Antecedents of Organizational Citizenship Behavior: The Mediating Role of Leader-member Exchange

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Abstract The main purpose of this study was to find antecedents of organizational citizenship behavior (OCB) and to investigate the mediating role of leader-member exchange (LMX). This study categorized the factors that influence OCB and LMX into individual (distributive and procedural justice), group (transformational leadership and team empowerment), and organizational levels (complexity). A total of 773 cases were used in this study, which were collected in one of industrial complexes. The research participants were any employees who participated in their work by collaborating with their co-workers. This study found that procedural justice, transformational leadership, and team empowerment had positive influences on OCB, and distributive justice, procedural justice, transformational leadership, team empowerment, and complexity significantly influenced LMX. Moreover, LMX played a mediating role in the relationship between each of the five input variables and OCB.

Key Words: Organizational citizenship behavior, Leader-member exchange, Organizational justice, Transformational leadership, Team empowerment, Complexity of organizational structure

요약 본 연구는 조직시민행동의 선행요인을 찾고, 그리고 LMX(leader-member exchange)의 매개효과를 살펴보는 것이다. 선행연구 검토를 통해 본 연구는 조직시민행동과 LMX에 영향을 미치는 요인을 개인(분배, 절차 공정성), 그룹(변혁적 리더십, 팀 임파워먼트), 그리고 조직(조직구조의 복잡성)수준으로 분류하였다. 산업단지 공단에 근무하는 종업원들을 대상으로 설문조사를 실시하였고, 총 773부의 설문지가 실증분석에 사용되었다. 실증분석 결과, 절차적 공정성, 변혁적 리더십, 그리고 팀 임파워먼트가 조직시민행동에 정(+)의 영향을 미치는 것으로 나타났다. 또한 분배 공정성, 절차공정성, 변혁적 리더십, 팀 임파워먼트, 조직구조의 복잡성은 LMX에 정(+)의 영향을 미치는 것으로 나타났다. 게다가 LMX는 5개의 독립변수(분배공정성, 절차공정성, 변혁적 리더십, 팀 임파워먼트, 조직구조의 복잡성) 가 조직시민행동에 미치는 영향관계에서 매개역할을 하는 것으로 나타났다. 연구결과를 바탕으로 연구의 시사점과 한계점 등에 대해서도 논의하였다.

주제어: 조직시민행동, LMX, 조직공정성, 변혁적 리더십, 팀 임파워먼트, 조직구조의 복잡성
1. Introduction

An organization that is comprised of various employees continuously seeks to accomplish organizational goals and to advance by organizational members’ collaborations with co-workers and their performances. To ensure continuous organizational development, it is important for organizations to attract competent employees and to motivate their current employees for their organizational goal. More importantly, organizations need to have employees who are motivated to actively participate in organizational activities. With regard to employees’ behavior and motivation, many researchers have introduced the importance of employees’ discretionary behavior, organizational citizenship behavior (OCB).

It is said that employees’ successful accomplishments, which are expected by their organization, are critical for organizational success. Moreover, employees’ voluntary behavior is also essential for organization development since organizations cannot foresee the extent of their employees’ behavior needed for achieving their goals[1].

OCB is employees’ discretionary behaviors that are not explicitly mentioned by job descriptions[1]. The role of and importance of OCBs in organizations have received much attention from researchers. Many studies have investigated the determinants of OCB, and have suggested and found various factors such as leadership, organizational support, and job satisfaction. However, these studies have focused on just one or two factors and their effects on OCB, and none of these studies has systematically categorized the factors that may affect OCB into individual, group, and organizational levels of factors.

To overcome the limitations of previous studies and to improve the value of practical research on OCB, this study aims to analyze and investigate OCB using an integrated approach of individual, group, and organization levels. More specifically, this study categorizes the factors that influence OCB into individual (distributive and procedural justice), group (transformational leadership and team empowerment), and organizational (complexity) levels, in an attempt to grasp and analyze the relationships between factors in the individual, group, and organizational levels and OCB. Moreover, this study explores the role of leader-member exchange in the relationships among the three levels of factors and OCB.

