

Transformational leadership and organizational commitment: mediating role of psychological empowerment and moderating role of structural distance

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Summary

Using a sample of 520 staff nurses employed by a large public hospital in Singapore, we examined whether psychological empowerment mediated the effects of transformational leadership on followers' organizational commitment. We also examined how structural distance (direct and indirect leadership) between leaders and followers moderated the relationship between transformational leadership and organizational commitment. Results from HLM analyses showed that psychological empowerment mediated the relationship between transformational leadership and organizational commitment. Similarly, structural distance between the leader and follower moderated the relationship between transformational leadership and organizational commitment. Implications for research and practice of our findings are discussed. Copyright © 2004 John Wiley & Sons, Ltd.

Introduction

Accumulating evidence suggests that transformational leadership is positively associated with work attitudes and behaviors at both an individual and organizational level (Dumdum, Lowe, & Avolio, 2002; Lowe, Kroeck, & Sivasubramaniam, 1996). However, the mechanisms and processes by which transformational leaders exert their influence on their followers' motivation and performance have not been adequately addressed in the literature (Bono & Judge, 2003; Kark & Shamir, 2002; Lord, Brown, & Feiberg, 1999; Yukl, 1998). Clearly, there is a need for greater attention to be paid to understanding the mechanisms and processes through which transformational leadership influences work-related

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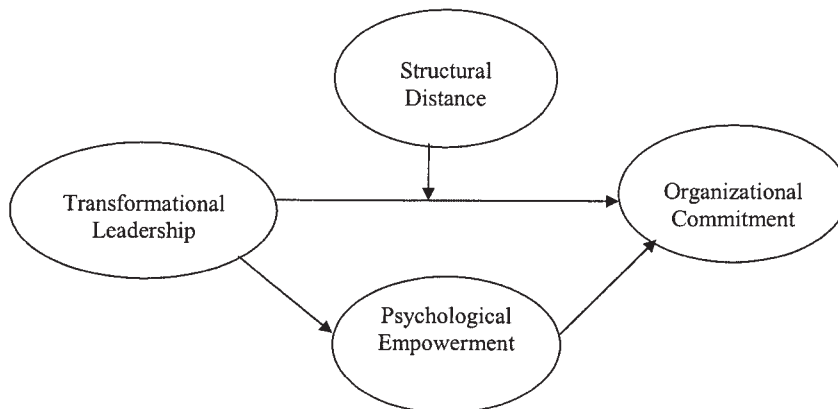


Figure 1. Transformational leadership and organizational commitment: mediating role of psychological empowerment and moderating role of structural distance

attitudes such as employee commitment in order to develop a more complete understanding of the inner workings of transformational leadership (Bass, 1999).

The goal of the present study is twofold. First, we set out to examine the underlying process through which transformational leaders influence followers' organizational commitment by focusing on psychological empowerment. Second, we explored the moderating role of structural distance (i.e., direct versus indirect reporting relationship to the leader), on the relationship between transformational leadership and organizational commitment, comparing immediate and indirect followers of leaders in a large public hospital. It has been suggested that hierarchical level, structural distance, and degree of differentiation in job function may moderate the effects of organizational leadership on follower motivation and performance (Day & Lord, 1988; Hunt, 1991; Zaccaro, 1996). We set out in this study to test the assumption that leadership may vary in its effects on followers if the follower directly or indirectly reports to the leader (Zaccaro & Klimoski, 2001). The theoretical framework that guides the present study is presented in Figure 1.

Theoretical Framework and Hypotheses

Transformational leadership and followers' organizational commitment

Organizational commitment is defined as 'the relative strength of an individual's identification with and involvement in a particular organization' (Mowday, Porter, & Steers, 1982, p. 27). Prior research suggests that work experiences, personal and organizational factors serve as antecedents to organizational commitment (Allen & Meyer, 1990, 1996; Eby, Freeman, Rush, & Lance, 1999; Meyer & Allen, 1997). One such personal and organizational factor that is considered a key determinant of organizational commitment is leadership (Mowday et al., 1982). In particular, there is considerable research now available suggesting that transformational leadership is positively associated with organizational commitment in a variety of organizational settings and cultures (Bono & Judge, 2003; Dumdum et al., 2002; Koh, Steers, & Terborg, 1995; Lowe et al., 1996; Walumbwa & Lawler, 2003). Work by Shamir

and colleagues (Shamir, House, & Arthur, 1993; Shamir, Zakay, Breinin, & Popper, 1998) suggests that transformational leaders are able to influence followers' organizational commitment by promoting higher levels of intrinsic value associated with goal accomplishment, emphasizing the linkages between follower effort and goal achievement, and by creating a higher level of personal commitment on the part of the leader and followers to a common vision, mission, and organizational goals.

