The Relationship Between Dispositional Positive Affect and Team Performance: An Empirical Study

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Research has established the impact of affectivity on a range of organizational outcomes. However, empirical works on how dispositional affect—the tendency to experience positive emotions—influences team outcomes are lacking. The purpose of this study is to empirically investigate how dispositional positive affect impacts team performance and how individual team member's task performance and team interactions including team learning and interpersonal citizenship behaviors, mediate the relationship. Results from new product student teams demonstrate that dispositional positive affect promotes both individual team member's task performance and team interactions, yet only team interactions contribute to overall team performance.

Understanding what contributes to the performance of small groups and teams has garnered the attention of scholars and researchers from a variety of disciplines, including psychology, organizational behavior, marketing, and economics (e.g., Grawitch, Block, & Ratner, 2005; Riolli & Sommer, 2010). Among various kinds of teams, new product development (NPD) teams have been widely adopted in organizations to generate product innovation (Edmondson & Nembhard, 2009; McDonough, 2000). Due to the popularity of NPD teams, a significant amount of research has investigated what contributes to NPD team processes and success (e.g., Troy, Hirunyawipada, & Paswan, 2008; Sethi, Smith, & Park, 2001). The majority of NPD team research focuses on examining how the functional composition of the team—the differing expertise within a team—impacts NPD team performance (e.g., Sethi et al., 2001). This line of research

has shown that integration through better team communication, team coordination, and team learning is necessary before NPD teams can shorten product development cycles, produce more innovative new product ideas, and generate better product design and quality (e.g., De Luca & Atuahene-Gima, 2007; Troy et al., 2008). Another line of research examines how leadership roles in the NPD process, including team leaders, managers, and champions, enable NPD team success (e.g., Qiu et al., 2009; Sarin & McDermott, 2003). For example, Sarin and McDermott (2003) demonstrated that leadership characteristics in NPD teams significantly impacted team learning, knowledge application, and subsequently, NPD performance. Qiu et al. (2009) found that project managers' interactional fairness promoted both individual team member's task performance and team performance as a whole.

Despite these fruitful findings on NPD teams from the functional composition and leadership perspectives, little empirical research has investigated the individual differences of the members within the team and how these individual differences impact the interactions between the team members. McNally et al. (2009) proposed that a manager's dispositional traits, such as analytic cognitive style, ambiguity tolerance, and leadership style, would be related to his or her decision processes in new product portfolio management. One central dispositional trait, dispositional affect (positive or negative affect), has received little attention in NPD teams. Dispositional affect encompasses a wide range of personality traits (Barsade et al., 2000) and is therefore likely to influence NPD team interactions and ultimately NPD team performance. In this study, how the dispositional affect impacts NPD team performance through individual team member's task performance and interactions with other team members will be empirically examined.

Theoretical Background

Affectivity is generally classified as either positive or negative. Positive affectivity (PA) is described as the experience of engaging pleasurably with ones' environment, feeling cheerful, enthusiastic, energetic, confident, and alert (Watson, Clark, & Tellegen, 1988; Wright, Larwood, & Denney, 2002). Conversely, negative affectivity (NA) is the experience of anger, guilt, fear, nervousness, and subjective stress (e.g., Watson & Clark, 1984). The tendency to experience positive or negative feelings consistently across time and a range of situations is defined as dispositional affect—dispositional PA and dispositional NA, respectively. Similar to personality traits, dispositional PA and dispositional NA represent consistent individual differences (Watson & Clark, 1984). They are not opposite ends of a one-dimensional construct. In fact, dispositional PA and dispositional NA operate largely independently and relate to different types of predictor and outcome variables (e.g., Watson et al., 1988).

Given the independence of dispositional PA and dispositional NA, studies have commonly focused on either dispositional PA or dispositional NA in predicting employees' attitudes and behaviors. The meta-analysis of Thoresen et al. (2003) reported that compared to dispositional NA, dispositional PA received disproportionately less attention in organizational research. The existing limited dispositional PA research

primarily focused on organizational outcomes, such as job satisfaction, organizational commitment, and turnover intentions (Thoresen et al., 2003). However, little is known about how individual dispositional PA impacts NPD team outcomes. In this research, the goal is to investigate how individual dispositional PA impacts NPD team performance through individual team member's task performance and team interactions including team learning and interpersonal citizenship behaviors (ICBs).

The research model used integrated insights from motivation research (Elliot, 1999; Elliot & Thrash, 2002; Gable, Reis, & Elliot, 2003), which suggested that motivation consisted of two dimensions: *approach* and *avoidance*. Approach motivation can be described as a tendency toward certain actions (Carver, Sutton, & Scheier, 2000). Action tendencies are "deeply embedded in the nature of human personality" (Carver, 2006, p.109). Approach tendencies prod people to act and trigger behaviors that facilitate their pursuits, whereas avoidance tendencies stimulate inhibition and elicit withdrawal in the face of new opportunities (Gray, 1994).

