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What makes a group of good citizens? The role of perceived group-level fit and critical psychological states in organizational teams

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Recent studies have expanded the construct of organizational citizenship behaviour (OCB) to the group level and demonstrated its significance in predicting group performance. In this study, we have further expanded this growing stream of research regarding group-level OCB (GOCB), by identifying distinct group characteristics that predict GOCB. Specifically, we have isolated perceived group–organization (G–O) fit and group–task (G–T) fit as meaningful antecedents of GOCB. We further propose that the perceived G–O and G–T fit influence GOCB by shaping two intermediate psychological states of group members: cohesion and group efficacy. Our findings, which were based on multi-source data collected from 43 organizational teams, demonstrated that cohesion completely mediated the effect of perceived G–O fit on GOCB. Group efficacy, however, proved not to be a significant mediator of the relationship between perceived G–T fit and GOCB. Instead, G–T fit had a significant direct effect on GOCB. This study highlights the significance of group-level conceptualization of group–environment interaction as a potential driver of various group processes and outcomes.

With increasing competitive pressure obliging organizations to do more with less, the mobilization of employees' voluntary efforts has become crucial to management (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). For this reason, management scholars have increasingly paid attention to organizational citizenship behaviour (OCB), which refers to various forms of extra-role, discretionary behaviour that may enhance organizational performance (Organ, Podsakoff, & MacKenzie, 2006). Although the potential contribution of OCB to unit or organizational performance has been the essential motivation of most OCB studies, thus far, the vast majority of them have been conducted at the individual level (Bommer, Dierdorff, & Rubin, 2007). In a departure

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from the prevailing focus on individual OCB, researchers have recently begun to conceptualize OCB as a group-level phenomenon (Ehrhart, 2004; Mayer, Kuenzi, Greenbaum, Bardes, & Salvador, 2009).

Group-level OCB (GOCB) is defined as the extent to which work-group members as a whole engage in discretionary extra-role behaviour that is beneficial to the group (Bommer *et al.*, 2007). GOCB differs from OCB in that it is a group-level phenomenon that consists of group members' aggregate OCB and reflects inter-member dynamics (Euwema, Wendt, & Van Emmerik, 2007; Mayer *et al.*, 2009; Raver & Gelfand, 2005). Researchers have claimed that OCB should be examined at the group level because it is collective engagement in OCB rather than individual OCB that contributes to organizational effectiveness (Organ *et al.*, 2006; Schnake & Dumler, 2003).

The majority of studies regarding GOCB have been designed to empirically demonstrate the association between GOCB and work unit performance (Bommer *et al.*, 2007; Koys, 2001; Podsakoff *et al.*, 2000). This line of research provides helpful insight into the positive role of GOCB with regard to team and organizational performance. The emerging literature on GOCB, however, has paid much less attention to its antecedents. Given the clear connection between GOCB and team performance, it is imperative for both researchers and practitioners to identify conditions that promote GOCB. A small number of existing studies on predictors of GOCB have focused principally on leader behaviour, such as servant leadership (Ehrhart, 2004), transformational leadership (Richardson & Vandenberg, 2005), ethical leadership (Mayer *et al.*, 2009), supportive/directive leadership (Euwema *et al.*, 2007), and leaders' emphasis on teamwork (Pearce & Herbik, 2004).

However, considering that GOCB reflects members' collective engagement in voluntary contributions, collaboration, and mutual support, properties of the group other than leadership should play significant roles in promoting GOCB. Without understanding such group-level antecedents to GOCB, organizational leaders may not be able to motivate their members to engage in more OCB and collectively produce enhanced performance. The present study focuses on the way work groups interact with their environment as a meaningful antecedent to GOCB because organizational teams do not operate in a vacuum and because group process and effectiveness are affected by the interaction between the group and its environment (Choi, 2007; DeRue & Hollenbeck, 2007). In this regard, we have adopted the fit perspective, which offers heuristic insights with regard to the comparison and interaction processes between two related entities (French, Rogers, & Cobb, 1974; Kristof, 1996).

The notion of fit has become important to contemporary work teams because the increasing diversity of today's workforce requires them to coordinate among members who possess diverse sets of knowledge, skills, values, and attitudes (DeRue & Morgeson, 2007). Moreover, the heterogeneity of work teams and the rapidly changing nature of their work environment have decreased the overall level of fit in work-groups (Hopkins, Hopkins, & Mallette, 2001). Given that fit between team members and their work environment is crucial to teams' functioning and effectiveness (DeRue & Morgeson, 2007), managing fit at the group-level constitutes an important challenge to organizational teams. In addition, it is of theoretical importance to understand the role of group-level fit with regard to various group processes and outcomes such as GOCB.

In summary, the present study contributes to the emerging literature on group-level OCB literature by identifying group-level predictors that explain why some teams exhibit more GOCB than others. In so doing, we advance the fit literature by

theorizing the effects of various group-level fit perceptions on GOCB. We further posit that these group-level fit perceptions influence GOCB by developing two distinct psychological states within the group: affective attachment among members (cohesion) and members' collective beliefs regarding their task-related capability (group efficacy). Our theoretical propositions were empirically tested by using multi-source data collected with temporal separation from 43 work teams in three Korean organizations.

The relationship between group-level fit and GOCB

Group-level organizational citizenship behaviour

Scholars have suggested various kinds of employee behaviours as citizenship behaviours (Podsakoff *et al.*, 2000). Of these, conscientiousness and helping behaviour were the most commonly investigated types of OCB (Tepper, Duffy, Hoobler, & Ensley, 2004), which have been often referred to as OCB-O (organizationally directed OCB), and OCB-I (interpersonally directly OCB), respectively (Williams & Anderson, 1991). In this study, we focus on the interpersonal-type OCB (e.g., helping, courtesy) at the group level for several reasons. First, the OCB literature clearly indicates that helping is the archetypal citizenship behaviour that has been most widely investigated by scholars (Organ *et al.*, 2006). Second, group-level studies of OCB indicate that group performance is consistently related only to helping and not to other OCB dimensions (Ehrhart, Bliese, & Thomas, 2006; Podsakoff *et al.*, 2000). Third, perhaps for the two aforementioned reasons, most prior studies have operationalized GOCB as interpersonal citizenship among members (Bommer *et al.*, 2007; Euwema *et al.*, 2007; Mayer *et al.*, 2009; Raver & Gelfand, 2005). Finally, we focus on interpersonal OCB because such behaviours tap into interpersonal relationships among members and are apt to be more sensitive to group-level properties involving inter-member dynamics than are organizationally directed OCBs such as compliance or conscientiousness.

