EXPLORING TEAM CLIMATE AND PERFORMANCE: MEDIATING EFFECTS OF COOPERATION AND TEAM EFFICACY

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ABSTRACT
This study proposes a model based on the team climate theory to explain the formation of team performance, proficiency, and proactivity in the contexts of technology industries. In the proposed model, team performance, proficiency, and proactivity are indirectly affected by three factors related to team climate (i.e., politics, emotional regulation, and charisma) via the mediation of cooperation and team efficacy. Empirical testing of this model, by investigating personnel from high-tech organizations, confirms the theoretical applicability of team climate across high-tech working groups. Based on the empirical findings, this research provides managerial implications and research limitations.

INTRODUCTION
The reasons influencing the team’s proactive behavior and performance have been attributed to such factors as political climate, emotional intelligence climate, leadership climate, and so on (Albrecht, 2005; Aryee, Chen, & Budhwar, 2004; Ayoko, Callan, & Härtel, 2008; Kacmar & Baron, 1999; Kiewitz, Hochwarter, Ferris, & Castro, 2002; Riely, 1998). Understanding these factors that simultaneously enhance proactive behavior and improvement of team performance represents an important complement to previous teaming literature (which has not taken the three factors together into account in a single model setting).

Even though a growing strand of literature has expanded our understanding of various kinds of team climate (e.g., leadership climate) and their direct effects on performance (e.g., Mehra, Smith, Dixon, & Robertson, 2006; Rapisarda, 2002; Vigoda-Gadot, 2007), previous literature has not yet examined the relationship among these factors, team-level proactive outcomes (e.g., proficiency and proactivity), and their key mediators (e.g., cooperation) based on the team
climate theory (Eisenbeiss, van Knippenberg, & Boerner, 2008; West, 1990). Given that team proactive outcomes of proficiency and proactivity are crucial to sustained team success (e.g., Williams, Parker, & Turner, 2010), their antecedents and mediators should be examined in depth, which is thus this study’s purpose.

Building upon West’s (1990) team climate theory and the literature of team proactive orientation (e.g., Choi, Price, & Vinokur, 2003; Loewen & Loo, 2004), this study suggests that three factors related to team climate (i.e., politics, emotional regulation, and charisma) influence team proficiency, proactivity, and performance indirectly through the mediation of cooperation and team efficacy. The mediators of cooperation and team efficacy are chosen, because they are highly related to each other (De Cremer & VanVugt, 1998; Kaufman & Kerr, 1993) and have been confirmed in the previous literature as two important mediating facilitators for team outcomes (e.g., Bezrukova, Spell, & Perry, 2010; Lent, 2006; Nielsen, Yarker, Randall, & Munir, 2009). Studies have found that, for example, people who perceive their cooperative actions (i.e., cooperation) as representative of the collective are more likely to have enhanced perceptions of self-efficacy (De Cremer & VanVugt, 1998), eventually boosting team performance (e.g., Wageman & Baker, 1997).

This study provides key contributions that differ from previous research in three important ways. To begin with, the majority of previous research studies related to interactions among team members focus on a single specific form of team climate (e.g., politics), which often results in a one-sided understanding of team outcomes and their mediators (Witt & Silver, 1995). Different factors related to team climate (i.e., politics, emotional regulation, and charisma) are worth studying together herein in order to avoid managerial misunderstanding, because these factors can simultaneously complicate teaming and its outcomes. Second, this study extends the previous literature on team climate to cooperation and team efficacy as two key mediators that jointly explain the formation of team outcomes. Even though these two mediators are important for team outcomes (e.g., performance) (e.g., Gong, Shenkar, Luo, & Nyaw, 2007), none of the previous studies included both factors together and empirically tested their effects in influencing team outcomes. Third, to complement prior empirical studies that examined organizational politics, emotional intelligence, or perceived leadership’s charisma at the individual level (e.g., Côté & Miners, 2006; Lam & Kirby, 2002; Vigoda-Gadot, 2007), this study is one of the few to use primary survey data collected from team workers to test all these three factors (e.g., team politics), their outcomes, and mediators based on team-level analyses.