Scholars from a variety of empirical traditions proposed that these two dimensions served as the foundation for a range of individual differences (Gray 1990, 1994; Elliot & Thrash, 2002; Carver, 2006) including dispositional affect, where positive affect and negative affect were manifestations of approach and avoidance temperaments, respectively. Approach motivated individuals were defined as "highly engaged in the pursuit of whatever incentives arise" (Carver et al., 2000, p. 747). For example, approach motivated individuals could be expected to look forward to an upcoming social event, thrill-seek, act spontaneously, or be excited about an unexpected opportunity (Gray, 1994). More generally, approach motivated individuals enacted behaviors that actively approached their environments, such as fulfilling their responsibilities, intentionally interacting with others, and seeking new experiences and opportunities (e.g., Gable, 2006). Relevant to this research, given that high dispositional PA individuals were likely to be approach motivated (Elliot & Thrash, 2002), they had the tendency to initiate behaviors which supported the task performance, team learning, and interpersonal citizenship behaviors investigated in this study.

Data were collected from teams engaged in the task of designing a new product and corresponding plan as part of an undergraduate product development course. This interactive task (McGrath & Kravitz, 1982), which involved multiple interactions across various product development stages, required the participation of all team members. Because of the level of interdependence inherent in the interactive task (Van der Vegt, Emans, & Van De Vliert, 1999), it was meaningful to examine team members' behaviors and to explore how these behaviors influenced the relationship between dispositional PA and NPD team performance. Specifically, the study intended to answer the following research questions about teams working on interactive tasks: (1) How did dispositional PA impact individual team member's task performance, team learning, and interpersonal citizenship behaviors? and (2) How did these behaviors contribute to overall team performance?

Literature Review and Hypotheses

Although there is an increasing interest in the relationship between personality traits

and individuals' attitudes and behaviors in the work place (see Ng & Sorensen, 2009 for a review), research on how dispositional affect (both positive and negative) impacts NPD team performance has received little attention in the interdisciplinary literature. Research findings have centered on general working teams in the organization. For example, two recent meta-analyses illustrated the range of outcome variables that dispositional affect can influence including: personal accomplishment, organizational commitment, job satisfaction, emotional exhaustion, depersonalization, turnover intentions (Thoresen et al., 2003), global satisfaction, social integration, organizational treatment, job stress, in-role and extra-role performance, and absenteeism (Ng & Sorensen, 2009), among others. Overall findings indicated that dispositional PA and NA were related to many important organizational variables and that dispositional PA had a strong effect on variables related to the job and organizational context (Ng & Sorensen, 2009). Additional research explored affect at the group level which entailed aggregating individual-level dispositional affect (George, 1990) and moods (Bartel & Saavedra, 2000) to investigate, for example, emotional contagion (Hatfield, Cacioppa, & Rapson, 1994) and the effects of affective diversity within a team (e.g. Barsade et al., 2000).

Despite these rich findings, there is a lack of empirical work on the relationship between dispositional PA and NPD team performance. The performance of a NPD team is based on the success of the product(s) that the NPD team develops (Kleinschmidt & Cooper, 1991). Thus, the performance of a NPD team can be assessed in a variety of ways, including external measures, such as product speed to market or timeliness of product introduction (Bstieler & Hemmert, 2010), product quality, and the product's market performance (Lynn, Skov, & Abel , 1999) or internal measures such as team members' self-assessments of performance and team member satisfaction (Brockman et al., 2010) along with innovativeness and improvement of the NPD process (Ettlie, Elsenback, & Jorg, 2007).

Regardless of which measure is adopted, NPD performance depends on how well the team members interact and collaborate (Hoegl & Gemeunden, 2001) or in other words, the quality of teamwork (Hoegl & Gemuenden, 2001). Scholars have called for more research into caring and cooperative behaviors and suggest that these behaviors are representative of the quality of team member interactions (Hoegl, Ernst, & Proserpio, 2007) and should be investigated as mechanisms that contribute to NPD team success and efficiency (Bstieler & Hemmert, 2010). Therefore, the question investigated in this study—how specific behaviors mediate the relationship between dispositional PA and NPD team performance—have the potential to yield insights beneficial for both emotion aspects and for NPD team researchers.

