

# **How Transformational Leadership Behavior Influences Employees' Knowledge Exchange and Combination: A mediating Approach (The mediating Effects of Organizational Trust Climate and Organizational Cooperation Climate)**

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## **ABSTRACT**

*Although the effects of transformational leadership behavior on knowledge exchange and combination are well-documented, the mechanisms that explain those effects remain unclear. We developed a baseline model to explain how transformational leadership behavior influences employees' job knowledge management activities. Our sample consisted of 275 employees from 122 firms of small and medium-sized enterprises in Taiwan. Results of our study show that transformational leadership behavior affects knowledge share and combination through the mechanisms of organizational trust climate and organizational cooperation climate. Implications for the theory and practices of leadership are discussed, and future research directions are offered.*

*Key words* Transformational leadership; organizational trust climate; organizational cooperation climate; knowledge share and combination

## **INTRODUCTION**

Strategy scholars have argued that successful knowledge management activities would help firms to form sustainable competitive advantages and organizational leaders would be the most central roles on the process of initiating above knowledge management activities (Grant, 1996; Kogut & Zander, 1992, Nahapiet & Ghoshal, 1998). Furthermore, within knowledge management activities, knowledge exchange and combination have emerged as the most important core contents to exploring knowledge management activities. Hence, examining the role of leadership in converting knowledge into competitive advantages would be an important issue to organizational leaders. From the perspective of strategic leadership theory, transformational leadership has been considered effective on affecting and transforming followers' behaviors at the individual and group levels while organizational leaders expect to motivate followers to engage in a higher degree of knowledge exchange and

combination. Failing to leading and motivating employees within organization to exchange and combine knowledge, organization would not be able to form better competitive advantage than its external competitor ( Kogut & Zander, 1992, Nahapiet & Ghoshal, 1998). Hence, how to lead and motivate employees within organization to exchange and combine knowledge becomes the important task for organizational managers.

Furthermore, much research on leadership theory has found that transformational leadership behavior would be positively associated with followers' knowledge exchange and combination (Bryant, 2003; Politics, 2001) Although prior studies have found that transformational leadership behavior would be able to urge followers to engage in higher degree of knowledge management activities, little attention has been paid to the process regarding explaining how that transformational leadership influences followers' knowledge exchange and combination Hence, there have been the calls for a theoretical explanation of the effects of transformational leadership behavior on followers' knowledge management activities (Bryant, 2003; Politics, 2001). Bryant (2003) contended that, in order to enhance supervisory leadership effectiveness on followers' attitudes and behaviors, organizational managers should pay more attention on how their leadership behavior is perceived by their subordinates as well as carefully examine the causality between leadership behavior and subordinate psychological response.

In fact, prior literature on transformational leadership and knowledge management literature has mentioned the assertion that transformational leadership can communicate a common vision and create a beneficial organizational social context that can urge followers to engage in a higher degree of knowledge management activities (Bryant, 2003; Politics, 2001). What is the beneficial organizational social context, however, is still unclear. Organizational social climate, which is another popular perspective to exploring followers' knowledge management activities, has been defined as "the collective set of norms, value, and belief that express individuals' view of how they interact with one another" (Ashkanasy, 2000). Based on the perspective of organizational social climate, we proposed the assertion that transformational leadership behaviors would be able to build a higher degree of organizational trust and cooperation climate, which would be the beneficial organizational social context that can facilitate followers to engage in the higher degree of knowledge exchange and combination.

Consistently with above reasoning and assertion, we try to answer the question regarding how transformational leadership behavior can influence followers' knowledge management activities and point out the important mediating factors used to explain the influence of transformational leadership behaviors on followers' knowledge management activities—organizational trust climate and organizational cooperation climate. Our research purposes are stated as following: (1) how does transformational leadership behavior influence followers' knowledge management activities (knowledge exchange and combination). (2) tested whether or not that organizational trust climate and cooperation climate are two major mediators in the process that transformational leadership behavior influences knowledge exchange and combination. Our study therefore offers an integration of two of the visible literature in the organizational behavior domain (transformational leadership theory and organizational social climate perspective) to explain how

transformational leadership can influence followers' knowledge exchange and combination.