Transformational leaders influence followers' organizational commitment by encouraging followers to think critically by using novel approaches, involving followers in decision-making processes, inspiring loyalty, while recognizing and appreciating the different needs of each follower to develop his or her personal potential (Avolio, 1999; Bass & Avolio, 1994; Yammarino, Spangler, & Bass, 1993). By encouraging followers to seek new ways to approach problems and challenges, and identifying with followers' needs, transformational leaders are able to motivate their followers to get more involved in their work, resulting in higher levels of organizational commitment (Walumbwa & Lawler, 2003). This view was supported by prior research that showed organizational commitment was higher for employees whose leaders encouraged participation in decision-making (Jermier & Berkes, 1979; Rhodes & Steers, 1981), emphasized consideration (Bycio, Hackett, & Allen, 1995), and were supportive and concerned for their followers' development (Allen & Meyer, 1990, 1996).

Although transformational leadership has been conceptually and empirically linked to organizational commitment, there has been little empirical research focusing on the processes by which transformational leaders influence followers' level of organizational commitment (see Bono & Judge, 2003; for exceptions). Recognizing that a variety of different processes may be involved in transformational leadership, we explored the potential role of psychological empowerment with respect to the relationship between transformational leadership and organizational commitment in the present study. Additionally, we examined structural distance as a potential moderator of the relationship between transformational leadership and organizational commitment.

Mediating role of psychological empowerment between transformational leadership and organizational commitment

Spreitzer (1995, p. 1443) defined empowerment as 'increased intrinsic task motivation manifested in a set of four cognitions reflecting an individual's orientation to his or her work role: competence, impact, meaning, and self-determination.' *Competence* refers to feelings of self-efficacy or personal mastery that one is capable of successfully performing a task (Bandura, 1986). *Impact* refers to the degree to which an individual's work makes a difference in achieving the purpose of the task and the extent to which an individual believes he or she can influence organizational outcomes. *Meaning* refers to the weight individuals place on a given task based on an individual's standards, while *self-determination* or *choice* refers to feelings of autonomy in making decisions about work.

Transformational leadership theory emphasizes the role of empowerment as a central mechanism of building commitment to the organization's objectives (Avolio, 1999; Bass, 1999; Yukl, 1998). Lowe et al. (1996) argued that transformational leaders transform their followers' aspirations, identities, needs, preferences, and values such that followers are able to reach their full potential. Followers of transformational leaders are expected to identify with their leaders and therefore are expected to have greater feelings that they can have an impact on their organization, through enhancements to their psychological empowerment (Laschinger, Finegan, & Shamian, 2001). Transformational leaders get followers involved in envisioning an attractive future and inspire them to be committed to achieving that future. They build team spirit through their enthusiasm, high moral standards, integrity, and optimism and provide meaning and challenge to their followers' work, enhancing followers' level of self-efficacy, confidence, meaning, and self-determination. Indeed, work by Avolio and colleagues

(e.g., Avolio, 1999; Bass & Avolio, 1994; Luthans & Avolio, 2003; Walumbwa et al., 2004) suggest that followers or employees who work with leaders exhibiting high moral standards and expectations, integrity, and optimism feel more comfortable and empowered to do the activities required for successful task accomplishment.

Transformational leaders also use intellectual stimulation to challenge their followers' thoughts and imagination, creativity, and recognition of their values, beliefs, and mindset. This involves leaders getting their followers to re-examine traditional ways of doing things, while encouraging them to try novel and creative approaches to solving problems and performing work (Bass & Avolio, 1994, 1997). Such leaders focus on coaching and mentoring followers to prepare them to assume more responsibility, and ultimately to develop followers into leaders (Bass, 1985; Yukl, 1998). Through the use of feedback, encouragement, and support, a follower's belief in his or her capability to perform activities is expected to be enhanced (Hughes, Ginnett, & Curphy, 1999). Transformational leaders exhibit individualized consideration by listening attentively and paying close attention to their followers' needs for achievement and growth by acting as mentors or coaches, while encouraging them to take on increasingly more responsibilities in order to develop their full potential (Avolio, 1999; Bass & Avolio, 1994; Kark & Shamir, 2002). Providing followers with greater opportunities for decision latitude, challenges, responsibility, as well as self-determination, is expected to result in followers who are more likely to reciprocate with higher levels of commitment to their organizations (Wayne, Liden, & Sparrowe, 2000).