Conceptualization of group–organization fit and group–task fit as perceived external fit of a group

Although the fit studies have principally employed the 'person' as the referent for comparison (e.g., person–organization (P–O), person–group (P–G), person–job (P–J) fit), the application of the fit construct to the group level is also feasible because the group is a meaningful reference point for a host of organizational phenomena (e.g., intergroup conflict, group identification, and commitment to group). DeRue and Hollenbeck (2007) categorized fit in work groups into internal and external fit. Internal fit refers to the degree to which member characteristics (e.g., demographic characteristics, personalities, and values) fit together. External fit pertains to the alignment between the characteristics of a group and its external environment (e.g., the organizational context and the task environment). Research into internal fit has focused on the effects of group composition on individual and group outcomes, resulting in a substantial body of literature that examines fit or misfit among various member attributes including demographic characteristics, goals, personalities, Knowledge, skills, and abilities, and affects (Kristof-Brown, Zimmerman, & Johnson, 2005; Williams & O'Reilly, 1998). This line of research has generally supported the theory that internal fit in groups among members has positive implications for extra-role behaviours such as OCB and proactive task contribution (Choi, 2007; Kristof-Brown *et al.*, 2005).

In contrast to the extensive literature about internal fit, literature about the effects of external fit on various group processes and outcomes is limited. This is partly due to the strong focus on internal dynamics among members that has prevailed in the group literature (Kozlowski & Bell, 2003). Because work groups do not perform in a vacuum, however, it is critical to consider the role of external environment in group functioning and performance. In this study, we consider the organization and the task because they constitute the immediate and meaningful environment with which the group interacts.

Accordingly, we focus on two types of group-level fit: group–organization (G–O) and group–task (G–T) fit. We define G–O fit as the congruence between the group and the organization with respect to values and goals. Thus, G–O fit represents *supplementary fit* in that it is based on the similarity between two entities (Muchinsky & Monahan, 1987). G–T fit is conceptualized as the match between the group's needs or desires and the attributes of the group task (needs–supplies fit) as well as the congruence between group members' KSAs and the demands of the group task (demands-abilities fit; Edwards, 1996). In other words, G–T fit represents *complementary fit* in that a particular group and its task match to each other's desires and demands.

In this paper, we focus on perceived G–O and G–T fit. *Perceived fit* is the group members' own perception of fit, conceptualized as an overall judgment about the extent to which group members collectively perceive the fit of the group to the environment (French *et al.*, 1974). On the other hand, *actual fit* refers to a comparison between a measure of a group attribute and an independent assessment of a corresponding environmental attribute (Kristof, 1996). Research on individual-level fit has demonstrated that perceived fit is a better predictor of work outcomes than is actual fit (Cable & Judge, 1997; Kristof-Brown *et al.*, 2005; Verquer, Beehr, & Wagner, 2003) perhaps because perceptions of the situation are more crucial and related more closely to attitudes and behaviours than the actual situation (e.g., Endler & Magnusson, 1976).

We propose that perceived G–O and G–T fit emerge as a group-level property through a *referent-shift consensus* composition model (Chan, 1998), in which a higher-level construct formed through consensus becomes conceptually distinct from the original individual-level construct. Each group member holds his or her own perception of how well the group's values and goals fit those of the organization, as well as how well the group fits its task. However, via attraction–selection–attrition (ASA) processes, social interaction, and normative influences and/or leadership processes, group members may come to hold similar perceptions of G–O and G–T fit (Ostroff, Kinicki, & Tampkins, 2003). In addition, the group-level fit perceptions may develop through observations of how the entire group relates to the organization and how members conduct group tasks. Thus, we conceptualize perceived G–O and G–T fit as collective constructs shared among group members, which are distinct from corresponding individual-level constructs (e.g., 'All in all, members of this group are fit for the group task even though I personally feel that I am not a good fit for the task'). Thus, perceived G–O and G–T fit should exist at the group-level, representing an attribute of the entire group.

Perceived G–O and G–T fit as antecedents of GOCB

Figure 1 provides a visual summary of our theoretical model, which depicts the relationships among group-level fit perceptions, intermediate psychological states of the group, and GOCB as a group's behavioural performance. The structure of the present

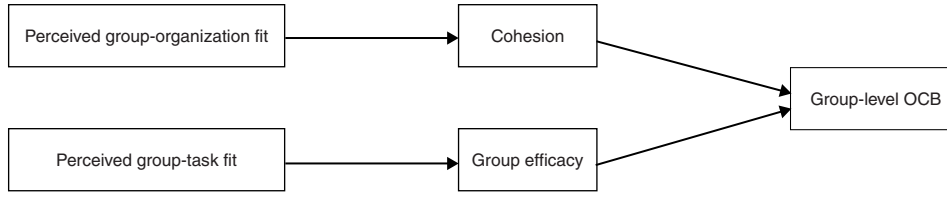

Figure 1. Conceptual framework.

model is based on the input–mediator–outcome (I–M–O) framework, in which inputs to the group induce intermediate processes and/or psychological states within the group, which in turn lead to group outputs (Ilgen, Hollenbeck, Johnson, & Jundt, 2005). In spite of its theoretical implications for and prevalent applications in the area of team research, the I–M–O model has not yet been systematically applied to the study of GOCB. In this study, we have identified perceived G–O and G–T fit as input factors that contribute to group psychological states and GOCB. As mentioned earlier, we attend to these two group-level fit constructs because the organization and the task reflect the work environment with which the group interacts most frequently (Choi, 2007; DeRue & Hollenbeck, 2007). We consider these two types of fit as inputs in our model because they reflect the configurations of members' values, goals, needs, and abilities against those of the organization and the group task.

