A multilevel analysis of the role of interactional justice in promoting knowledge-sharing behavior: The mediated role of organizational commitment

Xiaoshan Li, PhD a,b,d, Jianxin Zhang b, Shanshan Zhang, PhD c, Mingjie Zhou b,*

a Center of Mental Health Education and Research, Jiangxi Normal University, Nanchang, China
b Key Lab of Mental Health, Institute of Psychology, Chinese Academy of Sciences, Beijing, China
c School of Vocational Education, Tianjin University of Technology and Education, Tianjin, China
d Center of Mental Health Education and Research, Jiangxi Normal University, Nanchang, China

ARTICLE INFO

Article history:
Received 27 April 2015
Received in revised form 15 September 2016
Accepted 21 September 2016
Available online xxx

Keywords:
Organizational commitment
Knowledge collecting
Interactional justice
Multilevel structural equation modeling (MSEM)

ABSTRACT

Knowledge sharing behavior has received increased attention in the context of business due to its important role in enhancing organizational competitive advantage. This study aimed to identify possible predictors of knowledge sharing behavior and its underlying mechanisms from a multilevel perspective. The results showed that interactional justice positively related to knowledge sharing behavior both at the individual and the team levels. And organizational commitment took a mediated role between them. This study is the first to highlight the role of organizational commitment and interactional justice in knowledge sharing behavior, enriching current understanding of organizational knowledge management and providing further suggestions as how managers can improve knowledge sharing behavior in their organizations.

© 2016 Elsevier Inc. All rights reserved.

1. Introduction

Knowledge is a crucial organizational resource that can offer organizations competitive advantages in a dynamic economy (Spender & Grant, 1996). Research has shown that effective knowledge management is positively related to cost reduction, new product development, team performance, innovation, and organizational performance, as reflected by revenue gained from new products and services and sales growth (Collins & Smith, 2006; Hu & Randel, 2014; Lin, 2007a, b; Mesmer-Magnus & DeChurch, 2009). Hence, exploring the predictive variables of knowledge sharing behavior and understanding its mechanisms are critical areas of focus for both scholars and managers.

Many organizations have tried using reward systems to stimulate employees’ intragroup knowledge sharing behavior. As highlighted in previous research, knowledge sharing is often unable to be explicitly or directly rewarded due to its intangibility (Desouza, 2003; Lin, 2007a, b). Hence, some scholars have sought to identify intangible factors which can facilitate intragroup knowledge sharing behavior. As one of important intangible variables, organizational justice is a strong predictor of individual knowledge sharing behavior due to its positive influence on subordinates’ commitment and trust to their organization or supervisor (Wang & Noe, 2010). Organizational justice is concerned the ways in which employees determine if they have been treated fairly in their job, including procedural justice, distributive justice and interpersonal justice (Colquitt, 2001). The procedural and distributive justices are focus on individual fairness of decision making processes and outcomes distributive, respectively. And they may be the function of the organization policies/regulations which guarantee that each individual in a firm/department has the same standard of assessment and performance to follow. Comparing with the procedural and distributive justices, the interactional justice is often the matter of the subordinates’ fairness perception from their supervisors in their daily interaction and is easy to be managed by the supervisor. Research on organizational justice has shown that the interactional justice is a strong predictor of subordinates’ attitudes and behaviors (Colquitt, Conlon, Wesson, Porter, & Ng, 2001). Indeed, sometimes those effects are stronger than the effects for procedural and distributive justice (Ambrose & Schminke, 2003; Moorman, 1991; Williams, Pittre, & Zainuba, 2002). The importance of interactional justice may be explained by Bies’s (2005) distinction between “exchanges” and “encounters.” According to Bies, procedural and distributive justice are somewhat bounded in resource exchange contexts that may be relatively infrequent. In contrast, interactional justice can be judged in virtually any encounter between managers and subordinates, regardless of whether resource allocation decisions are being made. Therefore, Bies’s arguments suggest that interactional justice has “day-in-day-out” significance that the other justice dimensions may not possess.
Although research shows that interactional justice has played an important role in predicting subordinates' attitudes and behaviors, the increased academic research focus only on the important role of the distributive and the procedural justices in knowledge sharing behavior (Lin, 2007a, b; Schepers & van den Berg, 2007; Wang & Noe, 2010), comparatively little attention has been paid to the interactional justice. Therefore, it helps us to understand the organizational justice–knowledge sharing relationship by studying the role of the interpersonal justice in knowledge sharing behavior and the underlying mechanism between them.

Furthermore, individual’s behavior is easy to be affected by the team and organization they stayed at (Kenny & Judd, 1996), and the cross-level study may become an more and more popular method to examine how individual's or team's organizational justice perceptions affect organizational outcomes. However, very little attention is given to the antecedents of knowledge sharing from a multilevel perspective.