## **THEORY AND HYPOTHESIS**

### ***Transformational leadership and knowledge exchange and combination***

Over the past two decade, transformational leadership behavior has become one of the most popular approaches to understanding leader effectiveness (Colbert, Bradley & Barrick, 2008; Piccolo & Cqlquitt, 2006; Wang et al., 2005). Based on transforming followers' ideas and values, transformational leaders communicate a well-articulated vision with followers and develop the new ways of thinking how solve job problems (Bass, 1985; Boal & Hooijberg, 2001; Bonek & Judge, 2003; Cannella & Monroe, 1997; Colbert et al, 2008; Liao & Chuang, 2007). In fact, the positive association between transformational leadership and follower knowledge management activities is well documented (Bryant, 2003; Politics, 2001). Several studies on transformational leadership theory have pointed that transformational leadership behavior would be positively associated with followers' knowledge management activities. Bryant (2003) infer that leaders play a crucial role in building and maintaining an organizational culture of learning, which would urge individuals within organization to engage in higher degree of knowledge exchange and combination. In other words, by building common vision and encouraging individuals within organization to think new ways to solve problems, transformational leadership would build a beneficial organizational context of learning to foster knowledge exchange and combination of individuals within organization. Furthermore, empirical studies also have found that transformational leadership behaviors positively associated with knowledge exchange and combination (Politics, 2001). Thus, given the above discussion, we predict that transformational leadership behavior will be positively related to knowledge exchange and combination

### ***Transformational leadership, organizational trust climate and knowledge management activities***

As mentioned earlier, we defined social climate as "the collective set of norms, values, and beliefs that express individuals' views of how they interact with one another while achieving and accompanying their tasks for their organization" (Collins and Smith, 2006). In other words, organizational social climate is a organizational social context that influence individuals' brief, attitude, and behaviors. Under so social context, individuals express their cognitions regarding how to interact with other organizational coworkers. Organizational trust climate, which has been one of the most important organizational social climate, is defined as "the organizational norms that emphasize individual's brief that other individuals will not act opportunistically and would increase their willingness to share valuable resource or information" (Collins and Smith, 2006; Mayer and Davis 1999).

From the perspective of transformational leadership theory, transformational leadership would be able to

form a positive organizational trust climate that urges individual to believe that their coworkers would not act opportunistically and valuable resource exchange also would not hurt their benefits. By communicating the common vision, value and objective, transformational leadership leaders urge individuals to identify more to their coworkers and reduce their self-interest psychology, which also would let them believe that their coworkers will not act opportunistically. In other words, under common value, vision, and objective, individuals would form a common belief that our coworkers also pursue the common organizational goal and vision, and the possible self-interest or opportunistic psychology of their coworkers also thus is reduced. Transformational leadership behavior therefore forms a beneficial organizational trust climate that urges all individuals to believe each other and be willing to engage in resource or information exchange. From above reasoning, we therefore argued that transformational leadership would positively associate with organizational trust climate.

Organization social climate, which is a firm's social environment, has been indicated that it would facilitate knowledge exchange and combination of individuals in organization. Prior research on knowledge literature indicated that the characteristic of firm social environment would be able to facilitate knowledge exchange and combination of individuals in organization (Collins et al., 2006;Wagner, 1995 ; Nahapiet & Ghoshal, 1998). Collins et al (2006) also further argued that a social climate of trust appears to be essential for urging interaction and information exchange between individuals. From the perspective of trust concepts, trust reflects trustor's belief that a trustee will not act opportunistically and would increase their willingness to share valuable knowledge or information (Jones & George, 1998; Mayer et al., 1999; Mayer and Davis 1995 Whitener, Brodt, Korsgaard. & Werner, 1998). In other words, trust between individuals would enhance the possibility or likelihood of knowledge exchange and combination, since a trustworthy organizational context or condition would enhance individual's belief that exchanging or combining valuable knowledge would be beneficial to each side of knowledge exchange individuals and may lead to a reciprocal benefit in the future Mayer, Davis, Schoorman, 1999. Hence, based on the groundwork of trust between individuals, organizational trust climate would create a trustworthy and reciprocal atmosphere or aura to foster knowledge exchange and combination between individuals (Ring & Van de Ven ; 1992).