In our model, although, we submit that group members' collective perceptions of G–O and G–T fit have significant implications for GOCB, we also posit that their effects will be mediated by the group's affective and cognitive states (e.g., cohesion, group efficacy) that 'develop over the life of the team and impact team outcomes' (Ilgen *et al.*, 2005, p. 520). In contrast to *group processes* that involve interdependent actions among members, *emergent psychological states* refer to 'qualities of a team that represent member attitudes, values, cognitions, and motivations' (Marks, Mathieu, & Zaccaro, 2001, p. 357). The present mediating variables (cohesion and group efficacy) are thus, better characterized as psychological states shared among members than interacting processes among them. Viewing task performance and contextual performance as two distinct forms of performance (Motowidlo, 2003), we regard GOCB as a group's contextual performance, which should promote its task performance (Koys, 2001; Ehrhart *et al.*, 2006).

Perceived G–O fit and GOCB. According to the organizational culture literature, shared values among group members represent a subculture (Martin, 1992). Researchers have generally adopted an alignment perspective to the organizational culture–subculture relationship (Morgan & Ogbonna, 2008). When a subculture held by a group is congruent with the main culture of the organization, group members are likely to have positive work attitudes (Lok, Westwood, & Crawford, 2005). Similarly, findings have indicated the importance of goal alignment among organizational subunits (Jaskiewicz & Klein, 2007).

Based on these studies, we propose a positive relationship between perceived G–O fit and GOCB. When group members collectively perceive that the group's values and goals are congruent with those of the organization (i.e., high G–O fit), they are likely to perceive the organization as a favourable environment for their work group. In accordance with social information processing and social construction theories

(Salancik & Pfeffer, 1977), members' collective belief that they fit well within the organization result in positive organizational attitudes that are conducive to various citizenship behaviours (Organ *et al.*, 2006). Group members' favourable perceptions and attitudes concerning the organizational context should increase their motivation to spend extra effort on and offer help to each other to promote collective goals (Williams & Anderson, 1991), thereby enhancing the overall level of GOCB.

Hypothesis 1: Perceived G–O fit will be positively related to GOCB.

Perceived G–T fit and GOCB. Research on the external fit of work teams has reported positive effects of fit between group task and the structure, rewards, technology, and processes of the group on its performance (Alper, Tjosvold, & Law, 1998; Bonner, Baumann, & Dalal, 2002). Although G–T fit in terms of needs–supplies and demands–abilities fit has not been investigated in these studies, the group literature generally suggests that when there is a match between the group characteristics and the group task, groups are likely to engage in desirable processes and produce high performance (DeRue & Hollenbeck, 2007; Jehn, 1995). Therefore, we predict that GOCB is more likely to occur when group members share the collective perception that they match well to the group task with respect to the skills or abilities required to perform it, and also when they collectively perceive that their needs and desires can be fulfilled by the group task. Under this high G–T fit condition, members should develop positive attitudes towards the task (e.g., job dedication, task commitment) and will be collectively mobilized to perform the task. Members' positive task-related attitudes and collective motivation may result in an increase in voluntary contributions towards the group's task performance, as well as mutual support for the achievement of collective goals.

Hypothesis 2: Perceived G–T fit will be positively related to GOCB.

Two intermediate psychological states: Cohesion and group efficacy

As hypothesized above, perceived G–O and G-T fit may have positive implications for GOCB. In an effort to further explore the mechanisms through which these group-level fit perceptions increase GOCB, we have identified two psychological states of a group that characterize the affective and cognitive properties shared among members (Ilgen *et al.*, 2005; Marks *et al.*, 2001). Specifically, we propose that cohesion and group efficacy operate as distinct psychological states shared among members that explain the effects of perceived G–O and G–T fit on GOCB. Cohesion and group efficacy may reflect two collective psychological states required for collective performance. On the one hand, *cohesion* refers to the extent to which group members are attracted to each other (Kidwell, Mossholder, & Bennett, 1997). Thus, it signifies members' attachment to the group and their willingness to collaborate with others on the basis of affective commitments or liking one another, representing an emotional and motivational state among members. On the other hand, *group efficacy* refers to group members' shared belief in their collective capacity to organize and execute given courses of action (Bandura, 1997). In comparison with cohesion, group efficacy is predicated on a more rational assessment of the group's task performance capabilities, thus, representing a cognitive aspect of collective psychological states.

Although cohesion and group efficacy have been investigated extensively in the group literature (Chen & Bliese, 2002; Ilgen *et al.*, 2005; Kidwell *et al.*, 1997), their effects on GOCB have not yet been elucidated. Because individual performance is a function of one's motivation and capability (Motowidlo, 2003), GOCB as a form of group performance may be explained by members' willingness on the basis of affective attachment *and* their collective belief regarding the group's ability to complete a given task. Below, we propose that the two group-level fit perceptions indirectly predict GOCB by shaping these affective and cognitive states of group members.

Cohesion as a mediator between perceived G–O fit and GOCB. While little is currently known regarding the relationship between perceived G–O fit and cohesion, findings thus far, appear to indicate that P–O fit in terms of value congruence is a positive predictor of individuals' group cohesion (Boxx, Odum, & Dunn, 1991). Likewise, when group members perceive that their group's values and goals are congruent with those of the organization (i.e., high G–O fit), they will develop collectively a sense of the legitimacy and significance of their group as a performing unit, which is likely to induce a strong feeling of belongingness and cohesion among members.

Group cohesiveness has been identified as an antecedent of individual OCB (Podsakoff *et al.*, 2000). For instance, Kidwell *et al.* (1997) demonstrated the cross-level effects of group-level cohesion on individual OCB. Interpersonal attachment and liking among members are frequently based on satisfaction with and trust of peers, which should increase their identification with the group and motivation to maintain group well-being. Therefore, members of cohesive groups likely care more about others and the group and are thus, more likely to provide help when other members have task-related problems and to work together closely to achieve a common goal (Organ *et al.*, 2006). Taken together, we hypothesize the following mediating effect.

Hypothesis 3: Cohesion will mediate the relationship between perceived G–O fit and GOCB.

Group efficacy as a mediator between perceived G–T fit and GOCB. We expect that perceived G–T fit is associated with a different psychological state than is perceived G–O fit. Instead of cohesion, perceived G–T fit is proposed to increase group efficacy, which is a cognitive state shared among group members. Studies have shown that group members hold a shared belief regarding the extent to which the group as a whole can perform its task effectively (Bandura, 1997; Chen & Bliese, 2002; Gully, Incalcaterra, Joshi, & Beaubien, 2002). We submit that group efficacy is influenced by group members' perceptions of G–T fit. When group members collectively perceive that their group as a whole fits its task and is equipped with the KSAs required to perform it, they are likely to believe that the group will effectively complete its task (cf. Werbel & Johnson, 2001). Thus, perceived G–T fit should be a positive predictor of collective efficacy.