We have argued that empowered employees will see themselves as more capable and will be able to influence their job and organizations in a more meaningful way. If so, then they would also be expected to execute extra-role efforts, act independently, and to have a higher commitment to their organization (Spreitzer, 1995). That is because employees who feel more empowered are more likely to reciprocate by being more committed to their organization (Eisenberger, Fasolo, & Davis-LaMastro, 1990; Kraimer, Seibert, & Liden, 1999). Thomas and Velthouse (1990) suggested that empowered employees have higher levels of concentration, initiative, and resiliency, which in turn enhance their level of organizational commitment. In other words, employees deriving a greater sense of meaning from their work would have higher levels of commitment to their organization and energy to perform (Kanter, 1983; Wiley, 1999).

Based on the above arguments, we hypothesize that:

Hypothesis 1: Psychological empowerment will mediate the relationship between transformational leadership and employees' organizational commitment.

Moderating role of structural distance between transformational leadership and organizational commitment

Structural distance has been defined as physical structure in the organization (e.g., physical distance between leader and follower), organizational structure (e.g., hierarchical level, span of management control, and management centralization), and supervision structure (e.g., frequency of leader–follower interaction) (Antonakis & Atwater, 2002). In the present study, we adopt a narrower perspective of structural distance as the hierarchical distance between the leader and follower in terms of job responsibility (i.e., direct versus indirect).

Direct leader, or the relations between leaders and their immediate followers, has been studied extensively, in contrast to the impact of indirect leadership on followers' motivation and performance (Dvir, Eden, Avolio, & Shamir, 2002; Waldman & Yammarino, 1999; Yammarino, 1994). Conversely, the dynamics of how leadership influences 'close' and 'distant' followers has not received adequate research attention in the literature. Antonakis and Atwater (2002) pointed out that the distance between

leaders and their followers can partly explain how leaders are perceived and the leadership outcomes obtained at both individual and organizational levels. Shamir (1995) proposed that the effects of charismatic/transformational leadership could be observed in followers who are separated from their leader in terms of either *physical* or *structural* distance. Physical proximity between leaders and followers may facilitate the quality of communication between the leader and their followers, while physical distance may decrease the direct influence, and possibly effectiveness, of leaders working with their followers (Chen & Bliese, 2002; Liden, Sparrowe, & Wayne, 1997). For example, Dvir and Shamir (2003) argued that the difference in the information followers have about their distant and close leaders may contribute to the differential impact of leadership on followers.

Shamir (1995) contended that physically close leaders have a greater opportunity to show individualized consideration, sensitivity to followers' needs, and support for the development of employees. Howell and Hall-Merenda (1999) reported that trust between followers and close leaders is higher than between followers and distant leaders because close leaders have more opportunities to interact directly, establish personal contact, and build relationships. They also found that transformational leadership at closer levels produced significantly higher follower performance than transformational leadership at a distance. Thus, although most of the prior research has focused on physical distance, similar arguments can also be applied to structural distance (hierarchical level specifically) since both variables are highly correlated and both can influence the frequency of direct interactions between leaders and followers (Napier & Ferris, 1993).

Based on the above argument, we hypothesize that:

Hypothesis 2: Structural distance moderates the relationship between transformational leadership and organizational commitment such that transformational leadership will have a stronger positive relationship with organizational commitment for followers who are structurally close to their supervisor than followers who are structurally distant from their supervisor.

Organizational Context

Data for this study was collected in the public healthcare industry in Singapore. The hospital had total staff strength of 2301 at the point of data collection in the year 2000. Of these, 1059 were classified as nursing staff and, among these nursing staff, 792 were further subclassified as staff nurses. Of the 792 staff nurses, 650 were ward based, with hierarchical structure found in a typical organization. We chose the healthcare industry because, beginning in 1990, all public hospitals in Singapore underwent restructuring exercises to make them more innovative and cost efficient. Since effective leadership is viewed as a key factor in attracting, motivating, and maintaining employees in organizations undergoing change and transformation, we expected that the conditions in this industry provided an ideal test of the relationship between transformational leadership and follower commitment (Bass & Avolio, 1997; Cropanzano, Rupp, & Byrne, 2003).

In addition to the external forces that provided a rationale for selecting a public hospital setting, we also felt that hospitals had the appropriate structure for examining the relationship between structurally close and distant leaders. Thus, the hierarchical structure of the hospital set-up offered a 'natural' setting for studying how distance may affect perceptions of leadership and, in turn, the effects of leadership on organizational commitment.

Typically, the main responsibilities of a nursing officer in Singapore hospital include: administration (e.g., taking charge of human resource management issues such as assignment, performance management, and deployment, costing and budgeting, and smooth running of the ward/clinic), determining training needs of the staff, and providing health education to patients, care-givers, and members of the broader community. The roles of a staff nurse include: patient care, counseling, screening, and providing health education to patients, care-givers and the general public. Senior staff nurses are expected to conduct extra duty assignments given to them by the nursing officer and also serve as the immediate assistant to the nursing officer.