2. Theoretical Background and Hypotheses

2.1 Studies on OCB at the Individual Level

Studies on OCB can be largely divided into two research streams: 1) studies on OCB as an input variable that results in changes in employees’ results such as increased performance and increased trust in co-workers and leaders, and 2) studies on OCB as an output variable that is caused by other factors such as leadership and organizational structure. With regard to the first research stream, various factors have been suggested and investigated as factors that influence employees’ OCB. Such factors include job satisfaction, organizational justice, and support or trust from organizations and leaders[2,3].

Among these factors, organizational justice is one of the most frequently suggested. It is widely accepted that organizational justice has three sub-dimensions (distributive, procedural, and interactional justice) or four sub-dimensions (distributive, procedural, informational, and interpersonal justice)[4]. Procedural justice is related to employees’ perception of fairness in the decision-making process, and distributive justice is related to fairness of allocation and outcomes[5]. These two justices perceived by employees are considered as critical factors that improve employees’ organizational citizenship behavior. When the procedural and distributive fairness perception of employees is consistent with their beliefs of how organizational
fairness should be, the employees would have a strong intention to repay their organization by actively participating in organizational work and demonstrating voluntary behavior. That is, employees’ high perception of justice could be linked to OCB[6].

2.2 Studies on OCB at the group level

Employees’ OCB is also affected by their leaders’ behavior[7]. Transformational leadership focuses on followers’ development and establishment empowered working environments by sharing a vision and providing support and encouragement[8]. The transformational leaders play a key role in creating followers’ behavior and attitude by demonstrating high performance expectation and creating supportive work culture and structure. The positive relationship between transformational leadership and OCB is well supported by previous studies. For example, Koh, Steers, and Berborg[9] studied the effects of a principal’s transformational leadership on teachers’ attitudes and students’ schoolwork performance and found that transformational leadership had a positive effect on OCB. This means that a leader with a higher transformational characteristic forms employees’ higher commitment levels and increases OCB aspects.

Meanwhile, empowerment is “the process by which a leader shares his or her power with subordinates”[10, p. 239], and is considered an important way to increase organizational efficiency and effectiveness[11] by allowing participation of subordinates in decision-making and promoting subordinates’ self-efficacy and autonomy, and increasing subordinates’ impact on results. Highly empowered employees develop high self-efficacy and belief in their ability, and feel a sense of autonomy in their work, and then are able to exercise initiative and exhibit more OCB[12]. With the increased popularity of team-based organizational structures in organizations, discussion on the relationship between team empowerment and OCB has also increased. When employees work together as team members, they share team goals and vision and develop a shared belief. Therefore, they have a greater feeling of belonging to their team and their organization, resulting in increased engagement in OCB. The positive relationship between team empowerment and OCB is well supported by the previous studies. Several studies showed that team empowerment also promotes employees to contribute organizational performances and to sacrifice for the team’s success because the team members have an increased feeling of responsibility for the team performances[e.g., 11].

2.3 Studies on OCB at the organizational level

Employees’ attitudinal and behavioral outcomes are attributed to organizational structure[13]. Less rigid and less formalized organizations give employees more flexibility and autonomy in decision-making and allow employees to be more effective in performing their jobs. In contrast, highly formalized and complex organizations result in higher stress among employees and allow employees to have lesser autonomy in decision making and implementing tasks. As a result, employees do not put forth extra efforts to achieve their tasks and organizational goals[14]. This negative effect of organizational structure (complexity) on OCB has been reported in previous studies[e.g., 15,16]. For example, Chung and Oh[17] found that in highly centralized and formalized organizations, employees tend to be more passive and less exhibit OCB.

2.4 Studies on LMX

Liden and Graen[18] described employees by classifying them into an inner group and outer group according to their quality of relationships with supervisors. For inner-group members who maintain a good relationship with their supervisors, leader–member exchange is described as a partner relationship characterized by mutual influence, exchange outside contract, mutual trust, respect and favor, and
awareness of shared destiny. In contrast, outer-group members perceive their supervisors as the on-looker, characterizing the leader-member relationship as a top-down effect, role prescription, and a loose coalition. Inner-group members also enjoy relatively more attention and recognition from, having more loyalty and devotion to their supervisors and organization than outer-group members. These relationships with supervisors allow inner-group members to go on accomplishing the objectives of an organization efficiently.