Therefore, the second question is whether the predictors and the underlying mechanisms of knowledge sharing behavior are the same at both the individual and the team levels.

Overall, investigating the relationship between interactional justice and knowledge sharing behavior and their underlying mechanisms from a multilevel perspective, will enrich the understanding of knowledge sharing behavior and provide suggestions for knowledge management in a company.

2. Literature review

2.1. Interactional justice and knowledge sharing behavior

Knowledge sharing is a process in which individuals exchange their knowledge and create new knowledge together (De Vries, van den Hooff & de Ridder, 2006). It comprises two categories of behavior: knowledge donating, which refers to passing on one’s own intellectual capital to others, and knowledge collecting, which refers to consulting others in order to acquire some of their intellectual capital. The two processes are conceptually separate and distinct, and are regarded as two separate dependent variables in our analysis.

Interactional justice (Colquitt, 2001) refers to the perception of individuals regarding how fairly their supervisors treat them. According to social exchange theory (Eisenberger, Huntington, Hutchison, et al., 1986), to maintain a spirit of professional reciprocity, the employees are more likely to trust and identify with their colleagues and supervisors, and, in turn, to share knowledge with them, if their supervisors treat them fairly (Abrams, Cross, Lesser, et al., 2003; Ramasamy, Goh & Yeung, 2006). Furthermore, considering the agent role of the supervisor, employees tend to identify more strongly with their organization when they perceive a high level of fairness from their supervisors. And the identification to the organization will make employees tend to treat themselves as in-group members and share knowledge with others (Ramasamy, Goh & Yeung, 2006). Therefore, individuals who perceive a high level of interactional justice are more likely to impart or request knowledge within their organization.

Hypothesis 1. Interactional justice positively correlates with both knowledge donating behavior (a) and knowledge collecting behavior (b).

2.2. Organizational commitment and knowledge sharing behavior

Organizational commitment is seen as the strength of an employee’s identification with and involvement in a particular organization (Porter, Steers, Mowday, et al., 1974). It captures researchers' attention due to its positive relationship with many organization-related outcomes, such as organizational citizenship behavior, job satisfaction (Lin, 2007a, b; Porter et al., 1974; Sjahruddin, Armanu, Sudiro, et al., 2013). Both models by Scholl (1981) and Weiner (1982) have provided theoretical support for a commitment-OCB relationship (Schappe, 1998). They argued that commitment maintains behavioral direction when there is little expectation of formal organizational rewards for performance, and individual with high score of commitment is more likely to make contributions to the organization they belong to. Generally speaking, both knowledge donating and collecting behaviors may be the good ways to attain this goal.

Therefore, it is reasonable to expect that organizational commitment influence both people's willingness to contribute to the organization that they belong to and their tendency to consult others about their expertise. Thus, the second hypothesis is provided as follows:

Hypothesis 2. Organizational commitment correlates positively with knowledge donating behavior (a) and knowledge collecting behavior (b).

2.3. The mediator of organizational commitment

The effect of psychological factor on one’s behaviors could not be ignored. Social exchange view of commitment (Eisenberger et al., 1986) suggests the mediating role of organizational commitment in the relationship between perceived organizational support and employee's citizenship behavior. Employees easily perceive a higher level of organizational support and increase their identification to the organization when they were treated fairly by their supervisors, and in turn, this identification to company will increase individual's knowledge sharing behavior. Previous research showed that organizational commitment was often used as the mediator in organizational research, and was also found as the mediator in the relationship of other types of organizational justice (e.g., distributive and procedural justice) and knowledge sharing behavior (Lin, 2007a, b). Consequently, one could argue that changes in the perception of fairness would lead to changes in the levels of organizational commitment and in turn in the levels of knowledge donating and knowledge collecting behavior.

Hypothesis 3a. Organizational commitment mediates the association between interactional justice and knowledge donating behavior.

Hypothesis 3b. Organizational commitment mediates the association between interactional justice and knowledge collecting behavior.

2.4. Within-team and between-team effects

Individual’s behavior is affected easily by the team and organization they stay at (Kenny & Judd, 1996). Research shows that the study of justice at higher levels of analysis may better inform organizational practice (Simond & Roberson, 2003). Thus, it is better to discuss the relationship between interactional justice at team level and team-level outcomes. Several theories provide the theoretical underpinnings for the emergence of interactional justice climate as a group-level property. First, given that members of the same group are exposed to the same leaders (Naumann & Bennett, 2000), managers' behavioral norms may form a shared basis for employee's justice perception in a work group. Second, the notion of "contagious justice" (Degoeij, 2000) also suggests that people tend to engage in social talk and arrive at a shared, socially constructed interpretation of justice in front of some ambiguous justice events. In addition, the Attraction-Selection-Attrition perspective (ASA; Schneider, 1975), which proposes that individuals of similar
characteristics are attracted to, selected into, and retained by the same group, also suggests that over time, a work group will consist of individuals of similar justice values and perceptions. Finally, empirical research has proved the influences of justice climate, such as procedural justice climate (e.g. Naumann & Bennett, 2000). In sum, the above theories and empirical evidence support that the use of workgroup was an appropriate level to examine the existence of justice climate.