Methods

Sample and procedure

Participants for this study were 520 staff nurses (SNs) employed by a large public hospital in Singapore. The effective response rate is 80 per cent, which is rather high. All data were collected and administered on site during work time. However, before completing the survey, employees were assured of confidentiality. Two hundred and fifty-five SNs rated 117 senior staff nurses (SSNs, direct immediate level) and 54 nursing officers (NOs, indirect senior level). The remaining 265 SNs rated their level of psychological empowerment from both SSNs and NOs, and organizational commitment.

We coded the two survey forms for ratings of leadership for the same senior nurse and NO in order to link them to the evaluations of psychological empowerment and organizational commitment for participants coming from the same ward. This was done to help match followers to leaders. After dropping SNs who could not be matched to their leaders, the sample used for the final analyses reported in this study was 502. Ninety-nine per cent of participants were female, 45 per cent Chinese, 29 per cent Filipinos, 13.9 per cent Indians, 10 per cent Malay, 4 per cent others, with an average age of 31.25 years. Fifty-five per cent of participants were contracted staff and 45 per cent permanent, with 85 per cent having been in their present job for more than a year. It is important to note that by using different sources of data collection we reduced potential for common method variance bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Measures

Leadership

We used 20 items taken from Multifactor Leadership Questionnaire (MLQ) Form 5X to measure transformational leadership, including idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass & Avolio, 1997). However, because we did not have any a priori expectation that individual components of transformational leadership would differentially affect either levels of empowerment or commitment, we combined these scales into one higher-order factor (Cronbach alpha = 0.87, staff-level nurses rating their NOs; 0.82, staff-level nurses rating their immediate supervisor SSN). This combination is consistent with recent empirical (Bono & Judge, 2003; Jung & Sosik, 2002; Kark, Shamir, & Chen, 2003) and theoretical developments (Avolio, Bass, & Jung, 1999; Bass, 1999) of transformational leadership. Ratings were completed on a five-point Likert-type scale ranging from 0 (not at all) to 4 (frequently, if not always). Sample item: 'Provides reasons to change my way of thinking about problems.'

Psychological empowerment

We used a 12-item scale to measure psychological empowerment: competence, impact, meaning, and self-determination. Competence items (three-items) were adapted from Jones' (1986) self-efficacy scale. Impact items (three-items) were adapted from Ashforth's (1989) helplessness scale. Meaning items (three-items) were taken from Tymon (1988). Self-determination items (three-item) were adapted from Hackman and Oldham's (1980) autonomy scale. All of these scales have been used in past research and have produced adequate estimates of reliability (Spreitzer, 1995). Items were anchored by a seven-point scale (1 = Strongly disagree to 7 = Strongly agree). Sample items: 'I am confident about my ability to do my job' (competence), 'The work I do is very important to me' (meaning), 'I can decide on my own how to go about doing my work' (self-determination), 'My impact on what happens in my department is large' (impact). Responses to the items were averaged to form an overall psychological empowerment score (Cronbach alpha = 0.84, staff-level nurses rating NOs; 0.75, staff-level nurses rating senior NOs).

Organizational commitment

Organizational commitment was assessed using a nine-item scale developed by Cook and Wall (1980). This scale measures three basic components of organizational commitment: identification (three-item), involvement (three-item), and loyalty (three-item). Sample items: 'I am quite proud to be able to tell people the hospital I work for' (identification), 'I feel myself to be part of the hospital' (involvement), 'To know that my own work has made a contribution to the good of my ward would please me' (loyalty). Ratings were completed on a five-point scale (1 = Strongly disagree to 5 = Strongly agree). These items were averaged to form a single index of organizational commitment (Cronbach alpha = 0.87).

Control variables

In all our analyses, we included age, race, nationality, type of employment, tenure, amount of time spent with one's respective leader, and educational level as control variables. Prior studies have demonstrated that these demographic variables are potential predictors of organizational commitment (Ang, Dyne, & Begley, 2003; Mathieu & Zajac, 1990).

Level of analysis

In the present study, we treated transformational leadership as a group-level variable because we were interested in the behaviors that leader's exhibit to the group as a whole. This approach is consistent with previous studies (e.g., Bono & Judge, 2003; Jung & Sosik, 2002; Kark, Shamir, & Chen, 2003). For example, it has been suggested that leaders often engage in behaviors that are not directed toward specific individuals but toward a unit or ward as a whole, such that employees working in the same ward are likely to be influenced by similar leadership behaviors (Shamir et al., 1998). Thus, we aggregated the leadership score of each SSN and the NO. While we were interested in leadership at the group level, we were focused on psychological empowerment and organizational commitment at the individual level, and therefore examined each as individual-level variables. Our model can thus be viewed as a cross-level model because we aggregated leadership to the group level and then examined its relationship with the individual level of psychological empowerment and organizational commitment (Bono & Judge, 2003; Kark et al., 2003).