RESEARCH MODEL AND HYPOTHESES

This study establishes a model based on the team climate theory to explain the formation of team performance, proficiency, and proactivity. In the proposed model, team performance, proficiency, and proactivity are indirectly affected by team politics, team charisma, and the team leader’s charisma via the mediation of cooperation and team efficacy. The hypotheses are theoretically justified in detail as follows.

COOPERATION, TEAM EFFICACY, AND TEAM PERFORMANCE

Cooperation is defined as complementary coordinated actions taken by actors in interdependent relationships to achieve shared outcomes with expected reciprocation over time (Hillebrand & Biemans, 2004). Anderson and West (1994) discussed the team climate theory and stated that the climate of work teams facilitates common goals that predispose people toward collective action (i.e., cooperation), which boosts job performance. Note that team performance in this study is defined as the extent to which a team accomplishes its goals or mission (Devine & Phillips, 2001). Previous studies document that people under cooperation are more likely to achieve team goals by effectively completing tasks, forging quality solutions, strengthening work relationships,
and consequently improving team performance (Jehn & Shah, 1997; Podsakoff, Ahearne, & MacKenzie, 1997).

In addition to cooperation, team efficacy is a team’s self-confidence (or belief) in its capability to successfully achieve great team performance (Bandura, 1997; Lin, Baruch, & Shih, in press). Team efficacy influences what teams choose to do, how much effort they invest in aiming to reach their objectives, and their teaming persistence when initial team efforts fail to obtain good performance (Lin et al., in press). Strong team efficacy improves team performance following failures (e.g., Seijts, Latham, & Whyte, 2000). Based on the above rationales, the first hypothesis can be stated as below.

H1: Cooperation and team efficacy are positively and directly related to team performance.

People under cooperation are more likely to foster strong team efficacy or self-confidence (Cain & Jolliff, 1998), because excellent cooperation among team members suggests positive synergy of the team in strengthening their collective belief to execute teamwork. Previous literature suggests that a cooperative approach to conflict leads to team efficacy in dealing with conflict and consequently results in effective performance as measured by managers (Alper, Tjosvold, & Law, 2000). By contrary, a decrease in consensus and cooperation by a team often weakens the team’s confidence (Pinsoneault & Kraemer, 1990). For that reason, the relationship between cooperation and team performance is thus hypothesized as below.

H2: Cooperation is positively and indirectly related to team performance via team efficacy.

TEAM EFFICACY, TEAM PROFICIENCY, AND TEAM PROACTIVITY
While team proficiency is defined as the extent to which team members have had the necessary teaming knowledge and skills needed to successfully perform their required in-role teaming tasks (Klein & Heuser, 2008), team proactivity is defined as the extent to which team members engage in self-directed behavior to change the team’s situation or the way the team works (Griffin, Neal, & Parker, 2007). Proficiency and proactivity are critical, particularly when teaming contexts involve uncertainty and aspects of teaming work roles that cannot be formalized (Griffin et al., 2007). While team performance is a result of consequentism, team proficiency and proactivity both represent team traits of self-regulated and self-directed change in the teaming process contexts (Griffin et al., 2007).

Proactivity involves questioning the status quo (Strauss et al., 2009), but it takes strong self-efficacy to perform such questioning. Previous literature finds that employees’ self-efficacy in taking on new roles and challenging tasks is particularly important for proactive behavior (Parker, 1998, 2000). Self-efficacy is considered a proximal predictor of proficiency (e.g., Bandura, 1990, 1991; McCoy, 2010; Morris, 2010) and proactive behavior (e.g. Griffin et al., 2007; Parker, Williams, & Turner, 2006). Specifically, team members with a high sense of self-efficacy develop strategic skills in order to adapt to the challenges they confront (i.e., team proactivity) (Raghuram, Wiesenfeld, & Garud, 2003). Self-efficacy directly influences personal goal setting and proficient analytic thinking (Bandura, 1994), suggesting a positive relationship between team efficacy and team proficiency. Collectively, the hypothesis is developed as below.