High group efficacy is, in turn, likely to enhance GOCB because when members believe that the group is capable of successfully completing its tasks, they will be strongly motivated to exert effort towards achieving collective goals and to collaborate more with other members (Bandura, 1997). Group efficacy may convince individual members that extra efforts and cooperative contributions to the group will

not be wasted, because the group is capable of accomplishing its goals. Thus, we hypothesize that perceived G–T fit increases GOCB by promoting group members' collective efficacy.

Hypothesis 4: Group efficacy will mediate the relationship between perceived G-T fit and GOCB.

Method

Participants and data collection procedure

Data for the present study were collected in three Korean companies in oil refining, media, and trading industries, all of which adopted a team-based structure. These organizations consisted of functional divisions (e.g., manufacturing, sales, and human resource management) and each division was composed of several teams. Teams were the basic work unit in these companies, and there was only one team leader in each team, who occupied a higher rank in the organizational hierarchy than team members. The team leaders frequently interacted with their members and were in charge of various decisions within the team including task assignment, allocation of resources, scheduling and coordinating work tasks, and human resource issues. Participation in the study was voluntary, and the participants were assured of confidentiality and anonymity. Both participating members and leaders were instructed to place their surveys in the separate envelopes that were provided and to return them directly to the researchers.

The present data were collected at two different time points. At Time 1, the team members provided data regarding perceived G–O and G–T fit. At Time 2 (2 weeks after Time 1), team members reported on the two intermediate psychological states: cohesion and group efficacy. At Time 2, team leaders were also invited to rate the level of GOCB and task interdependence of their teams. Our interviews with the HR staff of the three companies indicated that there was no event or incident occurring in the companies during the two-week period that might have affected the participants' responses. Therefore, our use of multi-source data (separation of data sources of predictors and the outcome), coupled with temporal separation of the independent variables and the mediators, should reduce the common method variance, resulting in robust empirical findings (Ostroff, Kinicki, & Clark, 2002; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

At Time 1, we invited 442 employees comprizing 70 intact work teams. This initial target sample included all members of these 70 teams. Responding to this invitation, 402 employees from 70 teams participated in the study (individual-level response rate = 91.0%; group-level response rate = 100.0%). At Time 2, we invited these T1 participants to complete the T2 survey instrument and obtained T2 data from 370 employees from 67 teams, yielding a response rate of 83.7% at the individual level, and 95.7% at the group level. In an effort to reduce aggregation biases resulting from the use of data obtained from small groups (Bliese & Halverson, 1998), we excluded 11 teams with fewer than four participants. We also eliminated 13 teams from which we were unable to collect leaders' GOCB ratings. Thus, our final analysis sample included 43 teams that consisted of 248 members and 43 team leaders. To determine whether there were any systematic differences between our final sample and drop-outs, we conducted a series of *t* tests on the demographic characteristics of the excluded sample and the final analysis sample. The results indicated no significant differences between the two samples.

For this final sample, the average number of participants per team was 5.77 ($SD = 2.3$), ranging between 4 and 13 members. The average age of the team members was 32.8 years ($SD = 5.9$), and 75% of the members were male. These members' average organizational tenure was 6.9 years ($SD = 5.8$), and their average tenure on their current team was 3.0 years ($SD = 3.2$). The participants conducted a variety of organizational functions, including sales (32%), computer programming (15%), planning/operation (11%), finance/accounting (11%), and marketing (5%). The data collected from the members of the 43 teams were matched with the team leaders' GOCB ratings. Eighty-seven percent of the leaders were male. The average age of the team leaders was 41.9 years ($SD = 6.1$). The team leaders' average organizational tenure and tenure as the team leader were 15.1 ($SD = 7.2$) and 3.8 ($SD = 3.4$) years, respectively.

Measures

In order to assess the study variables, we utilized multi-item scales with acceptable levels of internal consistency. As all variables were conceived of at the group level, all items were worded in order to extract group-level dynamics and thus, referred to the group or group members (Chen & Bliese, 2002; Bommer *et al.*, 2007). All variables reported by members were also checked for a variety of psychometric properties (i.e., r_{wg}, ICC(1), and ICC(2)), which were required for the group-level aggregation of individual responses. As reported below, all scales exhibited acceptable levels of within-group agreement, as well as significant between-group variance and acceptable reliability of group-level scores. The participants rated all items on a five-point Likert-type scale (1 = *stronglydisagree*, 5 = *stronglyagree*).

Pilot study for developing perceived G–O and G–T fit measures

Because there were no measures of perceived G–O and G–T fit available, we conducted a pilot study to validate new scales of perceived G–O and G–T fit, which we constructed as follows. Using a sample of 99 employees from another company, we carried out a factor analysis for our new G–O and G–T fit scales and existing P–O and P–J fit scales (Cable & DeRue, 2002; Lauver & Kristof-Brown, 2001). The items included in these two types of measures were identical except that the G–O and G–T fit scales used team-referent items, whereas the P–O and P–J fit scales consisted of self-referent items. For the purpose of initial scale development, we developed 12 items for the two group-level fit constructs, and thus, six items for each (full set of items available upon request). Through the factor analytic procedure, we selected four and three items for G–O and G–T fit that offered the clearest factor structure when they were factor-analyzed along with P–O and P–J fit items. We used these short versions of the original scales in the present study. The four- and three-item scales for G–O and G–T fit were very highly correlated to the original six-item scales (both rs $> .90$, $p < .001$), indicating that these short versions effectively capture the essence of the full six-item scales.

Perceived G–O fit (time 1)

In an effort to assess perceived G–O fit, we constructed a four-item measure assessing the degree of congruence in values and goals between the group and the organization. To this end, items that have been used in measures of perceived P–O fit (Cable & DeRue, 2002; Lauver & Kristof-Brown, 2001) were modified to team-referent items, so that they could represent perceptions about the group as a whole. For instance, a self-referent

item, such as 'My goals are similar to those of my company' was changed to 'The goals of my team are similar to those of my company'. The perceived G–O fit scale was designed to evaluate value and goal congruence between the group and the organization, in addition to the overall fit perception ('My company is not a good match for members of my team', reversed; see Table 1 for other items). This scale exhibited acceptable psychometric properties for group-level aggregation (individual-level $\alpha = .81$, group-level $\alpha = .91$, $r_{wg} = .93$, ICC(1) = .19, ICC(2) = .63).

