Management and Organization Review 6:1 55–75
doi: 10.1111/j.1740-8784.2009.00172.x

From Organizational Citizenship Behaviour to Team Performance: The Mediation of Group Cohesion and Collective Efficacy

Cheng-Chen (Timothy) Lin[1] and Tai-Kuang (T. K.) Peng[2]

[1]*National Pingtung University of Science and Technology, Taiwan, and* [2]*I-Shou University, Taiwan*

ABSTRACT What is the relationship between individual members' organizational citizenship behaviours (OCB) and team-level performance? Using a social cognitive perspective, the current study proposes that the relationship is mediated by a team's cohesion and collective efficacy. We collected data at two points in time from three sources with a sample of 462 salespersons representing 62 teams (62 branches) of a financial institute in Taiwan. The results support the theoretical argument that OCB positively influences organizational performance. Furthermore, group cohesion and collective efficacy fully mediated the direct effects of OCB towards individuals and the organization on team performance. Theoretical and practical implications of the results are discussed.

KEYWORDS collective efficacy, group cohesion, organizational citizenship behaviour, team performance

INTRODUCTION

> Although we have some reassuring data in support of the connection between OCB and systemic performance, little if any analysis has dealt with the means by which OCB has these effects.
>
> Dennis Organ (1997: 95)

Since Organ and colleagues (Bateman & Organ, 1983; Organ, 1988; Smith, Organ, & Near, 1983) introduced the concept of organizational citizenship behaviours (hereafter, OCB) more than two decades ago, OCB has been one of the most actively researched areas among organizational scientists. Despite the numerous efforts devoted to this stream of inquiry, a review of the literature indicates that these studies have overwhelmingly focused on identifying potential antecedents of OCB (Hui, Lee, & Rousseau, 2004; Organ & Ryan, 1995). Only a few studies (e.g.,

Podsakoff & MacKenzie, 1994) examine the linkage between OCB and organizational (or team) performance, and they offer virtually no understanding of the process between them. This negligence of the process reflects a major gap in the understanding of OCB. Not surprisingly, Organ (1997: 95) lamented the process from OCB to organizational performance as a 'black box' and the challenge of unravelling it as 'unfinished business'.

In a recent meta-analytic study of OCB, Podsakoff, Whiting, Podsakoff, and Blume (2009) did not locate a single study exploring the mediation process from OCB to organizational consequences. Using the keywords of organizational citizenship behaviour, organizational performance, and organizational effectiveness, we located only nine empirical studies that explicitly focus on exploring the effects of OCB on organizational performance. They are Bachrach, Powell, Collins, and Richey (2006), Dunlop and Lee (2004), Ehrhart, Bliese, and Thomas (2006), Karambayya (1989), Koys (2001), Podsakoff and MacKenzie (1994), Podsakoff, Ahearne, and MacKenzie (1997), Walz and Niehoff (2000), and Yen and Niehoff (2004). The overall findings reported in these studies support the hypothesis that OCB relates positively and significantly to a majority of the organizational effectiveness indicators examined. However, none of these studies explores the theoretical mechanisms that explain the OCB and organizational performance relationships, thus leaving a critical conceptual gap in need of bridging. In light of accumulated knowledge, criticism, and controversies resulting from the stream of OCB research, Organ (1997: 95) asks a profound question: 'What is the chemistry by which the state of organization is altered by individual OCB?' Providing an answer to this question is crucial because OCB will remain an academic ideal without substantive meaning unless we can theoretically and empirically demonstrate why OCB in the aggregate actually contributes to unit or organizational performance.

Accordingly, the present study seeks to contribute to OCB research by serving as a cogent response to Organ's appeal. It intends to answer his critical question and add value to OCB research by clarifying the mediating mechanism of interest with subjective and objective data from three sources to test the process. In the present study, the words 'organizational', 'group', 'unit', and 'team' performance are used interchangeably. As has been reflected in organizational science literature (e.g., Cohen & Bailey, 1997), the terms 'group cohesiveness' and 'group cohesion' will refer to the same construct.

THEORETICAL BACKGROUND AND HYPOTHESES

Organ (1988: 4) defined OCB as 'behavior(s) of a discretionary nature that are not part of the employee's formal requirements, but nevertheless promote the effective functioning of the organization'. Over the past two decades, researchers have devoted numerous efforts to understanding OCB from a wide array of fields in

organizational science (e.g., Organ & Ryan, 1995). The majority of the studies (e.g., Bateman & Organ, 1983; Williams & Anderson, 1991) have focused on exploring OCB at the individual level. However, like many other constructs in organizational research, OCB may exist at individual and group (organizational) levels for both theoretical and practical reasons (Schnake & Dumler, 2003). It has become evident that between-group differences in OCB are greater than within-group differences (e.g., Sun, Aryee, & Law, 2007). That is, members in some groups are likely to engage in more OCB than are members in other groups.

In developing the hypotheses, we adopted the Williams and Anderson (1991) framework that classifies OCB towards individuals as OCBI and OCB towards the organization as OCBO, two independent variables of this study. Examples of OCBI are behaviours such as willingness to help newcomers to adjust to their work environment and to cover work assignments for colleagues when needed. In contrast, OCBO includes complying with company rules even when working alone and arriving at the office to start work early. This categorization is conceptually more plausible than a general construct that would encompass all behaviours and more parsimonious than one that would use several subscales at a time.

Conceptually, it is the aggregate OCB, not individual instances of OCB, that has an impact on organizational effectiveness (Organ, 1988; Schnake & Dumler, 2003). Rousseau (1985) indicates that levels of theory, measurement, analysis, and inference should be aligned to avoid level fallacy. Drawing on Organ's (1988) proposition that the aggregate actions of members displaying OCB facilitate organization-level functioning, we defined aggregate OCB as the total sum of OCB performed towards fellow members or towards members' own groups. Accordingly, as done in earlier research (e.g., Podsakoff & MacKenzie, 1994; Sun et al., 2007), this study measured OCB at the unit level by aggregating individual-level OCB. This is different from 'group OCB', which is the OCB by the whole group towards other groups or the company as a whole (Chen, Lam, Naumann, & Schraubroeck, 2005).

Direct Effects of OCB on Team Performance

There are a number of rationales given for why OCB may relate positively to work group or organization effectiveness (for a summary, see Podsakoff & MacKenzie, 1997). Generally, OCB may enhance organizational performance by '. . . "lubricating" the social machinery of the organization, reducing friction, and increasing efficiency' (Podsakoff & Mackenzie, 1997: 263). Social cognitive theory (Bandura, 1986, 1977) underpins this relationship. In the aggregate, OCB provides members a salient situation for vicarious learning in a team. Such learning, in turn, promotes efficiency and effectiveness in teams and organizations (Bandura, 2000, 1997).