To sum up, the leader-member exchange (LMX) model advocates heterogeneity in a group. That is, studies of organizational phenomena on perception differences in leader-member exchange show that perception has a respective effect on job satisfaction[18], support of employees and their commitment to the organization[19], favor in evaluating duty performance[20], quitting or quitting intention[20], performance results, decision-making influence, career development, and probability for promotion[20]. These research results indicate that a leader’s behavior of exercising the same leadership on all the employees will have different effects on each employee’s many behaviors or attitudes. Likewise, leader-member exchange plays an important role in forming an employee’s attitude and behavior through social exchange. According to Blau[21], these factors affect employees’ attitudes and behavior.

Accordingly, in the course of carrying out their jobs within an organization, employees will have many personal relationships, which can play a very important role in forming their attitudes and behaviors along with their jobs, and these relationships are considered an important element to decide the results of an organization[22]. In addition, according to the principle of reciprocity[23], the leader and members will trust each other through an exchange relationship, and a moral sense of duty based on such trust is very likely to lead to an employee’s voluntary participation. This involvement or proposal has the intent and purpose to reward an organization. That is, it is expected that there is a close connection between leader-member exchange and OCB.

Moreover, the quality of LMX is affected by distributive justice, procedural justice, transformational leadership, team empowerment, and complexity of organizational structure[24, 25]. For example, with regard to the individual level of factors, several studies have shown that procedural and distributive justice affects the leader-member exchange (LMX)[e.g., 24]. When employees consider percieved justice to their leaders, it contributes to a high quality of leader-member relationship[26]. The group level of variables (transformational leadership and team empowerment) is also found as antecedents of LMX. For example, Howell and Hall–Merenda[24] found that transformational leadership is a stronger predictor of LMX than transactional leadership. Moreover, the level of LMX is also influenced by the complexity of the organizational structure[27].

2.5 Research Framework and Hypotheses

With the increased interest in OCB over the last 20 years, many studies have identified the factors that increase OCB, such as trust in a leader, quality of LMX, awareness of an organization’s support, and empowerment[28, 29]. However, these studies investigated the relationship between factors in the individual or interpersonal level and OCB, and did not include the relationship between variables in the organizational level itself and OCB.

After reviewing OCB-related literature, this study classified the factors affecting OCB into individual, group and organizational levels: 1)distributive and procedural justice for the individual level, 2)transformational leadership and team empowerment for the group level, and 3)complexity of organizational structure for the organizational level. This study also proposed LMX as the mediating factor in the
relationships between factors in the individual, group, and organizational levels and OCB. Based on previous studies, this study developed the following six research hypotheses:

**Hypothesis 1**: Distributive justice will have a positive effect on employees’ OCB and LMX.

**Hypothesis 2**: Procedural justice will have a positive effect on employees’ OCB and LMX.

**Hypothesis 3**: Transformational leadership will have a positive effect on employees’ OCB and LMX.

**Hypothesis 4**: Team empowerment will have a positive effect on employees’ OCB and LMX.

**Hypothesis 5**: Complexity of organizational structure will have a negative effect on employees’ OCB and LMX.

**Hypothesis 6**: LMX will play a mediating role in the relationships between factors in the individual, group, and organizational levels (distributive justice, procedural justice, transformational leadership, complexity of organizational structure, team empowerment) and OCB.

3. Methods

3.1 Data Collection and Research Sample

This study used a questionnaire to collect data in an industrial complex. To obtain sample cases for this study, this study contacted one of six Korean Industrial Complex Corp. (KICOX) branches. Therefore, the sample for this study was employees who worked in one of the industrial complexes and participated in their work by communicating and collaborating with their co-workers and leaders. The participants were asked to provide their perception of organizational justice, their leader’s behavior, level of empowerment, and level of complexity. A total of 1,100 copies of the questionnaire were distributed to potential survey participants with the brief explanation of this study, including the research goal and instructions on completing the questionnaire. Of the questionnaires distributed to potential participants, 850 were returned. After screening the questionnaires, 77 were excluded because they contained incomplete responses. Therefore, the total sample used in this study consisted of 773 participants.