Analysis strategy

Because we examined a cross-level model, we used hierarchical linear modeling (HLM) to test our hypotheses (Raundenbush & Bryk, 2002). The HLM approach has several advantages, including allowing researchers to conduct group mean analyses that make appropriate adjustments for group size differences, accommodating variables at multiple levels, and to account for dependence among individuals (Arnold, 1992; Gavin & Hofmann, 2002; Raundenbush & Bryk, 2002).

We used a two-level HLM strategy to examine the direct effects of leadership at the NO level on follower's attitudes and a three-level HLM approach to examine the effects of leadership at the SSN level on their SN followers, taking into consideration the effects of NO leadership on SSN leadership.¹⁺² In all the HLM analyses we employed a grand mean-centered approach. Previous research suggests that mean centering can help address the interpretation of intercepts, the variance of random intercepts across groups, and the covariance of intercepts with random slopes, in addition to reducing possible multi-collinearity (Hofmann & Gavin, 1998).

To test for mediation and moderation, we followed the procedure outlined by Baron and Kenny (1986), specifically multi-level mediation testing procedures recommended by Krull and MacKinnon (1999, 2001) for mediation testing, and Podsakoff, MacKenzie, Ahearne, and Bommer (1995) for moderation testing. According to Baron and Kenny (1986) and Krull and MacKinnon (1999, 2001), four criteria need to be met to support full mediation. First, the independent variable (i.e., transformational leadership) needs to be significantly related to a mediator (i.e., psychological empowerment). Second, transformational leadership needs to be significantly related to organizational commitment. Third, psychological empowerment needs to be significantly related to organizational commitment. Finally, the relationship between transformational leadership and organizational commitment must disappear when psychological empowerment is introduced into the regression equation predicting organizational commitment. If the coefficient between transformational leadership and organizational commitment after introducing psychological empowerment into the regression equation remains significant but is reduced, there is evidence for partial mediation.

¹HLM 3 model

Level 1 model

$$Y = P0 + P1 * (EMPOWE_1) + E$$

Level 2 model

$$P0 = B00 + R0$$

$$P1 = B10 + B11 * (TFL_1) + R1$$

Level 3 model

$$B00 = G000 + U00$$

$$B10 = G100 + U10$$

$$B11 = G110 + G111 (TFLH_1) + U11$$

²HLM 2 model

Level 1 model

$$Y = B0 + B1 * (EMPOWE_2) + R$$

Level 2 model

$$B0 = G00 + U0$$

$$B1 = G10 + G11 * (TFLH_1) + U1$$

Notes:

EMPOWE_1 refers to the empowerment from SSN leadership.

EMPOWE_2 refers to the empowerment from NO leadership.

TFL_1 refers to SSN leadership.

TFLH_1 refers to NO leadership.

Results

Aggregation analyses

Aggregation is a common procedure used in research on transformational leadership (e.g., Bono & Judge, 2003; Dvir & Shamir, 2003; Jung & Sosik, 2002; Kark et al., 2003). Aggregating variables to a group level requires both theoretical and statistical support (Bliese, 2000). Following this suggestion and prior to testing our hypotheses, we assessed the viability of treating transformational leadership at the group level. To do this, we assessed both within-group agreement (James, Demaree, & Wolf, 1984, 1993; Lindell & Brandt, 1997; Lindell, Brandt, & Whitney, 1999) and intra-class correlations (Bliese, 2000). We used Lindell, Brandt, and Whitney's r^*_{wg} coefficient to examine the level of within-group agreement on leadership ratings (including SSNs and NOs) among the SNs in one ward. r^*_{wg} is recommended since James et al.'s (1984) r_{wg} can display irregular results based on the distributional properties of one's sample. r^*_{wg} uses the corresponding maximum dissensus to replace the variance of the uniform distribution in the original equation of r_{wg} . The r_{wg} mean value for the leadership scores for SSN level was 0.82 (ICC1 = 0.20, ICC2 = 0.57) and mean r_{wg} for leadership scores for NOs was 0.83 (ICC1 = 0.24, ICC2 = 0.76). Although no absolute standard value for aggregation based on r_{wg} and ICC have been established, an r_{wg} equal to or greater than 0.70 and ICC1 values exceeding 0.05 (Bliese, 2000) is considered sufficient to warrant aggregation. Based on the results, we concluded that it was statistically appropriate to assess transformational leadership as a group-level variable.

