# Does positive team mood mediate the relationship between team climate and team performance?

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We tested whether the relationship between a team climate of support from the organization and team performance is mediated by positive team mood. Recent research has shown that this team climate facet is related to team performance, but we do not have any empirical evidence about the mechanisms involved in this relationship. The study sample was composed of 59 bank branches, and a longitudinal design with three data-collection points was implemented. The results showed that a team climate of support from the organization was positively related to positive team mood, which in turn was positively related to team members' ratings of team performance.

¿Media el estado de ánimo positivo del equipo la relación entre el clima y el rendimiento del equipo? En este trabajo examinamos si la relación entre el clima de apoyo de los equipos de trabajo y su rendimiento está mediada por el estado de ánimo positivo de los equipos. A pesar de que estudios recientes han obtenido evidencia empírica que apoya la relación mencionada, todavía no están claros los mecanismos implicados en la misma. La muestra del estudio estaba compuesta por 59 sucursales bancarias, y se desarrolló un diseño longitudinal con tres puntos de recogida de datos. Los resultados mostraron que el estado de ánimo positivo de los equipos de trabajo medió la relación entre el clima de apoyo de los equipos y su rendimiento.

During the last few decades, many organizations have started to use work teams as the building blocks of their structure (Kozlowski & Bell, 2003). One of the underlying ideas supporting this strategy is the belief that teams composed of members with distinct but complementary skills, knowledge and aptitudes are better equipped to deal with the complex problems with which organizations have to cope (West, 2001). Thus, the study of work teams, their functioning, processes, experiences and states, becomes crucial for understanding and enhancing the contribution of work teams to organizational effectiveness (Kozlowski & Ilgen, 2006).

One of the most important characteristics of work teams is their climate - that is, the team members' shared perceptions of their team. Recent research has shown that team climate is related to team performance (e.g., Colquitt, Noe, & Jackson, 2002). However, there is no empirical evidence about the mechanisms involved in this relationship. Discovering these mediating variables is important for different reasons. Theoretically, it will contribute to increasing our understanding of the nature of the aforementioned relationship. Practically, the identification of mediators will allow us to design intervention strategies where these mediators can serve as levers for performance improvement.

In the present paper, we propose that one of these mediators is positive team affect. A recent review has shown that collective

affect is an important factor to understand team behavior (Barsade & Gibson, 2007). Several studies carried out at the individual (e.g., Parker et al., 2003) and organizational levels (e.g., Patterson, Warr, & West, 2004) have shown that affect mediates the relationship between climate and performance. Thus, it is plausible to assume that this mediation will operate at the team level as well. To the best of our knowledge, this hypothesis has not been tested at the team level. Thus, this study's objective is to test the aforementioned mediated relationship in a sample of work teams. By doing so, we hope to contribute to closing a gap in the literature. We focus on positive (and not negative) team affect for two reasons. First, as we explain later, positive team affect triggers motivational processes that contribute to enhanced team performance. Therefore, it is a plausible mediator for the team climate-team performance relationship. Second, by focusing on positive team affect, we contribute to expanding Positive Occupational Health Psychology (Bakker, Rodríguez-Muñoz, & Derks, 2011) to the team level. Moreover, positive team affect is a changeable collective positive state. Therefore, ascertaining its antecedents can be very helpful in increasing wellness in working environments, which is congruent with the principles of Positive Psychology (Seligman, 1998).

Theoretical framework and hypothesis

Team climate emerges from the interactions among team members (Schneider & Reichers, 1983). Through social interactions, team members communicate and discuss the meanings they attribute to the events that characterize their environment, and they develop a shared interpretation of their team. This interpretation can be structured according to climate

facets (that is, groups of psychologically-related events and meanings). In this paper, we consider the facet of support from the organization (the extent to which team members believe the team is supported by the organization and their managers) for several reasons. First, it is one of the five facets of climate said to apply across various work environments (Kopelman, Brief, & Guzzo, 1990). Second, in the specific context where the research was carried out (bank branches), top managers are aware that branch performance depends to a great extent on the commitment and visible support they provide to the employees. Consequently, the degree to which branch members believe the team is supported by the organization and their managers is an important condition for team performance.