Hence, by building common vision and communicating common value to facilitate individual's trust to other coworkers within organization, transformational leadership would be able to form an organizational trust context that would urge all individuals within organization to be willing to engage in higher degree of knowledge exchange and combination. In other words, due to the common value and vision, individuals would identify more to their coworkers within organization and thus be willing to believe them. Under the principle of trust initiated by common vision and value, individuals believe such knowledge exchange and combination wouldn't damage their benefits, and their coworkers also would not hurt them after engaging in such knowledge management activities. Finally, individuals also believed that they would be able to gain a reciprocal benefit due to engaging in such knowledge exchange activities. Thus, given the above discussion, we predicted

***H1: Organizational trust climate mediates the relationship between transformational leadership and knowledge***

***Transformational leadership, organizational cooperation climate and knowledge management activities***

Organizational cooperation climate is another important mediating factor that will affect individuals to engage in knowledge exchange and combination with their coworkers within organization. Following Wagner (1995), we defined “organizational cooperation climate as “the organizational norms that emphasize individual personal effort toward group outcomes or tasks as opposed to individual outcomes”. From the perspective of knowledge management, self-interest psychology would urge individuals to avoid engaging in knowledge exchange and combination, since exchanging valuable knowledge may present that individuals would lose their influence or knowledge advantage. Hence, how to reduce self-interest psychology of individuals and pursuing them toward organizational common objective to cooperate together became another important task for organizational managers.

As with organizational trust climate, we also expected transformational leadership to increase the norms for cooperation between individuals. Specifically, transformational leadership encourages individuals to focus on organizational and team accomplishment, thus increasing the prevalence of shared values and goals (Nahapiet & Ghoshal, 1998; Zucker, Darby, Brewer & Peng, 1996). Following Warger(1995) and Collins et al.(2006), individuals would be more likely to cooperate with one other to achieve organizational goals while they share a common purpose and goals. In other words, transformational leadership also would form an organizational cooperation context in which individuals increase their personal efforts to pursue common task rather than individual level’s outcomes. From above reasoning, we therefore argued that transformational leadership would positively relate to organizational cooperation climate.

Furthermore, organizational cooperation climate appear to be another beneficial social environment that facilitate knowledge exchange and combination of individuals within organization. Pursuing common task rather than personal outcomes, individuals would be willing to exchange or combine more valuable information to other coworkers within organization, since such knowledge management activities would be beneficial and helpful to achieving common task or goal. In fact, several empirical studies also have found the positive association between organizational cooperation climate and knowledge management activities (Nahapiet & Ghoshal, 1998; Zucker, Darby, Brewer & Peng, 1996). Collins et al. (2006) have pointed that organizational cooperation climate, which presents that all individuals within organization are willing to cooperate together for common task, would increase the frequency or chance of knowledge exchange and combination of individuals. In other words, organizational cooperation climate would facilitate knowledge exchange and combination.

Following above perspective, we therefore proposed that transformational leadership would form an organizational cooperation context in which individuals are willing to cooperate together and further engage in knowledge exchange and combination. In other words, organizational cooperation climate mediates the relationship between transformational leadership and knowledge exchange and combination. Thus, given the

above discussion, we predicted

***H2: Organizational cooperation climate mediates the relationship between transformational leadership and knowledge exchange and combination***

## **METHOD**

### ***Sample***

To test our hypothesis, we collected data via executive students of colleges who worked in small and medium-sized enterprises in Taiwan. Our sample consisted of 275 employees from 122 firms of small and medium-sized enterprises in Taiwan. Each executive student was given three questionnaires with transformational leadership, organizational trust climate, organizational cooperation climate, and knowledge exchange and combination. Furthermore, each executive student then given their immediate subordinates (three employees) the above questionnaires with sealed envelopes. Meanwhile, above process was followed by an e-mail reminder, and finally, a telephone reminder. Respondents were assured of the confidentiality of responses, and completed surveys were returned directly to us in sealed envelopes. By collecting measures of the independent, mediating, and dependent variables from different data source, we have limited the problems related to common method variance. Finally, we received multiple responses from 122 firms, two response from 91 firms, and three responses from 31 firms.

