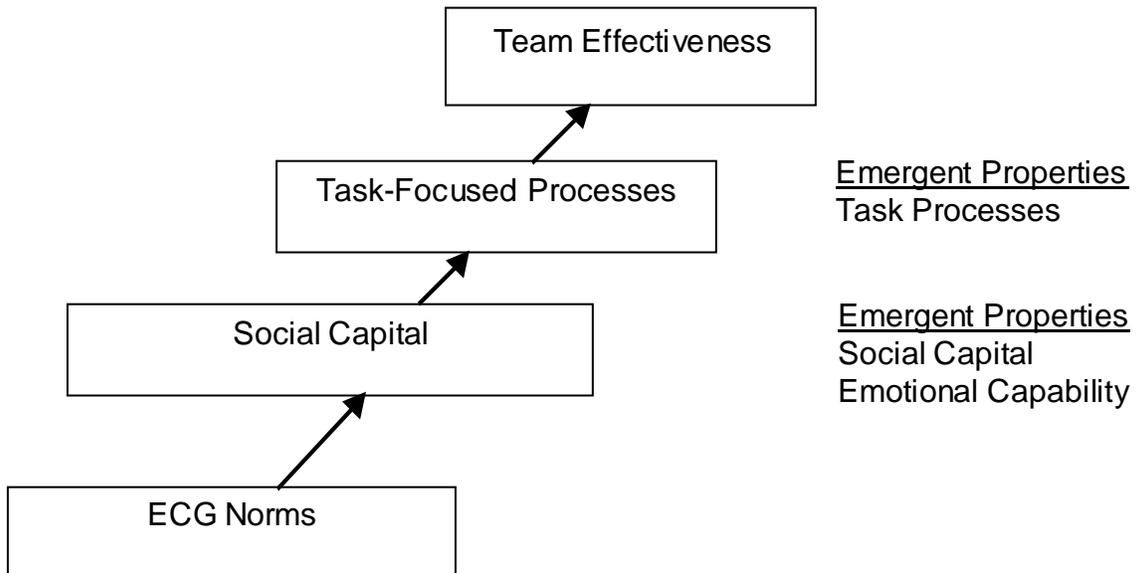
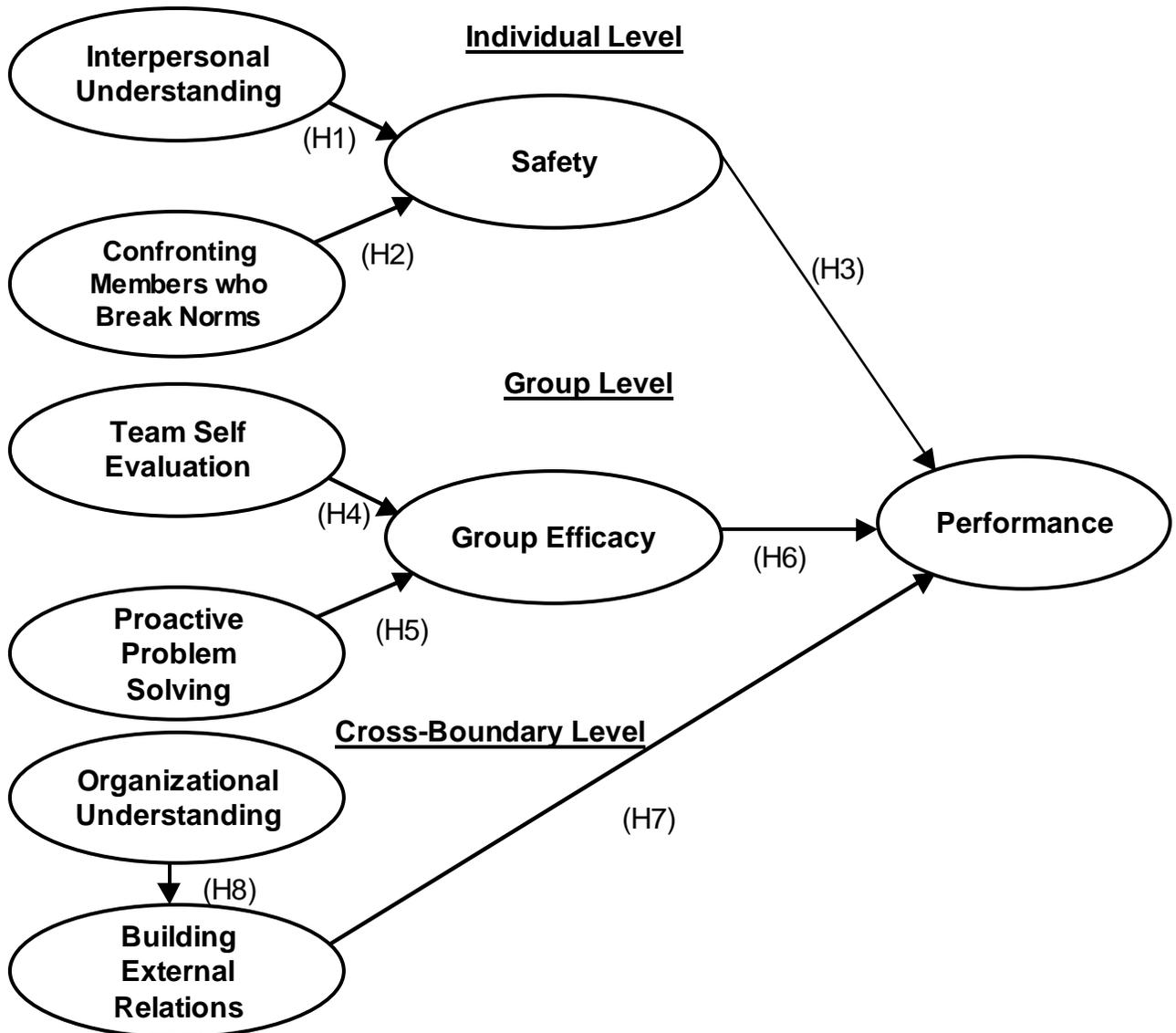
