

The Influence of Team Members' Emotional Intelligence on Communication Performance: A
Multilevel Examination

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TITLE

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ABSTRACT

Using a longitudinal design, we examined the influence of team members' emotional intelligence abilities on communication performance at the individual and team level. Hierarchical linear modeling revealed differential findings between emotional intelligence and communication at the individual-, team-, and cross-levels of analysis. Implications for theory and practice are discussed.

PRESS PARAGRAPH

We present a multilevel model to explain how emotional intelligence influences communication effectiveness and appropriateness at individual- and team-levels. Emotional intelligence ratings were obtained from 127 student participants prior to forming 37 teams. Peer ratings of members' communication performance were collected after completion of a presentation task 8 weeks later. Results revealed differential findings between emotional intelligence and communication at the individual-, team-, and cross-levels of analysis. While only one individual-level emotional ability was linked to individual-level communication effectiveness, and one team-level emotional ability to communication effectiveness and appropriateness, three team-level emotional abilities predicted individual communication performance outcomes.

The Influence of Team Members' Emotional Intelligence on Communication Performance: A Multilevel Examination

A significant move towards team-based structures in organizations (Allen & Hecht, 2004) has increased focus on the role of emotions in teams and the impact on performance (Druskat & Wolff (2001). Growing research suggests a teams' emotional intelligence (Salovey & Mayer, 1990), or an ability to be aware of, and manage, the emotions of team members, influences team outcomes (Bell, 2007; Jordan & Troth, 2004, 2002; Jordan, Ashkanasy, Hartel, & Hooper, 2002). Previously, the bulk of work had focused on emotional intelligence – performance links at the individual level (e.g., Offermann, Bailey, Vasilopoulos, Seal, & Sass, 2004). This paper is unique in that it takes a cross-level approach to simultaneously examine the impact of EI on performance at both the individual- and team-levels of analyses.

Despite calls to consider different levels of analyses simultaneously in organizations (e.g., Ashkanasy, 2003), almost nothing is known empirically about the interplay between the emotional intelligence of individuals within a team and the team as a whole (Bell, 2007). Stewart, Fulmer, and Barrick (2005) urge researchers to conceptually and empirically consider different levels simultaneously within organizations when studying teams, as relationships at one level may influence, or even conflict with, relationships at another. Druskat and Wolff (2001) suggest that emotionally intelligent teams can be more than just a collection of emotionally intelligent individuals. A positive relationship found between individual EI and an outcome variable might not necessarily hold for team EI. Supporting this, are findings by Elfenbein and Ambady (2002) that some dimensions of emotional intelligence might negatively link to performance at certain levels or in particular performance contexts, despite many researchers suggesting positive links (e.g., Cooper &

Sawaf, 1997).

Figure 1 presents our model that uses Mayer and Salovey's (1997) conceptualization of emotional intelligence to examine links with communication performance simultaneously at both the individual and team levels. In addition, it considers the cross-level impact of group EI on individual performance within teams.

Emotional Intelligence

Mayer and Salovey's (1997) 4-dimensional conceptualization of EI guides this study as it focuses on the specific connection between emotion and cognition. *Perception* is an ability to be self-aware of emotions and to express emotions and emotional needs accurately to others. *Assimilation* is an ability to use emotions to prioritize thinking by focusing on important information that explains why feelings are being experienced. *Understanding* is an ability to understand complex emotions such as simultaneous feelings of loyalty and anger. Finally, *emotional management* revolves around the regulation of emotions; an ability to connect or disconnect from an emotion depending on its usefulness in any given situation.