### ***Measure***

Because of the concerns of common method variance, we used the sample firms with multiple response to compute the intraclass correlation coefficient, ICC(1) and ICC(2), as the check of the reliability of our data. For example, ICC(1) can be conceptualized as the proportion of variance in a measure explained by group membership (Bryk & Raudenbush, 1992). As Blies(1998) and Datta et al(2005) mentioned. “ When ICC(1) is large, a single rating from an individual is likely to provide a relatively reliable rating of the group mean; when ICC(1) is small, multiple rating are necessary to provide reliable estimates of the group mean”. In addition, because we were interested in firm-level effects, we averaged responses in each firm to create an aggregated measure to reflect firm-level constructs. Finally, we examined intraclass correlations (ICC(1) and ICC(2) before aggregating these measure to the firm level.

#### **(1)Transformational leadership**

We used the multifactor leadership questionnaire (MLQ Form 5X; Avolio and Bass, 1999) to measure the four components of transformational leadership: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. The MLQ measures idealized influence with an eight item scale and the other three remaining behaviors with four-item scales. Example of items used include: “The leader in this company

emphasizes the importance of having a collective sense of mission”; “The leader in this company articulates a compelling vision of the future”; “The leader in this company articulates a compelling vision of the future”. The 20-item scale showed good reliability ( $\alpha=.87$ ). In addition, ICCs for the aggregated index { ICC(1)=0.22, ICC(2) = 0.72} exceeded levels suggested by Blise(1998); hence, we averaged responses in each firm to create an aggregated measure.

## **(2)Organizational trust climate**

We measured organizational trust climate with a 17 item scale adapt form Mayer and Davis (1999). The scale included three dimensions: ability, benevolence, and integrity. We measured ability with 6 items assessing the degree to which respondents believed that other individuals were capable and skilled. Second, we measured benevolence with 6 items assessing the degree to which individuals felt coworkers in the company wanted to do good toward each other. Finally, we measured integrity with 5 items assessing the extent to which individuals felt coworkers behaved fairly with each other. Example of items used include: “Our employees feel confident about each others’ skills”; “Our employees will go out of their way to help each other work”; “The employees in this organization try hard to be fair in their dealings with one another”;. The 17-item scale showed good reliability ( $\alpha=.90$ ). Furthermore, ICCs for the aggregated index { ICC(1)=0.25, ICC(2) = 0.77} exceeded levels suggested by Blise(1998); hence, we averaged responses in each firm to create an aggregated measure to estimate organizational trust climate.

## **(3) Organizational cooperation climate**

We measured organizational trust climate with five-item scale modified from Chatman and Flynn (2001) studies. Example of items used include: “There is much collaboration between employees at the company”; “Employees here are willing to sacrifice their self-interests for the benefit of the group”; “There is a high level of sharing between employees in the organization. The 5-item scale showed good reliability ( $\alpha=.94$ ). Furthermore, ICCs for the aggregated index { ICC(1)=0.21, ICC(2) = 0.79} exceeded levels suggested by Blise(1998); hence, we averaged responses in each firm to create an aggregated measure to estimate organizational cooperation climate.

## **(4) *Knowledge exchange and combination***

We used a eight-item scale developed Collins and Smith (2006) to measure knowledge share and combination. Example of items used include: “Employees see benefits from exchanging and combining ideas with one another”; “Employees believe that by exchanging and combining ideas they can move new projects or initiatives forward more quickly than by working alone.”; “Employees at this company are proficient at combining and exchanging ideas to solve problems or create opportunities”; “The employees in this company are willing to exchange and combine ideas with their coworkers.”. The 8-item scale showed good reliability ( $\alpha=.91$ ). Furthermore, ICCs for the aggregated index { ICC(1)=0.23, ICC(2) = 0.76} exceeded levels suggested by Bone & Judge(2003); hence, we averaged responses in each firm to create an aggregated measure to

estimate knowledge share and combination.