With regard to demographic characteristics of the survey participants, 571 were men (74.54%), and regarding educational level, approximately 54% had college- or graduate-level degrees and about 32% had 2-year vocational college-level degrees. More than 77% were general employees; the remaining respondents were assistant managers (24, 3.16%) and management-level employees (145, 19.07%).

3.2 Instruments

All instruments used in this study were developed and validated by previous researchers. Respondents used a five-point scale (1 = "strongly disagree" to 5 = "strongly agree") to indicate their perception of each item.

Organizational citizenship behavior (OCB) was measured by a nine-item scale taken from Rupp and Cropanzano[30]. Respondents were asked to provide the level of their extra efforts and activities that were not officially compensated by the organization for organizational goals (α=.87). Organizational justice was measured in a two dimensions 12-item scale, distributive justice and procedural justice, which were developed by Moorman[2]. Respondents provided their perception on whether the decision-making procedure and compensation were being made fairly (α=.92). Transformational leadership (α=.88) was measured with a seven-item scale developed by Bass[31]. Respondents provided their perception of their leaders’
characteristics and behaviors. Team empowerment (α = .84), the belief that employees have an influence on their own duties and organization, was measured using an eight-item scale developed by Thomas and Velthouse[32]. The variable of an organizational structure characteristic was measured by complexity, which means structural complexity within the organization. Complexity was measured by a three-item scale taken from Aiken and Hage[33] (α = .83). Employees rated their perception of organizational complexity. Sample questions are “There is frequent communication between management and employees” and “When I need to communicate with my leader, I can directly contact him or her and have honest communication.” LMX (α = .91), meaning the level of mutual respect for the other’s ability and trust and sense of duty between the leader and members, was measured using a seven-item scale developed by Scandura and Graen[34]. A sample question is “My leader is respected by all organizational members.”

Correlation analysis results given in <Table 1> indicate significant correlations among seven variables. However, the higher level of correlation coefficient among the latent variables could result in multicollinearity issues. To avoid this issue of multicollinearity, tolerance should be greater than .20[35] and VIF should be less than 4[36]. In this study, VIF scores ranged between 1.29 and 2.58, and tolerance values ranged between .38 and .77. Thus, it can be concluded that multicollinearity was not found in this study.

4. Results

4.1 Measurement Model Assessment

For the factor analysis, this study carried out the confirmatory factor analysis to estimate validity of the seven constructs. CFA results are shown in <Table 2>. This study considered multiple model-fit indices, and,

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Distributive justice</td>
<td>3.26</td>
<td>.74</td>
<td>(.91)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Procedural justice</td>
<td>3.24</td>
<td>.73</td>
<td>.61</td>
<td>(.92)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>3. Transformational leadership</td>
<td>3.40</td>
<td>.63</td>
<td>.52</td>
<td>.56</td>
<td>(.88)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Team empowerment</td>
<td>3.13</td>
<td>.64</td>
<td>.31</td>
<td>.33</td>
<td>.43</td>
<td>(.84)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Complexity</td>
<td>2.82</td>
<td>.90</td>
<td>- .51</td>
<td>- .54</td>
<td>- .62</td>
<td>- .41</td>
<td>(.83)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Organizational citizenship behavior</td>
<td>3.50</td>
<td>.49</td>
<td>.43</td>
<td>.45</td>
<td>.51</td>
<td>.39</td>
<td>- .44</td>
<td>(.87)</td>
<td></td>
</tr>
<tr>
<td>7. Leader–member exchange</td>
<td>3.38</td>
<td>.82</td>
<td>.56</td>
<td>.80</td>
<td>.72</td>
<td>.40</td>
<td>- .62</td>
<td>.52</td>
<td>(.91)</td>
</tr>
</tbody>
</table>

Note: All correlation coefficient estimates are significant at the .01 level.
The diagonal line indicates the value of Cronbach’s alpha.