In the case of OCBI, members may voluntarily help newcomers familiarize themselves with the work environment and assist them in fitting in with the team

https://doi.org/10.1111/j.1740-8784.2009.00172.x Published online by Cambridge University Press

culture. Senior members may help junior colleagues in networking with potential customers. They may also cover each other at busy times to deliver quality service to clients (Podsakoff & Mackenzie, 1994; Podsakoff et al., 1997). The study by Sun et al. (2007) demonstrated that members' citizenship manifests trust, cooperation, and high-quality attachment to the organization and that this leads to low turnover. This is particularly true when the work context that members experience is one of high task interdependence (Bachrach et al., 2006), as reflected by the work teams examined in the current study, where members work together to achieve clearly defined group goals. Accordingly, it is logical to propose a positive relationship between OCBI and organizational performance.

Organizational citizenship behaviours towards the organization may also be instrumental in fostering organizational performance. By definition, OCBO is behaviour displayed for the good of the organization. More specifically, members not only dutifully comply with rules and procedures, but also voluntarily take on challenging tasks, suggest ways to improve work functioning, and help to coordinate activities both within and across work groups (Karambayya, 1989; Sun et al., 2007). Members' OCBO increases the stability of the organizations' performance, enables the organization to spend more energy on planning and problem solving, and helps the organization to respond to market changes more effectively (Podsakoff et al., 1997). In other words, OCBO may increase the efficiency of an organization by reducing the need to devote scarce resources to purely maintenance functions (Organ, 1988) and releasing resources for more productive uses (Borman & Motowidlo, 1993). Therefore, when members display a high degree of OCBO, the group avoids deficiency and enhances operating capability. Based on the above, we suggest the following:

Hypothesis 1: Aggregate organizational citizenship behaviour (OCBI and OCBO) in the team will have significant positive effects on team performance.

Accounting for the OCB–Team Performance Relationship

As social cognition underpins the link between OCB and team performance, this link may be indirect through two mediators. Drawing further on the social cognitive perspective, we reason that, by way of modelling and reinforcement, individuals who sense the OCB displayed by fellow group members will form attributions and learn to respond properly. This is based on a fundamental assumption that people are self-regulating and proactive in controlling the events that affect their lives and that cognitive development proceeds mainly through observational learning and the actual effects of one's own behaviour (Bandura, 1977). In a social context where OCB occurs, members take the contextual cues of helping, cooperation, and coordination as behavioural guides. With continuous interactions, the tone of OCB is likely to make group cohesion and collective efficacy salient. In a work group,

social interactions and modelling often influence members' display of emotion. This arousal effect, as Bandura (1986) termed it, is likely to serve as a contextual enhancer for shared cognition, which, in turn, facilitates unity among members. Furthermore, vicarious learning in the team context is known to influence members' belief of team efficacy – their belief that they can solve their problems through collaborative effort (Bandura, 2000, 1986). Taken together, group cohesion and collective efficacy reflect the affective and cognitive aspects of the social learning process in a team context. Accordingly, we identified them as two potentially important mediators that transmit OCB effects to group performance.

Cartwright and Zander (1960) developed the concept of group cohesion to refer to individuals' high degree of loyalty to fellow group members and their willingness to endure frustration for the group. Festinger (1968: 185) later defined group cohesiveness as 'the resultant of all forces acting upon members to remain in the group'. That is, the more psychologically salient group membership is, the more the group members depersonalize their feelings, perceptions, and behaviours towards the group. The cohesion of the group thus develops. On the other hand, collective efficacy is rooted in self-efficacy, the latter being the core concept in Bandura's (1986) social cognitive theory. He defined self-efficacy as one's perceptions regarding one's capability to produce desired outcomes. Because individuals do not live in isolation, Bandura (1997) extends the theory to include the group as another agency of human functioning. Bandura (1986) defined collective efficacy as a shared belief in the conjoint capabilities of a group necessary to produce desired effects. According to Bandura (2000), collective efficacy is not merely the sum of personal judgments regarding capabilities, but an emergent group-level phenomenon that results from interactions and the coordination of group functioning. In other words, except for the unit of agency, self- and collective efficacies have similar sources, functions, and processes.

Linking OCB and the mediators. In the workplace, individuals working interdependently towards a common group goal display OCB and feel the benefits of similar behaviours exhibited by others. In such a supportive atmosphere, OCB becomes a particular social cue that creates friendliness, mutual liking and respect, cooperation, confidence, and motivation in implementing unit tasks. In other words, a supportive climate increases members' attachment towards the group (Mossholder, Settoon, & Henagan, 2005) and positive evaluation of the group's competency in achieving group goals (Lawler, Thye, & Yoon, 2000). Emotional attachment and positive evaluation of group capability are manifestations of group cohesion and collective efficacy.

In OCB research, group cohesion is generally treated as an antecedent of OCB (e.g., George & Bettenhausen, 1990). The logic behind this is that, in a cohesive group, members are more sensitive to others and are more willing to help, and members in such a group will experience stronger positive moods, which, in turn,

https://doi.org/10.1111/j.1740-8784.2009.00172.x Published online by Cambridge University Press

will engender altruism towards others. These are certainly plausible arguments. Nonetheless, we want to propose an alternative argument that OCB promotes group cohesion. This is grounded in the belief that OCBI engenders trust and a common sense of humanity in interpersonal relations (e.g., Sun et al., 2007), both of which are the essence of altruistic behaviour, and, thus, facilitates loyalty to the group. That is, interpersonal attraction fosters cohesion and attachment. Podsakoff and MacKenzie (1997: 138) made this explicit by stating that 'helping behavior may directly contribute to such an environment by enhancing morale and fostering group cohesiveness and a sense of belonging to a team, thus making the organization a more attractive place to work'. Accordingly, employees enjoy working in a pleasant environment with a closely knit and cohesive group of coworkers.

In a similar vein, OCBO engenders feelings of group support and group mastery that will reinforce collective efficacy. As members perform more acts of citizenship, which others continue to observe and imitate, an 'OCB norm' will eventually assert itself, and helping will become a behavioural mode on the team (Ehrhard & Naumann, 2004). In a work unit with a strong norm of OCBO, members more actively share job-related information, solve work problems together, and support each other to achieve work goals than do members in a unit where OCBO is not a standard mode (Bachrach et al., 2006; Podsakoff & MacKenzie, 1994; Sun et al., 2007). Empirical evidence also suggests that, through high-quality interaction, work group members gain confidence, psychological security, and positive self- and group evaluation (e.g., Lawler et al., 2000). All of these desirable outcomes are highly facilitative to forming collective efficacy.

Based on the above discussion, we posit direct effects and differential effects of OCBI and OCBO on group cohesion and collective efficacy:

Hypothesis 2a: Both OCBI and OCBO will have significant positive effects on group cohesion and collective efficacy.

Hypothesis 2b: OCBI will have a stronger positive effect on group cohesion than on collective efficacy, whereas OCBO will have a stronger positive effect on collective efficacy than on group cohesion.