### ***Data Analysis***

We adopted a two-step process of analysis to test our hypotheses. In the first step, we used two tests to verify the distinctiveness of our study variables. At first, we conducted a confirmatory factor analyses to evaluate measure model adequacy. Given the large number of item relative to the sample size, we reduced the size-to –estimator ratio. For constructs with eight or fewer indicators (Organizational cooperation climate, and knowledge exchange and combination), we used the individual items as observed indicator of the latent constructs. At the same times, for other multi-item constructs (Transformational leadership behavior and organizational trust climate), we used dimension of constructs as its indicators following statistical produces set up by Anderson & Gerbing (1988). After deciding the indicators of all constructs, we used a model comparison procedure to produce our fitted measure model. Secondly, following the suggestions of Fornell and Larcker (1981), we further tested the discriminant validity of transformational leadership behavior, organizational trust climate, organizational cooperation climate, and knowledge exchange and combination, by comparing the variance shared by each construct and its measures with variance shared by both constructs ( latent variables ). To meet the requirement of the test, the variance captured by each construct of our study needed to be larger than .50 and smaller than the squared correlation between these two latent constructs.

In the second step, we used firm-level data (the aggregated measure of constructs) to analyze the structural model of the hypothesized relationship by using a series of nested model comparisons. Hypothesized direct effects were assessed from the results of SEM, while mediating effects were tested through above nested model comparisons. Following the steps and methods of Wang, Law, & Hackett (2005), we tested whether or not that organizational trust climate and organizational cooperation mediated the relationship between transformational leadership behavior and knowledge management activities (knowledge exchange and combination). According to our results of analyses, a significant indirect effect indicate that the mediators significantly reduce the effect of the independent variables on the dependent variables, and verify that our theoretical was the better fitted model to our data. Finally, we used confirmatory factor analysis to test construct distinctiveness. We used individual-level data in above tests in order to have enough observations for data stability. Chi-square difference tests indicated that four-factor model (transformational leadership, organizational trust climate, organizational cooperation climate, and knowledge exchange and combination) showed a good fit to our data.

Finally, our hypothesized mediation effects were examined in accordance with standards proposed by Baron and Kenny (1986). Baron and Kenny specified three conditions that must be satisfied in order to infer mediation: (1) the independent variable must be significantly associated with the dependent variable in the absence of the mediator, (2) the independent variable must be significantly associated with the mediator, and (3) when both the independent variable and the mediator are considered simultaneously, the direct relationship between the independent variable and the mediator are considered simultaneously, the direct relationship

