We examined servant leadership as a precursor to a knowledge-sharing climate and demonstrated the mediating role of knowledge-sharing climate in the relationship between servant leadership and team performance. Data from 67 teams, comprising 1,884 direct sales representatives of a large cosmetics company in South Korea, were analyzed at the team level. Actual team sales data were obtained from the company 3 months after surveying, and regression analyses and bootstrapping were used to test the hypotheses. The results showed 2 key findings: servant leadership positively affected the knowledge-sharing climate of the team; and knowledge-sharing climate mediated the relationship between servant leadership and team sales performance. Theoretical and practical implications of the findings are discussed.

Keywords: servant leadership, knowledge-sharing climate, team performance, sales performance, social exchange theory, social learning theory.

Following Greenleaf’s (1977) conceptualization of servant leadership, a number of researchers have explored its relationship with various dependent variables, such as individual job performance (e.g., Liden, Wayne, Zhao,
& Henderson, 2008), individual attitudes (e.g., Barbuto & Wheeler, 2006; Ehrhart, 2004), team effectiveness (e.g., Irving & Longbotham, 2007), and corporate social responsibility (e.g., Burlingham, 2007). van Dierendonck (2011) distinguished six key characteristics of servant leadership from those of other leadership constructs: empowering and developing people, humility, authenticity, interpersonal acceptance, providing direction, and stewardship. On the basis of social exchange theory (Blau, 1964) and social learning theory (Bandura, 1977), in this study we explored the relationship between servant leadership and bottom-line performance by incorporating knowledge-sharing climate as a potential mediator.

**Literature Review and Hypotheses Development**

Although scholars have emphasized the inevitability of knowledge sharing because each individual’s knowledge is imperfect (e.g., Hayek, 1945), some people remain reluctant to engage in this process at work (e.g., Davenport & Prusak, 1998). Individuals’ natural tendency to hoard knowledge should be avoided in order to promote a knowledge-sharing climate. Organizational knowledge accumulation requires members to disseminate knowledge among the group and to use such knowledge to solve problems or provide new insights (Goh, 2002).

A number of previous researchers have incorporated knowledge sharing or knowledge-sharing climate as mediators in the relationship between leadership and outcomes (e.g., Lee, Gillespie, Mann, & Wearing, 2010; Srivastava, Bartol, & Locke, 2006). However, few have explored the effect of servant leadership on knowledge-sharing behaviors. *Servant leadership* refers to a style in which leaders go beyond their own self-interests and are concerned with serving followers with the purpose of allowing them to grow and foster success. Servant-leaders are characterized by showing altruistic behaviors toward their followers as they emphasize their followers’ interests first (Barbuto & Wheeler, 2006; Greenleaf, 1977). Such leaders also encourage their followers to put others’ interests first, and often advocate engaging in knowledge-sharing behaviors among subordinates because a knowledge-sharing climate has been found to be associated with improved organizational performance.

*Knowledge sharing* refers to the dissemination of relevant information within an organization (Bartol & Srivastava, 2002). Stasser and Titus (2003) showed positive relationships among knowledge sharing, utilization of existing knowledge, and the quality of decision making. In a qualitative study, Yang (2004) also found a positive association between knowledge-sharing climate and organizational effectiveness. Lin (2011) reported positive relationships between knowledge-sharing climate, knowledge management implementation and
institutionalization in organization level, and Radaelli, Mura, Spiller, and Lettieri (2011) examined knowledge-sharing climate as a full mediator in the relationship between intellectual capital and knowledge-sharing behaviors. However, building a knowledge-sharing climate is not an easy task. Individuals may withhold knowledge from their organization in order to secure promotion opportunities and avoid time and energy output for little to no compensation (Bock, Zmud, Kim, & Lee, 2005). Organizational members may also be reluctant to share their knowledge because they do not want to risk being taken advantage of, or because they want to gain or maintain an advantage within their organization from the knowledge they possess.