Building on Mayer and Salovey's (1997) model, Jordan et al. (2002) conceptualize EI in a team context and argue team members need two abilities to enhance their capability to deal with emotions in a team setting, (i) emotional awareness and (ii) emotional management. They also emphasize two aspects regarding each of these: (i) abilities related to dealing with your own emotions and (ii) abilities related to dealing with other peoples' emotion. Effective team members need to be aware of their own emotions and the emotions of other team members (*perception; understanding*). They also need to be able to manage their own emotions and the emotions of others (*assimilation; emotional management*). We differentiate between these two abilities in the current study:

Awareness of Own Emotions. Being in touch with one's momentary feelings is a skill revealed in an individual's ability to discuss and disclose the emotions they experience (Pennebaker & Francis, 1996). Emotional awareness is an important aspect of interacting with others as it allows employees to recognize when the intensity of emotions escalates during difficult encounters, prompting them to ultimately control those emotions.

Awareness of Others' Emotions. Recognizing emotional displays by others and detecting false expressions of emotion is an ability involved in successfully dealing with other people (Mayer & Salovey, 1997). This is important in conflict resolution and negotiation and in an effective communication interchange (Jordan & Troth, 2004).

Managing Own Emotions. This involves the ability to connect or disconnect from an emotion depending on its usefulness in any given situation (Mayer & Salovey, 1997) and is often manifested in the ability to hold back on immediate reactions. In teams, situations such as differences over values or goals, short timeframes, or the entry of new team members evoke emotions that may need controlling (Weiss & Cropanzano, 1996).

Managing Others' Emotions. This enables other team members' emotions to be managed and transformed into more positive and productive emotions. In some circumstances, emotions of other team members need to be managed to ensure that working relationships are maintained.

Team-level Emotional Intelligence

Team EI (opposed to individual team member's EI) is believed to contribute to team workplace outcomes by a number of researchers (e.g., Wolff, Druskat, Koman & Messer, 2006). Elfenbein et al. (2006; in press) suggests the benefits of emotional abilities in the workplace arise largely in coordinating relationships and interactions. We propose emotional abilities reflect consistent patterns of behavior at the individual level that will collectively

combine across team members to form stable patterns of behavior at the team level (i.e., team-level emotional abilities; Stewart et al., 2005). Several researchers suggest a legitimate way to assess a team's collective level of emotional intelligence is a summative composition approach (see Ashkanasy & Daus, 2002; Chan, 1988; George, 2002). The extent of emotional abilities may vary among individuals, but individuals have equal opportunities to influence each other. This in turn makes contributions to a team's level of emotional abilities that results in team-level constructs that are both similar to and different from the individual-level constructs (see Chen, Thomas & Wallace., 2005).

A question that remains, however, is what effect does team emotional intelligence have on performance outcomes for individuals within teams? This has not been empirically tested. In this paper, we believe a combination of team members' emotional intelligence abilities will produce an environment conducive to more effective communication exchange with the team.

Communication Performance

We represent team performance as communication competence – a process-type performance (Tannenbaum, Beard, & Salas, 1992). According to Dionne, Yammarino, Atwater, and Spangler (2004), characterizing team performance as a process-oriented construct is not a new phenomenon in the team performance literature. Panday and Garnett (2006) emphasize the primary function of effective communication is not only during organizational crisis but also for day-to-day operations. Champion, Papper, and Medsker (1996) found team processes, including communication, most strongly related to team effectiveness criteria. Klimoski and Mohammed (1994) believe team process-based performance includes effort collectively spent or the quality of interpersonal relationships. Dionne et al (2004)

believe this approach has more of a “teamwork” focus on performance as opposed to “taskwork” focus.

In our study, communication performance is based on Canary and Spitzberg’s (1987) conceptualization of communication competence which incorporates two properties – appropriateness and effectiveness. Effective communication accomplishes the goals or intended functions of the sender, whereas appropriate communication avoids the violation of situational or relational rules governing the communicative context. To achieve competent communication, team members collectively need to be aware of, and to manage, the emotions of all team members.

Individual-level Relationships between EI and Performance

Most empirical research has linked EI to performance at the individual-level in terms (e.g., Jordan & Troth, 2002). It is thought team members more capable of recognizing and managing their own and others’ emotions during interactions are more likely to engage in better information exchange and ultimate decision making, resolve task conflict, and display less relationship conflict than individuals with lower levels of emotional abilities (Pelled, Eisenhardt, & Xin, 1999; Yang & Mossholder, 2004). A common belief is the primary mechanism for more effective performance by individual team members is their greater communication skills; skills directly facilitated by emotional intelligence abilities. We propose:

H1: An individual team members level of emotional awareness (own and others) and emotional management (own and others) abilities will be positively related to the individual team member’s communication effectiveness.

