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Inclusive Leadership and Employee Involvement in Creative Tasks in the Workplace: The Mediating Role of Psychological Safety

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Abstract

This study examines how inclusive leadership (manifested by openness, accessibility, and availability of a leader) fosters employee creativity in the workplace. Using a sample of one hundred and fifty employees, we investigated the relationship between inclusive leadership (measured at Time 1), psychological safety and employee involvement in creative work tasks (measured at Time 2). The results of structural equation modeling (SEM) analysis indicate that inclusive leadership is positively related to psychological safety, which, in turn, engenders employee involvement in creative work.

Keywords: Employee creative behaviors, inclusive leadership, psychological safety, involvement.

Inclusive Leadership and Employee Involvement in Creative Tasks in the Workplace: The Mediating Role of Psychological Safety

Introduction

Leadership has been viewed as a particularly important factor that influences creativity and innovation in organizations (Mumford & Hunter, 2005; Shalley & Gilson, 2004; Woodman, Sawyer & Griffin, 1993). Leaders contribute to employee creativity in multiple ways. First, leaders can serve as role model for creative behaviors (Jaussi & Dionne, 2003) and innovation (Carmeli, Gelbard, & Gefen, 2010). Second, leaders can provide resources including time, funding and information necessary for the creative endeavor (Reiter-Palmon & Illies, 2004). Third, leaders can invigorate and energize their subordinates to become more involved in creative processes (Atwater & Carmeli, 2009). The relationship between motivation and creativity has been documented extensively (Amabile, 1983). Leaders can influence the motivation of their subordinates to engage in creative performance by setting expectations for creative performance (Carmeli & Schaubroeck, 2007; Redmond, Mumford & Teach, 1993; Scott & Bruce, 1994; Tierney & Farmer, 2004), increasing intrinsic motivation and cultivating energy to engage in the creative task (Atwater & Carmeli, 2009; Shin & Zhou, 2003). Since creativity is time consuming and effortful, motivation plays an important role in creative production. Fourth, leaders support creative behavior by providing relational support to followers (Arad, Hason, & Schnieder, 1997; Tierney, Farmer, & Graen, 1999). Leader support has been found to consistently relate to motivation to engage in creative work and display creative behaviors. Supportive behavior that has been linked to creative performance includes high quality leader–member exchange relationships, supporting employee actions or decisions, providing information, consulting employees, and trust in the leader (Amabile, Schatzel, Moneta, &

Kramer, 2004; Atwater & Carmeli, 2009; Basu & Green, 1997; George & Zhou, 2007; Oldham & Cummings, 1996; Scott & Bruce, 1994; Tierney et al., 1999). Finally, a meta-analysis on the relationship between climate and creativity suggests that positive supervisor relationships, including non-controlling supervision and support of innovation are linked to employee creativity (Hunter, Bedell, & Mumford, 2007). Finally, leaders can influence employee creativity by shaping the climate of the team or organization (Amabile, Schatzel, Moneta, & Kramer, 2004; Arad et al., 1997; Mumford & Hunter, 2005). Leaders can also influence the climate of the workgroup or organization indirectly by supporting a positive, open, and trusting environment. Not surprisingly, positive peer relationships, participation, open communication, and trust all appear as important aspects of climate that facilitates creativity (Hunter et al., 2007). Research suggests that leadership should be an important consideration when evaluating factors that affect creativity in organizations (Mumford et al., 2002; Tierney, 2008). Further, there is an agreement in the literature that supportive behaviors or relational leadership facilitates creativity (Amabile et al., 2004; Mumford, Scott, Gaddis, & Strange, 2002).

However, despite its importance, understanding of the specific leader behaviors that lead creative performance is lacking (Amabile et al., 2004; Mumford et al., 2002). Most studies have focused on general patterns of leader support (Oldham & Cummings, 1996; Tierney et al., 1999). Only a handful of studies such as the research by Amabile and her colleagues (2004) have evaluated the specific characteristics or behaviors of leader support that may enhance creativity. Further, there are multiple mechanisms by which leader behavior can influence creativity, and more studies are needed to understand the ways leaders cultivate conditions for enhancing employee creativity, and thus how different mediating variables relate to different leader behaviors.