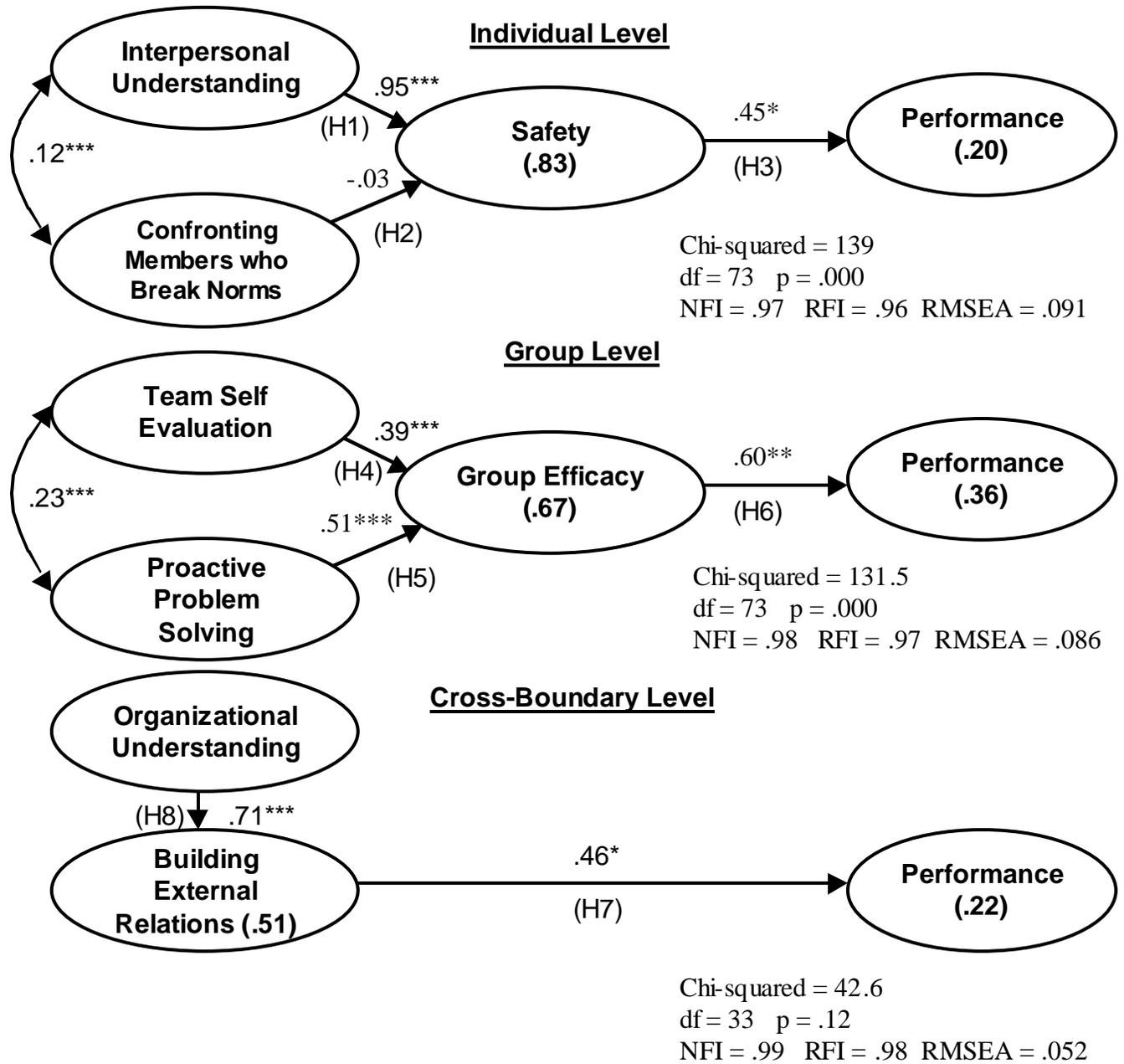


