**Journal of Leadership & Organizational Studies**
Volume 15 Number 2
November 2008 145-158

10.1177/1548051808324100
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# Building a Climate for Innovation Through Transformational Leadership and Organizational Culture

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Research has called for organizations to be more flexible, adaptive, entrepreneurial, and innovative in meeting the changing demands of today's environment. Appropriate leadership to effect such change is required; however, there has been little empirical analysis of the theoretical relationships among the key components that make up such change strategy, including transformational leadership, organizational culture, and organizational innovation. This study examines these linkages in terms of their relationships with climate for organizational innovation in Australian private sector organizations. Structural equation modeling based on responses to a survey of 1,158 managers explores the relationship between transformational leadership and climate for organizational innovation and the extent to which a competitive, performance-oriented organizational culture mediates this relationship. Strategies for building innovative organizations are discussed.

***Keywords:*** *transformational leadership; organizational culture; innovation*

Leadership and organizational culture are widely believed to be linked in the process of change (Afsaneh, 1993; Kotter, 1998; Schein, 1984). As Kotter (1998) stated, "Only through leadership can one truly develop and nurture culture that is adaptive to change" (p. 166). Ostroff, Kinicki, and Tamkins (2003) identified leadership as an emergent process that acts on both organizational climate and culture. Similarly, Denison (1990) claimed that management behaviors reinforce principles of the culture. Organizational culture has been conceptualized as a mediator of the relationship between transformational leadership and organizational innovation (Amabile, Conti, Coon, Lazenby, & Herron, 1996; Deshpande, Farley, & Webster, 1993; Jassawalla & Sashittal, 2002; Prather & Turrell, 2002) and performance (Ogbonna & Harris, 2000; Xenikou & Simosi, 2006). Nonetheless, although empirical research supports the proposition that transformational leadership and organizational innovation are related (Waldman & Bass, 1991), the inclusion of organizational culture as an intervening variable has yet to be examined comprehensively. And although Ogbonna and Harris (2000, p. 780) found a link between participative leadership and innovative culture as a predictor of organizational performance, this leadership approach was not fully sympathetic with existing models of transformational leadership. Accordingly, this study examines these theoretical linkages in terms of their relationships with climate for organizational innovation in a large sample of managers in private sector organizations in Australia.

## Organizational Innovation

Research has called for organizations to be more flexible, adaptive, entrepreneurial, and innovative to effectively meet the changing demands of today's environment (Orchard, 1998; Parker & Bradley, 2000; Valle, 1999). Appropriate leadership to effect such change has equally been called for (Bass, personal communication, December 15, 1998, 1998; Brown, 1992; Kotter & Heskett, 1992; Prajogo &

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Ahmed, 2006; Schein, 1992). However, despite this attention, there has been little empirical analysis of the theoretical relationships among the key components that make up such change strategy, including transformational leadership, organizational culture, and organizational innovation. Much of the research undertaken, although valuable, is conceptual in nature (Miner, 2000; Shane & Venkataraman, 2000), although recent studies are now exploring these relationships in more detail (Damanpour & Schneider, 2006; Kavanagh & Ashkanasy, 2006; Mumford & Licuanan, 2004).

Organizational innovation refers to the introduction of any new product, process, or system into an organization (Suranyi-Unger, 1994). The word *innovation* is derived from the Latin word *novus*, or *new*, and is alternatively defined as "a new idea, method or device" or "the process of introducing something new" (Gopalakrishnan & Damanpour, 1994, p. 95). The first definition views innovation as an outcome (e.g., Damanpour, 1991, 1992; Damanpour & Evan, 1984; Kimberly & Evanisko, 1981) and the second as a process (e.g., Cooper & Zmud, 1990; Ettlie, 1980; Rogers, 1983). Reviews of the organizational innovation literature have identified three emergent categories: the determinants of innovation, the process of intrafirm diffusion, and the interfirm diffusion research streams. Consistent with Wolfe (1994), we view innovation as an outcome of various antecedent organizational factors or determinants, namely, transformational leadership and organizational culture. This perspective supports Ahmed's (1998) claim that "innovation is the engine of change . . . [and] culture is a primary determinant of innovation" (p. 31). These determinants also feature in the meta-analyses of innovation conducted by Damanpour (1991) and King (1990), and in Scott and Bruce's (1994) model of innovative behavior.

In this study, we examine climate for innovation as an indicator of the capacity of organizations to become innovative. That is, the degree of support and encouragement an organization provides its employees to take initiative and explore innovative approaches is predicted to influence the degree of actual innovation in that organization (Martins & Terblanche, 2003, pp. 67-68; Mumford & Gustafson, 1988, p. 37). This view takes up the challenge from Ostroff et al. (2003) that only a few "climates-for" studies have been undertaken empirically and is consistent with Barrett and Sexton's (2006, p. 333) view that innovation is both an end and a means in achieving sustainable competitiveness. We also believe climate for organizational innovation is a useful proxy when it is difficult to get direct behavioral measures of innovation across diverse organizations and industry sectors. Throughout this article, we use the term *organizational innovation* when referring to the extant literature, and we refer to the term *climate for organizational innovation* more specifically in the framing of our research hypotheses. This approach is consistent with Damanpour and Schneider (2006), who asserted that strategic leadership research indicates that top managers influence organizational outcomes by establishing organizational culture, influencing organizational climate, and building the capacity for change and innovation. In this context, the climate for innovation is a direct result of top managers' "personal and positional characteristics" (Damanpour & Schneider, 2006, p. 220).