Researchers have investigated a number of knowledge-sharing promotion factors, including reward systems (e.g., Bartol & Srivastava, 2002), organizational culture (e.g., Yang, 2007), and leadership style (e.g., Tombul, 2011). Yang (2007) showed a positive relationship between collaborative culture and knowledge sharing, and Ardakani (2012) observed a positive association between perceived justice and knowledge-sharing intention. In the cited literature, researchers have emphasized the value of knowledge sharing, and suggested that a number of factors influence behavior in this regard. Thus, we posited that servant leadership may facilitate the development of a knowledge-sharing climate within an organization, thereby influencing organizational performance. We used social exchange theory and social learning theory, specifically, to examine these relationships.

According to social exchange theory (Blau, 1964), an individual tries to reciprocate favors when he/she feels that someone has acted in his/her interest. Followers of a servant leader are likely to experience a supportive organizational climate and tend to share more of what they know with others, than followers of leaders with other styles of leadership do based on the rule of reciprocity. Researchers (e.g., Ehrhart, 2004; Walumbwa, Hartnell, & Oke, 2010) have shown that servant leadership is associated with organizational citizenship behavior (OCB), and have explained this through social exchange theory. Subordinates under servant leaders are likely to experience satisfaction with their leader and to be willing to give something back in exchange for their leader’s support (Ehrhart, 2004).

In addition, knowledge sharing and servant leadership seem to be associated with perceptions of trust and justice (e.g., Ardakani, 2012; Bartol & Srivastava, 2002). According to van Dierendonck (2011), a leader with servant leadership characteristics tends to establish a psychological climate of trust and fairness among followers, which, in turn, promotes the building of a knowledge-sharing climate. An individual needs to trust that others will not take advantage of his/her knowledge-sharing behavior and/or that his/her prosocial behaviors, such as disseminating knowledge, will be valued by the organization. In line with this,
Ardakani (2012) reported a positive relationship between organizational justice and knowledge-sharing intention in a company, and Schaubroeck, Lam, and Peng (2011) showed that servant leadership positively influences team performance via the mediators of cognition- and affect-based trust in leaders.

According to social learning theory (Bandura, 1977), a servant leader may function as a norm or a role model for his/her subordinates, and help to promote knowledge sharing among followers. A leader is expected to model behavior that is both right and important in the work environment (Neubert, Kacmar, Carlson, Chonko, & Roberts, 2008). A number of researchers (e.g., Reed, Vidaver-Cohen, & Colwell, 2011; Walumbwa et al., 2010) incorporated social learning theory as a way of explaining the servant leadership characteristics of selflessness, being supportive, and displaying developmental behaviors, which subordinates then learn vicariously through observation.

In sum, a servant leader may positively influence his/her organization’s performance by establishing a knowledge-sharing climate. Establishing an organizational climate wherein knowledge sharing is promoted and encouraged results in members being more likely to convey their knowledge to, and learn from, others within the organization. Thus, we formulated the following hypotheses regarding the influence of servant leadership on team performance through promoting a knowledge-sharing climate:

**Hypothesis 1:** Servant leadership will have a positive effect on the knowledge-sharing climate within an organization.

**Hypothesis 2:** The knowledge-sharing climate within an organization will mediate the relationship between servant leadership and team performance.

**Method**

**Participants and Procedure**

Participants were 2,965 direct sales representatives nested within 77 sales teams in a cosmetics company in South Korea. We selected this company for our research because it is representative of similar organizations in South Korea, and because we were provided with access to the sales team’s financial performance data. There were 1,979 survey forms returned from 70 direct selling sales teams; after matching these with sales team data, which were obtained from the company, 95 survey forms from three teams were discarded as they could not be reliably matched. Ultimately, 1,884 survey forms from 67 sales teams remained for analysis.