Descriptive analyses

Table 1 presents means, standard deviations, and correlations among the study variables. Transformational leadership at the level of SSN and transformational leadership at the NO level were significantly correlated ($r = 0.43, p < 0.01$). Transformational leadership of the NO was also significantly correlated with psychological empowerment at the indirect follower ($r = 0.23, p < 0.05$) and organizational commitment ($r = 0.18, p < 0.05$). Finally, transformational leadership at the direct level was positively correlated with psychological empowerment for direct followers ($r = 0.15, p < 0.05$) and ratings of organizational commitment ($r = 0.15, p < 0.05$). However, these correlations do not consider the multi-level nature of the data since leadership scores at both SSN level and nursing office level were assigned to individuals within the groups, so cross-level correlations are confounded.

Hypotheses testing

Table 2 presents results of HLM analyses following the steps suggested by many scholars (Baron & Kenny, 1986; Hofmann, Moregeson, & Gerras, 2003; Krull & MacKinnon, 1999, 2001; Podsakoff et al., 1995) to test for multi-level mediation and moderation, respectively. Essentially, at Level 1, we tested the effects of control variables and our mediating variable (empowerment) on the dependent variable (commitment). At Level 2, we tested the relationship between the independent variable (SSN leadership) and mediating variable (empowerment from SSN leadership). At Level 3, we examined the 'cascading effect' of NO level leadership on SSN leadership. To test for mediation, we ran another HLM 2 model (Level 1: all control variables; Level 2: transformational leadership and empowerment). In this model, we substituted SSN leadership with NO leadership in the previous Level 2. To test for the

Table 1. Descriptive statistics and correlations for all variables^a

Variable	Mean	S. D.	1	2	3	4	5	6	7	8	9	10	11
1. Age	31.35	8.56	1.00										
2. Race (1 = Chinese, 0 = non-Chinese)	0.55	0.51	0.08	1.00									
3. Nationality (1 = Singaporean, 0 = non-Singaporean)	0.42	0.49	0.41*	-0.23*	1.00								
4. Employment type (1 = permanent, 0 = contracted)	0.45	0.50	0.43*	0.27**	0.77*	1.00							
5. Time in the hospital	4.60	5.71	0.67*	0.05	0.44**	-0.59**	1.00						
6. Time with the indirect leader	2.70	2.62	0.47*	0.02	0.33*	0.34**	0.68**	1.00					
7. Time with the direct leader	2.30	2.00	0.34**	0.04	0.35**	0.45**	0.74**	0.35*	1.00				
8. Transformational at indirect level	2.54	0.63	0.11*	-0.11*	-0.06	-0.09	-0.13*	-0.15**	-0.17*	1.00			
9. Empowerment from indirect level	5.10	1.12	0.11+	-0.19**	-0.12	-0.13	0.04	-0.11	0.04	0.23**	1.00		
10. Transformational leadership at direct level	2.30	0.69	-0.09	-0.03	-0.05	-0.06	-0.06	-0.11*	-0.18*	0.43**	0.08	1.00	
11. Empowerment from direct level	5.24	1.08	0.01	-0.12	-0.03	-0.02	0.02	0.00	-0.12	-0.09	0.35**	0.15*	1.00
12. Organizational commitment	3.38	0.35	0.18**	-0.09	-0.04	0.00	0.08	0.19**	0.20*	0.18*	0.15*	0.15*	0.28**

^aAlthough the correlations between transformational leadership at the NO and SSN level and other variables were computed by using $N = 244$, transformational leadership scores at both levels were assigned to individuals within those groups. Thus, the effective N for transformational leadership at the SSN level is 117 and the effective N for transformational leadership at the NO level is 55.
* $p < 0.05$; ** $p < 0.01$.

Table 2a. Hierarchical linear model (HLM) results (SSN level)

Fixed effect	Coefficient (unstandardized)	Standard error	<i>t</i> -ratio	Significance level
<i>For Intercept 1, P0</i>				
For Intercept 2, B00				
Intercept 3, G000	3.38	0.03	148.90	<0.05
<i>For empowerment slope, P1</i>				
For Intercept 2, B10				
Intercept 3, G100	0.10	0.02	4.53	<0.05
<i>For SSN transformational leadership, B11</i>				
Intercept 3, G110	0.05	0.03	1.71	>0.05
NO leadership, G111	0.11	0.06	2.04	<0.05

Table 2b. Hierarchical linear model (HLM) results (NO level)

Fixed effect	Coefficient (unstandardized)	Standard error	<i>t</i> -ratio	Significance level
<i>For Intercept 1, P0</i>				
For Intercept 2, B00				
Intercept 3, G000	3.38	0.02	138.82	<0.05
<i>For empowerment slope, B1</i>				
For Intercept 2, G10	0.06	0.05	2.38	<0.05
NO transformational leadership, G11	0.07	0.04	2.00	<0.05
<i>Step 4</i>				
Empowerment	0.06	0.04	2.50	<0.05
NO leadership	0.04	0.08	1.70	>0.05

moderating role of structural distance, we examined the differences in coefficients for transformational leadership at the different levels (i.e., direct versus indirect).