Dispositional PA and Task Performance

Task performance refers to individuals enacting role responsibilities (Qiu et al., 2009; Settoon & Mossholder, 2002). Given that individuals with higher dispositional PA are approach motivated (i.e., driven to pursue their goals) and enact approach related behaviors (e.g., actively engage with their environment), they will be more likely to fulfill their responsibilities, perform expected tasks, and complete their duties than those individuals lower in dispositional PA in NPD teams. Howell and Shea (2001) connected approach motivation and task performance by showing that

when individuals were approach motivated, they were likely to be more committed, involved and persistent in working on a product innovation task. Although task focus has never been directly linked to dispositional PA, a recent meta-analysis found that dispositional PA was positively correlated with in-role performance (Ng & Sorensen, 2009). Additionally, research on short-term affect, which demonstrated that individuals in positive moods were found to display task focus (Grawich et al., 2003) and initiative (Den, Hartog, & Belschak, 2007), was relevant in this case because individuals higher in dispositional PA were likely to be experiencing frequent short-term positive feelings. Finally, individuals who experienced more frequent positive emotions across a variety of situations were more likely to have confidence in their performance and were perceived to be more effective in their workplaces than those who experienced positive emotions less frequently (Staw & Barsade, 1993). Therefore, the following is suggested:

Hypothesis 1: Team members higher in dispositional PA will demonstrate a higher level of task performance than team members lower in dispositional PA.

Dispositional PA and Team Learning

Team learning is one of the most critical drivers of innovation in NPD teams (Clark & Cardy, 2002; Edmondson & Nembhard, 2009). It is defined as "activities by which team members seek to acquire, share, refine, or combine task-relevant knowledge through interaction with one another" (Van der Vegt & Bunderson, 2005, p. 534). This is a key team behavior because teams are unlikely to be able to succeed in new product development if the members do not combine their knowledge. Edmondson and Nembhard (2009) indicated that there was a set of processes that aided in team learning such as seeking feedback and help, experimenting with new approaches, and asking questions. Since approach motivated individuals seek out new opportunities, actively engage with others, and are driven to act in ways that support their goals, these interpersonal learning processes may also be expected from high dispositional PA individuals.

Although no previous research has studied the relationship between dispositional PA and team learning in NPD teams, research on associated behaviors has supported the expectation that team members higher in dispositional PA would engage in team-level processes that contributed to team learning more than those lower in dispositional PA (e.g., D'Zurilla, 2011). For example, individuals with greater dispositional PA performed better on the cognitive processes that were the antecedents to good decision making and constructive problem solving (D'Zurilla, 2011; Staw & Barsade, 1993). Additionally, Levin et al. (2010) found that individuals with a positive affect had a more successful transfer of knowledge than individuals with a negative affect. Individuals' with high dispositional PA approach motivation, decision making skills, and increased knowledge incorporation all indicated that individuals higher in dispositional PA would benefit from team learning. Thus the following is suggested:

Hypothesis 2: Individual team member's dispositional PA will be positively associated with team learning behaviors.

Dispositional PA and Person-focused Interpersonal Citizenship Behaviors (ICB)

Person-focused ICB refers to a type of extra-role behavior in which an individual extends voluntary efforts that go beyond his or her immediate role requirements in order to support fellow team members, enhancing the fabric of social relations in the workplace (Qiu et al., 2009; Settoon & Mossholer, 2002). Person-focused ICB can be exhibited in various forms, such as interpersonal sharing, helping, and facilitation (Bowler & Brass, 2006). Qiu et al. (2009) found that team members' commitment to NPD teams positively impacts team members' person-focused ICB.

Approach motivated individuals also have a more positive attitude toward social relationships (Gable, 2006). They experience an increase in relationship quality compared to non-approach motivated individuals (Impett et al., 2010). Therefore, it is expected that individuals higher in dispositional PA will be more willing to contribute beyond their required role responsibilities and enact ICB behaviors, compared to those individuals lower in dispositional PA in NPD teams.

Although no research has specifically addressed the relationship between dispositional PA and person-focused ICB in NPD teams, some research has shown that short-term PA encourages the display of helping others and prosocial behaviors (Isen & Baron, 1991; George, 1991). Dispositional PA can also lead to participation in more social activities (Watson, 1992) and better social judgments (Staw & Barsade, 1993). High dispositional PA members are also better at perceiving the social interaction patterns in groups (Casciaro, Carley, & Krackhardt, 1999) and have the tendency to pay more attention to others' behavior, consequently allowing them to make more accurate judgments about others than judgments made by individuals with lower dispositional PA (Staw & Barsade, 1993). Accurate judgments and frequent social interactions with team members are necessary precursors of ICB behaviors. Thus it is suggested:

Hypothesis 3: Team members higher in dispositional PA will demonstrate higher levels of person-focused ICB than team members lower in dispositional PA.

Task Performance, Team Learning, and Person-focused ICB as Mediators

This research explored the relationship between dispositional PA and the team behaviors described above with the ultimate goal of understanding how dispositional PA influenced NPD team performance. Team members were engaged both in their "taskwork" and "teamwork" (Ortiz, Johnson, & Johnson, 1994). Thus, team performance depended on individual task performance, as well as how well the team members learned, interacted and collaborated in NPD process.