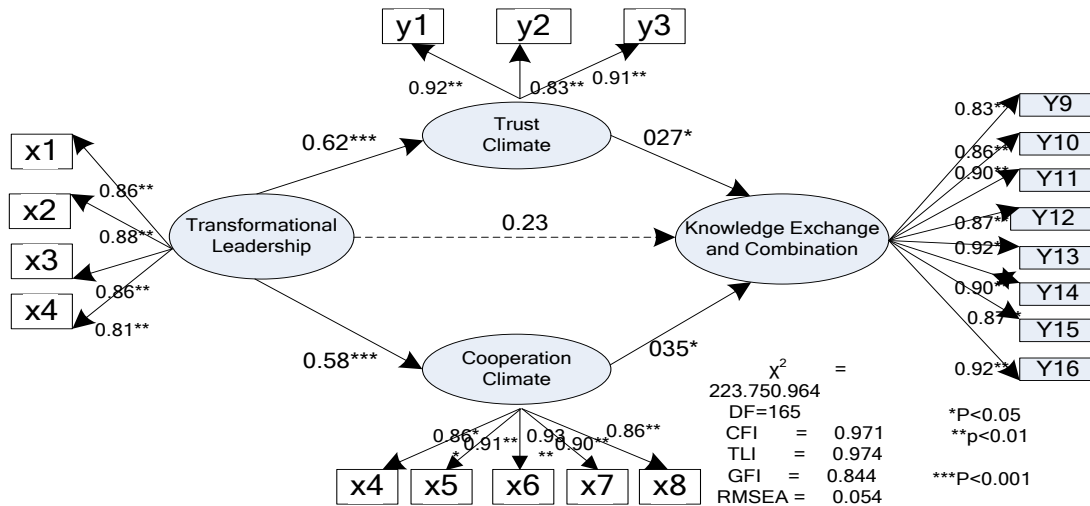


between the independent variable and the dependent variable should either decrease significantly or become non-significant. Hence, following Baron and Kenny's (1986) three requirement that must be satisfied, we tested our hypothesized relationships by analyzing the change of direct or indirect effects of independent variable and dependent variable.

## RESULTS

The structural model used to test our hypotheses is depicted in Figure 1. We predicted that transformational leadership would be related to knowledge exchange and combination through organizational trust climate and organizational cooperation climate. Consistent Baron and Kenny's first requirement for mediation, transformational leadership behavior was significantly related to knowledge exchange and combination in the absence of mediator variables ( $r = .50$ ,  $P < 0.01$ ). In accordance with Baron and Kenny's second requirement, transformational leadership behavior was significantly associated with both organizational trust climate and organizational cooperation climate. As reported in Figure 1, the path coefficient from transformational leadership behavior to organizational trust climate and organizational cooperation climate, were .49 and .51, whereas the path coefficients from organizational trust climate and organizational cooperation climate to knowledge exchange and combination were .52 and .57. Finally, consistent with Baron and Kenny's third requirement, the direct relationship between transformational leadership and knowledge exchange and combination decrease significantly in the presence of mediator variables ( $b = 0.23$ ). However, the indirect effects of transformational leadership behavior on knowledge exchange and combination were substantial and significant. Hence, following above reasoning and analysis, H1 and H2 were supported. Organizational trust climate and organizational cooperation mediated the relationship between transformational leadership behavior and knowledge management activities (knowledge exchange and combination).

**FIGURE 1**  
**Results of Structural Equation Modeling of the Mediating Effects**  
**of Trust Climate and Cooperation Climate**



## DISCUSSIONS

This article was to develop and test theory about how transformational leadership affect the organizational trust and cooperation climate that motivates individuals to work together to exchange and combine new knowledge. Facing more dynamic environments, firms in rapidly changing environment must derive their primary competitive advantage through the ability of their individuals to exchange and combining valuable knowledge. Thus, there is a need to understand how transformational leadership can facilitate the exchange and combination of ideas and knowledge among individuals. To foreshadow our arguments and highlight our contribution, we elaborate a model of how transformational leadership affects knowledge exchange and combination. Furthermore, this article is also investigated to response above argument that what is the process that transformational leadership affect knowledge exchange and combination According to our proposed model, transformational would form a beneficial organizational trust and cooperation contexts that can facilitate individuals within organization to increase their willingness to engage in a higher degree of knowledge exchange and combination. At first, organizational trust climate urges individuals to increase their trust to other coworkers within organization, which lets them believe that such knowledge exchange and combination would not hurt individuals' final benefits and even such behaviors would further help them to gain more value resource after engaging in such knowledge management activities, including learning more valuable knowledge and gaining some new ideas or opinions about jobs from other individuals.

Furthermore, the organizational cooperation climate also urges individuals to pursue organizational common goal rather than individual level of goal. In other words, under common vision and organizational goal,

transformational would reduce individuals' self-interest behavior and urge them to cooperate with each other, which ultimately facilitate knowledge exchange and combination. According to our proposed theoretical model, we considered that transformational leadership would effectively help organizational leaders to form a beneficial organizational context that would increase the willingness of all individuals within organization to engage in knowledge exchange and combination. Through the mediating effects of organizational trust climate and organizational cooperation climate, employees would increase their trust and the degree of cooperation to other coworkers within organization, ultimately facilitating their willingness to engage in knowledge exchange and combination.

## **REFERENCES**

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