Our results showed that none of the control variables was significantly related to organizational commitment (these coefficients are not reported). Results from the HLM analysis were presented in Table 2a (SSN level) and Table 2b (NO level). As to the HLM ICC values, it was 0.76 for SSN level and 0.84 for NO level.

As to reliability estimates of random Level 1 coefficients (the amount of systematic variance in the parameters across groups), B0 and B1 at the NO level were 0.65 and 0.67 separately and P0 and P1 at the SSN level were 0.72 and 0.62 separately, providing the evidence that estimates of OLS Level 1 regression coefficients were reliable and precise (Hofmann, 1996). It was found that psychological empowerment was significantly related to organizational commitment for SSN level ($G100 = 0.10$, $\chi^2(241) = 350.25$, $p < 0.05$, $R^2 = 0.02$) and for NO level ($G10 = 0.06$, $\chi^2(236) = 345.21$, $p < 0.05$, $R^2 = 0.03$). Organizational commitment was significantly related to transformational leadership at NO level ($G11 = 0.07$, $\chi^2(236) = 384.25$, $p < 0.05$, $R^2 = 0.40$) but not for the SSN level ($G110 = 0.05$, $\chi^2(241) = 101.45$, $p > 0.05$, $R^2 = 0.05$), providing evidence for the moderating role of structural distance. Hypothesis 1 predicted that psychological empowerment would mediate the relationship between transformational leadership and organizational commitment. As shown in Table 2b, results indicated that this hypothesis was supported only at the indirect level of leadership (NO level).

Contrary to Hypothesis 2, which predicted that the relationship between transformational leadership and organizational commitment at the NO level would be lower than the relationship between

transformational leadership and organizational commitment at the SSN level, our results showed the opposite effect. Transformational leadership at the direct SSN level had a weaker relationship with organizational commitment than the indirect-level NO transformational leadership, providing evidence that transformational leadership had a greater impact at the indirect level than the direct level. Furthermore, we have calculated R^2 of the moderating role of leadership level by treating leadership at the SSN level as an unrestricted model and leadership at NO level as a restricted model. This finding provides support that structural distance is a potential moderator in the relationship between transformational leadership and organizational commitment.

Discussion

The purpose of the present study was to examine the linkage between transformational leadership and organizational commitment by focusing on psychological empowerment and structural distance. Our findings suggest three main conclusions. First, consistent with previous studies (e.g., Dvir et al., 2002; Howell & Hall-Merenda, 1999; Kirkpatrick & Locke, 1996; Walumbwa & Lawler, 2003), we found a positive association between transformational leadership and organizational commitment. However, contrary to our initial expectations, the relationship between transformational leadership at the SSN (direct immediate level) was only modestly related to followers' level of empowerment and organizational commitment based on correlational analyses and was not significantly related in the HLM analyses. It is possible that close followers are more likely to see some of the inconsistencies in their leader's behavior, which may affect how committed they feel to the organization, as well as how empowered. Also, the discretion for lower-level supervisors in hospitals to empower their direct followers may be limited, potentially reducing the level of empowerment provided by the SSNs.

Second, in this study we have begun to explore what has been referred to as the 'black box' of how transformational leadership influences psychological outcomes by demonstrating that feelings of psychological empowerment mediated the relationship between transformational leadership and organizational commitment at the NO level (Jung & Avolio, 1998). At least in the current sample of hospital nurses our results suggest that differences in employee levels of organizational commitment may be explained in part by the differences in how empowered employees feel with respect to working with their more senior and indirect supervisor. Our findings confirm prior research (e.g., Kanter, 1983; Spreitzer, 1995; Thomas & Velthouse, 1990; Wayne et al., 2000; Wiley, 1999) in that empowered employees appear to be more likely to reciprocate with higher levels of commitment to their organization.

Third, we found that structural distance did moderate the relationship between transformational leadership and organizational commitment. More specifically, transformational leadership at the indirect senior level had a more positive relationship with employees' level of organizational commitment as compared to the relationship between commitment and ratings of transformational leadership of the followers' immediate supervisor. As noted above, this finding was contrary to our original hypothesis and contradicts previous research that has examined the moderating role of physical distance on leadership and organizational commitment (e.g., Chen & Bliese, 2002; Howell & Hall-Merenda, 1999; Liden, Sparrowe, & Wayne, 1997; Shamir, 1995). However, this finding does provide support to Zaccaro and Klimoski's (2001) argument that different dimensions of organizations, including structural distance, can moderate the nature of organizational leadership and its antecedents and consequences. Katz and Kahn (1978) also stated that leadership practices at lower organizational levels are so institutionalized that little leadership is needed, while leadership at the

middle level involves the embellishment and operationalization of formal structural elements. This may help explain why NO leadership had a greater effect on followers' organizational commitment than the lower SSN level.