H2: An individual team members level of emotional awareness (own and others) and emotional management (own and others) abilities will be positively related to the individual team member's communication appropriateness.

Team-level Relationships between EI and Performance

Only a small amount of research looks at EI at the team level (e.g., Jordan et al., 2002). Jordan and Troth (2004) examined how emotional intelligence predicted individual performance, team performance and conflict resolution styles. Team EI was positively linked with team performance and was differentially linked to conflict resolution methods. Bell (2007) conducted a meta-analysis to examine how deep-level composition variables of teams (e.g. personality, values, attitudes and abilities) predict team processes and outcomes. Team EI had a positive relationship with team performance. Unfortunately, only the relationship between overall EI and team performance was tested because of the variety of measures and subscales dimensions used. Our study looks at the subscales for individuals and teams simultaneously. We propose:

H3: Team- level of emotional awareness (own and others) and emotional management (own and others) abilities will be positively related to team- level communication effectiveness.

H4: Team- level of emotional awareness (own and others) and emotional management (own and others) abilities will be positively related to team- level communication appropriateness.

Cross-level Relationships between EI and Performance

Research has yet to examine EI simultaneously at the individual- and team-levels. It remains unclear whether the same EI abilities that promote performance at the individual level

also promote team performance at the team level, or whether teams as a whole need different abilities to foster performance. We believe team-level emotional abilities, more so than individual-level abilities, will determine whether a team member is likely to exhibit greater communication competence. An individual is more likely to be effective in their communication during a team interaction if the team is more capable of recognizing and managing each others' emotions. If goal achievement is an emotional issue (Jordan & Troth, 2004), then the skills of being aware of emotions and managing those emotions will lead to better outcomes in terms of communication. We propose the following cross-level hypotheses:

H5: Team-level emotional awareness (own and others) and emotional management (own and others) abilities will be positively related to team member's communication effectiveness at the individual level.

H6: Team-level emotional awareness (own and others) and emotional management (own and others) abilities will be positively related to team member's communication appropriateness at the individual level.

METHOD

Participants

127 respondents within 37 groups (3 or more members) completed surveys at Time 1 and 2, yielding a response rate of 53%. Average size of teams was 4.6 members, ranging from 3 to 6 members. Sixty-one (48%) were male; 63 (50%) were born in Australia. Mean age of respondents was 22 years, ranging from 17 to 45 years.

Procedure

As coursework, business undergraduates developed a team workshop presentation for assessment. At the beginning of semester, students formed self-selected teams. Teams met every week in class to work on presentations for approximately 8 weeks.

An initial survey assessed students' perceived level of emotional intelligence abilities within a team context. A second survey administered approximately 8 weeks later, after the presentation, asked members to reflect on the communication performance behavior of each of their team members during group interactions over the previous two months.

Measures

Communication Performance. Team members rated each of their fellow team members' communication behaviors during the life of their project group using Canary and Spitzberg's (1987) communication effectiveness and appropriateness scales. A 5-point response format (1 = strongly disagree to 5 = strongly agree) was employed. Items were modified to assess the communication performance of specific team members. Communication effectiveness comprised seven items (e.g. "He/she was effective in the conversations") while communication appropriateness comprised six items (e.g. "He/she said several things that seemed out of place in the conversation").

Overall scale reliability (Cronbach's alpha) for communication effectiveness using all available peer ratings for the 37 groups revealed a reliability of .89. The mean r_{wg} for communication effectiveness was .95, with a range of .78 to .99. Overall scale reliability (Cronbach's alpha) for communication appropriateness revealed a reliability of .83. The mean r_{wg} for communication appropriateness was .90, with a range of .71 to .99.