In an attempt to contribute to this body of literature, this study seeks to unravel whether and why relational leadership (Carmeli, Ben-Hador, Waldman, & Rupp, 2009; Fletcher, 2004, 2007; Uhl-Bien, 2006) is conducive to creativity. Specifically, the current study focuses on a particular mode of relational leadership – inclusive leadership. Inclusive leadership refers here to leaders who exhibit openness, accessibility and availability in their interactions with followers. This concept was coined by Nembhard and Edmondson (2006) who focused on leader inclusiveness to indicate leader behaviors that invite and appreciate inputs from others, thus help shape their team members' beliefs that "their voices are genuinely valued" (p. 948). That is, leaders exhibit inclusive behaviors by inviting followers to share their views, opinions and inputs by being open, available, and accessible to them. As such, inclusive leadership is at the core of relational leadership and focuses on whether followers feel that leaders are available to them, as well as whether the leader listens and is paying attention to the follower needs. Thus, this study examines whether inclusive leadership is conducive to creativity by investigating its influences on employee willingness to exert effort and be involved in behaviors that lead to creative production through the development of perceptions of psychological safety.

Inclusive Leadership and Psychological Safety

Psychological safety refers to individuals' perceptions of the consequences of taking interpersonal risks in their work environment (Edmondson, 1999, 2004; Kahn, 1990). As such, it describes a perception that "people are comfortable being themselves" (Edmondson, 1999, p. 354) and "feel able to show and employ one's self without fear of negative consequences to self-image, status, or career" (Kahn, 1990, p. 708). However, Edmondson (2004) suggests that psychological safety is distinct from trust. Psychological safety focuses on the self, whereas trust

the focus is the other. Another difference is that psychological safety pertains to a narrow and short time frame, whereas trust encompasses a wide temporal range (Edmondson, 2004).

Leader behaviors contribute to the feelings of psychological safety (Edmondson, 1996; Nembhard & Edmondson, 2006). Specifically, Edmondson (2004) suggested that when leaders exhibit openness, availability, and accessibility they are likely to facilitate the development of psychological safety among employees at work. Leaders can encourage followers to bring up new ideas and take risks by communicating the importance of such behaviors and assuring followers that negative consequences will not result from such behavior. Being open, available and accessible allows leaders to communicate such expectations. When the leader is open and listens to employees, willing to discuss new ways for achieving the work goals, and paying attention to new opportunities, employees are likely to feel that it is safe to bring up new ideas and take risks involved in coming up with ideas that basically defy the norm. In a similar vein, when leaders are available and accessible to employees, they send a clear signal that it is safe to approach them and that they will be available and accessible to employees attempting to address issues creatively. Edmondson's (2004) theory about such aspects of leadership as openness, availability and accessibility is also consistent with other studies that pointed, for example, to behaviors that signal leader benevolence (e.g., genuine caring and concern about the follower) and leader support, increase trust (Burke et al., 2007). Further, high-quality interpersonal relationships have been shown to facilitate the development of psychological safety (Carmeli, Brueller, & Dutton, 2009). Nembhard and Edmondson (2006) found that when members felt that their leaders invited and appreciated their input they developed a sense of psychological safety, in that their voice is appreciated and they are comfortable with speaking up and expressing themselves. Thus, we suggest the following hypothesis:

Hypothesis 1: Inclusive leadership will be positively related to psychological safety.