Mediating effects. Social learning not only serves as a prompt for similar actions, but also fosters socially shared cognition (Bandura, 2000). Therefore, a social context where people exhibit OCB easily induces a common sense of rapport and loyalty among members. As shared cognition often brings change and development (Bandura, 1986), cohesive groups commonly perform better than disunited groups. With the exception of groupthink (Janis, 1982), an extreme and somewhat unique form of group cohesion, there is substantial empirical evidence reporting the positive link between group cohesion and organizational effectiveness in empirical studies and meta-analyses (e.g., Gully, Devine, & Whitney, 1995; Mullen &

Cooper, 1994). For example, the meta-analysis conducted by Gully et al. (1995) provides sound evidence that cohesion had a significant effect on performance at group and organizational levels. Mullen and Cooper's (1994) meta-analysis found the link to be particularly significant when the group size is relatively small, its members commit to goals, the entrance standard is relatively high, and there is competition from outside. These conditions appear to be characteristic of the work groups sampled in the current study. Moreover, Bolino, Turnley, and Bloodgood (2002) propose that employees exhibiting OCB enhance relational social capital, which, in turn, improves organizational performance. Relational social capital, characterized by a sense of mutual identification, interpersonal trust, reciprocity, and emotional intensity among members, is essentially similar to group cohesion.

Building on the above theoretical arguments and empirical evidence, we propose that OCBI helps create group cohesion, which, in turn, produces higher levels of team performance.

Hypothesis 3: Group cohesion will mediate the relationship between OCBI and team performance.

Some organizational settings have successfully adopted social learning to develop intellectual, behavioural, and social capabilities (Bandura, 1997, 1986). These capabilities often translate into performance. As studies have shown self-efficacy to be significantly linked with such individual outcomes as satisfaction, commitment, and performance (e.g., Maddux, 2002), research also shows collective efficacy to have similar effects on group-level outcomes (e.g., Lee & Farh, 2004; Tasa, Taggar, & Seijts, 2007). Specifically, in their study of undergraduate students working as project groups, Lee and Farh (2004) reported a generally positive relationship between collective efficacy and task performance, particularly for mixed gender groups. Most recently, a multilevel and longitudinal study conducted by Tasa et al. (2007) documented that members' self-efficacy in team processes developed into collective efficacy over time, which then significantly predicted final team performance.

Earley (1994) conducted a cross-cultural analysis of organizational efficacy (a variant of collective efficacy) and productivity among organizations in Hong Kong, Mainland China, and the USA. He found that strong perceived efficacy rather than geographical cultural locale fostered performance attainment at both individual and societal levels. Furthermore, two recent meta-analytic reviews reached similar conclusions regarding the validity of collective efficacy in predicting group performance, with correlations ranging from 0.41 to 0.45 (Gully, Incalcaterra, Joshi, & Beaubien, 2002; Stajkovic & Lee, 2001). Taken together, the capability and confidence of a group will increase when the members of the group exhibit high levels of OCBO. Consequently, the performance of the group will improve (Jung & Sosik, 2002). These studies suggest that individuals in groups with high

https://doi.org/10.1111/j.1740-8784.2009.00172.x Published online by Cambridge University Press

collective efficacy willingly put their capabilities towards group accomplishments. In doing so, they fulfil their obligations as expected, they make their share of contributions, and they win the respect of their teammates. Furthermore, Bolino et al. (2002) suggest that employees engaging in OCB may contribute to organizational performance through cognitive social capital. Cognitive social capital, characterized by shared language and values of the organization, allows members to more easily exchange ideas, coordinate activities, and solve work problems together. Collective efficacy bears resemblance to the concept of cognitive social capital. Based on the above logic, we propose that OCBO contributes to the creation of collective efficacy, which, in turn, enhances team performance.

Hypothesis 4: Collective efficacy will mediate the relationship between OCBO and team performance.

METHOD

Sample and Research Design

The review of existing studies suggests that an ideal research design in this line of inquiries would (i) include a reasonable number of groups for statistical testing; (ii) locate organizations with low employee turnover and with objective performance data; and (iii) allow for multiple data collections. These are the principal guidelines for our research design.

We collected data for this study from 462 sales representatives of 62 sales teams in 62 branches of a financial institution in Taiwan. The inclusion of only a single organization is intended to control for industry and organization effects. The sales teams were comprised of 5–13 representatives (mean = 7.45), while the sizes of the branches ranged from 12–26 employees (including sales representatives and tellers). The overall turnover rates for the 62 branches ranged from 0 to 3.4 percent in the three years prior to the study. We selected these sales representatives as our research sample for two reasons. First, Podsakoff and MacKenzie (1994) attributed the negative relationship between helping behaviour and unit performance found in their study to the high turnover rate in their sample. That is, many employees receiving help might have left the company before the benefits of coworkers' helping behaviours were realized. Compared with their sample, the present study's sample included a lower turnover rate, thus allowing the benefits of OCB to be more testable. Second, the sales team performance measure is based on team-based criteria via the computation of annual sales volume for various products. Emphasizing teamwork, this institute did not offer rewards based on individual performance. In addition to a base pay rate that was related to each individual member's tenure, the reward system is based mainly on the team's sales performance.

We collected data from three sources: employees, their immediate supervisors, and organizational records. In order to ensure a high response rate, we collected

https://doi.org/10.1111/j.1740-8784.2009.00172.x Published online by Cambridge University Press

the survey data at the institution's annual training sessions, in which all employees were required to participate. We administered two questionnaires at two different points in time. At Time 1, an employee's immediate supervisor (i.e., managers of the branches) rated the employee's OCB (i.e., OCBI and OCBO). At Time 2, 12 months later, the employees in each branch evaluated the group cohesion and collective efficacy they experienced in their own sales team. We used company records of annual sales volume for new products at Time 2 to construct performance scores. The participants completed the surveys during their leisure time throughout the training programme. Anonymity and confidentiality were assured. At Time 1, 62 supervisors rated a total of 495 sales representatives, an average of 7–8 subordinates per supervisor. At Time 2, 462 individuals completed the questionnaires that could be matched with the supervisor surveys from Time 1, resulting in a 93.33 percent response rate between the two surveys. Among the participants, 67.2 percent were women (women = 275, men = 134), average age was 30 years (ranging from 26 to 60), average job tenure was 4.51 years (ranging from 2 to 22), and 71 percent of the sample had earned at least a bachelor's degree.

Measures

OCBI and OCBO. We assessed OCB with a scale originally developed by Farh, Earley, and Lin (1997) in Taiwan and later modified and validated by Hui, Law, and Chen (1999) for a sample of Mainland Chinese individuals. We used the altruism subscale to measure OCBI and the conscientiousness subscales to measure OCBO. A majority of scholars in the field (e.g., Organ, Podsakoff, & MacKenzie, 2006; Podsakoff, MacKenzie, Paine, & Bachrach, 2000) have identified altruism (or helping behaviour, as it is sometimes termed) and conscientiousness (also called generalized compliance) as the cores of OCBI and OCBO, respectively. Each scale includes four items. The items for OCBI are 'This employee helps the newcomers even without my asking', 'This employee assists new colleagues in adjusting to the work environment', 'This employee helps colleagues solve work-related problems', and 'This employee covers work assignments for colleagues when needed.' The items for OCBO are 'This employee does not mind taking on new or challenging assignments', 'This employee takes his/her job seriously and rarely makes mistakes', 'This employee complies with company rules and procedures even when nobody is watching and no evidence can be traced', and 'This employee's attendance at work is above the norm'.