Emotional Intelligence was measured using the self-report Workplace Emotional Intelligence Profile – Short Version (WEIP-S; Jordan & Lawrence, 2007), a validated

measure of EI. The WEIP-S is a further refinement of the WEIP (Jordan et al., 2002). The 16 item WEIP-S assesses a team member's emotional awareness and emotional management, from an own and other focus. The scale captures four dimensions (4 items each): Awareness of Own Emotions (alpha = .77), Management of Own Emotions (alpha = .70), Awareness of Others' Emotions (alpha = .70), and Management of Other's Emotions (alpha = .79). Respondents indicated their level of agreement with each item using a 7-point format (1 = "strongly disagree" to 7 = "strongly agree").

Group-level Aggregation. The group-level emotional intelligence abilities were operationalized as the mean of team members' collective emotional intelligence ability scores (in each of the four subscales), within each team. Chen, Mathieu and Bliese (2004) argue evidence of intra-class correlation (ICC) and inter-rater agreement (r_{wg}) is not necessary to justify the appropriateness of additive composition models.

Control Variables. Information collected regarding participant gender, age and national origin was used as individual-level controls, and team size was used as the group-level control variable.

RESULTS

Measurement Models

Prior to regression analyses, confirmatory factor analyses were conducted to ensure the factor structures of all the constructs demonstrated good construct validity and reliability at the individual level. All *a priori* measurement models demonstrated acceptable fit. Table 1 (correlation table) reveals that the Cronbach's alpha reliabilities for the constructs were also satisfactory.

Insert Table 1 about here

Hypothesis Tests

Hierarchical linear modeling (HLM) was employed to test our hypotheses (Mathieu and Taylor in press, b). A hierarchical linear equation was calculated for each individual at Level 1. The intercept and slope score from Level 1 were used as dependent variables at Level 2. A significant parameter estimate for the Level 1 predictor indicates an individual-effect, and a significant parameter estimate for the Level 2 predictor of the Level 1 intercepts and slopes indicates a group-level effect. We set our p value at .05 for our hypothesis tests, but do acknowledge effects of $p < .10$ as “marginally significant” given the limited power with regards to group-level effects.

Initial Analyses Controlling for Control Variables. Analyses were conducted to test the relationships between each of the control variables and communication effectiveness and communication appropriateness. Results reveal that none of the control variables were significantly with both communication effectiveness and appropriateness, with the exception of national origin ($\gamma_{10} = -.15, t = 1.71, p < .10$) and ($\gamma_{10} = -.23, t = 2.92, p < .01$).

Before testing hypotheses, a series of null models (no individual or group-level predictors) were conducted to examine if significant between-group differences existed for the outcome variables. Table 3 shows significant within-group variation in communication appropriateness ($\tau_{00} = .11, \chi^2(36) = 180.12, p < .001$). An ICC (1) of .54 also shows that communication appropriateness had 54 percent between-group variance. Similar results were found for communication effectiveness in terms of within-group variance, ($\tau_{00} = .08, \chi^2(36) = 164.92, p < .01$). An ICC (1) of .52 also indicated that 52 % of the variance in communication effectiveness resides between the teams. Further, results revealed an ICC (2) of .80 for communication appropriateness and .74 for communication effectiveness. These

results justify cross-level analyses and aggregation of the communication performance variables to the group level (Snijders & Bosker, 1999).

Individual-level Relationships. Table 2 shows none of the dimensions of individual-level emotional abilities were significantly associated with peer ratings of communication appropriateness, and only other aware was related to communication effectiveness ($\gamma_{10} = -.06$, $t = 2.47$, $p < .05$).

Cross-level Relationships. Relationships were tested using the “intercepts-as-outcomes” model in which the intercept coefficients obtained from Level 1 on the dimensions of group-level team emotional abilities were regressed at Level 2 (Hofmann & Gavin, 1998). Table 2 shows team other emotional management was found to be positively related to individual-level communication effectiveness and appropriateness. Team other emotional awareness was negatively associated with peer ratings of individual communication effectiveness. In addition, teams own emotional management abilities had a positive relationship with individual communication effectiveness.