Table 1. Factor analysis of G–O fit, G–T fit, cohesion, and efficacy items

	Factors			
Items	1	2	3	4
Group–organization fit				
1. The values of my team do not match those of my company (*R*)	.07	.11	.77	.18
2. The goals of my team are similar to those of my company	.29	.17	*.63*	.18
3. My company fulfills the needs of members of my team	.17	.29	*.66*	.08
4. My company is not a good match for members of my team (*R*)	.20	.29	*.66*	.15
Group–task fit				
5. Members of my team possess knowledge, skills, and abilities to perform the team task	.36	*.61*	.13	.29
6. The task of my team enables members of my team to do the kind of work they want to do	.23	*.73*	.37	.04
7. Members of my team are a good match to the team task	.18	*.74*	.35	.18
Cohesion				
8. Members of my team get along well with one another	.31	.25	.17	*.70*
9. Members of my team stick together	.27	.23	.18	*.77*
10. Members of my team are attached to one another	.30	.28	.16	*.69*
Group efficacy				
11. Members of my team are confident that the team will be able to successfully perform its task	*.72*	.26	.23	.23
12. Members of my team feel confident that the team's skills and abilities exceed those of other teams in the company	*.79*	.21	.19	.24
13. Members of my team believe that the team is not effective (*R*)	*.72*	.32	.23	.19
Percent of variance explained	16.89	14.54	14.50	11.10

Note. $N = 248$. *R* indicates reverse-coded items. Italicized numbers indicate factor loadings that are greater than .5 on that factor (Stevens, 2002).

Perceived G–T fit (time 1)

Modifying the items used to measure P-J fit (e.g., Cable & DeRue, 2002; Lauver & Kristof-Brown, 2001), we developed a three-item scale of perceived G-T fit (individual-level $\alpha = .81$, group-level $\alpha = .90$, $r_{wg} = .93$, ICC(1) = .18, ICC(2) = .61). This scale assessed demands–abilities fit and needs–supplies fit as well as the overall group-level G-T fit perception. The items of perceived G–T fit are provided in Table 1.

Cohesion (time 2)

To assess group cohesion, we employed three items (individual-level $\alpha = .81$, group-level $\alpha = .90$, $r_{wg} = .91$, ICC(1) = .17, ICC(2) = .60), which were obtained from

existing measures of cohesion (Beal, Cohen, Burker, & McLendon, 2003; Seashore, 1954; see Table 1 for items).

Group efficacy (time 2)

We assessed group efficacy using three items (individual-level $\alpha = .87$, group-level $\alpha = .89$, $r_{wg} = .90$, ICC(1) = .16, ICC(2) = .58) as shown in Table 1 that were used in previous studies (Jones, 1986; Hoyt, Murphy, Halverson, & Watson, 2003).

GOCB (time 2)

In order to measure GOCB, we adopted four items from Podsakoff, Ahearne, and MacKenzie's (1997) OCB scale, which addressed interpersonally-oriented citizenship behaviours. Team leaders evaluated the GOCB levels of their teams using the following four items ($\alpha = .84$): 'Members of my team help each other out if someone falls behind in his/her work', 'Members of my team collaborate well to complete tasks', 'Members of my team willingly give their time to help others in the team who have work-related problems', and 'Members of my team encourage each other when someone is down'.

Control variables

In addition to the study variables described above, our analysis included three control variables that may have significant implications for group processes and outcomes (Kozlowski & Bell, 2003; Pearce & Herbik, 2004): group size, group tenure, and task interdependence of the team. Group size was based on the number of participants from each group, and group tenure was an average of members' reported tenure on the current team. To measure task interdependence, we employed four items ($\alpha = .88$) from Pearce and Gregersen (1991), which were rated by team leaders at Time 2. Sample items included 'Members of my team have a significant impact on each other's job' and 'Members of my team consult with each other frequently to do their work'.

Results

Prior to testing our hypotheses, we conducted a series of analyses to check the empirical distinctiveness of the measures. We carried out an exploratory factor analysis (EFA) with a varimax rotation for the 13 items measuring G–O fit, G–T fit, cohesion, and group efficacy, all of which were reported by team members. As shown in Table 1, this EFA produced four factors that reflect the hypothesized factor structure. We also conducted a confirmatory factor analysis (CFA) of the 13 items. This CFA generated an acceptable fit to the data ($\chi^2(df = 59) = 123.79$, $p < .01$; CFI = .96, RMSEA = .067), thereby failing to disconfirm the hypothesized underlying factor structure. All indicators were related significantly to their corresponding latent factors (all $p < .001$). In addition, covariances among latent factors ranged between .10 and .21, and 99% confidence intervals of these covariances did not include the value of 1, suggesting that these scales had discriminant validity.

Table 2 presents the means, *SD*s, and inter-scale correlations of the study variables. The mean level of task interdependence was 3.68, which was higher than the typical range of task interdependence reported in previous studies based on real teams (from 2.78 to 3.43; Janz, Colquitt, & Noe, 1997; Pearce & Gregersen, 1991; Van der Vegt,

Table 2. Means, *SD*s, and intercorrelations

	M	*SD*	1	2	3	4	5	6	7	8
1. Group size	5.77	2.35	–							
2. Group tenure (T1, member)	3.04	1.88	.04	–						
3. Interdependence (T2, leader)	3.68	0.66	.27	−.48**	–					
4. G–O fit (T1, member)	3.63	0.36	−.10	−.07	.03	–				
5. G–T fit (T1, member)	3.75	0.33	−.31*	−.04	−.02	.59**	–			
6. Cohesion (T2, member)	3.80	0.45	−.16	−.14	.07	.47**	.42**	–		
7. Group efficacy (T2, member)	3.92	0.53	−.17	−.18	.02	.46**	.47**	.59**	–	
8. GOCB (T2, leader)	3.84	0.54	−.06	−.23	.45**	.34*	.43**	.44**	.21	–

Note. $N = 43$. *$p < .05$; **$p < .01$; ***$p < .001$.