The survey items were written in English and then translated into Korean following a back-translation procedure (Brislin, 1980). A pilot survey with 10 employees working in the participating company showed that each item was clearly understood. With the cooperation of the company, we then randomly
distributed hard copy survey packets, which included a cover letter explaining the study’s purpose, to the target participants. To promote honest responses, on the first page of the survey form we stipulated that respondents’ answers would only be used for our research purpose, and assurance of confidentiality was provided.

The mean number of sales representatives nested in direct selling sales teams was 28.12 (range = 6–66). Most of the respondents were female (99.6%), due to the norm in South Korea of a high ratio of female employees in the cosmetics industry. Respondents’ mean education level was 12.18 years ($SD = 1.94$, range = 6–22), more than half (51.9%) had an organizational tenure of 5 years or more ($M = 6.14$ years, $SD = 5.48$, range = 0.5–30), and their mean age was 46.8 years ($SD = 7.62$; range = 21–76).

**Measures**

All responses were made on a 7-point Likert-type scale (1 = *strongly disagree* to 7 = *strongly agree*).

**Servant leadership.** Servant leadership was assessed using the 14-item Servant Leadership Scale developed by Ehrhart (2004). Participants’ data were used to analyze the servant leadership of their immediate supervisors. Sample items are “My department manager spends time forming quality relationships with department employees” and “My department manager encourages department employees to be involved in community service and voluntary activities outside of work.” The Cronbach’s alpha was .90 in this study.

**Knowledge-sharing climate.** We used the four-item scale proposed by Faraj and Sproull (2000) to measure individual perceptions of the extent of knowledge sharing by team members. Sample items are “People in our team share their special knowledge and expertise with one another,” and “More knowledgeable team members freely provide other members with hard-to-find knowledge or specialized skills.” The Cronbach’s alpha was .93 in this study.

**Team performance.** Team performance was assessed using the financial data from the participating cosmetics company. We allowed for a 3-month interval between survey and the sales data, calculating the quarter-on-quarter growth rate of 2013 second quarter (Q2) sales divided by 2012 Q2 sales for each team to create the team performance variable. The use of a sales growth rate neutralized the absolute differences in teams’ sales volumes.

**Control variables.** Given the importance of demographic variables in leadership research (Srivastava et al., 2006), we included the number of team members and team sales volume for the previous quarter (i.e., 2013 Q1) as control variables.

**Data Aggregation**

As individual sales representatives were nested within their sales team, the assessment scores of individual respondents regarding servant leadership and
knowledge-sharing climate were summed for each team, and the mean values were calculated to measure servant leadership and knowledge-sharing climate as a group-level variable. Individuals’ responses can be aggregated for use as a group-level variable if some justification criteria are met (Chan, 1998). Specifically, to justify the aggregation of servant leadership and knowledge-sharing climate measures at the relevant group level, we examined the statistical evidence for within-group and between-group agreement (Bliese, 2000). Results demonstrated that the $r_{wg(j)}$, intraclass correlation coefficient 1, and intraclass correlation coefficient 2 values for servant leadership were .88, .12 ($p < .001$), and .80, and those for knowledge-sharing climate were .82, .11 ($p < .001$), and .77. Because these values were all above the cut-off values, we determined that the data aggregation of servant leadership and knowledge-sharing climate was justified (Bliese, 2000; Klein et al., 2000).

**Model Validation**

We conducted a confirmatory factor analysis to verify that servant leadership and knowledge-sharing climate were able to be differentiated from each other. The results indicated a satisfactory model fit ($\chi^2 = 185.08, df = 39, p < .001$; comparative fit index = .99, Tucker-Lewis index = .98, root mean square error of approximation = .04). Furthermore, factor loadings of all items included in each construct were appropriately loaded above 50 (minimum = .63, maximum = .90).