Employees who subject to the same leader or context in organization may have shared interpretations on justice event. The shared justice perception may create a climate that promotes or inhibits employee’s positive attitude and behavior toward the organization as a whole. Team-level justice is an important predictor of team-level outcomes, including team-level performance, absenteeism, employee’s affective commitment, satisfaction with supervision, discretionary service behavior, employee turnover (Colquitt, Noe, & Jackson, 2002; Simons & Roberson, 2003). Given that the above relationships established at the individual level, we hypothesize that similar relationships among aggregated constructs exist at the department and organizational level of analysis.

**Hypothesis 4.** Both interpersonal justice and organizational commitment have positive relations with knowledge donating/collecting behavior, and organizational commitment is a mediator in the relationship between interactional justice and knowledge donating/collecting behavior at the team level.

### 3. Methods

#### 3.1. Sample description

Information development and management system in Chinese enterprises has made great progress after 30 years of reform and opening policy, but still lags behind in large state-owned corporation. In those corporations, the sharing behavior between subordinates and their supervisor is at the low level for several reasons, such as high power distance. Since knowledge sharing behavior in teams played an important role in organization management (Hu & Randel, 2014), therefore, managers pay more and more attention to the effect of the supervisor because of his/her agent role of the organization and try to find the way to improve subordinates’ sharing behavior in a team.

All participants in this study are from a large state-owned enterprise controlled by Chinese government. The enterprise is an energy industry and has many subsidiaries across mainland China. Considering the diversity of regions and functional departments, participants were recruited based on the proportion of the number of employees. In 2013, following the principles of volunteerism and confidentiality, and with the help of two HR managers (the cooperators of this study), 1570 questionnaires were delivered to the participants at their dormitories or work places, and the response rate was 90.1%. After excluding those individuals who did not answer the questionnaires seriously, and those teams which was less three members, 1386 valid questionnaires across 128 teams were analyzed.

Of the respondents, 778 (60.5%) were male, 1098 (80.9%) were married, and their ages ranged from 23 to 58 (M = 35, SD = 6.2). Regarding their level of education, 530 (39.6%) had bachelor’s degree or above, 710 (approximately 53%) finished high school or vocational secondary school, and 100 (approximately 7.5%) had below a high school education. Their tenure with the organization ranged from 6 months to 40 years (M = 15, SD = 8.2). The team size varied from 3 to 25 employees (M = 11.2, SD = 5.4). It is important to note that observed totals for some of the demographic variables are less than 1386 due to missing data.

#### 3.2. Measure

The measures in the survey were translated and back translated by a group of bilingual researchers, and agreements were reached on all of the items. To test the readability and validity of translated questionnaire, fifteen college students (6 females) were taken part in pilot test, result showed that participants reached an agreement in understanding the questions and the answering rating scales.

### 3.2.1. Dependent variables

The two dependent variables (knowledge donating and knowledge collecting behaviors) were evaluated using a knowledge sharing scale developed by Van den Hooff and Hendrix (2006). Observed knowledge sharing behavior were measured using eight statement-based criteria, four of which were about knowledge donating (imparting knowledge to others), and four about knowledge collecting (consulting others about knowledge they lack). Knowledge donating behavior was measured by statements such as, “When I learn something new, I’ll tell my colleagues about them,” while knowledge collecting behavior was measured by statements like, “When I need certain kinds of knowledge, I’ll ask my colleagues for help.” In present study, the reliability of these measures was evaluated at 0.71 for knowledge donating statements and 0.81 for knowledge collecting statements, with a correlation coefficient of 0.60.

### 3.2.2. Independent variables and mediating factors

Interactional justice, as elaborated by Colquitt (2001), was the independent variable. Nine statements were used to measure employees’ perception of their supervisors’ respectfulness and sensitivity (key contributors to employee perception of interactional justice), such as, “My supervisor always treats me in a polite manners.” This measure’s reliability was 0.90.

Organizational commitment is regarded as a mediator between these dependent and independent variables. The scale developed by Allen & Meyer (1990) were used to assess the respondents’ affective commitment to their organization, such as “I would be very happy to spend the rest of my life in this organization.” The reliability of this measure was 0.77.

#### 3.3. Analysis strategy

The team structure at the organization yielded hierarchical data with two levels of random variation: variation among employees in the same team (level 1) and among different teams (level 2). Generally, hierarchical or multilevel linear modeling (HLM or MLM) is the most appropriate method of analysis for hierarchical data. However, when it comes to 1-1 linkage mediation modeling (both the mediating and dependent variables was individual level variables), traditional HLM/MLM is less effective than multilevel structural equation modeling (MSEM) (Preacher, Zyphur & Zhang, 2010). Ultimately, MSEM rather than MLM was used for multilevel mediation analysis as it can assess the chosen parameters more accurately.