Group-level Relationships. An examination of partial correlations between these variables (controlling for team size; see Table 3) revealed only team management of others’ emotions contributed significantly and positively to peer-reported communication effectiveness ($r = .48$, $p < .001$) and appropriateness ($r = .31$, $p < .10$).

DISCUSSION

The results provide some evidence for the hypothesized relationships put forward and confirm the utility of cross-level analyses when exploring what occurs within a team. Supporting Stewart et al. (2005), investigating how individual contributions combine in teams, as well as determining cross-level influences, provides unique information about the connections between important constructs that might not appear if analyses are merely

conducted at the individual- or team-level. Initial analyses revealed none of the dimensions of individual-level emotional abilities were significantly associated with peer ratings of individual-level communication effectiveness (except other emotional management). Yet, three team-level emotional abilities significantly predicted peer-ratings of individual communication effectiveness.

Hypotheses 3, 4, 5 and 6 were partially supported. While not holding at the individual level, it appears teams with greater emotional management abilities (self and other) are more able to create a team environment conducive to individual team members' effective communication (Hypothesis 5). Other management abilities at the team level also predicted greater communication appropriateness by individuals within teams (Hypothesis 6). Finally, team levels of other management abilities also promoted team level communication effectiveness and appropriateness (Hypotheses 3 and 4). Not only do these results point to salience of emotional regulation abilities in communication performance, they also support Druskat and Wolff (2001) suggestions that emotionally intelligent teams are more than just a collection of emotionally intelligent individuals. That is, connections between EI and performance at the individual level do not necessarily translate to team- and cross-levels.

Unexpectedly, both individual- and team-levels of other awareness abilities were negatively related to individual communication performance (Hypotheses 1 and 5). Elfenbein and Ambady (2002) findings provide one explanation, showing greater ability to recognize *negative* emotions in others is linked to lower performance in teams. The rationale is such individuals (or teams) get overly pre-occupied with each other and this detracts from performance.

Implications for Theory and Practice

Our findings contribute to the literature on the impact of emotions in teams in several ways. First, this is the first empirical study to examine the cross-level influence of a set of group-level emotional abilities in teams. We responded to calls by Jordan and Ashkanasy (2006) and Jordan et al. (2002) to examine the impact of emotional ability dimensions on communication performance, from a multilevel perspective. Our results also provide some support of our group-level hypotheses in the model. Specifically, three dimensions of group-level emotional abilities were significantly related to students' communication effectiveness at the individual level, although some were in fact negative relationships (awareness of emotions). The overall findings have substantial implications for advancing research on emotional abilities in teams and its unique effects on communication performance outcomes. This contributes to the growing body of research on multilevel models of communication performance in teams (e.g., Jones, Watson, Gardner, & Gallois, 2004) that integrates individual- and team-levels of analysis.

In terms of practice, it is clear from this study that the development of emotional abilities in teams contributes to more productive interactions between team members. From this perspective, the development of team emotional abilities becomes an important part of team building and, therefore, it is an issue that needs to be addressed within teams to ensure they have the maximum opportunity for optimizing their performance (Jordan & Ashkanasy, 2006).

Limitations and Future Research Directions

We acknowledge the limitations of our study. Primarily, our sample consisted of undergraduate students with an average age of 22 years. While limiting generalizability, the setting enabled us to partly control group work experiences and ensure work completed was

consistent across the teams. A future research direction is to transfer our research to a work setting dealing with in-situ teams. Adopting an organizational setting with existing work groups would enable us to consider the influence of emotional abilities on other team processes, and examine the impact of prior and ongoing team member relationships on the emotional abilities in a team.

Finally, our analyses contained 127 student-matched samples nested within 37 project teams. Due to the small sample size, we did not include the individual-level emotional abilities as control variables for the group-level analysis. The small size might have also lead to some problems with the estimation of HLM models in relation to hypothesis testing (Hofmann, 1997; Hofmann, Morgeson, & Gerras, 2003). We did, however, conduct ordinary least squares (OLS) regression before conducting HLM analyses. The results were consistent with the HLM results, implying that the smaller sample size does not invalidate the observed relationships in this study.