## Transformational Leadership

As stated above, the leaders of organizations help define and shape work contexts that contribute to organizational innovation (Amabile, 1998), and there is evidence that individual leadership style is an important determinant of innovation (Dess & Picken, 2000). In particular, transformational leadership has been shown to support and promote innovation, which in turn can ensure the long-term survival of an organization (Ancona & Caldwell, 1987). Zahra (1999) stated that "participation in the emerging global economy requires—in fact, demands—innovation and entrepreneurial risk taking" (p. 38). Participative leadership is associated with cultures of innovation and high-performing companies (Ogbonna & Harris, 2000). Transformational leadership refers to behaviors of leaders who motivate followers to perform and identify with organizational goals and interests and who have the capacity to motivate employees beyond expected levels of work performance. As a result, employees feel engaged and personally rewarded through work, and work outcomes such as satisfaction and extra effort are enhanced (Bass & Avolio, 1994, 1997; Gardner & Avolio, 1998; Howell & Avolio, 1993; Lowe, Kroeck, & Sivasubramaniam, 1996; Sosik, Kahai, & Avolio, 1998).

Transformational leadership, as examined in this article, uses the six factors proposed by Podsakoff, MacKenzie, Moorman, and Fetter (1990): articulating a vision for the future, providing an appropriate

role model, fostering the acceptance of goals, setting high performance expectations, providing individual support, and providing intellectual stimulation. In this study we were interested in the effects of the six transformational factors on organizational culture and climate for organizational innovation. Consequently, the six transformational leadership factors were treated as a set of distinct but related dimensions rather than as a single construct (Edwards, 2001). This approach is consistent with research that indicates some individual leadership styles, such as inspiring others and creating and communicating a vision, take prominence when dealing with organizational culture and change imperatives (Avolio & Bass, 2002).

## Leadership and Organizational Innovation

Transformational leadership has been theoretically and empirically linked to a range of organizational outcomes (Howell & Avolio, 1993; Kavanagh & Ashkanasy, 2006; Ogbonna & Harris, 2000; Waldman, Ramirez, House, & Puraman, 2001). Specifically, Jung, Chow, and Wu (2003) argued that transformational leadership enhances innovation by (a) engaging employees' personal value systems (Bass, 1985; Gardner & Avolio, 1998) and thereby heightening levels of motivation toward higher levels of performance (Shamir, House, & Arthur, 1993) and (b) encouraging employees to think creatively (Sosik, Avolio, & Kahai, 1997). In addition, Elenkov and Manev's (2005) study of 270 top managers' influence on innovation in 12 European countries found that sociocultural context was important in the leadership–innovation relationship and confirmed that leaders and top managers positively influence innovation processes in organizations, consistent with other research (e.g., Henry, 2001; Howell & Higgins, 1990; West et al., 2003).

The study by Jung et al. (2003) of 32 Taiwanese companies found that transformational leadership had significant and positive relationships with organizational innovation as it was mediated by "an organizational culture in which employees are encouraged to freely discuss and try out innovative ideas and approaches" (p. 539). However, their study did not identify specific transformational behaviors and their effects on organizational innovation, although they did suggest that intellectual stimulation and the capacity to constantly challenge workers encourage innovation (Jung et al., 2003, p. 539). This suggestion makes good intuitive sense as intellectual stimulation refers to the extent to which the leader stimulates employees to rethink the ways they perform their work duties and engage in problem-solving activities (Podsakoff et al., 1990; Rafferty & Griffin, 2004). Similarly, a leader's intellectual stimulation leads to new ideas and experimentation that are integral to the process of innovation (Bundy, 2002; Henry, 2001) and to the leader's perceptions of this process (Elenkov & Manev, 2005). Although generally positive relationships between the factors of transformational leadership and climate for organizational innovation are expected, we specify the following hypothesis:

*Hypothesis 1:* Intellectual Stimulation will be the factor of transformational leadership most strongly related to climate for organizational innovation.

## Leadership and Organizational Culture

Denison (1996) asserted that culture is "the deep structure of organizations, which is rooted in the values, beliefs and assumptions held by organizational members" (p. 654). That is, when we speak of organizational culture, we refer to the meanings inherent in the actions, procedures, and protocols of organizational commerce and discourse. James et al. (2007) described culture as "the normative beliefs (i.e., system values) and shared behavioural expectations (i.e., system norms) in an organization" (p. 21). Following Moran and Volkwein (1992) and Glisson and James (2002), we view organizational culture and climate as distinct but interrelated constructs. According to Beugelsdijk, Koen, and Noorderhaven (2006), organizational culture is specific to an organization (Smircich, 1983), is relatively constant (Christensen & Gordon, 1999), and can influence interorganizational relations. For these reasons, organizational culture is widely viewed as a source of sustained competitive advantage to businesses (Miron, Erez, & Naheh, 2004). Whereas organizational culture focuses on the shared behavioral expectations and normative beliefs in work units, climate describes the way individuals perceive the personal impact of their work environment on themselves (Glisson & James, 2002, p. 788). James et al. (2007, p. 20) differentiate organizational from psychological climate. Whereas the former is an aggregation of individual perceptions of the work environment, the latter refers to the perceptions individuals have of those workplaces as they reflect personal values and psychological desires. In

this study, the focus is more in line with the concept of organizational climate as measured by the organization's openness to change and its provision of resources to become innovative.