The theoretical justification for the relationship between a team climate of support from the organization (support climate henceforth) and team performance can be based on organizational support theory (Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001). Stemming from social exchange theory (Blau, 1964), this theory posits that perceived support from the organization elicits employees' feelings of obligation to help the organization achieve its goals. Employees can reciprocate the organization's support through greater effort at work. Previous empirical research has supported this relationship at the team level (González-Romá et al., 2009).

Support climate may also have an influence on positive team affect (Lawler & Yoon, 1996). In this study, we conceptualize positive team affect as positive moods shared by team members (Gamero, González-Romá, & Peiró, 2008). Moods, when compared with emotions, are weaker, more global and more diffuse affective reactions whose effects are more subtle and pervasive. Moreover, they can be characterized as relatively enduring. Distinct mechanisms may help explain the emergence of positive team mood from team members' affect (see Kelly & Barsade, 2001, for a review). Some of these mechanisms are: social interaction and socialization processes, emotional comparison and emotional contagion, and mood regulation norms. Through these processes, the moods team members bring with them to the team are communicated to other team members and modeled to form team mood.

The relationship between support from the organization and positive team affect can be based on Weiner's attribution theory of affects (1986). This theory suggests that when the outcome of an interaction process is positive, the result is a generalized positive affective reaction that is global and diffuse (positive mood). Therefore, we can expect that when the exchange process developed by the organization and the team results in higher perceived organizational support from the organization, the team's positive affect will increase.

We expect positive team affect to be positively related to team performance. George and Brief (1996) posit that positive mood enhances distal and proximal motivation at the individual level. «Distal motivation refers to how workers make choices about what specific job behaviors to engage in and how much initial effort to exert while proximal motivation is concerned with how workers regulate their behaviors once they are engaged in the chosen task» (George & Brief, 1996, p. 89). The influence of positive mood on distal motivation is accounted for by three mechanisms: mood-congruent judgment, mood-congruent recall, and mood effects on attribution (see George & Brief, 1996). Mood-congruent judgment is the tendency to see things in a manner consistent with one's

current mood. Mood-congruent recall is the tendency to recall material from the memory that is consistent with one's current mood. Finally, mood effects on attributions refer to the tendency of individuals in a positive mood to make more internal and stable attributions for successes than for failures (with the reverse pattern occurring for individuals in negative moods). Thus, because of the mechanisms of mood-congruent judgment, workers in a positive mood see a greater pay-off attached to their performance. Moreover, because of the mechanisms of mood-congruent recall, they construct their evaluations and judgements using more positive content recalled from memory. Finally, due to the effects of mood on attributions, they attribute successes to internal factors and failures to external factors, which influences their beliefs about the effort-performance relationship. According to George and Brief (1996), through these mechanisms, positive mood produces greater initial effort on work tasks and a better choice of appropriate goals (distal motivation), which, in turn, generate higher performance levels.

Mood also impacts performance through its influence on proximal motivation (George & Brief, 1996). Motivational control theory points out that when a perceptual input is compared to a reference criterion, the difference between the input and the criterion motivates behavior to lessen the discrepancy (Hyland, 1988; Klein, 1989). Mood influences proximal motivation in two ways. First, mood affects goal setting. Workers in a positive mood see themselves as more self-efficacious and capable, and they set a higher reference criterion level than workers in negative moods (George & Brief, 1996). Moods also affect goal achievement evaluation. Workers in positive moods may judge themselves as making more progress toward a goal than workers in negative moods and, based on these judgments, set higher goal levels for themselves (George & Brief, 1996). Thus, workers in positive moods have higher levels of proximal motivation and, therefore, persist longer and make more effort on the tasks they are engaged in.

When team members share their levels of high positive mood, the motivational mechanisms mentioned above will operate across all team members at the team level, yielding higher initial effort and greater persistence on team tasks, which in turn will facilitate team performance. Recent research on shared affective experiences in work teams has revealed that positive team affect (i.e., affective experiences shared by team members) is positively related to team performance (Barsade, Ward, Turner, & Sonnenfeld, 2000; George, 1995; Totterdell, 2000).