Psychological Safety and Employee Creativity

Consistent with Amabile's (1983, 1996) definition, employee creativity is referred to as the production of ideas, products, or procedures that are novel or original, and potentially useful to the employing organization. As such, creativity is a process of idea generation, problem solving and the actual idea or solution (Amabile, 1983; Sternberg, 1988; Weisberg, 1988). Creativity by nature introduces novelty and increases uncertainty. Creative ideas, because they are novel, are more likely to fail. It is therefore not surprising that one of the most consistent findings regarding creative individuals is that they are open, flexible, and willing to take risks (Barron & Harrington, 1981; Dewett, 2006; Feist, 1998; Sternberg & Lubart, 1991). Individuals need support in terms of psychological safety to become involved in the creative process and realize their creative potential (Harrington, Block, & Block, 1987; Rogers, 1954). Similarly, research on individual creativity in organizational settings finds that proactive behavior and initiative are related to creativity and innovation (Seibert, Kraimer & Crant, 2001; Rank, Pace & Frese, 2004). Further, Rank et al. (2004) suggested that voice behavior, that is, speaking up and willingness to question and provide suggestions for change, is the link between creativity, or the generation of new ideas, and innovation, or the implementation of these ideas. Binnewies, Ohly, and Sonnetag (2007) found that initiative and idea related communication increased employee creative engagement.

We suggest that when employees feel that they are psychologically safe to speak up, seek help from others and express themselves without fearing of negative interpersonal consequences they are more likely to develop a high degree of involvement in creative endeavors which are ultimately important for employee creative performance. Voice behavior, initiative, and

proactive behavior are more likely to occur when individuals feel safe psychologically

(Edmondson, 2004). This belief motivates and enhances willing to engage in these behaviors.

When individuals are comfortable to voice and speak up they are more likely to make

"innovative suggestions for change and recommending modifications to standard procedures

even when others disagree" (Van Dyne & LePine, 1998, p. 109). In a review of the literature on

organizational creativity, George (2008) suggested that signals for safety are one of the most

important contextual variables related to creativity. West and Richter (2008) and Nicholson and

West (1988) noted that when facing psychological threats and feeling psychologically unsafe,

individuals are more likely to develop defensive orientation and are less likely to display

creativity and innovative behaviors at work. Burke, Stagl, Salas, Pierce, and Kendall (2006)

found that psychological safety increases the likelihood that team members will feel free to

question suggestions and decisions. Work focusing on climate factors that facilitate creativity

consistently includes aspects of psychological safety (Amabile & Grykiewicz, 1989; Ekvall,

1986; Hunter et al., 2007). Feeling psychological safety to question current issues and speak up

are key for one's involvement in raising novel ideas and providing new suggestions (Kark &

Carmeli, 2009). Thus, the following hypothesis is suggested:

> *Hypothesis 2: Psychological safety will be positively related to employee involvement in*
>
> *creative work task.*

Inclusive Leadership, Psychological Safety, and Employee Involvement in Creative Tasks

Past research has suggested that leader support is important to creativity and innovation

(Mumford & Hunter, 2005; Hunter et al., 2007). However, most research on leader support has

focused on overall leader support including factors such as leader appreciation and support for

new ideas and innovation and leader support through resources, and did not distinguish between

the different aspects of support (George & Zhou, 2007; Mumford & Hunter, 2005). Research on the effect of supportive leadership, focusing more specifically on the relationship between the leader and the follower suggested that overall support is beneficial for creativity (Arad et al., 1997; George & Zhou, 2007; Oldham & Cummings, 1996).

Further, some research has pointed to the role of leadership in shaping conditions that are conducive for enhancing employee creativity. For example, George and Zhou (2007) conducted a study that evaluated the process by which leader support leads to creativity and innovation. Specifically, they evaluated three behavioral mechanisms by which supervisors can provide a supportive context – developmental feedback, displaying interactional justice, and being trustworthy. The results of their study suggested that all three types of behavioral support lead to increased creativity. Mumford et al. (2002) noted that leaders who provide support for creativity (idea, work and social supports) are more effective in facilitating creativity because they are able to shape and maintain work contexts which are vital for motivating individuals to display creative behaviors. Lee, Edmondson, Thomke and Worline (2004) have also noted that leader supportive coaching enables interpersonal risk taking (Edmondson 1999, 2002), while close evaluation processes intended to unravel failures inhibit creativity (Amabile et al., 2004) and make new tasks more difficult (Zajonc 1965). Lee et al. (2004) underscored the importance of joint supportive conditions that make people psychologically safe, thus facilitating their willingness to engage in experimentation, a behavior integral to creative and innovative endeavor.