As all four variables (interactional justice, organizational commitment, knowledge donating behavior, and knowledge collecting behavior) are individual level variables rated by subordinates, the model could be described as a 1-1-1 model, with correlated residuals between knowledge collecting and knowledge donating behaviors (see Fig. 1). SEM-based multilevel mediation was used to test this model.

Note: i indexes individual cases, j indexes team. For simplicity, the slopes of KD and KC regressed on LJ are not depicted. LJ = interactional justice; OC = organizational commitment; KD = knowledge donating behavior; KC = knowledge collecting behavior.

### 4. Result

#### 4.1. Preliminary analysis

The means, standard deviations, and zero-order correlations among all variables were shown in Table 1. The result showed a positive correlation between level of education and knowledge collecting behavior.
(r = 0.07, p < 0.05), as well as positive correlations linking organizational tenure with knowledge donating (r = 0.08, p < 0.05) and organizational commitment (r = 0.14, p < 0.01). And the relationships among interactional justice, organizational commitment and knowledge sharing behavior were positively related (r ranged from 0.27 to 0.60, p < 0.01).

The confirmatory factor analysis (CFA) was used to assess the scale validity of the measurement model and the modification index (MI) was used to select indicator variables due to the low loading of some indicators variable (Hatcher, 1994). The various fit indices in Table 2 (CFI and TLI > 0.90, RMSEA < 0.08) indicate our model’s overall goodness of fit.

Subordinates’ responses were aggregated to the team level to represent subordinate’s interactional justice, organizational commitment, and two kinds of knowledge sharing behavior at the high level, and this aggregation was supported by adequate agreement among team members (for interactional justice: ICC1 = 0.21, ICC2 = 0.61, mean \( r_{wg(j)} = 0.66 \); organizational commitment: ICC1 = 0.30, ICC2 = 0.65; mean \( r_{wg(j)} = 0.77 \); knowledge collecting: ICC1 = 0.11, ICC2 = 0.51, mean \( r_{wg(j)} = 0.59 \); knowledge donating: ICC1 = 0.14, ICC2 = 0.56; mean \( r_{wg(j)} = 0.62 \)).

Additionally, the effects of the minority status or diversity of team members based on individual’s gender, level of education, marital status, and organizational tenure were considered, as these variables have been found to affect knowledge sharing behavior strongly (Ojha, 2005). To test the effect of diversity of team members, the standard deviation of employee’s organization tenure within a team was used, in which large deviation means large diversity of team members. And the ratios were used as the index of the minority/majority status of team members for the variables of gender, education and marital status. Take gender for example, the ratio of the male/female team members within a team was considered as the index of the minority/majority status of team members based on gender, in which the ratio near to 0 means minority, while near to 1 means majority. The interpretation of the ratios of marital status and education level are the same as that of gender. However, the correlation analysis showed that none of the

![Fig. 1. The multilevel mediation model for 1-1-1 in our study.](image-url)
Table 2

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Standardized loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge donating</td>
<td></td>
</tr>
<tr>
<td>KD1</td>
<td>0.68 (t = 40)</td>
</tr>
<tr>
<td>KD2</td>
<td>0.73 (t = 47)</td>
</tr>
<tr>
<td>KD3</td>
<td>0.59 (t = 30)</td>
</tr>
<tr>
<td>KD4</td>
<td>0.52 (t = 24)</td>
</tr>
<tr>
<td>KD5</td>
<td>0.70 (t = 45)</td>
</tr>
<tr>
<td>KD6</td>
<td>0.41 (t = 17)</td>
</tr>
<tr>
<td>KD7</td>
<td>0.67 (t = 40)</td>
</tr>
<tr>
<td>KD8</td>
<td>0.66 (t = 39)</td>
</tr>
<tr>
<td>Knowledge collecting</td>
<td></td>
</tr>
<tr>
<td>KC1</td>
<td>0.82 (t = 86)</td>
</tr>
<tr>
<td>KC2</td>
<td>0.78 (t = 71)</td>
</tr>
<tr>
<td>KC3</td>
<td>0.82 (t = 89)</td>
</tr>
<tr>
<td>KC4</td>
<td>0.77 (t = 68)</td>
</tr>
<tr>
<td>KC5</td>
<td>0.72 (t = 55)</td>
</tr>
<tr>
<td>KC6</td>
<td>0.75 (t = 63)</td>
</tr>
<tr>
<td>KC7</td>
<td>0.81 (t = 86)</td>
</tr>
<tr>
<td>KC8</td>
<td>0.84 (t = 100)</td>
</tr>
<tr>
<td>KC9</td>
<td>0.66 (t = 45)</td>
</tr>
<tr>
<td>Interactional justice</td>
<td></td>
</tr>
<tr>
<td>IJ1</td>
<td>0.82 (t = 86)</td>
</tr>
<tr>
<td>IJ2</td>
<td>0.78 (t = 71)</td>
</tr>
<tr>
<td>IJ3</td>
<td>0.82 (t = 89)</td>
</tr>
<tr>
<td>IJ4</td>
<td>0.77 (t = 68)</td>
</tr>
<tr>
<td>IJ5</td>
<td>0.72 (t = 55)</td>
</tr>
<tr>
<td>IJ6</td>
<td>0.75 (t = 63)</td>
</tr>
<tr>
<td>IJ7</td>
<td>0.81 (t = 86)</td>
</tr>
<tr>
<td>IJ8</td>
<td>0.84 (t = 100)</td>
</tr>
<tr>
<td>IJ9</td>
<td>0.66 (t = 45)</td>
</tr>
<tr>
<td>Affective organizational commitment</td>
<td></td>
</tr>
<tr>
<td>OC1</td>
<td>0.78 (t = 57)</td>
</tr>
<tr>
<td>OC2</td>
<td>0.82 (t = 63)</td>
</tr>
<tr>
<td>OC3</td>
<td>0.63 (t = 34)</td>
</tr>
<tr>
<td>OC7</td>
<td>0.55 (t = 28)</td>
</tr>
</tbody>
</table>