There are two opposing schools of thought about leaders and culture. The functionalist school claims that leaders are the architects of culture change (Schein, 1985, 1992; Trice & Beyer, 1993), either through substantive, visible actions or through the symbolic roles they play (Meindl, Ehrlich, & Dukerich, 1985). On the other hand, the anthropological view questions the veracity of leaders' being able to create culture; that is, leaders are part of culture, not apart from it (Meek, 1988; Smircich, 1983). Nonetheless, the body of evidence is heavily weighted in favor of the functionalist perspective, in which leaders are in a position to shape the organization's culture (Denison & Mishra, 1995; Schein, 1992). Schneider, Goldstein, and Smith (1995, p. 751) stated that organizational managers and executives "make" the environment.

In many instances, the type of leadership required to change culture is transformational because culture change needs enormous energy and commitment to achieve outcomes. Bass (1999) has stated that "for an organizational culture to become more transformational, top management must articulate the changes that are required. . . . The behaviors of top-level leaders become symbols of the organization's new culture" (p. 16). Accordingly, we propose that the top echelons of leaders are in a position to significantly influence cultural identity and change (Barlow, Jordan, & Hendrix, 2003; Katz & Kahn, 1978). Through transformational leadership we believe managers can help build a strong organizational culture and thereby contribute to a positive climate for organizational innovation and subsequently influence innovative behavior (Elenkov & Manev, 2005; Jung et al., 2003). Tsui, Zhang, Wang, Xin, and Wu (2006) stated that "through their actions and behaviors, [leaders] contribute to the substance of an organization's culture" (p. 115). Their study of middle and top level managers enrolled in MBA classes in Beijing found that leadership contributed positively to organization culture.

## Leadership, Culture, and Innovation

The focus of this study is delimited to an examination of organizational culture from an individual or functionalist perspective (e.g., Kristof, 1996; Van Vianen, 2000). Although the level of analysis is the organization, we draw on the perspectives of managers and senior executives as key informants, an approach used by some other studies (e.g., Ogbonna & Harris, 2000). The use of individual responses to measure culture in work units is common in organizational culture research (Glisson & James, 2002, p. 771), with the focus on the behavioral expectations and normative beliefs of those who work in these units. We propose that organizational culture will mediate the relationship between transformational leadership and climate for organizational innovation. More specifically, as outlined below, we expect that in private sector organizations, transformational leadership will have a positive effect on a competitive, performance-oriented organizational culture, which will, in turn, have a positive relationship with climate for organizational innovation. We base this choice of cultural dimension on the centrality of profit, competition, and performance as a driver of organizational behavior in private sector organizations (e.g., Hater & Bass, 1988; Howell & Avolio, 1993; McColl-Kennedy & Anderson, 2002). Although a competitive, performance-oriented culture may be associated with cost cutting and an emphasis on efficiency in the short term, in the longer term such a culture is known to drive innovation, especially when coupled with a differentiation strategy. The rationale for our prediction that organizational culture will mediate the relationship between transformational leadership and climate for organizational innovation can be found in theoretical work concerning the centrality of vision to transformational leadership and its capacity to stimulate change. On the basis of their earlier research (Mumford & Strange, 2002), Strange and Mumford (2005) defined vision as "a set of beliefs about how people should act, and interact, to make manifest some idealized future state" (p. 122). Vision is a major component of transformational leadership (Antonakis & House, 2002; Bass & Avolio, 1989; Kim, Dansereau, & Kim, 2002) and drives much of the change in organizational culture (Deal & Kennedy, 1982; Trice & Beyer, 1993). Vision also helps direct employee efforts toward innovative work practices and outcomes (Amabile, 1996, 1998; Mumford, Scott, Gaddis, & Strange, 2002; Yukl, 2001). Kavanagh and Ashkanasy (2006) stated that "change is accomplished through the leader's implementation of a unique vision of the organization . . . designed to change internal organizational cultural forms" (p. S81). In effect, culture is the lens through which leader vision is manifested and helps build the climate necessary for organizations to become innovative (James et al., 2007).

Further, as a component of leadership, vision both augments organizational processes and culture and contributes to innovative workplaces. Elenkov and Manev (2005, p. 384) and others (Bundy, 2002; Henry, 2001) identified leader behavior as stimulating employee participation and esteem and encouraging new ideas as integral to the innovation process. These leadership behaviors, namely individualized consideration and motivation, derive from a leader's vision and values and contribute to a culture that facilitates organizational innovation (Elenkov & Manev, 2005; Nutt, 2002). Yukl (2002) asserted that specific leadership behaviors may influence innovation through compliance as part of the organizational culture.

Finally, organizational culture is an important determinant of climate. Such a view is consistent with the work of Moran and Volkwein (1992), who argued that climate reflects the shared knowledge and meanings embodied in an organization's culture. Organizational climate can thus be regarded as the expression of underlying cultural practices that arise in response to contingencies in the organization's internal and external environment. This view affirms the "climate-for" innovation approach (Ostroff et al., 2003) as a valid accompaniment to studies of organizational culture, consistent with Glisson and James' (2002, p. 789) observation that climate and culture should be studied simultaneously. On the basis of the above arguments and empirical evidence, we specify the following hypotheses:

*Hypothesis 2:* Articulating a Vision will be the factor of transformational leadership most strongly (and positively) related to a competitive, performance-oriented organizational culture.