Emans, & Van de Vliert, 1998). This indicates that the participants of this study were from intact work teams characterized by frequent interactions among team members.

Understandably, the two group-level fit variables were strongly correlated, although they were empirically distinguishable, as was demonstrated by the EFA, and CFA results. This is consistent with the results of individual-level studies, which have also reported relatively high levels of association among different aspects of fit, typically ranging between .49 and .72 (e.g., Kristof-Brown, 2000; Saks & Ashforth, 2002).

Hypothesized model and alternative models

We tested the present hypotheses using structural equation modelling (SEM), which allows for an omnibus test of multiple steps of causal relationships (thus, naturally testing mediation hypotheses). Considering that, we had a sample size of 43 teams at the focal level of analysis, it would be unreasonable to utilize all 21 scale items as indicators of the six latent factors. In their simulation study, Nevitt and Hancock (2004) demonstrated that SEM provides robust statistics with small samples (even at $N \leq 50$). Their study, however, indicated that to obtain reliable estimates, the subject-to-parameter ratio should be over 2:1. In the present sample, if we create a full measurement model using the 21 scale items, this ratio becomes .20:1, which is indeed very low and may produce unreliable estimates. For this reason, we used a single indicator for each latent construct and the subject-to-parameter ratio became 2.89:1, which was above the recommended level of 2:1 (Nevitt & Hancock, 2004). Studies have shown that SEM based on single indicators produce comparable results to those based on multiple indicators (Liang, Lawrence, Bennett, & Whitelaw, 1990). In our study, the results based on single indicators produced identical patterns to those based on multiple indicators. In our single-indicator model, we incorporated the measurement errors of each scale by setting the random error to its variance multiplied by $1 -$ its reliability (scale variance $\times [1 - \alpha]$, see Bollen, 1989).

We developed an initial structural model by incorporating all of the hypothesized paths and allowing covariances among the two group-level fit perceptions and the three control variables. The hypothesized model showed only a marginal fit to the data ($\chi^2(df = 9) = 15.61$, $p = .07$; CFI = .99, RMSEA = .132). Following the practice of checking the possibility that theoretically plausible alternative models better explain the observed pattern of relationships, we created four such alternatives, as summarized in Table 3. In the first two alternative models, we assessed the possibilities that G–O fit might exert a direct effect on group efficacy (alternative model one) and that G–T fit exerts a direct effect on cohesion (alternative model two). Neither of these added paths significantly improved the model fit, in accordance with the chi-squared comparisons of the alternative models against the hypothesized model (for both, $p > .05$). Thus, the original model was retained for the purpose of parsimony.

The third and fourth alternatives assessed the possibility that cohesion and group efficacy only partially mediated the relationship between perceived group-level fit and GOCB. Alternative model three, which was created by adding a direct path from G–O fit to GOCB, failed to improve the goodness-of-fit of the model ($\Delta\chi^2(\Delta df = 1) = 2.03$, $p = .15$). This result shows that, as hypothesized, cohesion completely mediated the relationship between G–O fit and GOCB.

In alternative model four, we added a direct path from G–T fit to GOCB. This alternative model resulted in a decent fit to the data ($\chi^2(df = 8) = 8.96$, $p = .35$; CFI = .99, RMSEA = .054) and offered a significantly better fit than the hypothesized

Table 3. Comparison of model fit of alternative models

Models	χ^2	*df*	*p*	CFI	RMSEA	AIC
Hypothesized model: Complete mediation model	15.61	9	.07	.99	.132	−2.36
Alternative model 1: Direct effects of G–O fit on group efficacy	12.49	8	.13	.99	.053	−3.50
Alternative model 2: Direct effect of G–T fit on cohesion	13.43	8	.10	.99	.054	−2.57
Alternative model 3: Direct effects of G–O fit on GOCB	13.58	8	.09	.99	.051	−2.42
Alternative model 4: Direct effect of G–T fit on GOCB	8.96	8	.35	.99	.027	−7.04

Note. CFI, comparative fit index; RMSEA, root mean-square error of approximation; AIC, Aikake information criterion.

model ($\Delta\chi^2(\Delta df = 1) = 6.65, p < .01$). This model also exhibited the lowest AIC value among the models compared in Table 3. This pattern suggests that mediation by group efficacy was not complete and that G–T fit had a significant direct effect on GOCB. Therefore, we adopted this model as the final model, and it is presented in Figure 2 with standardized path coefficients.

Structural relations among variables

The final model, which is depicted in Figure 2, supported the majority of the proposed hypotheses. As expected, perceived G–O and G–T fit significantly predicted cohesion and group efficacy, respectively ($\beta = 0.44$, $p < .01$ and $\beta = 0.48$, $p < .001$, respectively). As shown in alternative model comparisons (see Table 3), the present data supported our expectation that G–O fit is related to cohesion, though not to group efficacy, and that G–T fit predicts group efficacy but not cohesion. This pattern supports the theoretical proposition that there exist two distinct group processes, which represent the emotional and cognitive states of group members.

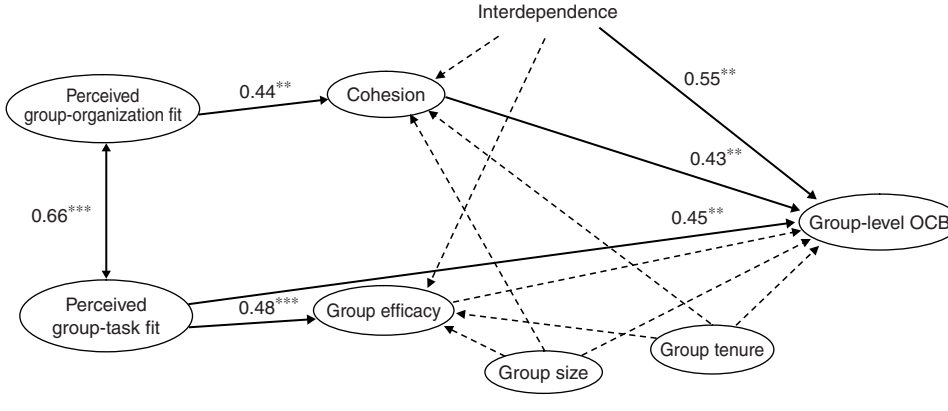

Figure 2. Final structural model. Solid lines represent statistically significant results. Dotted lines represent statistically insignificant results. To simplify the presentation, path coefficients for insignificant path are not indicated. $\chi^2(8) = 8.96$, $p > .30$; CFI = .99; RMSEA = .054. *$p < .05$; **$p < .01$.