Note: Goodness-of-fit indices (N = 1386), CFI = 0.97, TLI = 0.95, RMSEA = 0.07.

4.2. Analysis of within-team effects

Two statistical models were used to test the relationships among interactional justice, organization commitment, and knowledge sharing behavior. In model 1, after controlling the demographic variables of organizational tenure and educational level at individual level and group size at the team level, SEM (Mplus version 6) was employed to measure the relationship between interactional justice and knowledge donating/knowledge collecting behavior. In model 2, after controlling for the same variables as in model 1, MSEM was used to measure how interactional justice influences individuals’ knowledge sharing behavior at both the individual and the team levels, with organizational commitment as a mediating factor. All regression coefficients reported in the following results were unstandardized.

In model 1, the relationship between interactional justice and knowledge sharing behavior at both the individual and the team levels were tested. Hypotheses 1a and 1b suggested that interactional justice positively correlated with knowledge donating behavior and knowledge collecting behavior. Results (in bracket of Fig. 2a) showed that interactional justice had a positive relationship with individual knowledge donating behavior ($r = 0.094$, $p < 0.01$) and knowledge collecting behavior ($r = 0.094$, $p < 0.001$), supporting Hypotheses 1a and 1b. Additionally, knowledge donating behavior was related positively with knowledge collecting behavior at both individual level ($p = 0.001$) and team level ($p < 0.05$). Only organizational tenure ($r = 0.04$, $p < 0.05$) was related positively with individual knowledge donating behavior, while education level was related positively with individual knowledge collecting behavior ($r = 0.18$, $p < 0.05$). However, group size had no apparent correlation to either individual knowledge donating behavior ($r = 0.001$, $p > 0.1$) or individual knowledge collecting behavior ($r = 0.005$, $p > 0.1$).

In model 2, MSEM was used to examine the mediated role of organizational commitment in the relationship between interactional justice and knowledge sharing behavior at both the individual and team levels. Hypotheses 2a and 2b assumed that employees who were more committed to their organization would be more likely to impart knowledge to and collect knowledge from their coworkers. Results (Fig. 2a) supported Hypotheses 2a and 2b.

Hypotheses 3a and 3b suggested that individuals who perceive a high level of interactional justice from their supervisors were more committed to their organization, which in turn would increase their knowledge donating and collecting behaviors. The results (Fig. 2a) showed that perceived interactional justice indirectly affected both knowledge donating behavior ($a \cdot b = 0.060$, $p < 0.001$) and knowledge collecting behavior ($a \cdot b = 0.061$, $p < 0.001$) at the individual level, mediated by organizational commitment. Interactional justice still was correlated positively with both knowledge donating ($r = 0.352$, $p < 0.001$) and knowledge collecting ($r = 0.361$, $p < 0.001$) when taking organizational commitment into consideration. Thus, organizational commitment partially mediated the relationships between interactional justice and both individual knowledge donating and collecting behavior, supporting Hypotheses 3a and 3b.