FIGURE 2
Hypothesized Model



Note: Not shown but included in the model are covariances among the GEC norms.

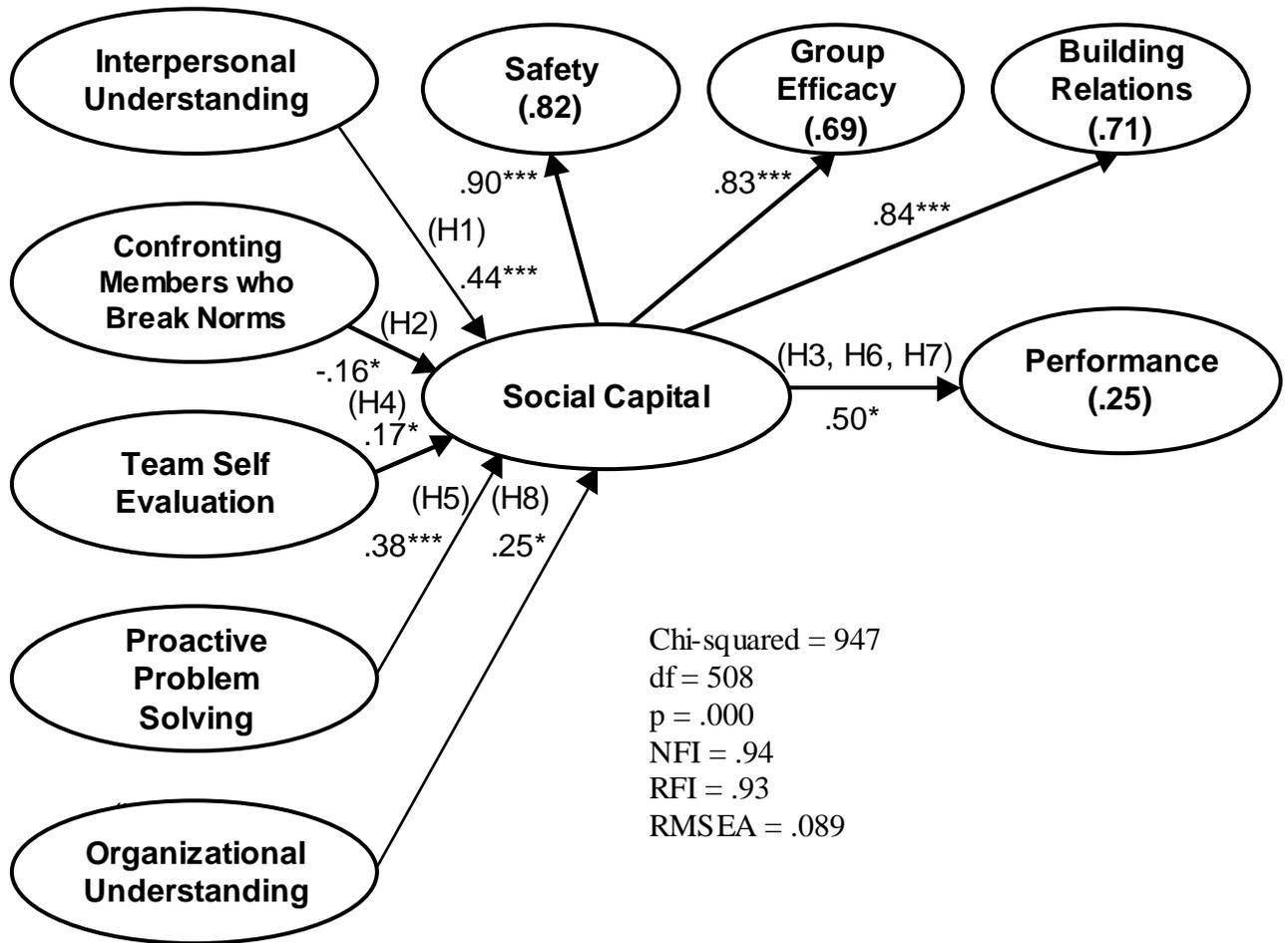
FIGURE 3
Results by Level (n=109)



Note: Numbers in parentheses represent squared multiple correlations. This is similar to r-squared and represents a measure of the variance explained by the model for the particular construct.

*p<.05 ** p< .01 ***p<.001

FIGURE 4
Results - Full Model (n=109)



Note: Numbers in parentheses represent squared multiple correlations. This is similar to r-squared and represents a measure of the variance explained by the model for the particular construct. Not shown but included in the model are covariances among the GEC norms and the measurement model. Social Capital is a combination of Safety, Group Efficacy, and Building External Relations (which we considered a proxy for network ties).

*p<.05 **p<.01 ***p<.001