In addition, consistent with previous research we reason that psychological safety is developed through relational leadership and serves as a key social-psychological mechanism by which people are able to display creativity without experiencing interpersonal threats and

developing defensive orientation (Carmeli et al., 2009; Edmondson, 2004). Along with this line of research (see also, De Dreu & West, 2001), we posit that the relationship between leader inclusiveness and creativity will be mediated through psychological safety. Inclusive leaders who are open, available and accessible to employees who come up with new ideas, cultivate a context in which people feel psychologically safe to voice and express new ideas that often defy the norms. Psychological safety, in turn, is likely to result in a higher level of employee involvement in creative work. Hence, the following hypothesis is suggested:

Hypothesis 3: Psychological safety will mediate the relationship between inclusive leadership and employee involvement in creative work task.

These three hypotheses and the relationships between inclusive leadership, psychological safety, and employee involvement in creative tasks in the workplace, are presented in Figure 1.

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Insert Figure 1 about here

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Method

Sample and Procedure

One hundred and eighty employees, who engage in the development of advanced technological products, were randomly selected to participate in the study. They were employed in the R&D units of 8 knowledge-intensive organizations that develop advanced technological products. Every third, sixth, ninth (and so on) employee was contacted and asked to complete a structured survey at two points in time, with a lag of two months between Time 1 and Time 2. The questionnaires were completed by the respondents on-site, during scheduled work time sessions. We initially contacted the Human Resource Department Director and discussed our

research goals and scope. In exchange for cooperation, we promised to deliver the results of the study upon request. One of the authors attended the work sites, briefly presented the subject of the study, and handed out the questionnaires. The average time for completing this questionnaire was about 10 minutes. To correlate the same respondent's completed questionnaires from Time 1 and Time 2, and to preserve the respondent's anonymity, employees were asked to indicate the names of their maternal grandparents. We explained that the maternal grandparents' names were needed to allow us to follow up with the additional survey two months later. The questionnaire at Time 1 included items measuring inclusive leadership and data about control variables, whereas the survey at Time 2 included items measuring psychological safety and employee involvement in creative work tasks.

One hundred and fifty employees completed the two surveys, representing a response rate of 83 percent. Ninety-two of the respondents were female. Sixty-four percent were married. The respondents' average age was 32.27 years (*s.d.* 7.11), and their average tenure within the organization was 3.69 years (*s.d.* 5.07). Twenty-seven percent of the participants held a high school diploma or equivalent, 44.7% held a Bachelor's degree, 25.3% held an MA degree, while the remainder of the participants held a PhD degree.

Measures

All measurement items are shown in Appendix A.

Inclusive Leadership. We constructed a 9-item measure aiming at assessing three dimensions of inclusive leaders: openness, availability, and accessibility. We first asked 10 employees and 15 graduate students to carefully read each statement and indicate the extent to which each item reflects the construct it aimed to constitute. Each item that was specified as reflecting none of the dimensions or more than one dimension was removed. Respondents were

asked to assess on a five-point scale (ranging from 1 = 'not at all' to 5 = 'to a large extent') the

extent to which their leader displays openness and is available and accessible for them at work.

Results of factor analyses produced a one-factor solution had an eigenvalue of 6.18 and

explained 68.74 percent of the variance. It had factor loadings ranging from .51 to .82. The

Cronbach alpha for this measure was .94.

Psychological Safety. This measure assesses the extent to which a member in an

organization feels psychologically safe to take risks, speak up, and discuss issues openly.