4.3. Analysis of between-team effects

Hypothesis 4. proposed that both interpersonal justice and organizational commitment had positive relations with knowledge donating/collecting behavior, and organizational commitment as a mediator in the relationship between interactional justice and knowledge
donating/collecting behavior at the team level. The above two models were also used to test the relationships among interactional justice, knowledge sharing behavior and organizational commitment at the team level. In model 1, results (Fig. 2b) showed that interactional justice was related positively to both knowledge donating behavior ($r = 0.35$, $p < 0.01$) and knowledge collecting behavior ($r = 0.291$, $p < 0.05$) at the team level. In model 2, results (see Fig. 2b) showed that interactional justice ($r = 0.216$, $p < 0.01$) was related positively to organizational commitment at team level. Organizational commitment was correlated positively with knowledge donating behavior (0.367, $p < 0.10$) and knowledge collecting behavior (0.424, $p < 0.05$) at the team level. Thus, it was necessary to test the mediating effect of organizational commitment at the team level. Interactional justice was observed to have a significant indirect effect on knowledge collecting behavior ($a \times b = 0.096$, $p < 0.05$), with organizational commitment mediating the process (Fig. 2b). Interactional justice was not found to have a significant direct effect on knowledge collecting behavior at the team level ($r = 0.029$, $p > 0.05$) when taking the mediating effect of organizational commitment into consideration. Therefore, interactional justice was found to significantly impact knowledge collecting behavior through the mediating influence of organizational commitment. The same relationship was not observed between interactional justice and knowledge donating behavior under the influence of organizational commitment ($a \times b = 0.079$, $p > 0.10$). Thus, the Hypothesis 4 was partially supported.

4.4. Common method bias

With all self-reported data, there is a potential for common method biases resulting from multiple sources such as consistency motif and social desirability. Podsakoff et al. (2003) noted that there are both procedural and statistical remedies to control for common method bias. The procedural methods used in this study, including subjecting the questionnaire to rigorous review by peers and using both a pre-test and pilot test, have improved the study and provided more consistent and unbiased scales. And the statistic method proposed by Liang et al. (2007) was used to detect the common method bias. To perform this test, the indicators of all constructs were reflectively associated with the method factor, with the results showing the variance explained by the construct and by the method factor (bias). As shown in Table 3, although nearly half of the method loadings were significant, the average substantive explained variance for an indicator is 0.488 and the average common method-based variance is 0.01, showing a ratio of substantive variance to method variance of 48.8:1. Additionally, the structural model shows different levels of significance for the path coefficients. Therefore, that the common method bias was not a significant factor in this study.

5. Discussion

The present study highlighted the role of interactional justice in both individual and team’s knowledge sharing behavior and discussed the underlying mechanism between them from a multilevel perspective. The results showed that both interactional justice and organization commitment were related positively to knowledge sharing behavior, and organizational commitment was a mediator in the relationship between them. Those above effects not only existed at the individual level, but also at the team level.

5.1. The relations among interactional justice, organizational commitment and knowledge sharing behavior (at the individual level)

Support was found for the positive relationship between the perception of interactional justice and knowledge sharing behavior. This finding is consistent with the equity theory (Adams, 1965), in which employees who perceived unfairness may reduce the frequency or magnitude of their citizenship (e.g., sharing experience with coworkers and supervisors), while employees who believed they are treated fairly will see continued citizenship as a reasonable contribution to the firm. And this finding also provided support for the supervisor’s support theory (Cabrera, Collins & Salgado, 2006). Employee who perceived high fairness in the interaction with their supervisor will tend to trust their supervisors and establish good leader-member interpersonal relation and then increase their knowledge sharing behavior. Though previous studies showed that both distributive and procedural justices (the perception of fairness from organizational policy/regulation view) were related to knowledge sharing behavior, this study was the first to examine the influence of interactional justice (the justice perception from leader-member exchange view) on knowledge sharing behavior. Thus, the findings here enrich organizational justice-knowledge sharing relationship by investigating the role of interactional justice in knowledge sharing behavior.

The positive relationship between organizational commitment and knowledge sharing behavior is consistent with previous research (Lin, 2007a, b; Van den Hooff & De Ridder, 2004), indicating that people who are more committed to an organization are more likely to exchange knowledge with their coworkers/supervisors. And support was found for the mediating role of organization commitment in the relationship between interactional justice and knowledge sharing behavior. This finding is consistent with Lin’s view (Wang & Nøe, 2010) that the perception of fairness affects the level of knowledge sharing through influencing employee’s commitment to the firm.