H3: Team efficacy is positively related to team proficiency and team proactivity.

TEAM POLITICS AND COOPERATION
Team climate theory suggests a negative influence of disharmony and tension among members (Loewen & Loo, 2004), caused by team politics (Anderson & West, 1998; Camacho, 2006;
Team politics is defined as the pursuit of self-interest in the allocation of scarce resources in the teaming contexts (Cropanzano, Kacmar, & Bozeman, 1995; Drummond & Hodgson, 1996). Team politics is the phenomenon when employees deliberately act in a way that promotes or protects their own self-interests, even if their actions may or may not involve the interests of other team members (Kacmar & Ferris, 1993). Since team politics reveals the degree to which team members view their work environment as politically disharmonious, tensional, and unjust (Ferris, Fedor, Chachere, & Pondy, 1989), it is likely to discourage cooperation.

Jablin (1981) reported that team members who perceive their firm management to be highly involved in politics are less open in their communications with others (Cropanzano, Howes, Grandey, & Toth, 1997), increasing work disharmony and hindering their cooperation with others (Gilmore, Ferris, Dulebohn, & Harrell-Cook, 1996). Hence, the hypothesis about the relationship between team politics and cooperation can be described as below.

**H4:** Team politics is negatively and directly related to cooperation.

**TEAM POLITICS AND TEAM EFFICACY**

Team members working under the climate of strong pursuit of self-interest in the allocation of scarce resources (i.e., high team politics) are unlikely to have strong team efficacy. Due to the strong conflict caused by team politics between chasing self-interests and striving to match the interests of others, team members can easily feel stymied and lose confidence that they can work well together (e.g., Tjosvold, Hui, & Law, 2001). Given stronger team politics, team members will more deliberately act in a way that promotes or protects their own self-interests without regard to or at the expense of team goals (e.g., Kacmar & Ferris, 1993), negatively impacting team efficacy (Chan, Lau, Nie, Lim, & Hogan, 2008). Therefore, the hypothesis about the relationship between team politics and team efficacy is stated as below.

**H5:** Team politics is negatively and directly related to team efficacy.

**TEAM EMOTIONAL REGULATION AND COOPERATION**

Previous literature indicates that a key element of climate is the array of largely shared emotions that exist in teams (Ayoko et al., 2008; Brown & Brooks, 2002). A heightened control of emotional states (i.e., EQ) can stimulate neurological reactions that motivate people to accomplish a collective task or decision-making (Bechara, Tranel, & Damasio, 2000; Damasio, 1994), which often result in increased cooperation (Zeidner et al., 2004).

A key aspect of emotional processes that often influence employees’ job effectiveness is their capacity to regulate emotions (i.e., emotional regulation) (Gross, 1999; Moon & Lord, 2006). Emotional regulation is defined as the ability team members have in managing their emotions so that they remain consistent with their team goals and objectives (Serras, Saules, Cranford, & Eisenberg, 2010). The positive emotional regulation that affects respectful or enjoyable interactions among team members can lead to the development of social bonds that boost cooperation (Dirks, 1999). Since people with high emotional regulation can enable themselves to have a more rapid recovery from psychological distress (Law, Wong, & Song, 2004), they are more likely to generate excitement, enthusiasm, and optimism in the work environment and maintain an atmosphere of cooperation through the development of quality social interactions and exchanges in teaming (Law et al., 2004; Reus & Liu, 2004; Zeidner et al., 2004). Collectively, the hypothesis about emotional regulation and cooperation is provided as below.