Both measures used a five-point Likert-type response scale, with '1' denoting 'strongly disagree' and '5' representing 'strongly agree'. The coefficient alphas were 0.89 and 0.92 for OCBI and OCBO, respectively. We estimated two measurement models to verify the distinctiveness of OCBI and OCBO. The results of the confirmatory factor analysis (CFA) suggested that the two-factor model provided a good fit ($\chi^2 = 48.09$ [d.f. = 19], non-normed fit index [NNFI] = 0.98,

https://doi.org/10.1111/j.1740-8784.2009.00172.x Published online by Cambridge University Press

comparative fit index [CFI] = 0.99, root mean square error of approximation [RMSEA] = 0.06, standardized root mean square residual [SRMR] = 0.04). The two-factor model also provided a significant improvement in fit ($\Delta\chi^2 = 98.14$ [Δd.f. = 1], $p < 0.001$) over the single-factor model ($\chi^2 = 146.23$ [d.f. = 20], NNFI = 0.92, CFI = 0.94, RMSEA = 0.13, SRMR = 0.06).

Supervisor assessment may risk data non-independence in that having individual supervisors rate multiple subordinates within their branch may cause rating bias, which could introduce bias into the estimates. To estimate the extent of this bias, we asked the managers to assess their subordinates' behaviours and the employees to rate themselves. The correlation between employee ratings and supervisor ratings was 0.77 ($p < 0.01$) for OCBI and 0.69 ($p < 0.01$) for OCBO. Based on this check, we determined that the manager assessment was appropriate. Moreover, since the level of analysis is the group, independence of ratings within each supervisory group is not a concern.

Collective efficacy. The four-item measure developed by Jex and Bliese (1999) was adopted to assess the collective efficacy of the branches. Using the referent-shift model as suggested by Chan (1998), this measure asks the employees to rate their work group's ability to perform their tasks on a five-point scale with end points of 'strongly disagree' and 'strongly agree'. These items are 'The sales team of this branch I work with has above-average ability', 'I think the level of training in this unit is high', 'If we had a new sales project tomorrow, I would feel good about working with my unit', and 'I have real confidence in my team's ability to perform its mission'. The coefficient alpha of this scale was 0.82.

Group cohesion. We used the referent-shift model to measure group cohesion with an eight-item scale developed by Dobbins and Zaccaro (1986) and later modified by Kidwell, Mossholder, and Bennett (1997). Three sample items read 'I feel that each of us is really part of the work group', 'The work group we belong to is a close one', and 'The members of my group will readily defend each other from criticism by outsiders'. The five-point scale format was the same as that used to measure collective efficacy. The coefficient alpha of this scale was 0.84.

Because collective efficacy and group cohesion were both assessed by the employees, we also conducted a CFA to check for the distinctiveness of the two measures. The results of the CFA indicated that the two-factor model was better than the one-factor model (two-factor model: $\chi^2 = 206.09$ [d.f. = 53], NNFI = 0.96, CFI = 0.97, RMSEA = 0.08, SRMR = 0.04; one-factor model: $\chi^2 = 1{,}121.89$ [d.f. = 54], NNFI = 0.74, CFI = 0.79, RMSEA = 0.22, SRMR = 0.16; the comparison of models: $\Delta\chi^2 = 91.58$ [Δd.f. = 1], $p < 0.001$).

Team performance. We developed objective unit (i.e., sales team) performance scores (i.e., annual sales volume of new products) based on performance data between Time 1 and Time 2 that were published in the yearly internal report issued by the

https://doi.org/10.1111/j.1740-8784.2009.00172.x Published online by Cambridge University Press

headquarters of the institute. The indices include several performance categories, for example, financial products (e.g., mutual funds), insurance products (e.g., health insurance), new products (those marketed in the past year), and extant products (those marketed for more than a year). For each branch's sales team, the indices are uniformly weighted performance points depending on the types of products (e.g., financial or insurance) and amount of money involved (e.g., money received as a fixed amount or as monthly receivables). We summed up performance points from all new products within a branch between Time 1 and Time 2 as our team performance measure, with higher scores indicating better performance. This measure is appropriate because it covers a period roughly parallel to that of our project period from Time 1 to Time 2.[1]

Control variables. We included three categories of control variables in our analyses. First, based on the results of organizational demography studies (e.g., Tsui & Gutek, 1999; van Knippenberg, De Dreu, & Homan, 2004), we included four indicators of demographic diversity: gender, education level, age, and tenure of membership in the present sales team. Following the practices employed in previous diversity research (e.g., Tsui & Gutek, 1999), we calculated diversity indices of gender and education level using Blau's (1977) heterogeneity index. Furthermore, we computed coefficients of variation for continuous variables such as age and tenure on the present team. Second, research has documented the effects of team size on performance (e.g., Jackson & Joshi, 2004; van Knippenberg et al., 2004). We measured team size according to the total number of sales representatives.

Finally, the economic vitality of a region is very likely to affect the performance of the branches in that region. We controlled for region effect by using a composite index constructed by Commonwealth Magazine,[2] a mainstream Chinese monthly business publication in Taiwan. Based on a survey examining the economic power of all 23 cities, the weighted index was composed of such factors as unemployment rate, total sales volume in the business sector, local government economic development budget, average land price, average yearly per capita income, and average household savings. The composite scores ranged from 7.42 (ranked #1) to 2.33 (ranked #23). We employed the scores as the proxy of the region effect in the study.

Analysis

Because this study assesses OCB phenomenon at the unit level, the level of analysis here is the branch. To do branch-level analysis, we aggregated data collected at the individual level (the two OCB dimensions assessed by supervisors and group cohesion and collective efficacy as rated by employees) to the unit level. The prerequisite for meaningful data aggregation is an assessment of within-group agreement and between-group variation for each construct. We computed rwg, an

https://doi.org/10.1111/j.1740-8784.2009.00172.x Published online by Cambridge University Press

inter-rater agreement index (James, Demaree, & Wolf, 1984), for the four constructs separately for each of the branches. The means and medians of the four rwgs were all acceptable, ranging from 0.69 to 0.82 for means and 0.73 to 0.89 for medians. The minimum and maximum for all the rwg values ranged from 0.64 to 0.93. We also computed intraclass correlations for all four constructs. These include ICC(1), the ratio of between group variance to total variance in a measure, and ICC(2), the reliability of a group mean. The analyses indicated that a substantial amount of variance was due to branch membership. Specifically, the values of ICC(1) ranged from 0.11 to 0.20, and those of ICC(2) ranged from 0.51 to 0.66 (all p-values < 0.001). The literature has suggested some rule of thumb values to justify aggregation. The respective cut-off points of rwg, ICC(1), and ICC(2) are 0.7 or above (James et al., 1984), 0.12 or above (Bliese, 2000), and 0.6 or above (Glick, 1985). The values of the present study roughly aligned with these suggested values. Accordingly, we deemed the aggregation adequate.