5.2. The relations among interactional justice, organizational commitment and knowledge sharing behavior (at the team level)

The positive relation between interactional justice and knowledge sharing behavior showed that teams with high level of interactional justice perception enjoy a more conductive atmosphere to knowledge sharing, which is consistent with the view of the influence of organizational climate on knowledge sharing (Wang & Nøe, 2010). Given that employees in the same group are exposed to the same leaders, employees may have similar interpretation on justice event by social

Table 3: Common method bias analysis.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Indicator</th>
<th>Substantive factor loading (R1)</th>
<th>Method factor loading (R2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge donating</td>
<td>KD1</td>
<td>0.66*</td>
<td>0.436 0.12*</td>
</tr>
<tr>
<td></td>
<td>KD2</td>
<td>0.70*</td>
<td>0.490 0.09*</td>
</tr>
<tr>
<td></td>
<td>KD3</td>
<td>0.58*</td>
<td>0.336 0.13*</td>
</tr>
<tr>
<td></td>
<td>KD4</td>
<td>0.52*</td>
<td>0.270 0.15*</td>
</tr>
<tr>
<td></td>
<td>KC1</td>
<td>0.69*</td>
<td>0.476 0.09*</td>
</tr>
<tr>
<td>Knowledge collecting</td>
<td>KC2</td>
<td>0.41*</td>
<td>0.168 0.20*</td>
</tr>
<tr>
<td></td>
<td>KC3</td>
<td>0.56*</td>
<td>0.436 0.13*</td>
</tr>
<tr>
<td></td>
<td>KC4</td>
<td>0.65*</td>
<td>0.423 0.09*</td>
</tr>
<tr>
<td>Interactional justice</td>
<td>IJ1</td>
<td>0.80*</td>
<td>0.640 0.05*</td>
</tr>
<tr>
<td></td>
<td>IJ2</td>
<td>0.77*</td>
<td>0.593 0.04*</td>
</tr>
<tr>
<td></td>
<td>IJ3</td>
<td>0.81*</td>
<td>0.656 0.06*</td>
</tr>
<tr>
<td></td>
<td>IJ4</td>
<td>0.77*</td>
<td>0.593 0.09*</td>
</tr>
<tr>
<td></td>
<td>IJ5</td>
<td>0.70*</td>
<td>0.490 0.08*</td>
</tr>
<tr>
<td></td>
<td>IJ6</td>
<td>0.74*</td>
<td>0.548 0.07*</td>
</tr>
<tr>
<td></td>
<td>IJ7</td>
<td>0.81*</td>
<td>0.656 0.03*</td>
</tr>
<tr>
<td></td>
<td>IJ8</td>
<td>0.63*</td>
<td>0.559 0.04*</td>
</tr>
<tr>
<td></td>
<td>IJ9</td>
<td>0.60*</td>
<td>0.436 0.10*</td>
</tr>
<tr>
<td>Affective commitment</td>
<td>OC1</td>
<td>0.77*</td>
<td>0.593 0.07*</td>
</tr>
<tr>
<td>OC2</td>
<td>0.81*</td>
<td>0.656 0.04*</td>
<td>0.002</td>
</tr>
<tr>
<td>OC3</td>
<td>0.63*</td>
<td>0.397 0.09*</td>
<td>0.008</td>
</tr>
<tr>
<td>OC7</td>
<td>0.52*</td>
<td>0.270 0.10*</td>
<td>0.010</td>
</tr>
</tbody>
</table>

* $p < 0.05$.  ** $p < 0.01$. 

Please cite this article as: Li, X., et al., A multilevel analysis of the role of interactional justice in promoting knowledge-sharing behavior: The mediated role of organizational justice perception, Industrial Marketing Management (2016), http://dx.doi.org/10.1016/j.indmarman.2016.09.006
interaction and be easy to develop justice climate perception at team level. This justice climate perception will increase employee's affective commitment to the company, in turn, which may further stimulate knowledge sharing behavior across the entire team. This finding also provided support for the mediating role of organizational commitment in the relation of organizational justice and organization-related outcomes.

5.3. Knowledge donating and knowledge collecting are different in nature

Additionally, supports were provided for Van den Hooff and Hendrix's view (De Vries, van den Hooff & de Ridder, 2006) that knowledge donating and knowledge collecting are two separate, conceptually different processes. The following evidences were provided to illuminate the distinction. First, the goodness-of-fit of the measurement model indicated these two constructs differ from each other theoretically. Second, interactional justice had indirect effect on knowledge collecting behavior rather than knowledge donating behavior through organizational commitment. Third, interactional justice had a stronger correlation to knowledge donating than knowledge collecting \(Z = 3.66, p < 0.001\) at the team level by comparing the standardized regression coefficient (Bring, 1994). It indicates that, although both knowledge donating and knowledge collecting behaviors may share common antecedents, influences and predictors (e.g., interactional justice), the efficacy of these predictors may vary considerably. All above evidences support that knowledge donating behavior is a different concept from knowledge collecting behavior.