*Hypothesis 3:* The transformational leadership factor of Setting High Performance Expectations will be positively related to a competitive, performance-oriented organizational culture.

*Hypothesis 4:* A competitive, performance-oriented organizational culture will be positively related to climate for organizational innovation.

*Hypothesis 5:* A competitive, performance-oriented organizational culture mediates the relationship between transformational leadership and climate for organizational innovation.

# Method

## Sample and Procedure

The data for this study were drawn from a random sample of private sector managers as part of a larger survey of members of the Australian Institute of Management. A mail survey was used, and prospective respondents were provided with a covering letter, a copy of the questionnaire, and a postage-paid envelope. Prospective respondents were informed that the survey was confidential. A number of mail-outs to the sample were conducted over 5 months, yielding an overall response rate of 37%, which is an above-average response rate for surveys with senior management or organizational-level representatives as respondents (Baruch, 1999; Cycyota & Harrison, 2006).

Excluding those respondents who described themselves as self-employed left a sample of 1,158 private sector managers. The majority of respondents were male (73.2%), between 40 and 59 years of age (70.9%), tertiary qualified (69.8%), and with a mean 12.71 ($SD$ = 9.01) years of experience as a manager. Of the respondents, 30.8% described themselves as top-level managers, 21.1% as executives, and 48.1% as upper-middle managers. Most of the managers (71.6%) worked in organizations with fewer than 500 employees. Because of the anonymous nature of the survey, respondents could not be directly compared with nonrespondents. However, the profile of the sample was compared with Australian Census data (Australian Bureau of Statistics, 2006) and was found to represent a reasonable cross section of managers in the Australian context.

## Measures

*Transformational leadership.* The Transformational Leadership Scale by Podsakoff et al. (1990) was used to examine the six transformational factors of (a) Articulates Vision (5 items), (b) Provides Appropriate Role Model (3 items), (c) Fosters the Acceptance of Goals (4 items), (d) Sets High Performance Expectations (3 items), (e) Provides Individual Support (4 items), and (f) Provides Intellectual Stimulation (4 items). Each of the 23 items was rated on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The Transformational Leadership Scale has been shown in previous studies to have acceptable internal consistency reliability (all Cronbach's alpha coefficients > .70) and evidence of content and construct validity (Podsakoff et al., 1990). Cronbach's alpha coefficients in this study's sample ranged from .62 (Provides Individual Support) to .79 (Fosters the Acceptance of Goals), which was considered acceptable given the relatively small number of items in each subscale.

*Organizational culture*. Organizational culture was operationalized using the Organizational Culture Profile (OCP) developed by O'Reilly, Chatman, and Caldwell (1991) and amended by Cable and Judge (1997). A recently revised version of the OCP by Sarros, Gray, Densten, and Cooper (2005) was used in this study. The revised OCP consists of 28 items measuring the following seven factors: supportiveness, innovation, competitiveness, performance orientation, stability, emphasis on rewards, and social responsibility. Each of the 28 items was rated on a scale from 1 (*not at all*) to 5 (*very much*). As outlined below, this study used the competitiveness (4 items) and performance orientation (4 items) factors of the revised OCP. These two factors had acceptable internal consistency reliability, with Cronbach's alpha coefficients > .70 in this study sample.

*Climate for organizational innovation*. Climate for organizational innovation was operationalized using the support for innovation and resource supply measures developed by Scott and Bruce (1994). Support for innovation (16 items) measures the degree to which individuals view the organization as open to change, and resource supply (6 items) measures the degree to which resources (e.g., personnel, time) are perceived as adequate in the organization (Scott & Bruce, 1994, p. 592). Each of the 22 items was rated on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). In this study, the support for innovation and resource supply subscales were used as a proxy measure of organizational innovation. As noted above, the degree of support and encouragement an organization provides its employees to take initiative and explore innovative approaches is predicted to strongly influence the degree of actual innovation in that organization (Martins & Terblanche, 2003, pp. 67-68; Mumford & Gustafson, 1988, p. 37). Scott and Bruce (1994) reported adequate factorial validity and internal consistency reliability for the two measures of innovation ($\alpha$ = .92 for support for innovation and .77 for resource supply). Cronbach's alpha coefficients for the present sample were .94 for the support for innovation scale and .76 for the resource supply for innovation scale.

## Method of Analysis

Latent variable structural equation modeling (SEM) was used to estimate the parameters of our hypothesized models. SEM analyses were performed using a covariance matrix as input to the Analysis of Moment Structure software package (Arbuckle & Wothke, 1999), using maximum likelihood estimation. The expectation maximization approach in SPSS for Windows was used to impute missing data prior to analysis. Expectation maximization is an effective technique for handling missing data and generally outperforms conventional methods such as listwise deletion, yielding parameter estimates with less bias in large samples (Schafer & Graham, 2002; Tabachnick & Fidell, 2001).