To test for mediation effects, we employed normal theory tests and bootstrapping tests (Preacher & Hayes, 2008). Recent reviews indicate that researchers often use causal-steps strategy, particularly Baron and Kenny's (1986) approach and the product-of-coefficient approach (e.g., the Sobel test), to test mediation effects (Mathieu, DeShon, & Bergh, 2008). However, these approaches are not adequate for the present study for two reasons. First, Baron and Kenny's (1986) method was proposed to test models with a single mediator instead of multiple mediator models (Preacher & Hayes, 2008). Second, due to the small sample ($n = 62$) in the present study, a mediation test based on normal distribution assumptions (Sobel test) led to estimation bias (MacKinnon, Lockwood, & Williams, 2004). Recent developments in mediation research explore bootstrapping and its variants as appropriate methods of testing multiple mediation models even when sample size is small and when the sampling distribution of indirect effects does not assume normality (e.g., MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; Taylor, MacKinnon, & Tein, 2008). Following the procedures suggested by Preacher and Hayes (2008), we carried out normal theory tests to check for Hypotheses 1, 2a, and 2b as well as bootstrapping tests to check for Hypotheses 3 and 4. Specifically, we calculated the two indirect effects' 95 percent confidence intervals (CIs) with bias corrected and accelerated to determine whether these CIs include zero (Efron & Tibshirani, 1993).

RESULTS

Table 1 reports the means, standard deviations, correlations, and reliabilities of all variables at the team level. The reliability coefficients were all greater than 0.82. The significant correlations among the four independent variables suggest potential problems of multicollinearity. We did some subsequent analyses to detect the level of tolerance. The resulting values of variance inflation factor ranged from 1.74 to 3.31, and the highest condition index was 55.13, implying that the

https://doi.org/10.1111/j.1740-8784.2009.00172.x Published online by Cambridge University Press

Table 1. Descriptive statistics and intercorrelations among variables

	Mean	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1. Gender diversity	0.28	0.17	–									
2. Education diversity	0.46	0.16	0.01	–								
3. Age diversity	0.11	0.03	−0.12	0.20	–							
4. Tenure diversity	0.54	0.22	−0.03	0.11	0.44***	–						
5. Team size	7.45	3.65	0.01	0.01	0.24	0.13	–					
6. Region effect	6.71	0.57	0.00	0.01	0.36**	0.21	0.44***	–				
7. OCB-individual	3.63	0.31	0.20	0.04	0.01	0.17	−0.02	0.45***	(0.89)			
8. OCB-organization	3.27	0.31	0.03	0.13	0.05	0.18	−0.05	0.33**	0.69***	(0.92)		
9. Collective efficacy	3.38	0.39	0.14	0.04	0.14	0.10	0.01	0.36**	0.57***	0.62***	(0.88)	
10. Group cohesion	3.59	0.27	0.22	0.19	0.16	0.15	0.01	0.22	0.71***	0.41***	0.47***	(0.82)
11. Team performance	142.72	73.34	0.01	0.03	0.27*	0.24	0.71***	0.52***	0.42***	0.39**	0.43***	0.40***

Notes:
N = 62.
The alpha internal consistency reliability coefficients appear in parentheses along the diagonal.
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
OCB, organizational citizenship behaviours.

https://doi.org/10.1111/j.1740-8784.2009.00172.x Published online by Cambridge University Press

collinearity was not a serious problem (see Belsley, Kuh, & Welsch, 1980). Considering that the data for the OCB dimensions and the potential mediators were collected from independent sources and that the two are conceptually distinct, we decided that the significant correlations did not need to be further addressed.

Direct Effects and Mediated Relationships

Table 2 reports the results of the regression analyses, Sobel tests, and bootstrapping tests. Model 2 is the model for group cohesion, and Model 4 is for collective efficacy. Model 6 is the test for Hypothesis 1, which posits that both OCBI and OCBO have a significantly positive effect on team performance. As shown in Model 6, OCBI (unstandardized beta = 70.37, standard error [SE] = 25.55, $p < 0.01$) and OCBO (unstandardized beta = 53.89, SE = 26.30, $p < 0.05$) were significantly associated with team performance. Hence, Hypothesis 1 was supported.

Hypothesis 2a postulates that both OCBI and OCBO predict group cohesion and collective efficacy. Hypothesis 2b states that OCBI has a stronger effect on group cohesion, whereas OCBO has a stronger effect on collective efficacy. In Table 2, Model 2 reveals that OCBI was significantly and positively related to group cohesion (unstandardized beta = 0.79, SE = 0.11, $p < 0.001$), but it was not related to collective efficacy (Model 4: unstandardized beta = 0.24, SE = 0.19, n.s.). However, OCBO was significantly associated with collective efficacy (Model 4: unstandardized beta = 0.59, SE = 0.18, $p < 0.01$) but unrelated to group cohesion (Model 2: unstandardized beta = –0.13, SE = 0.10, n.s.). Thus, Hypothesis 2a has partial support while Hypothesis 2b has full support.

Hypothesis 3 postulates that group cohesion mediates the relationship between OCBI and team performance. Based on Model 7 in Table 2, the direct effect of OCBI was insignificant when group cohesion (unstandardized beta = 47.56, SE = 15.24, $p < 0.01$) and collective efficacy (unstandardized beta = 47.31, SE = 28.05, n.s.) entered the regression equation. The result suggests that group cohesion fully mediated the effect of OCBI on team performance. Table 2 also reports the results of the Sobel test and the 95 percent CIs for bias as corrected and accelerated (abbreviated BCa 95% CI) using the bootstrapping technique (see the last four rows of Table 2). BCa is a method using adjusted probability levels to correct errors incurred during approximation. As shown, the Sobel test indicates that the indirect effect is significant (indirect effect = 37.57, t = 2.83, $p < 0.01$), and the bootstrapping test indicates the same. Specifically, the BCa 95% CI ranged from 6.94 to 96.01, which did not include zero, suggesting a significant and full indirect effect of group cohesion. As such, Hypothesis 3 is supported.

Hypothesis 4 postulates the mediating role of collective efficacy between OCBO and team performance. Shown in Model 8 of Table 2, the direct influence of OCBO became insignificant when group cohesion (unstandardized beta = 35.40, SE = 18.52, n.s.) and collective efficacy (unstandardized beta = 67.62, SE = 20.93,

https://doi.org/10.1111/j.1740-8784.2009.00172.x Published online by Cambridge University Press

Table 2. Direct effect of OCB-individual/OCB-organization and mediation of collective efficacy and group cohesion on team performance