Following the results of a factor analysis, we adopted five items from Edmondson's (1999)

psychological safety scale. Responses were made on a five-point scale ranging from 1 = 'not at

all' to 5 = 'to a large extent'. The Cronbach alpha for this measure was .74.

Employee Involvement in Creative Work. We used four items of the employee creativity

developed and used by Tierney, Farmer and Graen (1999) and further implemented in other

studies that examined the degree to which one is involved in creative work tasks (Carmeli &

Schaubroeck, 2007). Respondents were asked to indicate the extent to which they regularly

exhibit various behaviors that are indicative of creative work involvement. Responses were made

on a five-point scale ranging from ranging from 1 = 'not at all' to 5 = 'to a large extent'. The

Cronbach alpha for this measure was .89.

Control variables. We controlled for tenure in the organization, as this reflects work

domain expertise (Oldham & Cummings, 1996; Tierney & Farmer, 2004). In addition, we

controlled for respondents' age because younger employees may be more inclined to take risks

and engage in creative endeavors than older employees.

Data Analyses

We used structural equation modeling (SEM) (Bollen, 1989) to estimate the research model. As outlined by Anderson and Gerbing (1988), we employed a two-step approach to SEM in which construct validity was assessed using confirmatory factor analysis followed by a comparison of a sequence of nested structural models. To alleviate problems associated with using a single goodness-of-fit index in SEM (Medsker, Williams, & Holahan, 1994), we used several goodness-of-fit indices in assessing the fit of the research model (Joreskog & Sorbom, 1993; Kline, 1998). These fit indices include the Chi-square statistic divided by the degrees of freedom (χ^2/df); a Comparative Fit Index (CFI), the Tucker-Lewis coefficient (TLI), and the Root Mean Square Error of Approximation (RMSEA). As suggested in the literature (Joreskog & Sorbom, 1993; Kline, 1998), the following criteria of goodness-of-fit indices were used to assess the model fit: the $\chi2$/df ratio is recommended to be less than 3; the values of CFI, and TLI are recommended to be greater than .90; RMSEA is recommended to be up to .05, and acceptable up to .08.

Results

The means, standard deviations, reliabilities and correlations among the research variables are presented in Table 1. The bivariate correlations indicate that inclusive leadership is positively related to both psychological safety ($r = .39$, $p < .01$) and employee involvement in creative work ($r = .25$, $p < .01$). The results also showed that psychological safety was positively associated with employee involvement in creative work ($r = .34$, $p < .01$).

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Insert Table 1 about here

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Measurement Model Results

We first sought to show further evidence of the construct validity of our latent factors using confirmatory factor analysis (CFA). The hypothesized three-factor measurement model was tested to assess whether each of the measurement items would load significantly onto the scales with which they were associated. The results of the overall CFA showed acceptable fit with the data (χ^2 (135) = 289.8; CFI = .91; IFI = .91; TLI = .90; RMSEA = .08). Standardized coefficients from items to factors ranged from .47 to .98. In addition, the CFA indicated that the relationship between each indicator variable and its respective construct was significant ($p <$ .01), establishing the posited relationships among indicators and constructs, and thus, convergent validity (Hair, Anderson, Tatham, & Black, 1998). We compared the fit of our measurement model to a two-factor where inclusive leadership and psychological safety items loaded onto one factor and employee involvement in creative work was loaded onto a second factor. The fit of this model was relatively poor, and significantly worse than our proposed three-factor model (χ^2 (136) = 409.8; CFI = .84; IFI = .84; TLI = .82; RMSEA = .11; $\Delta\chi^2$ (1) = 120, $p < .01$). Finally, we also tested a one-factor model (Herman one-factor test for common method bias) where all items measuring inclusive leadership, psychological safety, and employee involvement in creative work were loaded onto a single factor. The fit of this model was relatively poor, and significantly worse than our proposed three-factor model (χ^2 (137) = 781.8; CFI = .62; IFI = .62; TLI = .58; RMSEA = .17; $\Delta\chi^2$ (2) = 492, $p < .01$). In sum, the hypothesized three-factor measurement model had better fit with the data, compared to the alternative (two-factor and one-factor) models. In the following section, we test our hypothesized research model and hypotheses.