<table>
<thead>
<tr>
<th>Latent construct</th>
<th>Composite reliability (CR)</th>
<th>Average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributive justice</td>
<td>.92</td>
<td>.86</td>
</tr>
<tr>
<td>Procedural justice</td>
<td>.94</td>
<td>.89</td>
</tr>
<tr>
<td>Transformational leadership</td>
<td>.84</td>
<td>.72</td>
</tr>
<tr>
<td>Team empowerment</td>
<td>.85</td>
<td>.73</td>
</tr>
<tr>
<td>Complexity</td>
<td>.79</td>
<td>.65</td>
</tr>
<tr>
<td>LMX</td>
<td>.89</td>
<td>.80</td>
</tr>
<tr>
<td>OCB</td>
<td>.76</td>
<td>.68</td>
</tr>
</tbody>
</table>

χ² (69) = 151.23, χ² / df = 2.2, GFI = .97, NFI = .99, zRMSEA = .04
overall, all model fit indices were acceptable ($\chi^2(69)=151.23$, $\chi^2/df=2.2$, GFI=.97, NFI=.99, RMSEA=.04). Additionally, composite reliability (CR) and average variance extracted (AVE) were also considered to assess convergent validity. The composite reliabilities of the variables ranged from .76 to .94, satisfying the recommended criteria, >.60[37]. Moreover, the AVEs for all variables were greater than .50[37]. Therefore, these results provided evidence of validity of the measures.

4.2 Structural Model Assessment

Structural equation modeling analysis was performed using Lisrel 8.80[38] to test the hypothesized model. Various indices provided by Lisrel results were used to estimate overall fitness of the measurement model. However, the $\chi^2$ statistic was not used because of its sensitivity to sample size. This study considered the goodness of fit index (GFI: >.90), normed fit index (NFI: >.90), and comparative fit index (CFI: >.90). The results showed that the overall fit of the structural model was acceptable: $\chi^2=548.70$, df=71, NFI=.93, GFI=.91.

As shown in [Fig. 1], distributive justice was found to have a significant effect on LMX (SPC=.18, p<.05; H1) but not on OCB (SPC =.08, t=1.64; H1). This result supports the hypothesis that distributive justice has a positive effect on LMX but does not support the hypothesis that it has a positive effect on OCB. Procedural justice was found to have a significant effect on LMX (SPC =.12, p<.05) and OCB (SPC =.09, p<.05), also supporting hypothesis 2, which posited that procedural justice would have a significant effect on OCB and LMX. Transformational leadership was found to have a significant effect on LMX (SPC =.52, p<.05) and OCB (SPC =.14, p<.05), supporting hypothesis 3. Team empowerment also was found to have a significant effect on both LMX (SPC =.07, p<.05) and OCB (SPC =.20, p<.05), supporting hypothesis 4. The complexity of the organizational structure was found to have a significant effect on LMX (SPC =-.18, p<.05; H5), but not on OCB (SPC =-.04, t=-.55; H5). This result partially supports hypothesis 5.

In <Table 3>, path decomposition is described to explain the magnitude of the direct and indirect effects among the research constructs. As shown in Table 3, distributive justice and complexity had no direct impacts on OCB but does have indirect effects on OCB through LMX. On the other hand, procedural justice, transformational leadership, and team empowerment had direct affect on OCB and had also indirect effect on OCB through LMX. Therefore, the influential
relationship between procedural justice, transformational leadership, team empowerment, and OCB were partially mediated by LMX, and the influential relationship between distributive justice, complexity, and OCB were fully mediated by LMX, supporting hypothesis 6.