Based on the arguments presented above, we hypothesize that the relationship between the team climate facet of support from the organization and team performance is mediated by positive team mood, so that support from the organization is positively related to positive team mood, which in turn is positively related to team performance. Taking into account the study's longitudinal design and the fact that team performance is a distal outcome of support climate, we hypothesize that the expected mediation will be full (Shrout & Bolger, 2002; Schneider et al., 2005).

## Method

Procedure and sample

Data were gathered from a sample of branches of a Spanish savings bank. The human resource manager of the bank was contacted and asked for his collaboration. After agreeing to collaborate, the manager informed the branch managers about the study and asked for collaboration in the data gathering phase. Then, a group of trained questionnaire administrators contacted every branch manager involved to arrange for the administration of the questionnaires. Generally, questionnaires were distributed among branch members and filled out in collective sessions. When a branch member could not participate in a collective session, the questionnaire was personally delivered to him/her and collected a few days later by the corresponding questionnaire administrator. Confidentiality and anonymity of the responses were guaranteed in all cases.

Data were gathered at three time points. Time 1 and Time 2 were separated by six months, and Time 2 and Time 3 by one year. These time lags met our requirement of using time lags that were long enough (several months) to observe significant relationships among the study variables over time, but they were mainly determined by the involved organization's availability. At Time 1, data were collected from 67 teams composed of 286 employees. The response rate was 98%. At Time 2, data were collected from 68 teams composed of 289 members. Two hundred and seventy-three team members responded, which represented a response rate of 95.3%. At Time 3, data were collected from 65 teams composed of 285 members. Two hundred and seventy-four team members responded. The response rate was 96.1%. One of the indicators of team performance was provided by branch managers at Time 3. The overall response rate was 83%.

To form the longitudinal sample, those branches with fewer than three members (excluding the team manager) at the three times were eliminated. In order to guarantee that the composition of the teams did not vary too much across the three time points, those teams with a membership stability rate lower than 50% were also disregarded. The stability rate was computed as the ratio between common subjects at two successive time points (Time 1 and Time 2, and Time 2 and Time 3) and the total number of members in the team. The average stability rate for the first two data collection points was 94.2%, and it was 78.3% for Time 2 and Time 3. The final sample was composed of 59 teams. Average team size was 4.39 (SD= 1.4) at Time 1, 4.42 (SD= 1.39) at Time 2, and 4.42 (SD= 1.45) at Time 3. The range was between 3 and 8 team members at Time 1 and Time 2, and between 3 and 9 members at Time 3. Regarding team tenure, 29.4% of the team members at Time 1, 32.4% at Time 2, and 36.7% at Time 3 had been in their teams between 5 and 10 years. Eight teams, from which we collected data at Time 1 and Time 2 but not at Time 3, were not included in the final sample. However, differences in team climate of support from the organization at Time 1 and positive team mood at Time 2 between these eight teams and those included in the final sample were not statistically significant (t= -1,22, n.s., and t= -1,97, *n.s.*, respectively).

## Measures

Support climate. We measured team climate of support from the organization at Time 1 by means of González-Romá and colleagues' (2009) 4-item scale (e.g., «In my work team, team members feel supported by the organization»). Respondents answered using a 6-point scale (1= strongly disagree, 6= strongly agree). Cronbach's alpha was .85. Support climate was operationalized by aggregating team members' scores, following a referent-shift consensus model of composition (Chan, 1998).

Prior to aggregation, first we assessed within-team agreement by means of the Average Deviation index (AD henceforth) proposed by Burke, Finkelstein and Dusig (1999). Burke and Dunlap (2002) recommend using the criterion of  $AD \le c/6$ , where c is the number of response alternatives, to interpret the index. For a Likert-type 6-point scale, c/6 is equal to 1. Consequently, we concluded that there was within-team agreement when the AD values were equal to or less than 1. At Time 1, the average AD value was .62 (SD= .27). Thus, we concluded that the level of within-team agreement was sufficient to aggregate individual scores to the work team level. We also assessed whether there were sufficient differences in support climate among branches by using one-way analysis of variance (ANOVA). The observed F value was F (58, 196)= 3.13, p<.01 at Time 1. This result showed adequate between-teams discrimination in support climate, and supported the validity of the aggregated measure (Chan, 1998).