Another possible explanation for the differences between the current and previous studies' results may be cultural differences. The prior research cited above was conducted in Western cultures, where power distance is perhaps not as high as in Singaporean culture (Hofstede, 1991). In a high-power distance culture, lower-level leaders (e.g., SSN in this study) differ from middle-level leaders (e.g., NO in this study) on the sharing of vision, values, and inspiration. Lower-level leaders may feel that their job is to take care of the day-to-day routine management (such as making sure that all the patients' needs are taken care of) and leave longer-term issues like sharing of vision and values to higher-level leaders like the NOs. Furthermore, in a high-power distance culture, the top management would be more likely to share the vision of the organization with those who are structurally closer to them than those who are further away.

Taken together, our results underscore the argument presented by Antonakis and Atwater (2002) that examining the distance between leaders and followers may help clarify how leaders are perceived and the effects those perceptions have on attitudinal and performance outcomes. In the absence of adequate theory to explain the effects of transformational leadership on close versus distant followers, the current results must be viewed as preliminary, exploratory, and speculative.

Theoretical and practical implications

Our findings indicate that a more complete understanding of what drives levels of employee commitment may need to include some focus on how empowered followers feel within their work roles and the relationship they have with both indirect and direct supervisors. Transformational leaders place emphasis on the meaning of tasks that followers engage in at work. It appears, based on these preliminary results, that by empowering employees transformational leaders may also be demonstrating their trust in their followers' capability, therefore creating opportunities for them to significantly impact their work, which could lead to higher levels of identification with and commitment to the organization.

One of the strengths of the current study was the fact that we were able to collect leadership and attitudinal outcome ratings from different sources within the same ward, reducing the potential effects of common methods and single source bias. Moreover, prior studies that have examined the relationship between ratings of transformational leadership and organizational commitment have not tested for mediating effects with data collected from different sources.

There are several practical implications that can be derived from our findings. First, by creating a greater sense of empowerment, more senior leaders could have a more positive, albeit indirect, effect on levels of organizational commitment at subsequent levels within their respective organizations. The type of indirect leadership effects of transformational leadership observed in the current study is certainly worth further exploration, especially where leaders are at greater structural distances with respect to followers and within organizations that are perhaps not as hierarchical as the public hospital surveyed in the current study. In a less hierarchical organization, lower-level management may have more discretion to empower their direct followers, potentially changing the pattern of results observed in the current study.

To promote greater feelings of psychological empowerment, top management should clearly articulate a vision that inspires employees to take greater responsibility for their work at all organizational levels. Goal clarification, and a clear specification of tasks, roles, and rewards, perhaps at the more immediate supervisory level, may also facilitate feelings of empowerment among employees.

Understanding employee needs, creating a supportive atmosphere and engaging in confidence-building practices would also likely contribute to a greater feeling of psychological empowerment (Conger, 1989; Quinn & Spreitzer, 1997).

Limitations and recommendations

One of the main weaknesses of this study was the use of a cross-sectional design, which does not allow for an assessment of impact or cause and effect. Thus, we could not test whether transformational leadership causes feelings of empowerment, nor could we test whether empowerment positively causes higher levels of organizational commitment. In the context of the present study, we cannot rule out the alternative explanation that employees, who indicated having higher levels of commitment to the organization, might also claim they were more empowered.

Another limitation of the current study relates to the characteristics of the sample. The study was conducted in a public hospital with young, mostly female participants. We don't know whether these results would generalize to other hospital settings or to other types of organizations. Generalizability of the present findings should therefore be examined in future research in other types of organizations, with mixed gender, older, and more heterogeneous samples.

Future research also needs to collect ratings of leadership, empowerment, and outcomes from multiple sources over time to adequately test the mediating effects of psychological empowerment on the relationship between transformational leadership and organizational commitment. Future research also needs to explore the effects of variables that were not measured in the current study, which can also directly or indirectly influence feelings of empowerment, such as the organization's structure, climate, and/or culture (Koberg, Boss, Senjem, & Goodman, 1999; Spreitzer, 1996; Spreitzer, Janasz, & Quinn, 1999). In addition, interviewing each level of supervision might provide insights into why the lower-level leader was not perceived as empowering their direct followers.

In sum, this is the first study to examine the mediating effects of psychological empowerment on the relationship between transformational leadership and organizational commitment at multiple organizational levels. As more employees work at a distance to their immediate and senior leaders, we expect that future research will focus more on the direct and indirect effects of transformational leadership on psychological constructs such as empowerment and organizational commitment.

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