In addition, differences between organizations on the variables of interest were examined using ANOVA. As no significant differences were found, the analyses were conducted across all organizations.

Model Comparisons and Hypothesis Testing

This study proposed a mediation model. Because traditional guidelines for testing mediation (e.g., Baron & Kenny, 1986; Kenny, Kashy, & Bolger, 1998) are not as suitable for SEM applications, we tested the hypothesized mediating relationship through a series of nested model comparisons, as recommended by others (see James, Mulaik, & Brett, 2006; Schneider, Earhart, Mayer, Saltz, & Miles-Jolly, 2005). Testing meditation model using SEM has several advantages over hierarchical regression approaches with regard to the testing of mediation (Cheung & Lau, 2008). SEM is a better statistical tool for investigating latent variables with multiple indicators (Holmbeck, 1997), controlling for measurement error and thus avoiding underestimation of mediation effects (Hoyle & Smith, 1994), allowing for the analysis of more complex models (Hoyle & Smith, 1994), and for specifying all relevant paths (Baron & Kenny, 1986).

We first tested our hypothesized mediation model, specifying the role of psychological safety (PS) as a mediator for the relationship between inclusive leadership (IL) and employee involvement in creative work (EC) (i.e., IL $\rightarrow$ PS $\rightarrow$ EC). Additional paths from control variables (respondent age and tenure in the organization) to employee involvement in creative work were also specified in this model. Results, shown in Table 2, indicated that the model fit the data well data (χ^2 (135) = 289.8; CFI = .91; IFI = .91; TLI = .90; RMSEA = .08).

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Insert Table 2 about here

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To test for mediation, we compared the fit and path coefficients of the hypothesized mediation model with a second model (Model 1) which was identical to our hypothesized model except for the addition of direct effect path from IL to EC. As is shown in Table 2, although all paths from IL to PS and from PS to EC remained significant ($.47, p < .01; .38, p < .01$, respectively), the direct path from IL to EC was not ($.08, p = .41$). Following Holmbeck (1997), we see from the results of the $\Delta\chi^2$ difference test that the addition of the direct effect path did not significantly improve model fit. Thus, the results showed support for our hypothesized mediation model, which is depicted in Figure 1, and the research hypotheses. The results of the hypothesized mediation model supported Hypothesis 1, which posited a positive relationship between inclusive leadership and psychological safety ($.47, p < .01$). In addition, Hypothesis 2 which predicted a positive relationship between psychological safety and employee involvement in creative work was also supported ($.38, p < .01$). Finally, the findings also support Hypothesis 3, which posited that psychological safety would mediate the relationship between inclusive leadership and employee involvement in creative work, as the paths from inclusive leadership and psychological safety as well as from psychological safety and employee involvement in creative work remained significant while the path from inclusive leadership to employee involvement in creative work was not statistically significant (see Table 2).

Discussion

The findings of this study indicated that inclusive leadership was positively linked to psychological safety, which, in turn, resulted in enhanced employee involvement in creative work, thus suggesting that psychological safety plays an intervening role in the relationship between inclusive leadership and employee creativity. In so doing, this study makes several

contributions to theory and research on both leadership and creativity.

Our research addresses the call to direct further attention to the role of relational leadership in work organizations (Carmeli et al., 2009; Fletcher, 2004, 2007). We proposed and investigated a specific form of relational leadership, inclusive leadership, which includes three reinforcing facets: openness, accessibility and availability. This study extends our understanding of relational leadership by focusing not on a broad construct such as leader support, but rather on a specific aspect of relational leadership and leader support, that of inclusive leadership. In addition, this form of leadership and its facets have been suggested to have the potential to give rise psychological safety (Edmondson, 2004).