Positive team mood. Positive team mood was measured at Time 2 using the Affective Well-being Scale constructed by Segura and González-Romá (2003) based on the circumplex model of affect (Warr, 1990). The scale is composed of 6 items (i.e. «To what extent, over the last weeks, did your job make you feel cheerful/ enthusiastic/optimistic/pessimistic/gloomy/discouraged?»). The last three items were reverse-scored, so that high scores indicated high positive affect. Branch members answered using a 5-point scale (1= Not at all, 5= Very much). Cronbach's alpha was .92. Positive team mood was operationalized by aggregating team members' scores, following a direct consensus model of composition (see Chan, 1998). We assessed within-team agreement by means of the AD index. The average AD value was .47 (SD= .22), and the practical upper-limit criterion equalled .83 (c/6=.83). Therefore, the level of within-team agreement was sufficient to aggregate individual scores. We also carried out an ANOVA to ascertain whether there was statistically significant between-team discrimination in team mood among bank branches. The observed F value showed an adequate between-teams discrimination (F (58, 196)= 2.49, p<.01). This result supported the validity of the aggregated measure (Chan, 1998).

Team performance. We used two indicators of team performance:

1. Perceived team performance, which refers to the quality of processes and behaviors oriented toward goal achievement (Motowidlo, 2003), and 2. Effectiveness ratings, which refer to the results of those actions, that is, the degree to which the performance outcomes approach the specified goals (Campbell, McCloy, Oppler, & Sager, 1993). This distinction is important because effectiveness can be affected by situational opportunities and constraints, such as market conditions or economic factors, and it is not under the complete control of managers or employees (Motowidlo, 2003). Data on perceived team performance were provided by team members, whereas data on effectiveness were provided by team managers. In both cases, data were collected at Time 3.

Team members' perceived team performance was measured by a 2-item scale. One item was selected and adapted from Jehn and colleagues' «group performance scale» (Jehn, Northcraft, & Neale, 1999): «How well do you think your work team performs?». Respondents answered using a 5-point scale (1= very badly, 5= very well). The other item was as follows: «What is the quality of the work carried out by your team?». Respondents answered using a 5-point scale (1= very bad, 5= very good). The correlation between the two items was .81 (p<.01). Individual ratings of team performance were obtained by averaging respondents' scores on the two items.

Team members' perceived team performance was operationalized by aggregating individual ratings of team performance following a referent-shift consensus model of composition (Chan, 1998). The mean AD for this performance measure was .25 (SD=.19). These values were smaller than the practical upper-limit criterion of c/6 (5/6=.83). Therefore, the level of within-team agreement was sufficient to aggregate team members' scores on the performance measure. We carried out an ANOVA to ascertain whether there was statistically significant between-team discrimination on average team performance. The results (Time 3: F (58, 188)= 2.23, p<.01) showed that there was significant between-team differentiation. Consequently, we decided to compute aggregate performance scores for every team in our sample.

Team managers' effectiveness ratings were obtained by means of the following item: «How many of the goals that the team had last year were achieved?». The item was responded to on a 5-point graded scale ranging from 1 «None» to 5 «All». This type of oneitem indicator has been previously used in the literature to assess performance at both the individual and organizational levels (Wall et al., 2004).

Control variables. Team size and tenure were measured and controlled in this study, given their influence on work-team performance (Kang, Yang, & Rowley, 2006). Team size was operationalized as the number of actual branch members, excluding the branch manager. Team tenure was operationalized as the period of time that the team members had been working together. This information was reported by the branch managers by answering the following questions: «How many people are members of the team that you manage?» and «How long have your current team members been working together on this team?».