Although NPD teams consisted of multiple individuals working toward a common goal, each individual was responsible for exerting effort in order to accomplish his or her assigned tasks. There is general consensus among team researchers that the quality performance of each group member contributes to the overall NPD team performance (Qiu et al., 2009). Specifically, individual task efforts have been found to have a significant positive influence on team performance (Weingart & Weldon, 1991). Previous conceptual arguments stated that task performance may impact team performance in a number of different ways depending on the task type. Task types may have determined whether team performance was affected by interdependent group

efforts or by the efforts of specific individuals within the team (Zaccaro & McCoy, 1988). For example, if performance in a specific task was only based on one team member's solution, then one might argue that the other team members' emotional dispositions would be irrelevant. However, that was not the case for the interactive task assigned to the product teams in this study. Therefore, the expected result was that the greater each team member's task performance, the greater the team performance would be.

Hypothesis 4a: Task performance will mediate the relationship between individual dispositional PA and team performance.

In addition to "taskwork", in order to reap the benefits of working in a team, team members need to behave in ways that enhanced team learning. Teams are "key learning units in organizations" (Senge, 1990, p. 236) and they contribute to organizational effectiveness. A significant success factor in NPD teams is whether knowledge shared with the team becomes a part of the team (e.g., Edmondson, 1999; Edmondson & Nembhard, 2009). When team members learn by effectively sharing their information or developing new knowledge, the effectiveness of the NPD team is enhanced (Edmondson, 1999; Edmondson & Nembhard, 2009), in turn leading to improved NPD team performance (Sarin & McDermott, 2003). Knowledge acquisition, implementation, and dissemination, (among other learning sub-concepts) contributes to new product success (Akgün, Lynn, & Yilmaz, 2006). More specifically, since innovation is a consequence of the learning process (Sarin & McDermott, 2003), the more a team learned, the more likely the NPD team would be to perform well. Therefore, it is hypothesized:

Hypothesis 4b: Team learning will mediate the relationship between individual dispositional PA and team performance.

A harmonious work environment in which team members voluntarily enact supportive and caring behavior is also important in order for teams to achieve a common goal. When constructive and cooperative behaviors occur within NPD teams, the quality and acceptance of the solutions that the teams propose are enhanced (De Dreu & West, 2001; Qiu et al., 2009). Additionally, scholars hypothesize that when team members are in a caring environment they can concentrate more on their tasks, as opposed to having to struggle to be accepted and appreciated, yielding a positive impact for the team (De Dreu & Weingart, 2003). Therefore, this paper suggests that voluntary interpersonal caring behaviors, such as listening, showing concern and helping—investigated in this study as person-focused citizenship behaviors—will mediate the relationship between dispositional PA and team performance.

Hypothesis 4c: Person-focused ICB will mediate the relationship between individual dispositional PA and team performance.

Method

Sample and Data Collection Procedure

Data were collected from 26 new product development teams consisting of a total of 98 undergraduate senior business majors from two large public universities. 15 new product development teams (56 students) were from a large public university in the Midwestern United States and 11 new product development teams (42 students) were from a large public university in the Southern United States. Approximately 32% of the participants were male and 68% were female. Participants' ethnicities were as follows: White (85), Hispanic (6), Asian (5), Black (1), and Native American (1). The participants' ages ranged from 18 to 45 years old, with 88% of the participants having full or part-time work experience.

Given that organizations are increasingly relying on new product development (NPD) teams to leverage employees' combined expertise and knowledge (McDonough, 2000), NPD teams provide an opportune context in which to empirically investigate the relationships studied in this paper. The study participants were enrolled in NPD courses that required product teams to develop detailed and actionable new product solutions to project ideas provided by corporate sponsors from both manufacturing and service industries. During the first week of the semester, participants were randomly assigned to teams of three or four members to work on this task. Then, following the schedule as outlined in the course syllabus, the student teams engaged in the following new product development activities: 1) identifying market needs, 2) generating new product ideas, 3) evaluating the potential market, 4) conducting cost analysis, and 5) outlining a market launch plan. Team members interacted with each other both in the class work-sessions and during team meetings outside of the class. The course faculty advisors and corporate sponsor representatives guided the teams' NPD efforts from idea screening to product testing. At the end of the semester, the teams presented their new product solutions and submitted a written report. The faculty advisors and the corporate sponsor representatives then evaluated each team's new product solution following the Product Development and Management Association's project success guidelines (Griffin & Page, 1996). Specifically, the faculty advisors and the corporate sponsor representatives evaluated the product solutions along five dimensions: product innovativeness, development cost, how the product met quality specifications, how the product fit with the business strategy, and how the product led to future opportunities.

After all teams submitted their reports (but before the evaluation of their projects), the data for the study were collected via a written survey. Collection occurred before the final project evaluation to avoid retrospective biases in which team members adjusted their responses based on the evaluation results from the faculty advisors. The survey contained measures of each team member's dispositional PA, task performance, team learning behavior, person-focused ICB, and self-report team performance.