In the final structural model, GOCB was significantly predicted by cohesion and perceived G–T fit ($\beta = 0.43$ and 0.45, respectively, both $p < .01$). In addition, task interdependence significantly predicted GOCB ($\beta = 0.55$, $p < .01$). In summary, both G–O and G–T fit had significant positive *total effects* on GOCB ($\beta = 0.19$ and 0.31, respectively, both $p < .05$), thus, confirming Hypotheses 1 and 2. Also supporting Hypothesis 3, group cohesion completely mediated the effect of G–O fit on GOCB, and the indirect effect of G–O fit on GOCB via cohesion was significant (Sobel test statistic $= 2.02$, $p < .05$). Group efficacy, however, exhibited no significant association with GOCB and failed to mediate the link between G–T fit and GOCB (Hypothesis 4, not supported).

Discussion

Existing studies of OCB suffer from ambiguity in the theoretical levels of the predictors and consequences of OCB, thus, losing specificity with regard to the appropriate level of analysis and boundary conditions of the theory (Schnake & Dumler, 2003). In order to address this problem, it is imperative to go beyond the prevailing individual-level focus of the OCB literature (Bommer *et al.*, 2007). The present study contributes to the emerging literature of group-level OCB by theoretically isolating group-level antecedents of GOCB and identifying two complementary mechanisms that shape GOCB in work groups. The empirical data gathered from 43 organizational teams generally supported our theory that group-level fit perceptions have significant implications for group psychological states, such as cohesion and group efficacy, in addition to group members' collective engagement in GOCB. Below, we have highlighted the significant findings of this study, and discussed their implications along with the limitations of the study.

Group-level conceptualization of fit

A lack of level specificity is also widespread in the P–E fit literature, in which a focal person is compared against others, the group, and the organization, and the resulting fit has multi-level ramifications with regard to interpersonal dynamics and group functioning (Kristof-Brown & Jansen, 2007). Naturally, the fit construct beyond the individual level is thus an important research issue in the fit literature. The present study constitutes the first group-level investigation of fit perceptions shared among members. The present data showed that both the G–O and the G–T fit measures evidenced sufficient levels of within-group agreement and meaningfully discriminated between groups with regard to their levels of fit to the organization and the task. Therefore, this study provides empirical evidence for the presence of perceived G–O and G–T fit as a collective construct (Bar-Tal, 1990). In this initial effort to examine fit as a group-level construct, we also demonstrated the significance of group-level fit perceptions to the group's core psychological states as well as to its contextual performance such as GOCB. Future studies may further explore the role of group-level fit in contemporary organizational teams that are dealing with increasing internal diversity along with the increasing complexity and heterogeneity of the operating environment (Hopkins *et al.*, 2001).

Antecedents of GOCB: Multilevel homology or discontinuity?

Although we did not assume multi-level homology or discontinuity for the fit-OCB relationship, the results of our study seemed to support multi-level homology. For

example, the individual-level relationship between P–O fit and OCB has been well documented in the literature, using both actual P–O fit (Goodman & Svyantek, 1999), and perceived P–O fit approaches (Cable & DeRue, 2002; Lauver & Kristof-Brown, 2001). As depicted in Figure 2, perceived G–O fit had significant positive effects on both cohesion and GOCB. Moreover, the positive link between perceived G–T fit and group efficacy validates Werbel and Johnson's (2001) individual-level argument that P–J fit may enhance self-efficacy. In addition, as with our group-level association between cohesion and GOCB, previous studies have demonstrated the positive effect of cohesion on individual OCB (Podsakoff *et al.*, 2000).

The present findings also substantiate the congruence perspective of organizational culture, which endorses the benefit accruing from the alignment of subunit goals and values with those of the organization (Jaskiewicz & Klein, 2007; Lok *et al.*, 2005). We found that when there was a fit between the group's values and goals and those of the organization, group members reported more cohesion and exhibited greater citizenship behaviour. This group-level finding is also consistent with prior individual-level findings, which have documented the positive effects of P–O fit in values and goals on individual work attitudes and OCB (Kristof-Brown *et al.*, 2005). Overall, these overlapping patterns suggest the possibility of multi-level homology, in that OCB and GOCB may have similar functional relationships with similar sets of predictors that can be conceptualized at multiple levels of analysis (Chan, 1998; Rousseau, 1985).

Contrary to our expectations, we detected no mediating effect of group efficacy on the relationship between perceived G–T fit and GOCB. This was due to the lack of a significant relationship between-group efficacy and GOCB. Apparently, group members' motivation and attitudes such as cohesion and team commitment have significant implications for the group's contextual performance such as GOCB (Pearce & Herbik, 2004; Organ *et al.*, 2006). In contrast, group efficacy has been found to predict the group's task performance, because it reflects members' belief about the group's task-related capability (Gully *et al.*, 2002). Thus, it is possible that cohesion and group efficacy have significant implications for contextual performance and task performance, respectively.

In the present study, only cohesion, not group efficacy, was related to GOCB, perhaps because our measure of GOCB was focused on interpersonal courtesy and helping, which may not require a great degree of distinct competence or ability on the part of members to perform. In a radical sense, a group of highly competent members may actually obviate the need for task-related assistance and mutual helping. This pattern could be reversed for a group's task performance, which may be more closely related to collective efficacy (or actual competence of group members) than to cohesiveness among members. Unfortunately, group task performance had not been included in the present study and, we could not have examined this possibility.

Motivational and capability bases of GOCB

Though considerable research attention has been paid to leadership as a predictor of GOCB, the role of group characteristics in explaining GOCB has been largely ignored. Thus far, researchers have examined only a few group characteristics as predictors of GOCB, such as the procedural justice climate (Ehrhart, 2004) and team commitment (Pearce & Herbik, 2004), which represent the *morale* of the group, perhaps reflecting the motivational side of GOCB. However, Organ *et al.* (2006) pointed out that it is necessary to consider both motivation and resources or capability to collectively engage in GOCB.