# Analyses

Considering recent conceptual criticisms of Baron and Kenny's (1986) procedure for testing mediation (James, Mulaik, & Brett, 2006; LeBreton, Wu, & Bing, 2009), and that a simulation study has shown that this procedure has low power to detect mediation (McKinnon, Lockwood, Hoffman, West, & Sheets, 2002), we tested mediation using the product of coefficients method ( $P=z_{\alpha}$ ) proposed by MacKinnon and colleagues (2002). This method provides satisfactory statistical power and accurate Type I error rates

Mediation involves a causal relationship whereby an independent variable (X) impacts on a mediator (M), which in turn impacts on a dependent variable (Y) (Sobel, 1990). To

estimate these relationships, two regression models are needed. First, the mediator (M) is regressed onto the independent variable (X):  $M = \beta_{0(1)} + \alpha \ X + \epsilon_1$  (where  $\beta_{0(1)}$  and  $\epsilon_1$  are the intercept and error term, respectively). Second, the dependent variable (Y) is regressed onto the mediator (M), controlling for the independent variable (X):  $Y = \beta_{0(2)} + \tau \ X + \beta M + \epsilon_2$ . The product  $\alpha\beta$  is the mediated or indirect effect, whereas ( $\tau$ ) is the non-mediated or direct effect. One can say that a relationship is mediated if 1. X is significantly related to M, 2. M is significantly related to Y after controlling for X, and 3. the mediated effect is statistically significant (MacKinnon, 2008).

Testing the mediated effect using the product of coefficients method  $(P=z_{\alpha}\cdot z_{\beta})$  involves the calculation of two z statistics (MacKinnon et al., 2002):  $z_{\alpha}=\alpha/\sigma_{\alpha}$  and  $z_{\beta}=\beta/\sigma_{\beta}$ , where  $\sigma$  is the respective standard error of  $\alpha$  and  $\beta$ . Then, the product  $P=z_{\alpha}\cdot z_{\beta}$  is obtained. Finally, assuming that  $\alpha$  and  $\beta$  follow a normal distribution, the statistical significance of the product P can be tested using a critical value from the distribution of the product of random variables  $P=z_{\alpha}\cdot z_{\beta}$  (as a reference, the critical value to test  $\alpha\beta=0$  for the .05 significance level for the  $P=z_{\alpha}\cdot z_{\beta}$  distribution is 2.18, instead of 1.96 for the normal distribution; Craig, 1936; MacKinnon et al., 2002). The regression models were estimated with SPSS 17.

#### Results

Descriptive statistics, correlations among the study's teamlevel variables, and reliability estimates are displayed in Table 1. Considering that team size and team tenure were not significantly related to positive team mood, team members' perceived team performance or managers' team effectiveness ratings, the study's control variables were dropped from subsequent analyses.

The results of the mediation analyses are displayed in Table 2. Support climate at Time 1 was statistically related to positive team mood at Time 2 ( $\alpha$ = .53, SE= .07, p<.01). When the dependent variable was team members' perceived team performance at Time 3, positive team mood at Time 2 was significantly related to the dependent variable, after controlling for support climate at Time 1 ( $\beta$ = .26, SE= .12, p<.05). The estimated mediated effect ( $\alpha\beta$ = .14) was statistically significant (P=  $z_{\alpha} \cdot z_{\beta}$ = 14.4, p<.01). The direct or non-mediated effect was not statistically significant ( $\tau$ = .03, SE= .10, p>.05). Therefore, we concluded that the relationship between support climate at Time 1 and team members' perceived team performance at Time 3 was fully mediated by positive team mood at Time 2.

Table 1  Descriptive statistics, correlations and Cronbach's alpha coefficients (on the diagonal) for the team level study variables									
	M	SD	1	2	3	4	5	6	
1. Team size	4.4	1.4	_						
2. Team tenure	36.5	49.1	.15	-					
3. Support climate T1	4.2	.71	31*	23	(.85)				
4. Team positive mood T2	3.9	.545	07	24	.69**	(.92)			
5. Team members' perceived team performance T3	4.2	.40	02	05	.29*	.39**	(.89)		
6. Managers' ratings of team effectiveness T3	4.0	.55	05	08	.02	.21	.24	_	

When the dependent variable was managers' team effectiveness ratings at Time 3, positive team mood at Time 2 was significantly related to the dependent variable, after controlling for support climate at Time 1 ( $\beta$ = .37, SE= .18, p<.05). However, Table 1 shows that positive team mood did not show a significant correlation with this dependent variable. Taken together, these results suggested that support climate was acting as a suppressor. What probably happened was that support climate suppressed some of the error variance in team positive mood, enhancing in this way its relationship with managers' ratings of team effectiveness. Therefore, our mediation hypothesis was not supported when managers' ratings of team effectiveness at Time 3 was the dependent variable.