**H6:** Team emotional regulation is positively and directly related to cooperation.
TEAM EMOTIONAL REGULATION AND TEAM EFFICACY
Although previous research has discussed emotional intelligence, most studies have not directly addressed emotional regulation (e.g., Diefendorff & Gosserand, 2003; Grandey, 2000; Gross & John, 2003; Moon & Lord, 2006), and thus its effect on team efficacy is still unknown. For example, a survey on school teachers indicates that positive emotional regulation is confirmed as a significant predictor in forecasting general self-efficacy (Chan, 2004), but whether such a phenomenon exists among working teams in industries warrants further study.

People can use strong emotional regulation to increase self-confidence in their capabilities and thus survive in the face of obstacles and adversities (Salovey & Mayer, 1990). Previous literature indicates that people with high ability in the area of emotional regulation can return quickly to normal psychological states after rejoicing or being upset (Law et al., 2004). These people also have great control of their emotions and are unlikely to lose their temper and faith in teamwork (Law et al., 2004), eventually facilitating team efficacy. Consequently, the hypothesis about emotional regulation and team efficacy is derived as below.

H7: Team emotional regulation is positively and directly related to team efficacy.

CHARISMA AND COOPERATION
Prior literature has stressed the importance of support from the power elite (e.g., leaders) for the innovation implementation of teamwork (Anderson & West, 1998; Schroeder, Van de Ven, Scrudder, & Polley, 1989), suggesting the importance of team leadership (e.g., charisma) (Carlton-Ford, 1993). In today’s uncertain, complex, and changing business environment, charismatic leadership is a key to achieving team goals (e.g., Law et al., 2004; O’Connell, Hickerson, & Pillutla, 2011). For example, Platow and van Knippenberg (2001) indicate that a charismatic leader directs team members’ attention to the collective’s interest in teaming up for cooperation.

Charisma represents a leader’s ability to exercise diffuse and intensive influence over the normative orientations of others and arouse their fervent devotion and enthusiasm. Charismatic leadership strengthens a sense of team belongingness and therefore transforms team members’ attention from self-interest to collective interest (Bass & Avolio, 1993; Conger & Kanungo, 1987; De Cremer & van Knippenberg, 2002; Shamir et al., 1993). In other words, a team leader’s charisma encourages team members’ participation in the teamwork by creating strong values of internalization and congruence among the members (Jung & Avolio, 2000; Shamir et al., 1993), thus facilitating cooperation. Based on the above justifications, the hypothesis regarding the linking between charisma and cooperation is stated as below.

H8: Team leader’s charisma is positively and directly related to cooperation.

CHARISMA AND TEAM EFFICACY
Through positive modeling and direct communications among team leaders and team members, a team leader’s charisma helps team members develop their talents into strengths, build up their self-confidence in teaming, and encourage them to accomplish teamwork for which they have the competence to excel (Clifton & Harter, 2003; Gardner, Avolio, Luthans, May, & Walumbwa, 2005; Liden, Wayne, & Sparrowe, 2000), thus bolstering team efficacy.

By realistically and honestly taking inventory of social assets, charismatic leadership can move positive goals to the forefront and elevate team members’ efficacy beliefs in the process (Gardner et al., 2005). Previous literature integrating charismatic leadership into the team climate theory (e.g., Eisenbeiss et al., 2008) suggests that a team leader’s charisma can mobilize and sustain
activity within a team and thus enhance team members’ feelings of confidence and competence in teamwork (i.e., team efficacy) (Bandura, 1997; Gardner et al., 2005; Yukl, 1989a, 1989b). Based on the above rationales, we provide the following hypothesis.

H9: Team leader’s charisma is positively related to team efficacy.

METHOD

SUBJECTS

The hypotheses described in this study were empirically tested using a survey of teams of professionals across high-tech firms in Taiwan. This study recruited professionals from work teams in high-tech firms, because the working mode in teams is the most popular form in high-tech firms (Lin et al., in press). We initially contacted twenty high-tech firms in an industrial zone in north Taiwan for the assistance of our data collection, and eventually nine of them agreed to help conduct our survey. The teams we surveyed in this study were existing working teams, and their members were acquainted with each other in the same teams. To collect data based on teams, we surveyed six persons from each team, including one team leader and five team members.