The findings of this study provide further support to the importance of leader inclusiveness in the development of psychological safety (Nembhard & Edmondson, 2006). Our work expands the research of Edmondson and her colleagues (Edmondson, 1999, 2004; Nembhard & Edmondson, 2006), by focusing on a specific aspect of relational leadership and its effect on psychological safety. In addition, the current study sheds light on the role of psychological safety in enhancing creativity in the workplace. Specifically, our study indicates that when leaders are open, accessible and available to discuss new ideas with employees, they cultivate a social context in which people feel that they are psychologically safe to voice, speak up and come up with novel and useful solutions. This provides further support to the importance of the social context that is conducive for employee creativity (Illies & Reiter-Palmon, 2004; Perry-Smith, 2006). Furthermore, we expand previous research that pointed to psychological conditions that foster personal engagement in particular work task (Kahn, 1990) by exploring the importance of psychological safety in facilitating employee involvement in creative work tasks.

Our research also addressed calls to extend our knowledge about leadership and creativity

(Mumford et al., 2002; Tierney, 2008). By illuminating inclusive leadership as a form of relational leadership, this study adds to our understanding of the nature of leadership processes that contribute to employee involvement in creative work tasks. Further, we extend our understanding of the ways leadership support facilitates creativity through the development of psychological safety. Specifically, our study indicates that inclusiveness is key in providing leadership support for creativity, because it cultivates high quality relationships that further augment a sense of psychological safety. The latter is a vital social-psychological mechanism which creates conditions where individuals feel safe to bring up ideas, voice opinions, and to question (Edmondson, 2004). All of these behaviors have been found to be related to increased creativity in the workplace (Edmondson, 2004).

The role of leadership in facilitating creativity is particularly important in knowledge intensive, complex, and uncertain environments similar to the one used in this study (Mumford et al., 2002). In those environments a firm's competitive edge is largely dependent on the creative employees who can come up with novel and useful ideas that are vital for the development of advanced technological products. Because in such a setting demands are often overwhelming and time is scarce, it becomes a challenge for managers to develop a high level of inclusiveness by being open, accessible and available to talk and discuss creative ideas of employees. In addition, employee motivation to engage in creative behaviors becomes paramount and thus this study contributes to the literature by documenting the importance of inclusive leadership for facilitating employee psychological safety and involvement in creative work tasks.

In sum, this study provided an important step toward understanding a relatively understudied form of leadership, relational leadership, and its potential to contribute to creativity in the workplace. The findings of this study lend additional support for the role that relational

leadership plays in enhancing employee creativity, but furthers our understating in two areas. First, this study evaluated a specific form of relational leadership, inclusive leadership. Second, this study investigated the mechanism by which relational leadership, and specifically inclusive leadership may facilitate employee creativity. The findings also pointed out that inclusive leadership, characterizes by openness, accessibility, and availability increases psychological safety which in turn increases employee creativity, lend support to the importance of these beliefs in understanding the link between leadership and creativity.

Limitations and Future Research Directions

In interpreting the results of this study, it is important to keep several issues in mind. First, although we collected data at two points in time, it is difficult infer cause-effect relationships in our study. While we provided sound theoretical reasoning for our model, future research should pursue a longitudinal design to allow for stronger causal interpretations of our model. Second, while we focused on leader inclusive behaviors and psychological safety, we recognize that other unobserved variables may be vital for explaining employee creativity in the workplace. Thus, unobserved variables may limit the implications of our study. Future research may integrate complementary theories and explanations of employee creativity at work. For instance, whereas we advocate the importance of relational leadership in facilitating such conditions as psychological safety for enhancing employee creativity, cognitive capacities and job characteristics may also foster creative behaviors. In addition, it is possible that leader inclusive behaviors may influence positive affect toward the leader or creative self-efficacy. It is, thus, of importance to seek ways to develop a more integrative approach for understanding how employee creativity is fostered by inclusive leadership.