Measures of Key Constructs

The measures employed in the study were adapted from previous scales. The item loadings of all variables were significant at $p < .05$. Cronbach's reliability statistics showed that all measures had satisfactory convergent reliability. Discriminant validity

between the measures using two approaches was tested. First, a confirmatory factor analysis (CFA) was employed to test the validity of the measures (Anderson & Gerbing, 1988). The model statistics were satisfactory (RMSEA= 0.08; GFI= 0.89; RMR= 0.08; AGFI= 0.85; CFI= 0.90; NFI= 0.86). Second, following the guidelines set by Segars (1997), discriminant validity with a chi-square difference test was tested. Specifically, the study compared the pair-wise chi-square statistics among each possible pair of scales using unconstrained (the correlation between the two constructs is set free) and constrained (the correlation between the two constructs is constrained to one) models. All chi-square statistics in the unconstrained model were significantly lower than the chi-square statistics in the constrained model ($p < .01$), verifying the discriminant validity of the scales.

The study measured dispositional PA by adopting Watson et al.'s (1988) 10-item scale. The instructions asked the respondents to indicate to what extent he/she felt that each of the items was generally descriptive of oneself, not just descriptive of oneself while he/she was working on the team project. The measure used a 5-point Likert scale, with response options ranging from 1 = "not at all", to 5 = "extremely". The final measure contained all 10 items, with a reliability level (alpha) of 0.79 in the current study. The following were three sample items: interested, proud, and inspired. Williams and Anderson's (1991) in-role behavior scale to measure individual team member's task performance was adapted. This self-report scale contained five items that examined how well the team member completed his/her assigned team duties. The following were two sample items: "I adequately completed my assigned team duties" and "I fulfilled my responsibilities as specified." The scale had a reliability level of 0.88. Edmondson's (1999) team learning scale was adapted to measure team learning processes. This scale measured learning as an ongoing process at the group level that enabled team members to acquire, share, and combine knowledge through group interactions. One item in this scale had a loading of less than [.50] and was eliminated (Hair et al., 1998). The final scale contained 6 items, with response options ranging from 1 = "strongly disagree", to 5 = "strong agree." The reliability level was 0.73. The following were two sample items: "Our team frequently sought new information that led us to make important changes" and "We regularly took time to figure out ways to improve our team's work processes." Settoon and Mossholder's (2002) scale was used to measure person-focused ICB. This scale measured team members' social and emotional support of other team members. The scale contained 6 items and had a reliability level of 0.90. The following were two sample items: "I made an extra effort to understand the problems faced by teammates" and "I took the time to listen to teammates' problems and worries."

Team performance was measured in two ways: (1) respondents' self-report rating of their teams' performance, and (2) faculty advisor's evaluation of the team performance. For the first measure, existing published research using student samples was followed (e.g., Sarin & McDermott, 2003) and team performance was assessed with self-report ratings of NPD team performance, which included team performance from 5 perspectives: the morale of the team, the efficiency of the team's operations, the attainment of the goals set for the team, the team's reputation for work excellence, and the quality of the project (Sethi et al., 2001). This scale used a 5-point Likert scale, ranging from 1 = "far below expectations", to 5 = "far above expectations". The

reliability level was 0.91. The limitation of assessing team performance through self-report survey items was recognized, thus the study attempted to address this limitation by including a second, external team performance measure that reflected a combined team evaluation score from the faculty advisors and corporate sponsors. The advisors and corporate sponsors met to discuss and assign a score to each team's project based on the five-stage development process. Since the student teams worked on mock products and no true product performance data were available, these evaluations captured the qualitative aspect of the project and were project-specific centering around the key criteria of "the degree to which the product provides a competitive advantage" as advocated by Griffin and Page (1996). Specifically, five dimensions of the product solutions: product innovativeness, development cost, how the product met quality specifications, how the product fit the business strategy, and how the product led to future opportunities, were emphasized in the qualitative evaluation.

Finally, the study controlled for three variables: (1) team members' gender, (2) team members' ethnicity, and (3) team size, when testing the models due to the possible influence these variables might have had on team interactions and project success.

Tests of Hypotheses

Table 1: *Descriptive Statistics and Correlations among Variables*[a]

	Mean	Correlation						
		1	2	3	4	5	6	7
1. Dispositional positive affect	3.79							
2. Task performance	4.54	.47[b]						
3. Team learning behavior	3.7	.30[b]	.35[b]					
4. Person-focused ICB	4.20	.37[b]	.56[b]	.61[b]				
5. Team performance (self report)	3.82	.48[b]	.48[b]	.65[b]	.67[b]			
6. Gender	N.A	.04	.02	.27[b]	.23[c]	.22[c]		
7. Ethnicity	N.A.	-.04	-.18	-.02	-.18	-.13	.05	
8. Team Size	3.89	.08	-.08	-.17	-.02	-.06	-.03	-.11

[a] Ninety eight senior undergraduate students participated in the study. The items corresponding to each construct/dimension were summed and averaged in order to obtain a summated index. The summary statistics are reported for this index.