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Yang, J. X., & Mossholder, K. W. (2004). Decoupling task and relationship conflict: The role of intra-group emotional processing. *Journal of Organizational Behavior*, 25, 589-605.

FIGURE 1

A multi-level model of emotional intelligence abilities in a team context

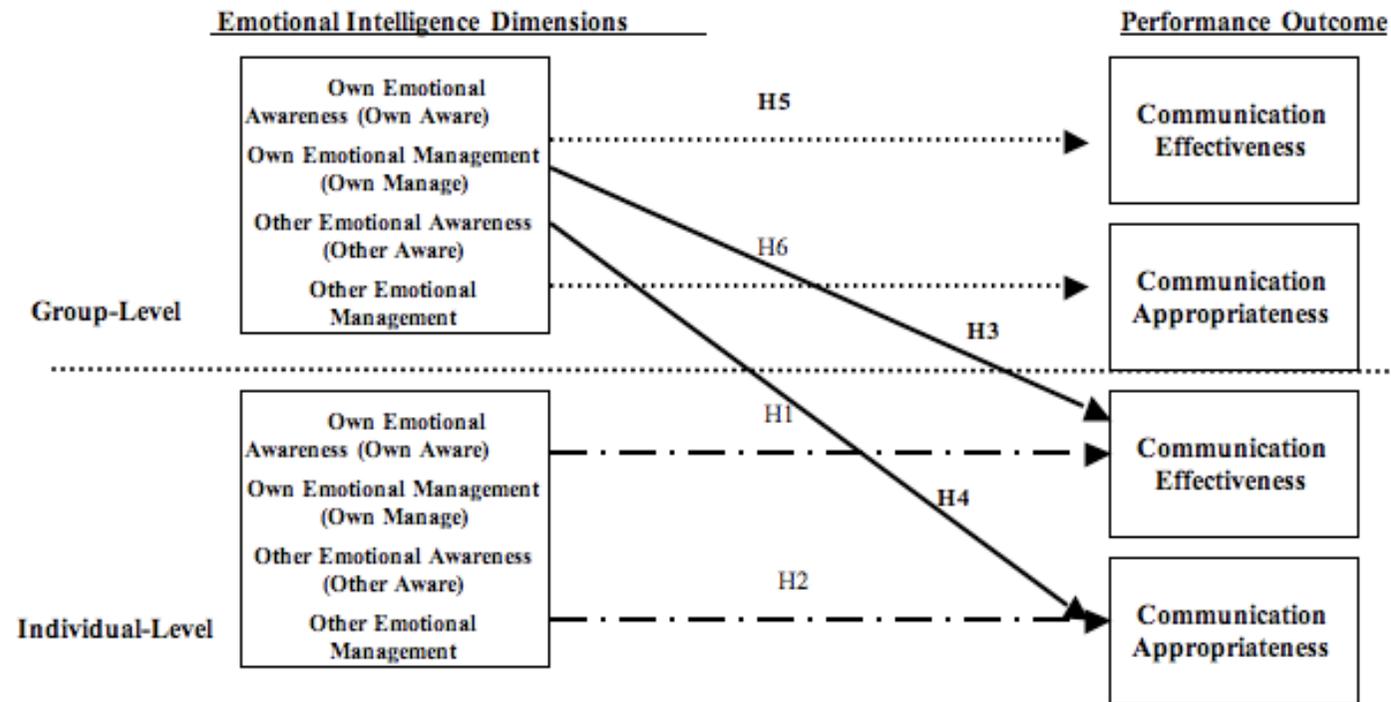


TABLE 1**Means, Standard Deviations, Reliabilities, and Correlations among Study Variables^a**