## Method Effects

Following Spector (2006), we considered each construct in terms of the potential sources of method variance that could artificially influence the results. Social desirability is considered a potential source of bias in many self-report measures of attitudinal or subjective phenomena and hence could be a source of bias in self-ratings of leadership behavior (cf. Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Therefore, we checked whether social desirability was related to any of the transformational leadership factors, using a 10-item version of the Social Desirability Scale (SDS; Crowne & Marlowe, 1960). We examined the influence of social desirability on the organizational culture–innovation relationship, using a SEM approach, as recommended in the literature (Podsakoff et al., 2003). Specifically, the influence of social desirability was represented by factor loadings from the SDS scale to each of the indicators of transformational leadership.

# Results

Table 1 reports means, standard deviations, and correlations among the study variables. Correlations among the six transformational leadership factors ranged from .10 to .56, providing support for the discriminant validity of the leadership dimensions reported in previous research (Podsakoff et al., 1990). SDS scores were significantly correlated with five of the six transformational leadership factors, although the size of the coefficients was generally small (the largest being between SDS and Provides Individual Support).

Next, we estimated the measurement model for the substantive constructs. The support for innovation and resource supply for innovation scales were used as indicators of the construct labeled *climate for organizational innovation*. Following Sarros et al. (2005), we used a higher-order factor labeled *business*

**Table 1**
**Means, Standard Deviations, and Intercorrelations Among Transformational Leadership Factors, Organizational Culture, Climate for Organizational Innovation, and Social Desirability Variables**

| Variable | *M* | *SD* | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Articulates vision | 5.69 | 0.78 | | | | | | | | | | |
| 2. Fosters the acceptance of goals | 5.99 | 0.70 | .56* | | | | | | | | | |
| 3. Intellectual stimulation | 5.78 | 0.70 | .54* | .54* | | | | | | | | |
| 4. Provides individual support | 5.59 | 0.91 | .14* | .35* | .19* | | | | | | | |
| 5. High performance expectations | 5.66 | 0.82 | .50* | .49* | .45* | .10* | | | | | | |
| 6. Provides appropriate role model | 6.00 | 0.68 | .48* | .57* | .42* | .26* | .47* | | | | | |
| 7. Competitiveness | 4.00 | 0.64 | .38* | .25* | .24* | .12* | .28* | .21* | | | | |
| 8. Performance orientation | 3.75 | 0.66 | .39* | .30* | .25* | .13* | .30* | .26* | .71* | | | |
| 9. Support for innovation | 3.69 | 0.66 | .44* | .25* | .24* | .16* | .17* | .18* | .60* | .64* | | |
| 10. Resource supply for innovation | 3.16 | 0.73 | .35* | .20* | .18* | .13* | .15* | .13* | .51* | .56* | .67* | |
| 11. Social Desirability Scale | 3.49 | 0.46 | .12* | .22* | .12* | .32* | .05 | .17* | .09* | .10* | .14* | .12* |

Note: $N = 1{,}158$.
*$p < .05$.

*culture*, consisting of the two first-order factors of Competitiveness and Performance Orientation. Sarros et al. (2005) found the factors of Competitiveness and Performance Orientation were highly correlated ($r = .76$), thereby justifying a higher-order factor (Kline, 2005). As we intended to model the effects of each leadership factor separately, the six transformational leadership factors were represented by their corresponding items. The six factors of transformational leadership were allowed to freely correlate with each other. A confirmatory factor analysis of the measurement model (including all the constructs) yielded a good fit to the data, $\chi^2(296, N = 1{,}158) = 1{,}235$; root mean square error of approximation (RMSEA) = .05; 90% confidence interval for RMSEA: .049 to .055; comparative fit index (CFI) = .92; root mean residual (RMR) = .06; adjusted goodness of fit index (AGFI) = .91. Standardized factor loadings on all the latent variables were acceptable, ranging from .36 to .88 and averaging .71. A one-factor measurement model (in which all indicators loaded onto a single factor) resulted in a poor fit, $\chi^2(434, N = 1{,}158) = 15{,}580$; RMSEA = .127; 90% confidence interval for RMSEA: .12 to .13; CFI = .51; RMR = .10; AGFI = .42. Taken together, these results strongly support the construct validity of the measures used in this study.