[b] correlations have $p < .01$

[c] correlations have $p < .05$

Before testing the model, an assessment was conducted of the between-group variance in team performance using a null model. The null model is an intercept-only model in which no predictors are specified. The between-group variance (τ^2) in team performance was calculated to be .27, while the variance between members in the same team (δ^2) was .35. In this case, the interclass correlation coefficient was .44, indicating that 44% of variance in team performance resided between groups. This

result indicated that the team level had an important impact on team performance and justified the use of hierarchical linear modeling technique.

The 5 linear mixed equations that were tested in the study are presented in Table 2. Equations 1 to 5 tested the mediating effects of individual task performance, person-focused ICB and team learning on the relationship between dispositional PA and NPD team performance (Krull & MacKinnon, 1999). Analytical procedures recommended by Baron and Kenny (1986) were adopted to test the presence of mediating effects in the model. Equations 1, 2 and 3 examined the direct effects of dispositional PA on the mediating variables: individual task performance, team learning, and person-focused ICB. Equation 4 examined the direct effect of dispositional PA on the dependent variable of the model: NPD team performance. All variables were entered simultaneously in Equation 5 to examine individual task performance, team learning, and person-focused ICBs as mediators of the relationship between dispositional PA and NPD team performance. The hypothesized mediating effects were supported if three criteria were met: (1) if dispositional PA significantly affected individual task performance, team learning, and person-focused ICB in equations 1, 2 and 3, (2) if dispositional PA significantly affected NPD team performance in the fourth equation, and (3) if individual task performance, team learning, and person-focused ICB significantly affected NPD team performance while controlling individual dispositional PA.

Table 2: *The Effect of Dispositional Positive Affect (DPA) on Team Performance*

	Fixed Effects			Random effects				Fit statistics	
		γ's	(SE)	τ_0^2	(SE)	δ^2	(SE)	-2 loglike	AIC
1. Task performance (TP):	Int	3.24**	(.45)	.00	.02	.26	.04	135.1	147.1
Level 1: $(TP)_{ij} = \beta_{0j} + \beta_{1j}(DPA)_{ij} + \beta_{2j}(CV)_{ij} + \varepsilon_{ij}$	DPA	.43**	(.08)						
Level 2: $\beta_{0j} = \gamma_{00} + U_{0j}$	Size	-.05	(.05)						
	Ethnicity	-.12	(.06)						
	Gender	.00	(.14)						
2. Team learning (TL):	Int	2.38**	(.62)	.11	.07	.39	.07	187.5	201.5
Level 1: $(TL)_{ij} = \beta_{0j} + \beta_{1j}(DPA)_{ij} + \beta_{2j}(CV)_{ij} + \varepsilon_{ij}$	DPA	.25*	(.11)						
Level 2: $\beta_{0j} = \gamma_{00} + U_{0j}$	Size	-.05	(.08)						
	Ethnicity	-.14	(.08)						
	Gender	.40*	(.18)						
3. Person-focused ICB (ICB):	Int	2.42**	(.52)	.02	.04	.36	.06	161.8	173.8
Level 1: $(ICB)_{ij} = \beta_{0j} + \beta_{1j}(DPA)_{ij} + \beta_{2j}(CV)_{ij} + \varepsilon_{ij}$	DPA	.39**	(.10)						
Level 2: $\beta_{0j} = \gamma_{00} + U_{0j}$	Size	-.13*	(.06)						
	Ethnicity	-.03	(.07)						
	Gender	.44**	(.16)						
4. Team performance (TAP)	Int	1.70**	(.60)	.16	.08	.31	.06	176.6	190.6
Level 1: $(NPD)_{ij} = \beta_{0j} + \beta_{1j}(DPA)_{ij} + \beta_{2j}(CV)_{ij} + \varepsilon_{ij}$	DPA	.48**	(.10)						
Level 2: $\beta_{0j} = \gamma_{00} + U_{0j}$	Size	.09	(.09)						
	Ethnicity	-.07	(.08)						
	Gender	.39*	(.17)						
5. Team performance (TAP):	Int	-.58	(.56)	.01	.03	.23	.04	129.9	149.9
Level 1:	DPA	.29**	(.09)						
$(NPD)_{ij} = \beta_{0j} + \beta_{1j}(DPA)_{ij} + \beta_{2j}(TL)_{ij} + \beta_{3j}(ICB)_{ij} + \beta_{4j}(CV)_{ij} + \varepsilon_{ij}$	TP	.10	(.12)						
Level 2: $\beta_{0j} = \gamma_{00} + U_{0j}$	TL	.41**	(.09)						
	ICB	.29*	(.12)						
	Size	-.02	(.06)						
	Ethnicity	-.03	(.06)						
	Gender	.12	(.14)						