	Mediators								*Dependent variable*							
	Group cohesion				*Collective efficacy*				*Unit performance*							
	Model 1		*Model 2*		*Model 3*		*Model 4*		*Model 5*		*Model 6*		*Model 7*		*Model 8*	
	B	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*	*B*	*SE*
Intercept	2.63	0.42	1.61	0.33	1.40	0.61	−0.02	0.57	−209.84	81.35	−413.47	73.59	−468.50	79.70	−517.69	78.85
Independent variables																
OCB-individual			0.79***	0.11			0.24	0.19			70.37**	25.55	42.82	28.10		
OCB-organization			−0.13	0.10			0.59**	0.18			53.89*	23.60			46.77	20.89
Mediating variables																
Group cohesion													47.56**	15.24	35.40	18.52
Collective efficacy													47.31	28.05	67.62***	20.93
Control variables																
Gender diversity	0.36	0.19	0.09	0.14	0.34	0.28	0.24	0.24	2.46	37.93	−22.79	31.25	−45.44	29.29	−35.64	28.77
Education diversity	0.25	0.20	0.20	0.14	0.05	0.29	−0.11	0.24	2.85	38.96	−18.11	31.36	−16.50	29.64	−28.35	29.12
Age diversity	0.56	1.09	1.74*	0.77	0.47	1.57	1.65	1.32	−27.28	209.10	161.68	169.86	−3.12	167.99	−22.98	156.33
Tenure diversity	0.08	0.16	−0.06	0.12	0.02	0.24	−0.18	0.20	38.67	32.43	9.27	26.29	23.44	24.81	20.99	24.14
Team size	−0.00	0.01	0.00	0.00	−0.01	0.01	−0.00	0.00	4.59***	0.76	5.61***	0.63	5.52***	0.59	5.50***	0.57
Region effect	0.10	0.06	−0.11*	0.05	0.29***	0.10	0.07	0.09	31.08*	13.24	−5.30	12.42	−2.29	12.25	1.68	10.68
Overall R^2	0.15		0.59***		0.18		0.45***		0.57***		0.73***		0.77***		0.78***	
Change R^2			0.44***				0.27***				0.16***		0.20***		0.21***	
Model F value	1.64		10.10		2.05		5.78		12.24		18.74		19.76		21.03	
Degrees of freedom	61		61		61		61		61		61		61		61	

Indirect effect testing	Sobel test estimate	Bootstrap (95% confidence interval) Lower	Upper	Significance test
OCB-individual – group cohesion – performance	37.57**	6.94	96.01	Yes
OCB-organization – collective efficacy – performance	39.89*	0.93	61.06	Yes

Notes:
N = 62.
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
B, unstandardized beta; OCB, organizational citizenship behaviours.

$p < 0.001$) were included in the regression analysis. The results suggest that collective efficacy fully mediated the effect of OCBO on team performance. The Sobel test suggests that the indirect effect is significant (indirect effect = 39.89, $t = 2.28$, $p < 0.05$), and the bootstrapping test also indicates the same. Specifically, the BCa 95% CI ranged from 0.93 to 61.06, which did not include zero, suggesting a significant indirect effect. Accordingly, we can conclude that collective efficacy fully mediated the OCBO–team performance relationship and that Hypothesis 4 gained support.

DISCUSSION

This study extends our knowledge of the OCB and unit performance relationship. The study provides evidence in support of the positive relationship between team member OCB and team performance. It further explains how OCB within a team impacts team performance through group cohesion and collective efficacy. Aggregate OCBI and OCBO account for 16 percent of the variance in unit performance, 44 percent of the variance in group cohesion, and 27 percent of the variance in collective efficacy. Accordingly, the present study brings new insights into OCB research. It sheds some light on the black box underlying the individual OCB–unit performance linkage by confirming the important role of team cohesion and a team's collective efficacy. While these two variables have long been treated as antecedents of OCB, this study provides a conceptual basis and empirical evidence that OCB can affect cohesion and efficacy. The findings suggest that OCB not only promotes unit performance as expected by Organ (1988), but also fosters other desirable outcomes (i.e., efficacy and cohesion) in a team context. Overall, this study has made a constructive step in addressing the unfinished business that Organ (1997) lamented over a decade ago.

This study also contributes to group research in general. It addresses three of the five research directions highlighted by Cohen and Bailey (1997). First, we executed a design to measure predictors and outcomes at different points in time in response to their suggestion for more longitudinal studies. Second, we examined collective efficacy as a mediator to support their call for more studies on the antecedents and consequences of collective efficacy (and group potency). Third, we took a social cognitive perspective to understand the OCB–performance relationship in response to their appeal for studies that probe deeply into group cognition (and affect).

Limitations and Directions for Future Research

There are a few limitations to the study. First, the research design does not allow us to draw conclusions with sufficient confidence regarding the causal relationships of interest. For example, there are studies reporting that group cohesiveness

has a positive relationship with OCB (Kidwell et al., 1997) and pro-social behaviour (George & Bettenhausen, 1990). Furthermore, groups that receive positive feedback may be more cohesive than groups receiving negative feedback (Staw, 1975). Accordingly, Podsakoff and MacKenzie (1997) suggested the possibility of organizational performance having a causal relation to OCB. Although the longitudinal study by Koys (2001) did not support such causality, a more robust design in the future could feature three or more points in time or a field experiment to capture the dynamic relationships among the key variables. Second, there is concern about the non-independence of OCBI and OCBO scores due to one supervisor rating multiple team members. Although our use of aggregate OCBI and OCBO scores to the team level should attenuate the threat to construct validity to some degree, we must be reasonably conservative as we interpret the results. Third, as the results were based on one organization in one society, generalizability to other organizational or national contexts should be verified in the future. Future research should also consider context-specific OCB behaviours such as self-training and social welfare participation (Farh, Zhong, & Organ, 2004) for team and organizational performance in the Chinese context (Tsui, 2009).

To further improve our understanding of the OCB–performance process, many other potential intervening factors could be explored. For example, trust climate might mediate between OCBI and performance, while task interdependence might transmit the influence from OCBO to outcomes. Moreover, further attention is desirable on the moderators of the linkage. Factors such as turnover rate (Podsakoff & MacKenzie, 1994) and reward practices (Organ et al., 2006) may attenuate or strengthen the link between OCB and team outcomes.

Practical Implications

The present study has one major practical implication. The findings suggest that OCB in the aggregate is an important predictor of team performance. Managers should try to foster OCB among employees, which can strengthen both team cohesion and the team's confidence in task performance. It is important to design and nurture conditions under which members' OCB effectively motivates team performance. The work context and team characteristics of the financial institute employees sampled in this study reflect these facilitating conditions: the groups are relatively small and autonomous, their tasks are interdependent, their goals are explicit, the employees consider performance standards legitimate, and some group-oriented rewards are implemented. These conditions together with supervisor support are conductive to team performance (e.g., Mullen & Cooper, 1994). Therefore, given an appropriate work design, fostering OCB among team members can facilitate cohesion and efficacy and, eventually, team performance.

https://doi.org/10.1111/j.1740-8784.2009.00172.x Published online by Cambridge University Press

CONCLUSION

This study has helped to crack open the lid on the black box of a process that has not been well understood since the birth of the notion of OCB in 1983. The findings of the study provide evidence that OCB is not simply a theoretical ideal and that the path from OCB to unit performance is substantive and can be explained by group cohesiveness and collective efficacy. Our findings also suggest that OCB promotes desirable team outcomes other than just performance. We urge other scholars to devote further intellectual energy to discovering more insight on this process, which is so critical to team and organizational effectiveness. We found very strong relationships between OCB and team performance among sales agents in a Taiwanese financial institution. Whether OCB can have this powerful of an effect in all firms and in other cultural contexts would be a worthwhile question to ponder and explore.

NOTES

We acknowledge the insightful comments made by A. R. Elangovan and Craig Pinder on our earlier draft. An earlier version of this manuscript was presented at the annual meeting of the Academy of International Business, Beijing, June 2006. Please address any correspondence regarding this article to T.K. Peng.