## Model 1: Transformational Leadership and Climate for Organizational Innovation

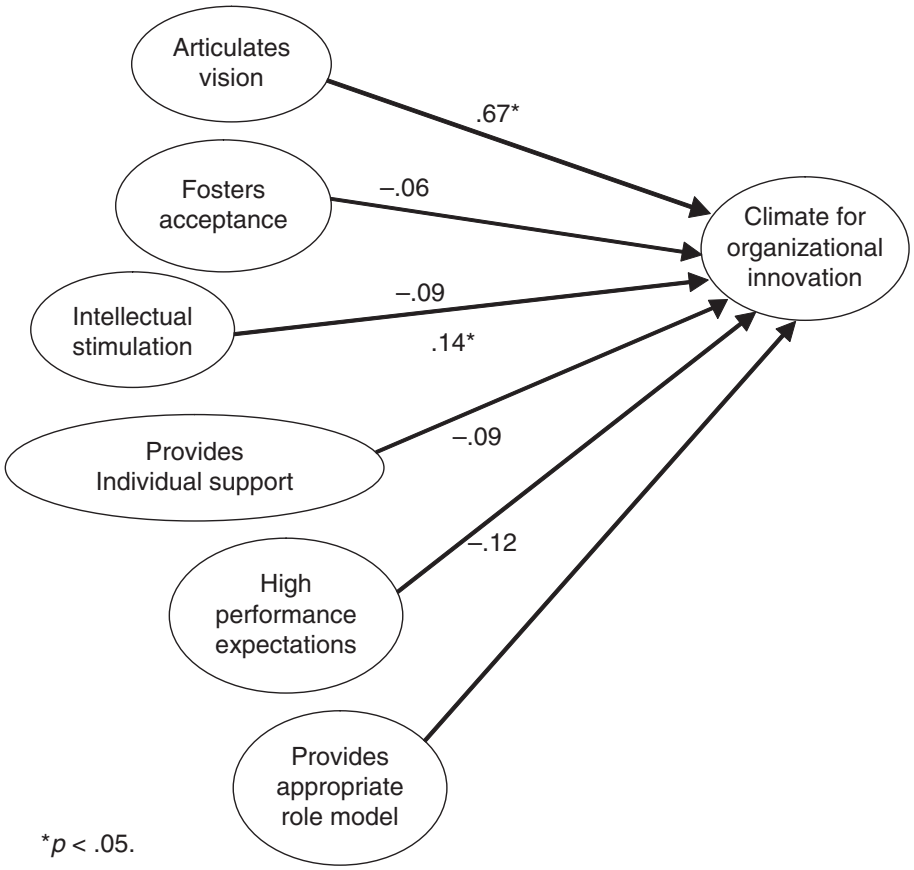
Next, we examined the relationships between the six transformational leadership factors and climate for organizational innovation. This model (including the SDS as a method factor) had a good fit to the data, $\chi^2(258, N = 1{,}158) = 1{,}197$; RMSEA = .06; 90% confidence interval for RMSEA: .053 to .059; CFI = .91; RMR = .06; AGFI = .90. Taken together, the six transformational leadership factors accounted for 26% of the variance in climate for organizational innovation.

Figure 1 presents the standardized path coefficients for Model 1. Although not shown in Figure 1 for the sake of brevity, the standardized loadings of SDS on the 23 transformational leadership items were small in magnitude, ranging from .01 to .22, and averaged .05, indicating little evidence of social desirability. Controlling for other variables in the model, two of the six transformational leadership factors, namely, Articulates Vision and Provides Individual Support, were significantly related to climate for organizational innovation. The transformational leadership factor Articulates Vision was most strongly related to climate for organizational innovation ($\beta = .67$, $p < .05$), followed by a smaller path for the factor Provides Individual Support ($\beta = .14$, $p < .05$). Contrary to Hypothesis 1, Intellectual Stimulation did not have the strongest relationship with climate for organizational innovation. Indeed, the path from Intellectual Stimulation to climate for organizational innovation was not significantly different from zero.

## Model 2: Organizational Culture as a Mediator of the Transformational Leadership–Climate for Innovation Relationship

Next, we examined organizational culture as a mediator of the relationship between the six

**Figure 1**
**Structural Model of the Relationships Among Transformational Leadership and Climate for Organizational Innovation**



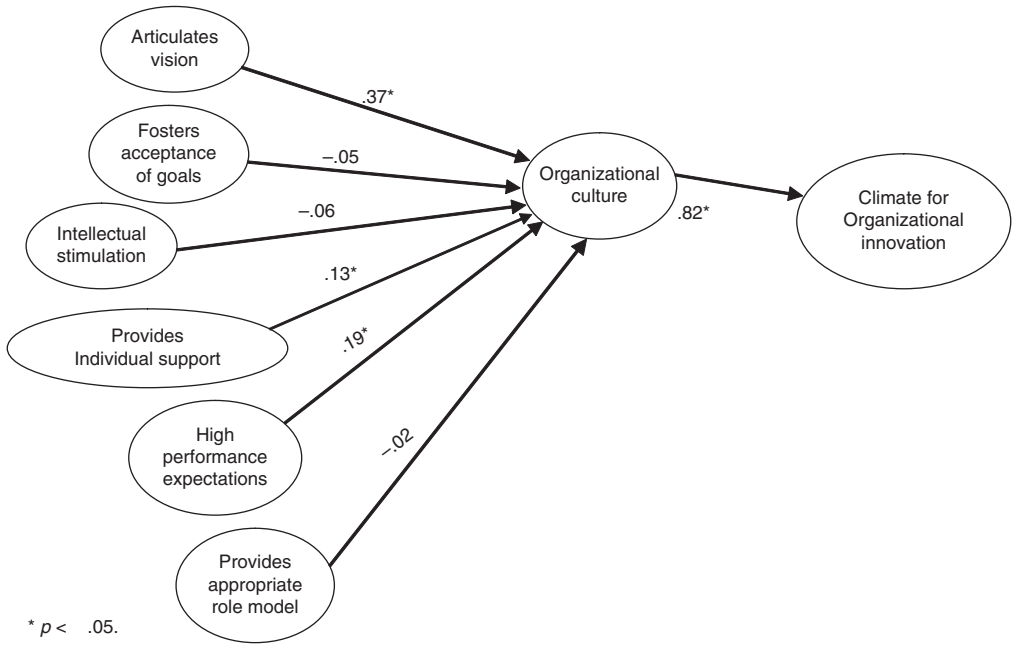

transformational leadership factors and climate for organizational innovation. Model 2, a mediation model with direct effects included, had a good fit to the data, $\chi^2(300, N = 1{,}158) = 1{,}250$; RMSEA = .05; 90% confidence interval for RMSEA: .049 to .055; CFI = .92; RMR = .06; AGFI = .90.