Using SPSS, this study bootstrapped to test statistical significance of the mediation effects of LMX. There were significant indirect effects of distributive justice ($b = .137$, BCa CI [.102, .173]), procedural justice ($b = .160$, BCa CI [.106, .221]), complexity of organizational structure ($b = -.129$, BCa CI [-.171, -.093]), team empowerment ($b = .132$, BCa CI [.097, .168]), and OCB through LMX. Moreover, the $K^2$ values of distributive justice ($K^2 = .195$, 95% BCa CI [.150, .244]), procedural justice ($K^2 = .199$, 95% BCa CI [.146, .252]), transformational leadership ($K^2 = .170$, 95% BCa CI [.115, .234]), complexity of organizational structure ($K^2 = .198$, 95% BCa CI [.152, .250]), and team empowerment ($K^2 = .174$, 95% BCa CI [.134, .216]) were bounded between 0 and 1 and their 95% confidence intervals (CI) did not contain zero. Thus, the predictors (distributive justice, procedural justice, transformational leadership, complexity of organizational structure, team empowerment) significantly affected OCB via the mediator (LMX).

### 5. Conclusion

The main purposes of this study were to explore the determinants of OCB and to investigate the role of LMX. To these ends, this study first reviewed OCB and LMX literature, and then sorted factors affecting OCB and LMX into individual (distributive and procedural justice), group (transformational leadership and team empowerment) and organization (complexity) levels. This study proposed an integrated model that can explain the structural relationships between these five variables (distributive justice, procedural justice, transformational leadership, team empowerment, and complexity) and OCB and the structural relationships between the five variables and LMX, and show the mediating role of LMX in the relationships between factors in the individual, group, and organizational levels and OCB.

As the results indicated, the procedural justice had a statistically significant effect on both OCB and LMX however, distributive justice had a positive influence on only LMX. Transformational leadership and team...
empowerment, which are both group-level variables, had positive effects on both LMX and OCB. This means that the more a leader serves as a role model for their employees and the more employees perceive confidence in their ability and their capacity for duties they are carrying out, the higher the quality of LMX they perceive with more readiness to perform OCB. In addition, complexity was shown to have a negative effect on LMX quality, but not on OCB. This means that when an organization is divided into many parts, with broad spans of control and a complicated decision-making process, and necessitates many instructional practices, the quality of LMX decreases.

Based on the findings, this study suggests practical implications for organizations. First, as shown in the Results section, when employees have a high level of perception on organizational justice, especially on procedural justice, they exhibit more OCB, which is ultimately conducive to the organization. This result suggests that organizations can facilitate employees’ OCB by increasing employees’ perception of organizational justice. Organizations should encourage their employees to perceive justice to increase its practical implications by increasing transparency in the decision-making process.

Second, the results of the study also show the important role of organizational level factors such as leadership and team empowerment in improving OCB and LMX. A leader should make their employees very aware of the organization’s objectives by providing an empowered working environment, sharing an organization vision, and providing individualized consideration. Organizations should remember that when leaders serve as an excellent role model for their employees, let their employees have responsibilities in their work, and give their employees autonomy, employees are likely to feel more self-confident in performing their engaged duties, resulting in LMX quality improvement and fostering a higher level of performance of OCB.

Lastly, organizations should recognize the importance of organizational structure as an effective tool for implementing organizational strategy. As the results indicated, it is important for organizations to be aware that a high level of structural complexity is associated with negative results because complexity makes it difficult to control decision-making activities and processes[39]. Structural complexity also leads to a complicated process of communication and numerous instructional practices incurring direct or indirect expenses and losses for involving employees in the organization. As a result, employees have less intention to show OCB, which is ultimately related to the organization’s performance. Therefore, reducing complexity of organizational structure through creating a team-based structure can be beneficial to the organization.

Besides these practical implications, this study also has several limitations that should be considered and addressed in future studies. First, this study is limited by its sampling approach. The data used in this study were collected in one specific area with the purposive sampling approach. This sampling approach limits the possibility of generalizability of the results. Future studies should collect data with representative samples. Second, as with all studies, there could be other input variables that can positively increase OCB such as work status[40] and role identity[41]. Considering such variables in future research could further explain which factors can improve OCB.

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조직시민행동의 선행요인에 관한 연구: LMX의 매개효과를 중심으로


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