[1] We did not employ performance points extrapolated from data on extant products as an outcome because these products entail varying degrees of maturity for individual branches. That is, a product on the market for several years may be considered mature in the context of relatively well-established branches but would not be for newly established branches. Including such products in the performance measure would obviously present threats to construct validity.

[2] Available online since September 2008 at http://www.cw.com.tw/article/index.jsp?id=35774.

REFERENCES

Bachrach, D. G., Powell, B. C., Collins, B. J., & Richey, R. G. 2006. Effects of task interdependence on the relationship between helping behavior and group performance. ***Journal of Applied Psychology,*** 91(6): 1396–1405.

Bandura, A. 1977. ***Social learning theory.*** Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. 1986. ***Social foundations of thought and action: A social-cognitive view.*** Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. 1997. ***Self-efficacy: The exercise of control.*** New York: Freeman.

Bandura, A. 2000. Exercise of human agency through collective efficacy. ***Current Directions in Psychological Science,*** 9(3): 75–78.

Baron, R. M., & Kenny, D. A. 1986. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. ***Journal of Personality and Social Psychology,*** 51(6): 1173–1182.

Bateman, T. S., & Organ, D. W. 1983. Job satisfaction and the good soldier: The relationship between affect and employee 'citizenship'. ***Academy of Management Journal,*** 26(4): 587–595.

Belsley, D., Kuh, E., & Welsch, R. 1980. ***Regression diagnostics: Identifying influential data and sources of collinearity.*** New York: Wiley.

Blau, P. M. 1977. ***Inequality and heterogeneity.*** New York: Free Press.

Bliese, P. D. 2000. Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), ***Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions:*** 349–381. San Francisco, CA: Jossey-Bass.

Bolino, M. C., Turnley, W. H., & Bloodgood, J. M. 2002. Citizenship behavior and the creation of social capital in organizations. ***Academy of Management Review,*** 27(4): 505–522.

Borman, W. C., & Motowidlo, S. J. 1993. Expanding the criterion domain to include elements of contextual performance. In N. Schmitt & W. C. Borman (Eds.), ***Personnel selection in organizations:*** 71–98. San Francisco, CA: Jossey-Bass.

Cartwright, D., & Zander, A. 1960. Group cohesiveness: Introduction. In D. Cartwright & A. Zander (Eds.), ***Group dynamics: Research and theory*** (2nd ed.): 69–94. New York: Harper Row.

Chan, D. 1998. Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models. ***Journal of Applied Psychology,*** 83(2): 234–246.

Chen, X.-P., Lam, S. S. K., Naumann, S. E., & Schraubroeck, J. 2005. Group citizenship behavior: Conceptualization and preliminary tests of its antecedents and consequences. ***Management and Organization Review,*** 1(2): 273–300.

Cohen, S. G., & Bailey, D. E. 1997. What makes teams work: Group effectiveness research from the shop floor to the executive suite. ***Journal of Management,*** 23(3): 239–290.

Dobbins, G. H., & Zaccaro, S. J. 1986. The effects of group cohesion and leader behavior on subordinate satisfaction. ***Group and Organization Studies,*** 11(3): 203–219.

Dunlop, P. D., & Lee, L. 2004. Workplace deviance, organizational citizenship behavior, and business unit performance: The bad apples do spoil the whole barrel. ***Journal of Organizational Behavior,*** 25(1): 67–80.

Earley, P. C. 1994. Self or group? Cultural effects of training on self-efficacy and performance. ***Administrative Science Quarterly,*** 39(1): 89–117.

Efron, B., & Tibshirani, R. J. 1993. ***An introduction to the bootstrap.*** Boca Raton, FL: Chapman & Hall.

Ehrhard, M. G., & Naumann, S. E. 2004. Organizational citizenship behavior in work groups: A group norm approach. ***Journal of Applied Psychology,*** 89(6): 960–974.

Ehrhart, M. G., Bliese, P. D., & Thomas, J. L. 2006. Unit-level OCB and unit effectiveness: Examining the incremental effect of helping behavior. ***Human Performance,*** 19(2): 159–173.

Farh, J. L., Earley, P. C., & Lin, S. C. 1997. Impetus for action: A cultural analysis of justice and organizational citizenship behavior in Chinese society. ***Administrative Science Quarterly,*** 42(3): 421–444.

Farh, J. L., Zhong, C. B., & Organ, D. W. 2004. Organizational citizenship behavior in the People's Republic of China. ***Organization Science,*** 15(2): 241–253.

Festinger, L. 1968. Informal social communication. In D. Cartwright & A. Zander (Eds.), ***Group dynamics: Research and theory*** (3rd ed.): 182–191. New York: Harper and Row.

George, J. M., & Bettenhausen, K. 1990. Understanding prosocial behavior, sales performance, and turnover: A group-level analysis in a service context. ***Journal of Applied Psychology,*** 75(6): 698–709.

Glick, W. H. 1985. Conceptualizing and measuring organizational and psychological climate: Pitfalls in multilevel research. ***Academy of Management Review,*** 10(3): 601–616.

Gully, S. M., Devine, D. S., & Whitney, D. J. 1995. A meta-analysis of cohesion and performance: Effects of level of analysis and task interdependence. ***Small Group Research,*** 26(4): 497–520.

Gully, S. M., Incalcaterra, K. A., Joshi, A., & Beaubien, J. M. 2002. A meta-analysis of team-efficacy, potency, and performance: Interdependence and level of analysis as moderators of observed relationships. ***Journal of Applied Psychology,*** 87(5): 819–832.

Hui, C., Law, K. S., & Chen, Z. X. 1999. A structural equation model of the effects of negative affectivity, leader-member exchange, and perceived job mobility on in-role and extra-role performance: A Chinese case. ***Organizational Behavior and Human Decision Processes,*** 77(1): 3–21.

Hui, C., Lee, C., & Rousseau, D. M. 2004. Psychological contract and organizational citizenship behavior in China: Investigating generalizability and instrumentality. ***Journal of Applied Psychology,*** 89(2): 311–321.

Jackson, S. E., & Joshi, A. 2004. Diversity in social context: A multi-attribute, multilevel analysis of team diversity and sales performance. ***Journal of Organizational Behavior,*** 25(6): 675–702.

James, L. R., Demaree, R. G., & Wolf, G. 1984. Estimating within-group interrater reliability with and without response bias. ***Journal of Applied Psychology,*** 69(1): 85–98.

Janis, I. L. 1982. ***Groupthink: Psychological studies of policy decisions and fiascoes.*** Boston, MA: Houghton-Mifflin.

Jex, S. M., & Bliese, P. D. 1999. Efficacy beliefs as a moderator of the impact of work-related stressors: A multilevel study. ***Journal of Applied Psychology,*** 84(3): 349–361.

Jung, D. I., & Sosik, J. J. 2002. Transformational leadership in work groups: The role of empowerment, cohesiveness, and collective-efficacy on perceived group performance. ***Small Group Research,*** 33(3): 313–336.

Karambayya, R. 1989. ***Contexts for organizational citizenship behavior: Do high performing and satisfying units have better 'citizens'.*** York University Working Paper, North York, Ontario, Canada.