Figure 2 presents the standardized path coefficients for Model 2. Although generally positive relationships between transformational leadership and organizational culture were expected, the factor Articulates Vision had the strongest relationship with a competitive, performance-oriented culture ($\beta = .37$, $p < .05$), in support of Hypothesis 2. In support of Hypothesis 3, the leadership factor Setting High Performance Expectations was also positively related to organizational culture ($\beta = .19$, $p < .05$), although the size of the coefficient was much smaller. Taken together, the transformational leadership factors accounted for 24% of the variance in the organizational culture construct.

In support of Hypothesis 4, there was a strong positive relationship between a competitive, performance-oriented organizational culture and climate for organizational innovation ($\beta = .82$, $p < .05$), explaining 67% of the variance in the latter construct. The strength of this relationship is not surprising given that studies have found that organizational culture and climate are distinct but highly interrelated constructs (see Glisson & James, 2002).

In support of Hypothesis 5, three of the six transformational leadership factors, namely, Articulates Vision, Setting High Performance Expectations, and Provides Individual Support, showed evidence of mediation, using tests of indirect effects (Kline, 2005). The indirect effects from the factors of Articulates Vision, Setting High Performance Expectations, and Provides Individual Support to climate for organizational innovation were statistically significant with standardized values of .30, .15, and .11, respectively. In addition to these indirect effects, there was a direct

**Figure 2**
**Structural Model of the Relationships Among Transformational Leadership, Organizational Culture, and Climate for Organizational Innovation**




path from the factor Articulates Vision to climate for organizational innovation ($\beta = .38$, $p < .05$), indicating that organizational culture partially mediated leadership vision. Neither of the direct effects of Setting High Performance Expectations and Provides Individual Support was statistically significant, indicating full mediation for these two factors. Finally, we tested the sensitivity of our models to the incorporation of control variables, including organization size and industry sector. Their inclusion did not substantively affect the results.

## Discussion

In this article, a theoretical model of the relationships among transformational leadership, organizational culture, and climate for organizational innovation was developed and tested. Our purpose was to examine the relationship between transformational leadership and climate for organizational innovation, and the extent to which a competitive, performance-oriented organizational culture mediates this relationship. The findings of this study make a contribution to understanding the linkages among these theoretical constructs.

Two of the six transformational leadership factors, namely, Articulates Vision and Provides Individual Support, were positively related to climate for organizational innovation. Contrary to Hypothesis 1, the transformational leadership factor of Intellectual Stimulation did not have the strongest relationship with climate for organizational innovation. Indeed, the strongest relationship was found for the leadership factor of Articulates Vision. As expected, the leadership factor most strongly related to a competitive, performance-oriented organizational culture was Articulates Vision (Hypothesis 2). We also found that the transformational leadership factor Setting High Performance Expectations was positively related to organizational culture, in support of Hypothesis 3. Finally, we found that a competitive, performance-oriented organizational culture was strongly related to climate for organizational innovation (Hypothesis 4) and mediated the relationship between three of the transformational leadership factors and climate for organizational innovation (Hypothesis 5).

The findings of this study are consistent with research that indicates that vision is a major facet of transformational leadership and is strongly associated with organizational culture (Antonakis & House, 2002; Bass & Avolio, 1989; Deal & Kennedy, 1982;

Kim et al., 2002; Trice & Beyer, 1993) and innovation (Amabile, 1996, 1998; Mumford et al., 2002). Damanpour and Schneider (2006) asserted that a leader with vision creates a culture of change that facilitates the adoption of innovation. However, Rafferty and Griffin's (2004, p. 348) study of 1,398 employees in the Australian public sector found that at an individual level, leader vision did not always have a positive influence on followers, consistent with earlier research by Shamir, Zakay, Breinin, and Popper (1998). These contradictory findings suggest that an examination of leadership vision, as a component of transformational leadership, needs to be clearly articulated at either an individual or organizational level of analysis. The capacity of leaders to define a vision for their organization is one thing, but to have that vision accepted and acted on as anticipated both individually and organizationally is quite another proposition. We suggest that articulating vision can achieve results only when its development involves those it is most intended to influence, the workers and clients of the organization. Research could examine the processes involved in manifesting vision in organizations, how leaders encourage follower engagement with the vision, and which components of culture and innovation are specifically associated with vision.

As noted above, we found that the transformational leadership dimension of Articulates Vision had the strongest association with climate for organizational innovation. That is, visionary leaders were associated with organizations that were reported to provide adequate resources, funding, personnel, and rewards to innovate, as well as time for workers to pursue their creative ideas. Yet vision was mediated through organizational culture, and it is in this association that our results are most important. Although causal inferences cannot be made from this cross-sectional study, the associations among the transformational leadership dimension of vision, organizational culture, and climate for organizational innovation suggest that the stronger these linkages, the greater the likelihood of innovative work practices occurring.