Of the 978 questionnaires distributed to the members of 163 teams, 739 usable questionnaires from 130 teams were returned for a questionnaire response rate of 75.56%. A satisfactory response rate for this survey was obtained due to the strong support from our sample firms in which their human resource departments helped distribute the questionnaires to team leaders and members and then traced the status of returned questionnaires. In our sample, 385 participants were male (52.10%) and 425 participants had a bachelor’s degree or higher (57.51%).

MEASURES

The constructs in this study were measured using scales drawn and modified from existing literature (Bass & Avolio, 1999; Griffin et al., 2007; Law et al., 2004; Man & Lam, 2003; Mosley, Boyar, Carson, & Pearson, 2008; Vigoda, 2002; Wong, Tjosvold, & Liu, 2009), and three steps were employed in choosing measurement items. First, the items from the existing literature were translated into Chinese from English, and then the items in Chinese were repeatedly refined by a focus group of five people familiar with organizational behavior, including two graduate students and three professors. Second, before our actual survey, two pilot studies were conducted to assess the quality of our scale items, and their readability and clarity. Some inappropriate items were reworded or removed from our survey questionnaire after two pilot tests were examined using exploratory factor analysis. Sample sizes for the two pilot studies were 35 and 103 respondents, respectively. These respondents were then excluded from the respondents in the actual survey.

The constructs in this study were measured using a five-point Likert scale. To avoid a threat of common method bias, this study surveyed team members for measuring our antecedents (i.e., team politics, team emotional regulation, and team leader’s charisma) and mediators (e.g., cooperation and team efficacy) while surveying team leaders only to measure our three team outcomes (i.e., team performance, team proficiency, and team proacti

RESULTS

After the aggregation of individual responses to team-level measures was justified, team-level data were analyzed using exploratory factor analysis with the promax oblique rotation before the empirical tests were conducted. In the analysis of the data collected from team leaders, a total of three factors of team outcomes emerged from the analysis with eigenvalues greater than 1.0.
From the analysis of the data collected from team members, a total of five factors emerged from the analysis with eigenvalues greater than 1.0, including our three antecedents and two mediators. Appendices C and D present matrices of team-level factor analysis.

To confirm the full mediation effects of cooperation and team efficacy, we conducted regression analyses with three steps as updated by Kenny, Kashy, and Bolger (1998). Following this work, which offered three steps for testing mediation models (e.g., Kenny et al., 1998; Frazier, Tix, & Barron, 2004), we used the same three steps with team-level data and simultaneously included three control variables (see Tables 2, 3, and 4). The three steps are explained in detail as below.

In the first step, we included our three exogenous determinants (i.e., team politics, team emotional regulation, and team leader’s charisma) in Model 1 and then further included cooperation in Model 2 (see Table 1). The test results in Model 1 showed that team politics was not related to cooperation, while team emotional regulation and team leader’s charisma were both positively related to cooperation. In Model 2, team politics was not related to cooperation, whereas team emotional regulation, team leader’s charisma, and cooperation were all positively related to team efficacy.

**TABLE 1.** Team-Level Regression Analysis Among Cooperation, Team efficacy and Their Predictors

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<tr>
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<th>Model 1</th>
<th>Model 2</th>
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<tbody>
<tr>
<td>Control variables:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ratio of members’ difference in gender</td>
<td>0.02</td>
<td>-0.01</td>
</tr>
<tr>
<td>Ratio of members’ difference in age</td>
<td>-0.01</td>
<td>-0.02</td>
</tr>
<tr>
<td>Ratio of members of higher education</td>
<td>-0.01</td>
<td>-0.01</td>
</tr>
<tr>
<td>Antecedents:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Team politics</td>
<td>-0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Team emotional regulation</td>
<td>0.20*</td>
<td>0.21**</td>
</tr>
<tr>
<td>Team leader’s charisma</td>
<td>0.41**</td>
<td>0.18**</td>
</tr>
<tr>
<td>Mediators:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperation</td>
<td>0.24**</td>
<td></td>
</tr>
<tr>
<td>Adj R²</td>
<td>0.36</td>
<td>0.44</td>
</tr>
</tbody>
</table>