Kidwell, R. E., Jr., Mossholder, K. W., & Bennett, N. 1997. Cohesiveness and organizational citizenship behavior: A multilevel analysis using work groups and individuals. ***Journal of Management,*** 23(6): 775–793.

Koys, D. J. 2001. The effects of employee satisfaction, organizational citizenship behavior, and turnover on organizational effectiveness: A unit-level, longitudinal study. ***Personnel Psychology,*** 54(1): 101–114.

Lawler, E. J., Thye, S. R., & Yoon, J. 2000. Emotion and group cohesion in productive exchange. ***American Journal of Sociology,*** 16(3): 616–657.

Lee, C., & Farh, J. L. 2004. Joint effects of group efficacy and gender diversity on group cohesion and performance. ***Applied Psychology: An International Review,*** 53(1): 136–154.

MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. 2002. A comparison of methods to test mediation and other intervening variable effects. ***Psychological Methods,*** 7(1): 83–104.

MacKinnon, D. P., Lockwood, C. M., & Williams, J. 2004. Confidence limits for the indirect effect: Distribution of the product and resampling methods. ***Multivariate Behavioral Research,*** 39(1): 99–128.

Maddux, J. E. 2002. Self-efficacy. In C. R. Snyder & S. J. Lopez (Eds.), ***Handbook of positive psychology:*** 277–287. Oxford: Oxford University Press.

Mathieu, J. E., DeShon, R. P., & Bergh, D. D. 2008. Mediational inferences in organizational research: Then, now, and beyond. ***Organizational Research Methods,*** 11(2): 203–223.

Mossholder, K. W., Settoon, R. P., & Henagan, S. C. 2005. A relational perspective on turnover: Examining structural, attitudinal, and behavioral predictors. ***Academy of Management Journal,*** 48(4): 607–618.

Mullen, B., & Cooper, C. 1994. The relation between group cohesiveness and performance: An integration. ***Psychological Bulletin,*** 115(2): 210–227.

Organ, D. W. 1988. ***Organizational citizenship behavior: The good soldier syndrome.*** Lexington, MA: Lexington Books.

Organ, D. W. 1997. Organizational citizenship behavior: It's construct clean-up time. ***Human Performance,*** 10(2): 85–98.

Organ, D. W., & Ryan, K. 1995. A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. ***Personnel Psychology,*** 48(4): 775–802.

Organ, D. W., Podsakoff, P. M., & MacKenzie, S. B. 2006. ***Organizational citizenship behavior: It nature, antecedents, and consequences.*** Thousand Oaks, CA: Sage.

Podsakoff, P. M., & MacKenzie, S. B. 1994. Organizational citizenship behavior and sales unit effectiveness. ***Journal of Marketing Research,*** 31(3): 351–363.

Podsakoff, P. M., & MacKenzie, S. B. 1997. Impact of organizational citizenship behavior on performance: A review and suggestions for further research. ***Human Performance,*** 10(2): 133–151.

Podsakoff, P. M., Ahearne, M., & MacKenzie, S. B. 1997. Organizational citizenship behavior and the quantity and quality of work group performance. ***Journal of Applied Psychology,*** 82(2): 262–270.

Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. 2000. Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future study. ***Journal of Management,*** 26(3): 513–563.

Podsakoff, N. P., Whiting, S. W., Podsakoff, P. M., & Blume, B. D. 2009. Individual level- and organization level-consequences of organizational citizenship behavior: A meta-analysis. ***Journal of Applied Psychology,*** 94(1): 122–141.

Preacher, K. J., & Hayes, A. F. 2008. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. ***Behavior Research Methods,*** 40(3): 879–891.

Rousseau, D. M. 1985. Issues of level in organizational research: Multi-level and cross-level perspectives. In L. L. Cummings & B. M. Staw (Eds.), ***Research in organizational behavior,*** vol. 7: 1–38. Greenwich, CT: JAI Press.

Schnake, M. E., & Dumler, M. P. 2003. Levels of measurement and analysis issues in organizational citizenship behavior research. ***Journal of Organizational and Occupational Psychology,*** 76(3): 283–301.

Smith, C. A., Organ, D. W., & Near, J. P. 1983. Organizational citizenship behavior: Its nature and antecedents. ***Journal of Applied Psychology,*** 68(4): 653–663.

Stajkovic, A. D., & Lee, D. 2001. ***A meta-analysis of the relationship between collective efficacy and group performance.*** Paper presented at the meeting of the Academy of Management, Washington, DC, August, 2001.

Staw, B. M. 1975. Attribution of the 'causes' of performance: A general alternative interpretation of cross-sectional research on organizations. ***Organizational Behavior and Human Decision Processes,*** 13(3): 414–432.

Sun, L. Y., Aryee, S., & Law, K. S. 2007. High-performance human resource practices, citizenship behavior, and organizational performance: A relational perspective. ***Academy of Management Journal,*** 50(3): 558–577.

Tasa, K., Taggar, S., & Seijts, G. H. 2007. The development of collective efficacy in teams: A multilevel and longitudinal perspective. ***Journal of Applied Psychology,*** 92(1): 17–27.

Taylor, A. B., MacKinnon, D. P., & Tein, J.-Y. 2008. Tests of three-path mediated effect. ***Organizational Research Methods,*** 11(2): 241–269.

Tsui, A. 2009. Editor's introduction – Autonomy of inquiry: Shaping the future of emerging scientific communities. ***Management and Organization Review,*** 5(1): 1–14.

Tsui, A., & Gutek, B. 1999. ***Demographic differences in organizations.*** New York: Lexington Books.

van Knippenberg, D., De Dreu, C. K. W., & Homan, A. C. 2004. Work group diversity and group performance: An integrative model and research agenda. ***Journal of Applied Psychology,*** 89(6): 1008–1022.

Walz, S. M., & Niehoff, B. P. 2000. Organizational citizenship behaviors: Their relationship to organizational effectiveness. ***Journal of Hospitality & Tourism Research,*** 24(3): 301–319.

Williams, L. J., & Anderson, S. E. 1991. Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behavior. ***Journal of Management,*** 17(3): 601–617.

Yen, H. R., & Niehoff, B. P. 2004. Organizational citizenship behavior and organizational effectiveness: Examining relationships in Taiwanese banks. ***Journal of Applied Social Psychology,*** 34(8): 1617–1637.

Cheng-Chen (Timothy) Lin (timothy@mail.npust.edu.tw) is Professor of Business Administration at the National Pingtung University of Science and Technology, Taiwan. Professor Lin earned his Ph.D. from the School of Management at the National Sun Yat-Sen University. His research interests include organizational citizenship behaviour, counterproductive behaviour, and leadership.

Tai-Kuang (T. K.) Peng (tkpeng@isu.edu.tw) (Ph.D. Texas Tech University) is Professor of Organizational Behavior at I-Shou University in Taiwan. His current research interests focus on leadership, group-level citizenship behaviour, and gender phenomena in the workplace.

Manuscript received: March 31, 2008
Final version accepted: November 4, 2009
Accepted by: Anne S. Tsui