**Data Analysis Strategy**

We carried out an ordinary least squares hierarchical multiple regression analysis for hypotheses testing, and followed the method proposed by MacKinnon, Lockwood, Hoffman, West, and Sheets (2002) to verify the mediation effect. To achieve the optimal balance between statistical power and type I error rates, the independent variable must be significantly related to the mediator ($\alpha \neq 0$). Furthermore, the mediator must be significantly related to the dependent variable when the independent variable is being controlled for ($\beta \neq 0$). Additionally, to confirm the mediation effect, we used a bootstrapping method to verify directly the significance of the indirect effect. We implemented a 10,000-times repeated sampling process by the percentile method, and presented a 95% confidence interval result, which is known to provide accurate verification of the mediation effect (Shrout & Bolger, 2002). As the variance inflation factors of all variables related to the estimation of regression coefficients were below 10.00, we determined that the possibility of multicollinearity was low (Aiken & West, 1991). We used STATA version 12.1 for statistical analyses.
Results

The means, standard deviations, and reliabilities of, and correlations among, the study variables are summarized in Table 1.

Table 1. Descriptive Statistics and Reliabilities of, and Correlations Among, Study Variables

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Team performance</td>
<td>0.92</td>
<td>0.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Servant leadership</td>
<td>4.92</td>
<td>0.45</td>
<td>.18</td>
<td>.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Knowledge-sharing climate</td>
<td>4.91</td>
<td>0.46</td>
<td>.32**</td>
<td>.75***</td>
<td>.93</td>
<td></td>
</tr>
<tr>
<td>4. Previous quarter sales^</td>
<td>6.21</td>
<td>0.45</td>
<td>.35**</td>
<td>.07</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td>5. Number of team members</td>
<td>55.73</td>
<td>21.27</td>
<td>.14</td>
<td>-.01</td>
<td>.09</td>
<td>.85***</td>
</tr>
</tbody>
</table>

Note. N = 67. Internal reliabilities are given on the diagonal in italics. ^ Natural logarithm of the previous quarter’s sales volume. * p < .05, ** p < .01, *** p < .001.

Model 1 of Table 2 includes the control variables and the independent variable (i.e., servant leadership) in the regression analysis of knowledge-sharing climate. As the regression coefficient of servant leadership in Model 1 was significant (p < .001), we determined that Hypothesis 1 was supported. It is also a stage one requirement (α ≠ 0) to verify the mediation effect, according to the method suggested by MacKinnon et al. (2002).

Model 2 of Table 2 represents the regression analysis of team performance, and was created by simultaneously adding the control, independent, and dependent (knowledge-sharing climate) variables. Results revealed a significant relationship (p < .01) between knowledge-sharing climate and team performance when servant leadership was controlled. It is a stage two requirement (α ≠ 0) to verify the mediation effect according to the method suggested by MacKinnon et al. (2002). As the results of stages one and two satisfied the verification conditions of the mediation effect set out by MacKinnon et al. (2002), we determined that Hypothesis 2 was supported.

Table 2. Standardized Regression Results for Knowledge-Sharing Climate and Team Performance

<table>
<thead>
<tr>
<th></th>
<th>Model 1 (Knowledge-sharing climate)</th>
<th>Model 2 (Team performance)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>t</td>
</tr>
<tr>
<td>Control variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous quarter sales^</td>
<td>-.10</td>
<td>-.65</td>
</tr>
<tr>
<td>Team size</td>
<td>.18</td>
<td>1.15</td>
</tr>
<tr>
<td>Independent variable</td>
<td>Servant leadership (H1)</td>
<td>.76***</td>
</tr>
<tr>
<td>Mediator</td>
<td>Knowledge-sharing climate (H2)</td>
<td>.47**</td>
</tr>
</tbody>
</table>
Table 2 continued

<table>
<thead>
<tr>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Knowledge-sharing climate)</td>
<td>(Team performance)</td>
</tr>
<tr>
<td>$\beta$</td>
<td>$t$</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.58</td>
</tr>
<tr>
<td>Adj. $R^2$</td>
<td>.56</td>
</tr>
<tr>
<td>$F$</td>
<td>28.60***</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td>.57***</td>
</tr>
</tbody>
</table>

Note. $N = 67$. a Natural logarithm of the previous quarter’s sales. * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed).