*$p < .05$; **$p < .01$

Equation 1 showed a significant effect of dispositional PA (γ = .43, p<.01) on individual team member's task performance, supporting Hypothesis 1. Equation 2 examined the effect of dispositional PA on team learning. The parameter estimate of dispositional PA (γ = .25, p<.05) was significant. These results demonstrated that

dispositional PA significantly impacted team learning, which supported Hypothesis 2. Equation 3 examined the effect of dispositional PA on team members' person-focused ICB. Dispositional PA demonstrated a strong significant effect on person-focused ICB (γ = .39, p<.01), which supported Hypothesis 3. Equation 4 examined the direct effect of dispositional PA on NPD team performance. Dispositional PA was found to significantly impact NPD team performance (γ = .48, p<.01).

In Equation 5, dispositional PA (γ = .29, p<.01), team learning (γ = .41, p<.01), and person-focused ICB (γ = .29, p<.01) were found to significantly impact NPD performance. Individual task performance did not show a significant effect on team performance. Taken together, the hypothesized mediating effects of team learning and person-focused ICB were supported. However, although dispositional PA significantly impacted team members' task performance, team members' task performance had no direct impact on NPD team performance.

Further, since dispositional PA still significantly impacted NPD performance in Equation 5, this was an indication of a partial mediation. Team learning and person-focused ICB did not fully mediate the relationship between dispositional PA and NPD performance. Using Sobel's (1982) method, the study further tested the partial mediating roles of team learning and person-focused ICB. The Sobel z-statistics were 2.11 for team learning (p = .04) and 3.36 for team members' person-focused ICB (p < .001). These statistics confirmed a partial mediating role of team learning and person-focused ICB on the relationship between dispositional PA and NPD team performance, supporting Hypotheses 4b and 4c.

To address the issue of possible common method bias, the faculty advisors' aggregated performance evaluation scores were used as an alternative measure of NPD team performance (Podsakoff et al., 2003). Since HLM required that the dependent variables be measured at the lowest level to capture both variance within the lower-level and the variance between the higher-level groups, the faculty advisors' evaluation scores took into account the advisors' evaluation not only of each team's new product solutions, but also of the individual student team member's contribution to the solution. Consistent with the above findings, dispositional PA significantly impacted NPD team performance (γ = .70, p<.01). At the same time, both team learning (γ = .33, p<.05) and person-focused ICB (γ = .54, p<.01) demonstrated highly significant relationships with NPD performance while controlling for dispositional PA. Thus, the faculty advisor scores provided a version of an external measure of performance to complement the internal measure (Brockman et al., 2010) and through triangulation, supported the validity of the study's findings (Jick, 1979).

In terms of controls, the findings showed that ethnicity had no significant impact on team learning, individual task performance, and person-focused ICB. Gender had no relationship to task performance either. However, it was found that gender significantly impacted both team learning and person-focused ICB. Female team members demonstrated significantly higher levels of person-focused ICB and promoted team learning better than male team members. Team size demonstrated a significant negative effect on team members' person-focused ICB. The findings illustrated that smaller team size enhanced interactions and facilitated team members' interpersonal behaviors.

Discussion

Due to the increased popularity of teams in executing various tasks, such as new product development and sales campaigns in organizations, there is great interest from academics and practitioners alike in the antecedents of team performance. This study contributed to an understanding of the relationship between dispositional PA and NPD team performance and promoted an understanding of both an antecedent to and the mechanisms of team success. Although functional diversity, especially cross-functional diversity in NPD teams, has received wide attention, it has been shown here that the dispositional diversity of team members also has important implications for team interactions. The study highlighted the relationship between dispositional PA and key behaviors integral for NPD team performance. It was also shown that dispositional PA had a direct positive effect on NPD team performance along with having important implications for team learning and ICBs which also contributed to NPD team performance. These results underscored the role of dispositional PA as a critical team stage setting element at the outset of a team project that promoted active learning and influenced project success.

This study illustrated that team members with high levels of dispositional PA acted in ways that corresponded with their approach motive tendencies (e.g., intentionally interacting with others and seeking new experiences and opportunities); namely, they were more willing to fulfill their task responsibilities and go beyond their task specifications to engage in team learning and spontaneous assistance behaviors. These findings were consistent with previous research on dispositional PA that emphasized the positive relationships between dispositional PA and a range of work performance outcomes, such as decision making, interpersonal performance, and managerial potential (Staw & Barsade, 1993; for a review, see Thoresen et al., 2003). Furthermore, the findings demonstrated that dispositional affect may be considered an individual-level team stage setting element. McDonough (2000) described this as an element in place at the outset of the project that influenced project success. Thus, the study illustrated that dispositional affect is an important variable to address because it not only can have a direct impact on individual task performance, it also indirectly influences two mechanisms—interpersonal behavior and team learning—known to drive NPD performance.