Unfortunately, even at the individual level, studies that have taken into account both the motivation and ability of individuals in order to predict OCB are quite rare. In the present study, we posited that cohesion represents the collective motivation of members to help each other and to promote collective well-being, whereas group efficacy represents members' belief with regard to the group's capability as a performing unit. The results, as depicted in Figure 2, confirmed the importance of cohesion for GOCB, but this was not the case for group efficacy. Group efficacy was significantly related to other variables in the model, but its relationship with GOCB was only marginally significant ($p < .15$). Instead, perceived G–T fit, which may tap into the readiness and resourcefulness of group members with regard to group tasks, was found to predict GOCB, with an effect size similar to that of cohesion. This pattern indicates that in order to fully understand GOCB, researchers must examine both collective motivation and task-relevant resources.

Although it was not a focus of this study and thus was included only as a control variable, task interdependence was a significant positive predictor of GOCB. This finding supports the 'opportunity' argument related to OCB (Organ *et al.*, 2006), in which OCB is expected to occur more often when members are more interdependent and thus, need to interact to a greater extent than when they are relatively independent, isolated task performers. Interdependence among members is an essential feature of a group, and it often shapes the nature and intensity of various group phenomena (Kozlowski & Bell, 2003). We therefore, conducted a series of *post hoc* analyses to determine whether interdependence moderated the relationships tested in our model, but none of the moderating effects was significant. Nevertheless, our analysis indicated that even after controlling for the natural level of GOCB that might take place due to task interdependence, cohesion among members and perceived G–T fit were meaningful predictors of GOCB.

Practical implications

The present findings offer valuable practical implications for team leaders and managers. In addition to its significant effect on task performance of work groups (Bommer *et al.*, 2007; Koys, 2001; Podsakoff *et al.*, 2000), GOCB serves as a lubricant that improves the teamwork and morale of the team, thus, creating a favourable condition for team functioning (Motowidlo, 2003). Therefore, team leaders need to encourage their members to engage in more OCB. Our results suggest that leaders can create a group context in which members collectively work at a greater level of GOCB by increasing their perception of fit between the group and its task environment. Specifically, leaders can develop a high G–O fit among members by making the culture of the team align with the main culture of the organization. To this end, it is important to clearly communicate the values and goals of the company to group members so that they are encouraged to actively assimilate those values and goals in their team efforts. Our results showed that this aspect of value alignment between the group and its organizational context is also beneficial for interpersonal solidarity among members.

In addition, organizational leaders may help their work unit exhibit more GOCB by enhancing the fit between-group members and the task to be performed. To this end, organizations may form groups with members whose KSAs and needs and desires match the characteristics of the team task. In addition to the proper team formation, organizations may provide their employees with adequate training to boost both P–J fit at the individual level and G–T fit at the group level. As shown in this study, members

with similar G–T fit perceptions tend to engage in more GOCB among themselves perhaps because of the increased commitment to and motivation for the team task. Enhancing P–J and/or G–T fit should also increase task-specific self-efficacy and collective efficacy, which promote individual and group task performance (Gully *et al.*, 2002).

Limitations and directions for future research

Our findings should be interpreted in light of the following limitations of the study. First, the current sample size at the focal level of analysis (43 teams) was relatively small and was not large enough to validate our model using a full measurement model. In addition, our group-level results could be affected by individual non-responses within each team. Timmerman (2005) reported that team-level relationships were attenuated when the number of non-responding members increased in either a random or a systematic manner (e.g., based on the member's level of participation). In our study, the initial overall response rate following T1 and T2 data collection was 84%, which may be a reasonable estimate of the average within-group response rate because, we invited the entire membership of the sampled teams (unfortunately, the within-group response rates for each team are not available). Although this overall response rate is quite comparable to those reported in previous studies (Allen, Stanley, Williams, & Ross, 2007; Timmerman, 2005), further studies need to be conducted to validate the present conceptual model using group-level data with higher within-group response rates in order to obtain more robust empirical findings.

Second, as an initial effort to expand the P–E fit literature to the group level, this study focused on specific aspects of the phenomenon of interest, thus, leaving other aspects unexamined. Of course, no study can include all constructs pertinent to the research framework. Nevertheless, we acknowledge that the omission of team task performance in the present study puts a clear limit on its scope. In addition, future studies may benefit from expanding the scope of the study, by examining internal and external group-level fit simultaneously as well as measuring both types of OCB (OCB-I and OCB-O) at the group level (DeRue & Hollenbeck, 2007; Podsakoff *et al.*, 2000).

Finally, our measures of fit were predicated on group-level perceptions of fit or overall perceptual judgments of members. Although this approach can be efficiently adopted and may provide measures of fit with a relatively high predictive power, the details of the underlying conceptual domain causing the fit effects remain to be elucidated. In this regard, researchers may need to further elaborate the specific dimensions of values (e.g., collectivism), goals (e.g., learning vs. performance), and skills (e.g., information technology skills, communication skills) to be employed for G–O or G–T comparisons.

The degree of fit between an entity (e.g., person, group) and its task or organizational context naturally involves a multi-level phenomenon, although this aspect has been largely neglected in the relevant literature. In this study, we identified two group-level fit constructs that have significant implications for important collective psychological states and GOCB. Future research should seek to further elucidate the role of group-level fit constructs with regard to various outcomes including GOCB-I, GOCB-O, and team performance. For example, group efficacy, which did not mediate the relationship between G–T fit and GOCB-I, could turn out to be a significant mediator between G–T fit and GOCB-O or team task performance.

In addition, it is critical to explore how the group-level fit constructs affect or are affected by various aspects of collective motivation (e.g., cohesion, team commitment,

group identification, and justice climate), collective capacity (e.g., objective task skills, abilities, group potency, and group efficacy), and interpersonal processes (e.g., communication, conflict; Marks *et al.*, 2001). Finally, both scholars and practitioners may benefit from further theoretical development of the core content dimensions that may drive the perceptions of group-level fit. Given the collective nature of the group-level fit constructs as observed in this study, researchers may also benefit from expanding this group-environment interaction process as part of a meaningful group climate (thus, a fit climate) or normative context of group functioning.

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