The result of the bootstrap-approached indirect effect test also supported the mediation effect of servant leadership on team performance through knowledge-sharing climate. As the bias-corrected 95% confidence interval for the indirect effect that was bootstrapped 10,000 times did not include zero (lower limit = .0003, upper limit = .1909), we determined that the mediation effect was significant. Thus, Hypothesis 2 was supported.

Discussion

Our results support the proposed hypotheses and show that a knowledge-sharing climate has a mediating effect on the relationship between servant leadership and team performance. Servant leadership was found to be significantly associated with team performance, showing a direct relationship between the antecedent and outcome variables. Knowledge-sharing climate was also positively associated with team performance, and mediated the relationship between servant leadership and team performance. Extending a similar study of empowering leadership by Srivastava et al. (2006), our findings provide the following unique contributions:

First, to our knowledge, no previous scholars have provided empirical evidence demonstrating the mediating effect of knowledge-sharing climate in the relationship between servant leadership and team performance. Rai and Prakash (2012) proposed a theoretical model depicting the role of servant leadership in knowledge creation, and in their case study, Oliveira and Ferreira (2012) also provided qualitative evidence that servant leadership promotes knowledge sharing. However, in no previous empirical study have researchers provided quantitative data of this relationship.

Second, we incorporated the variables of team-level knowledge-sharing climate and team performance in our model. In most studies of servant leadership, researchers have examined individual-level outcomes, rather than group- or team-level variables (van Dierendonck, 2011). Whereas Srivastava et al. (2006) examined management teams in 202 hotel properties, we collected data
from 67 sales teams working for a cosmetics company in a metropolitan city, and an adjacent province in which all sales representatives sell the same products, use the same promotion tactics, and have access to the same marketing strategies. To the best of our knowledge, the 67 teams are homogeneous except for the leadership, sales people, and geographical regions where there is no restriction on sales activities across regions. Thus, we can presume that our research findings are relatively free from alternative explanations.

Third, we measured team performance based on objective performance improvement (the growth rate in quarterly sales revenue) over a 1-year period. In contrast, Srivastava et al. (2006) computed hotel management teams’ performance based on the focal hotel’s room rate in comparison to that of two local competitors. There may be a generalizability issue given that our data were collected from a single organization, but this method effectively allowed us to single out the leadership effect on team performance.

In terms of practical implications, our findings indicate that organizations may need to employ leaders who use a servant leadership style in order to create a knowledge-sharing climate. Such leaders could be hired from outside the organization or promoted from within. Greenleaf (2003) suggested that a leader can become a servant leader when he/she tries to serve first as a way to encourage his/her followers to “become healthier, wiser, freer, more autonomous, and more likely themselves to become servants” (Spears, 2003, p. 16). Organizations should consider incorporating a number of human resources management tactics (e.g., hiring, promoting, and/or training) to position servant leaders, and should remove barriers to knowledge sharing as a way to facilitate the development of a knowledge-sharing climate within their organization. It can be noted that Correia de Sousa and van Dierendonck (2010) have stated that servant leadership, with its associated high levels of knowledge management and knowledge sharing, is more appropriate for knowledge organizations than for other types of firms.

Our study is not free from limitations. First, any application of results from our research may be restricted to the cosmetics industry, the specific type of direct sales environment experience of participants in this study, or the particular sociocultural environment of South Korea. It is, thus, essential to examine whether or not the finding is applicable to other industries, occupations, and sociocultural locales. Second, although we devised a time-lag research design and used data from different sources, common method variance may still exist. Third, we did not conduct a multilevel analysis to investigate variables of diverse levels. For example, sales performance can be affected by several dimensions, from individual-level variables, such as team members’ personalities and attitudes, to group-level variables that may influence one another. However, as the purpose of our study was to examine the relationships among servant
leadership, knowledge-sharing climate, and sales performance within the team-level unit of analysis, the primary purpose of our study was accomplished.

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