Dependent variable/Predictors	Ba	SE	$\mathbb{R}^2$
Dep. Var: Positive team mood T2			
Support climate T1	.53**	.07	.47**
Dep. Var: Team members' perceived team performance T3			
Support climate T1	.03	.09	_
Positive team mood T2	.26*	.12	.15*
Dep. Var: Managers' team effectiveness ratings T3			
Support climate T1	18	.14	_
Positive team mood T2	.37*	.18	.08*

### Discussion

The objective of this study was to test whether the relationship between team climate of support from the organization and team performance was fully mediated by positive team mood. The results obtained showed that support climate was positively related to positive team mood, which in turn was positively related to one of the two indicators of team performance considered (team members' perceived team performance). In this case, the study hypothesis was supported.

This study makes a number of contributions to the literature. First, the results obtained help close a gap in the literature. Previous research carried out at the individual and organizational levels had shown that affective variables mediated the relationship between climate and performance (Parker et al., 2003; Patterson et al., 2004). To our knowledge, no study had tested this relationship at the team level. Our study shows that this mediated relationship also operates at the team level. Taken together, all these results suggest a homologous multilevel model for the climate-affect-performance sequence that operates at the individual, team, and organizational levels. Future research should test this model in a single study using a sample composed of individuals nested in teams which, in turn, are nested in organizations. We know that it is not easy to obtain this kind of data base, but it is a necessary condition for testing the proposed homology.

Second, we have identified one of the mechanisms that explain the relationship between support climate and team performance. When team members perceive that they are supported by the organization, it is highly likely that the outcome of their social exchange with the organization will be positive and yield a global positive affective reaction (positive team mood) (Weiner, 1985, 1986). Then, this collective affective state triggers a motivational process that makes the team invest higher initial effort and persist longer on team tasks, which in turn will enhance team performance (George & Brief, 1986). Mathieu, Maynard, Rapp and Gilson (2008) stated that mediation studies contribute to moving *«organizational research beyond dust-bowl empiricism and toward a true science»* (p. 203). In this sense, the mediated relationship observed here makes a meaningful contribution.

Third, our study also contributes to Positive Occupational Health Psychology by identifying one of the antecedents of positive team mood. Therefore, theoretical models aiming to understand how wellness in work teams can be built and fostered will have to pay attention to the team climate facet of support from the organization.

Our study presents a number of limitations. First, the study sample was composed of a small number of teams. This fact reduced statistical power. However, despite this limitation, the expected mediation was observed. This suggests that the study results are robust. Second, the sample of teams used in our study was composed of only one type of team. This limits the generalizability of our results to other types of teams. Third, the rationale underlying the mediated relationship investigated here involves team-level motivation. However, we did not measure this process in the present study. Therefore, future studies should extend the relational sequence tested here by including indicators of this construct. Fourth, the instruments used to measure team performance contained very few items. This problem limits their content validity. Future studies should replicate the findings reported here using larger scales.

These limitations notwithstanding, the present study also has some strengths. The fact that the three constructs involved were measured at three different time points allows us to overcome many limitations associated with cross-sectional research. However, in order to obtain more sound empirical evidence about causality among variables, a cross-lagged design should have been implemented.

Our results have a clear practical implication: organizations and team managers must ensure that work team members feel they are supported by the organization. To achieve this goal, support from the organization must reach work teams. This support may take different forms, such as properly designing the team, improving lines of communication, providing information, feedback, structure or direction, training and material resources, or implementing a fair system of rewards and punishments (Kennedy, Loughry, Klammer, & Beyerlein, 2009). When team members perceive that this support is high, not only will their affective mood be better, but the quality of their work will also be higher.

## Acknowledgements

This investigation was supported by Research Grants PSI2010-21746 and SEJ2006-14086/PSIC from the Spanish Ministry of Science and Innovation.

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