5.4. The effect of employee's demographic variables

The minority/majority status or diversity of team member based on those four demographic variables (marital status, organizational tenure, education, gender) were not significant related to knowledge sharing behavior. It was not consistent with Ojha's view (2005). The reason may be that the employees, even if they were in minority in a team because of their gender or marital status, are still easy to establish a good relation with other team members in the process of cooperating and tend to trust their coworkers or supervisors and communicate with them. In general, as an agent with the ability to communicate, employees may not stop their sharing behavior unless they perceived that they were at psychological disadvantage due to the external/internal threats. The threat may be anything like "denying by other team members" or "facing a great economic or social cost" and so on. No support was found for the relation of knowledge sharing behavior and the diversity of team members based on organizational tenure. The reason may be that the factors which foster individual's sharing behavior are different for teams with different diversity level. For example, in a team with low diversity base on organizational tenure, people like to communicate with others because of their similar experiences (e.g., take part in team's work at the same year). However, in a team with large diversity, employee's positive attitude of knowledge may be the main reason for their sharing behavior.

However, employees' education was positively related to their knowledge collecting behavior \(r = 0.07, p < 0.05\), and employees' organizational tenure was positively related to their knowledge donating behavior \(r = 0.08, p < 0.05\). For knowledge collecting, employees with high education often have strong willing to success, and consulting others is a good way to achieve self-improvement. And for knowledge donating, employees who stay at the same firm for a long time often have more confidence to believe that their knowledge is useful to new employees and tend to share with them.

5.5. Practical implications

The strongest implication of this study is that the supervisor can affect employee's knowledge sharing behavior directly. The perception of interactional justice was based on whether the supervisor used the procedures correctly and was based on the supervisor's behavior while enacting these procedures. If the supervisors want to increase employees' knowledge sharing behavior, they should increase the fairness of their interactions with employees. Additionally, comparing with the distributive and the procedure justices, the interaction justice may be the easiest perception of fairness to manage because the supervisors can influence employees' interactional justice perception easily through interaction. Thus, the interactional justice has wide application aspect in knowledge management.

Second, organizational climate, particularly the knowledge sharing climate, was influenced by team perception of interactional justice, and team perception in turn was heavily influenced by the perceptions of each individual team member. Hence, these findings can help managers to have better understanding of knowledge sharing mechanisms within teams, and to construct more effective management policies. And managers can employ both bottom-up strategy and top-down strategies simultaneously in order to improve employees' knowledge sharing behavior.

Third, since knowledge donating and knowledge collecting are different in nature, managers can adopt different ways to encourage employee's knowledge donating and collecting behaviors. For example, managers can stimulate team members' willing to consult by helping them to set appropriate goal to success and providing them a chance to consult, while encourage team members to share by creating a safe and justice atmosphere for communicate and establishing a warm environment that design to make team members feel at home.
order to yield a more efficient guidance for knowledge management in a company.

Funding

This research was supported by three research grants from National Natural Science Foundation of China (Grant No. 70801060; Grant No. 70971126; Grant No.31600909).

Acknowledgement

Many thanks are due to Julie and Professor Fu for their assistance in language revision. Also, thanks to the editor and all anonymous reviewers for their constructive comments.

References

Abrams, L. C., Cross, R., Lesser, E., et al. (2003). Nurturing interpersonal trust in knowl-
Adams, J. S. (1965). Inequality in social exchange. In L. Berkowitz (Ed.), Advances in exper-
Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, contin-
uance and normative commitment to the organization. Journal of Occupational Psychology,
63(1), 1–18.
Ambrose, M. L., & Schminke, M. (2003). Organization structure as a moderator of the re-
lation between procedural justice, interactional justice, perceived organizational support,
Mawah, NJ: Erlbaum.
Brinig, J. (1994). How to standardize regression coefficients. The American Statistician,
245–264.
human resource practices in the performance of high-technology firms. Academy of Manager-
Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct valida-
The role of team communication styles, job satisfaction, and performance beliefs. Communication Research, 33(2), 115–135.
Degoeij, P. (2000). Contagious justice: Exploring the social construction of justice in orga-

Eisenberger, R., Huntington, R., Hutchison, S., et al. (1986). Perceived organizational sup-
Hatcher, L. (1994). Step-by-step approach to using the SAS system for factor analysis and struc-
Hu, L., & Randal, A. E. (2014). Knowledge sharing in teams: Social capital, extrinsic incen-
31(1), 59–87.
Lin, C. P. (2007a). To share or not to share: Modeling tacit knowledge sharing, its media-
Mesmer-Magnus, J. R., & DeChurch, L. A. (2009). Information sharing and team per-
fairness perceptions on organizational citizenship behavior. The Journal of Psychology,
88, 432–443.
Sjahruddin, H., Armanu, Sudiro, A., et al. (2013). Personality effect on organizational citi-
zenship behaviors: Do fairness perceptions in
Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future re-
Williams, S., Pitt, R., & Zainuba, M. (2002). Justice and organizational citizenship behav-

Please cite this article as: Li, X., et al., A multilevel analysis of the role of interactional justice in promoting knowledge-sharing behavior: The mediated role of organizational justice, Industrial Marketing Management (2016), http://dx.doi.org/10.1016/j.indmarman.2016.09.006