* p < 0.05  
** p < 0.01  

In the second step, we included mediators (i.e., cooperation and team efficacy) and outcomes in Models 3, 4, and 5 (see Table 2). Overall, the empirical results showed that cooperation and team efficacy were both positively related to team performance. At the same time, team efficacy was positively related to both team proficiency and team proactivity.

**TABLE 2.** Team-Level Regression Analysis Among Team Outcomes and Their Predictors

<table>
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<tr>
<th></th>
<th>Model 3</th>
<th>Model 4</th>
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<tr>
<td>Control variables:</td>
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In the third step, we included antecedents, mediators, and outcomes in Models 6, 7, and 8 to test our full mediation effects (see Table 3). The test results showed that all the significant paths in Models 3, 4, and 5 remained significant in Models 6, 7, and 8, whereas the direct effects of three exogenous factors on team outcomes were all insignificant. These test results suggested that full mediations of cooperation and team efficacy indeed exist between our exogenous determinants and team outcomes to a large extent.

In the above empirical results, we summarize the final results of our hypotheses as follows:

Of our nine hypotheses, we obtain seven fully supported hypotheses (i.e., H1-H3 and H6-H9) and 2 unsupported hypotheses (i.e., H4 and H5). The two unsupported hypotheses regarding team politics are surprising, as such results may occur perhaps due to team punitive or incentive
systems (e.g., Elvira, 2003) that are not controlled herein. Nevertheless, the unexpected empirical results for the unsupported hypotheses may warrant further research in order that the authentic relationships among team politics, cooperation, and team efficacy can be interpreted more accurately.

**DISCUSSION**

This research adds to the team climate theory by extending the principles of West’s (1990) work to frame a model that covers three key determinants related to team climate. West (1990) provided a comprehensive classification schema for team factors — first and foremost, support for teamwork and climate for excellence — that are proposed to directly influence team performance (e.g., Eisenbeiss et al., 2008). Extending and complementing West’s (1990) work, our research empirically confirms the mediating effects of cooperation and team efficacy on the team outcomes.

A majority of previous studies have mostly focused on either cooperation or team efficacy as a mediator (e.g., Paulsen, Maldonado, Callan, & Ayoko, 2009; Liu, Liu, & Zeng, 2011). However, the effect of cooperation on team performance may be biased if team efficacy is not simultaneously examined, given its critical importance on team performance (Durham, Knight, & Locke, 1997). Based on the empirical results of this study, team emotional regulation and team leader’s charisma are verified to have indirect and positive effects on team performance via the mediation of cooperation and team efficacy. This study also confirms that team efficacy fully mediates the effects of team emotional regulation and team leader’s charisma on both team proficiency and team proactivity.

The full mediating mechanisms of cooperation and team efficacy in the team performance formation suggest that management should periodically monitor these two mediators as key checkpoints to avoid declining team performance. Managers who want to improve team efficacy and cooperation should first design strategies to strengthen team members’ ability to interrupt their negative emotional states and to prolong the positive ones (i.e., increased emotional regulation) (e.g., Montes-Berges & Augusto-Landa, 2007). Managers should also develop their own charisma skill as a means to improve the team climate, which can boost team efficacy and cooperation.

**LIMITATIONS**

There are two limitations in this study. First, this work was conducted in a single industry setting – Taiwan’s high-tech industry. As a result, the generalizability of the findings may be somewhat limited. Additional studies across various industries (e.g., service and banking industries) may be helpful to generalize the findings. The second limitation of this work relates to its cross-sectional investigation that limits our ability to achieve causal inferences from the data. Future studies can improve such shortcomings by directly observing subjects’ behavior (e.g., proactivity) over time.

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