The study suggested that the success of NPD teams depended upon how effectively team members were interacting and communicating with each other. Team activities such as communication with other members and showing concern towards others contributed to the performance of NPD teams as a whole, which supported previous research emphasizing the importance of teamwork quality (Hoegl et al., 2007) and internal team factors such as social cohesion (Nakata & Im, 2010) on NPD team success. It was also found that the extent to which team members acquired, shared, and combined knowledge impacted NPD team performance, thereby supporting previous findings (Lynn et al., 1999; Akgün, Lynn, & Yilmaz, 2005) and theorizing (Edmondson & Nembhard, 2009) in regards to the relationship between team learning and NPD team performance.

This study also revealed that dispositional PA and short-term PA had different

consequences. For example, previous research on short-term PA has shown that it had an inhibiting role in individual cognition and the search for information because individuals in positive moods use heuristics and perform less systematic analyses of the information they receive than individuals in negative moods (see Forgas, 2008 for a review). In contrast, it was found that team members high in dispositional PA did not appear to fall prey to this type of limited information search. It seemed that they continued to initiate behaviors that facilitated their pursuits, as their task performance and team learning behaviors were consistently stronger than low dispositional PA team members.

Although dispositional PA had a positive influence on individual team members' task performance, counter to expectations, individual team members' task performance did not have a significant effect on team performance. This implies that fragmented individual effort cannot lead to the success of the team as a whole for an interactive task. Instead, success on an interactive task depended on the concerted efforts of all team members through their behaviors that promote team interactions and team synergy.

This study had important implications for practitioners managing NPD teams. The results suggested that it is critical for managers to seek out high dispositional PA individuals in the interest of success of the whole team. Dispositional PA was consistent across situations (Diener & Larsen, 1984) and team members carried their affective history with them when they interacted as a group (Kelly & Barsade, 2001). Thus, dispositional PA, at any time, exerted strong effects on the behaviors of individuals. However, it is also important to note that although team members with high dispositional PA were likely to fulfill their individual task obligations, high dispositional PA individuals' fragmented efforts could not guarantee the success of the team. Instead, the success of the team relied on the concerted efforts of dispositional PA team members to actively contribute their share of knowledge to the development of the project while at the same time supporting other team members. Taking into account that dispositional PA operates like a personality trait, management may have difficulty changing the team dynamic by adapting individuals' dispositional affect. Instead, management may want to consider individuals' dispositional affect when assigning employees to teams. To summarize, this study contributed to a better overall understanding of the relationship between dispositional PA and NPD team performance. This relationship cannot simply be summed up so as to say "positive people create positive outcomes," but instead that individuals who are more dispositionally positive enhance team effectiveness due to enacting behaviors that support team learning and ICBs.

Limitations and Future Research

This research provided important evidence of the positive effects of dispositional PA on NPD team outcomes, including team learning behavior, ICBs, and overall team performance. Several limitations to the research are worthy of note and efforts that address these limitations may introduce interesting avenues for future study. First, PA from a dispositional perspective was studied while ignoring the possible influences of short-term PA and group-level PA on team outcomes. Future research should try to incorporate individual short-term PA and group-level PA with dispositional PA in order

to enable a better understanding of the effects of various types of PA on team outcomes. For example, do frequent short-term low PA experiences for high dispositional PA individuals negate the benefits of dispositional PA on team performance? Also, what is the impact of different configurations of dispositional PA on how team behaviors are enacted when some team members are high in dispositional PA and other team members are not? Assessing PA as a state and a trait, individually and in different configurations, will likely introduce many other important mechanisms that can influence team performance.

Second, as noted above, the study investigated the mediating roles of task performance, team learning, and ICBs in the relationship between PA and team outcomes. However, previous research has indicated that a wide variety of variables may have moderating/mediating roles such as job type and tenure (Ng & Sorensen, 2009). Future research could expand on the behaviors investigated here to include other team based variables that dispositional PA would be likely to influence, such as group identity, risk taking, conflict resolution, and innovation.

Lastly, the restricted student sample that was used placed a limitation on the study's external validity. The study could be enhanced by collecting data from work teams in a range of real business settings and using a variety of performance indicators. The faculty advisors' performance evaluations, although incorporating corporate sponsors' feedback, were still based on only one rater. Thus, the study could be improved by having corporate sponsors be more involved in the student projects and integrating multiple evaluators' objective evaluations as the index of the final team performance scores. Instead of developing mock products, long-term or permanent teams in organizations engaging in the development of real-world products or promoting a product should be investigated, along with various external performance indicators, such as speed to market, customer satisfaction, and sales volume. Continued research in this area may not only shed new light on the influence of affect on NPD team processes, but also provide practitioners with useful guidelines for boosting NPD team performance.

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