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Individual Own Aware	4.34	1.10	(.77)									
2. Individual Own Manage	5.50	.78	.16†	(.70)								
3. Individual Other Aware	4.82	.80	.34***	.25**	(.70)							
4. Individual Other Manage	4.85	.86	.47***	.19*	.37***	(.79)						
5. Communication Effectiveness	3.90	.40	.00	.12	-.11	.32***	(.89)					
6. Communication Appropriateness	3.94	.46	-.03	.02	-.04	.16*	.74	(.83)				
7. Team Own Aware	4.34	.59	.55***	-.10	.24**	.29**	-.07	.00	---			
8. Team Own Manage	5.50	.47	-.01	.60***	.09	.02	.19*	.14	-.18*	---		
9. Team Other Aware	4.82	.44	.24**	.10	.55***	.18*	-.13	-.06	.44***	.17*	---	
10. Team Other Manage	4.85	.50	.28**	.02	.17*	.58***	.38***	.26**	.51***	.30***	.31***	---

^a Internal consistency reliabilities appear in parentheses along diagonal. Correlations between variables 1 to 4 of individual-level emotional intelligence and communication performance were computed using n =127.

Variables 7 to 10 of group-level emotional intelligence scores for individual groups were assigned down to individuals within those groups. Thus, the effective sample size for group emotional skills is n = 37 project teams.

*** p < .001; ** p < .01; * p < .05; † p < .10

TABLE 2

HLM Results for Individual and Team Emotional Abilities, Communication Appropriateness and Communication Effectiveness^a

Variables	Null Models		Communication Appropriateness		Communication Effectiveness	
Initial Analysis	Coefficient	χ^2	Coefficient	<i>t</i>	Coefficient	<i>t</i>
Communication Appropriateness τ_{00}	.11***	180.12				
Communication Effectiveness τ_{00}	.08***	164.92				
Control Variable Analysis						
Individual-level						
Age			-.00	-0.25	-.00	-0.17
Gender			-.07	-0.87	-.06	-1.20
National Origin			-.15†	-0.17	-.23**	-2.90
Team-level						
Team size			-.04	-0.47	.01	0.17
^b R²			.02		.06	
Individual-level Analysis						
Emotional Abilities						
Individual Own Aware γ_{10}			.00	-0.02	.04	0.13
Individual Own Manage γ_{10}			-.07	-1.30	-.00	-0.01
Individual Other Aware γ_{10}			-.00	-0.19	-.06*	2.50
Individual Other Manage γ_{10}			.04	1.00	.04	1.20
^b R²			.02		.08	

Group-level Analysis

Emotional Abilities

Team Own Aware γ_{10}	- .03	- .26	- .10	- 1.57
Team Own Manage γ_{10}	.12	1.42	.13 †	1.74
Team Other Aware γ_{10}	- .14	- 1.16	- .23**	- 2.62
Team Other Manage γ_{10}	.30*	2.28	.44***	5.69
^c R ²		.02		.10

^a Level 1, n = 127 students and Level 2, n = 37 project teams. Entries are estimations of fixed effects with robust standard error.

This table shows results concerning individual-level and team-level analyses and “intercept-as-outcomes” analysis.

^bR² = Proportion of within-branch variance explained by level 1 predictors.

R² = Proportion of between-group variance explained by group-level predictor.

*** p < .001; ** p < .01; * p < .05; † p < .10

TABLE 3**Means, Standard Deviations, and Partial Correlations among Team-level Variables^a**

Variables	Mean	SD	1	2	3	4	5	6
1. Team Own Aware	4.34	.59	---					
2. Team Own Manage	5.51	.47	-.19	---				
3. Team Other Aware	4.81	.45	.39*	.16	---			
4. Team Other Manage	4.85	.50	.45**	.03	.29†	---		
5. Team Communication Effectiveness	3.90	.33	-.11	.24	-.18	.48**	---	
6. Team Communication Appropriateness	3.95	.38	-.02	.20	-.06	.31†	.74***	---

^a Partial correlations between variables were computed using n =37 project teams, controlling for Group Size (effective n = 34)

*** p < .001; ** p < .01; * p < .05; † p < .10