Our findings reveal that intellectual stimulation did not predict organizational culture or climate for innovation. Past research suggests that leadership vision has a greater capacity to influence culture change and to build a climate for innovation than has intellectual stimulation (Kavanagh & Ashkanasy, 2006; Strange & Mumford, 2005). If this is the case, future research should examine under what conditions (organizationally and culturally) employees are best engaged creatively and intellectually to achieve higher levels of performance (Elenkov & Manev, 2005; Yukl, 2002) independent of leader vision. Research may also explore how leader vision, combined with intellectual stimulation, best achieves sustainable and innovative organizational cultures, as leaders with vision are expected to achieve these outcomes (Damanpour & Schneider, 2006).

## Implications

Transformational leaders have long been acknowledged as significant contributors to organizational performance and culture (Hater & Bass, 1988; Howell & Avolio, 1993; Yammarino, Spangler, & Bass, 1993). Our study findings enhance existing knowledge by revealing that vision, setting high performance expectations, and caring for fellow workers through Individual support are powerful forces in the culture–leadership relationship. According to Podsakoff et al. (1990), articulating a vision consists of having a clear understanding of where the company or group is going, painting an interesting picture of the future of the group, and inspiring others with the leader's plans for the future. These leadership behaviors are far reaching and ambitious, and they demand an enormous amount of time and energy from leaders and followers. Combined with the capacity to consider others' feelings and recognize others' personal needs, both indicators of providing individual support, leadership vision and setting high performance expectations are significant forces to be reckoned with.

We have argued that organizational culture is an important determinant of climate for innovation. Our study shows the extent to which a competitive, performance-oriented organizational culture is positively associated with climate for organizational innovation, which in this case was measured by the adequacy of its resources (i.e., personnel, time) and the degree to which organizational change was encouraged, referred to as support for innovation (this dimension also includes support for and encouragement of individual creativity). Our findings support the accepted wisdom that creativity, as a facet of innovation, is associated with strong and visionary leadership and supportive cultures, *ceteris paribus* (e.g., Scott & Bruce, 1994; Unsworth, Wall, & Carter, 2005). In particular, the greater the need for change, the more likely it is that creativity and innovation will occur (Angle & Van de Ven, 1989). Similarly, supportive leadership and organizational cultures have been

associated with employee creativity (e.g., Burkhardt & Brass, 1990; Cummings & Odlham, 1997; Eisenberger, Fasolo, & Davis LaMastro, 1990; Guastello, 1995; Redmond, Mumford, & Teach, 1993). Our findings also confirm Damanpour and Schneider's (2006) study of 1,276 public organizations in the United States, which found that "top managers' attitudes . . . positively affect all aspects of innovation adoption" (p. 231).

Overall, the linkages found in this study among specific transformational leadership behaviors, organizational culture, and climate for innovation suggest that it may be possible to develop more parsimonious theories about proximal determinants of organizational cultures dealing with change and innovation. That is, we may be able to explore how organizational culture is the mechanism by which leaders enact change in organizations, rather than being the prime instigator of that change. For instance, do some cultures contain innate patterns of behavior or reward systems that promote innovation ahead of other outcomes? How do different leadership approaches stimulate or compromise these elements of culture to produce or stifle innovative imperatives? There is a need to more fully elaborate these leadership–culture–innovation relationships to provide information for building innovative cultures and enhancing the leadership of those cultures.

## Limitations

We must acknowledge some limitations to the study. As noted above, the use of a cross-sectional, nonexperimental design limits causal inferences. Indeed, there is always the possibility of reverse causal relationships among the variables. For example, it is entirely possible that organizational culture influences leadership behaviors. The use of a longitudinal or experimental design in future research would help strengthen causal inferences. Nevertheless, it is important to note that the results of our structural equation model are consistent with theoretical predictions based on extant research.

This study used the perceptions of managers and senior executives as the data source. We believe that top managers are in a good position to observe the culture of an organization, consistent with the proposition that only the top echelons of leaders are in a position to significantly influence cultural identity and change (Bass, 1999; Katz & Kahn, 1978; Schein, 1992). As the data were self-reports, we controlled for social desirability and found little evidence of such bias in the data. However, it could be argued that as the data were gathered by a single-organizational-informant design, this approach may have exposed the study to common method variance. Although Spector (2006) has argued it is incorrect to assume that the use of a single method automatically introduces systematic bias, it is recommended that future research gather measures of independent and dependent variables from different data sources (e.g., subordinate ratings of transformational leadership behaviors and more objective measures of organizational outcomes) to minimize the effects of any response bias (cf. Podsakoff et al., 2003). Finally, future studies could also move beyond climate measures to examine the relationships of transformational leadership and organizational culture with direct measures of innovative behavior.

## Conclusions

Our study contributes to the body of knowledge surrounding leadership and organizational behavior by revealing the extent to which transformational leadership is associated with climate for organizational innovation through the mediating role of a competitive, performance-oriented organizational culture. The evidence in this study suggests that transformational leadership is associated with organizational culture, primarily through the processes of articulating a vision, and to a lesser extent through the setting of high performance expectations and providing individual support to workers. These findings are consistent with, and extend, existing research (Kotter & Heskett, 1992; Schein, 1985, 1992; Trice & Beyer, 1993) and provide evidence of the capacity of vision as a culture builder in organizations.

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