Third, the study used self-reports to assess the variables which may be associated with common method bias, specifically, the variables measured here all asked for employee perceptions. In a recent work about relying on self-report data, Chan (2009) pointed out that scholars tend to believe that such data have little validity "because of two related assumptions namely, (1) they are inherently flawed as measures of the intended constructs and (2) they are unable to provide accurate parameter estimates of inter-construct relationships." However, Chan (2009) also pointed to the fact that many of the alleged problems associated with self-reports "are overstated or exaggerations." Nevertheless, in an attempt to alleviate problems associated with self-report data, we followed Podsakoff, MacKenzie, Lee, and Podsakoff's (2003, p. 887) suggested remedy "to separate the measurement of the predictor and criterion variables." Thus, we administered surveys at two points in time. In addition, we assessed the effects of common method bias using confirmatory factor analyses of three models. This model is expected to assess the extent of common method variance overall. As mentioned above, the results of the one-factor model (i.e., Harman one-factor test) did not fit the data well, whereas the hypothesized three-factor model had a good fit with the data. In addition, a confirmatory factor analysis of a two-factor model where items measuring both psychological safety and employee creativity (measured at Time 2) had a better fit with the data compared to a one-factor structure. Although this set of analyses provide some indication that the common method variance may not be a severe problem in our study, we acknowledge that one cannot fully determine the magnitude and thus a longitudinal study and use of different sources of data are desirable.

We examined employee perceptions of creativity, as a measure of involvement in creative production. Zhou, Shin, and Cannella (2008) noted that "there is significant theoretical merit to studying employees' self-perceived creativity" (p. 399). This is consistent with recent

studies that employ self-perceptions of creativity (e.g., Carmeli & Schaubroeck, 2007).

Creativity is often a self-awareness process, intentional in nature. It may well be that these

creative behaviors are not observed by others and thus creating misalignment in the way an

individual perceive his or her creativity and the ways others perceive his or her creative behavior

(Zhou et al., 2008). Yet, "because engaging in creative activities starts with individuals'

conscious choice (Ford, 1996) and because it is accompanied by subjective experiences

(Csikszentmihalyi, 1990), understanding individuals' self-perceptions and subjective experiences

of their creativity is the first step toward understanding the entire process of creativity" (Zhou et

al., 2008, pp. 399-400). Nonetheless, we acknowledge the need to use multiple referents for

assessing employee creativity, including direct managers, peers and customers. Finally, it is

worth nothing that the variance explained is moderate, and thus we need to seek for other

unobserved conditions and states that motive individuals to become involved in the creative

process.

References

Amabile, T. M. (1983). *The social psychology of creativity*. New York: Springer-Verlag.

Amabile. T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work

environment for creativity. *Academy of Management Journal*, *39*, 1154-1184.

Amabile, T.M., & Gryskiewicz, N.D. (1989). The creative environment scales: Work

environment inventory. *Creativity research Journal, 2*, 231-253.

Amabile, T.M., Schatzel, E.A., Moneta, G.B., & Kramer, S.J. (2004). Leader behaviors and work

environment for creativity: Perceived leader support. *The Leadership Quarterly*, *15*, 5-32.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review

and recommended two-step approach. *Psychological Bulletin, 103*, 411-423.

Arad, S., Hanson, M.A., & Schnieder, R.J. (1997). A framework for the study of relationship

between organizational characteristics and organizational innovation. *Journal of Creative

Behavior, 31*, 42-58.

Atwater, L., & Carmeli, A. (2009). Leader-member exchange, feelings of energy and

involvement in creative work. *The Leadership Quarterly*, *20*, 264–275

Baron, R. M., & Kenny, D. A. (1986). The moderator - mediator variable distinction in social

psychological research: Conceptual, strategic, and statistical considerations. *Journal of

Personality and Social Psychology, 51*, 1173-1182.

Barron, F., & Harrington, D.M. (1981). Creativity, intelligence, and personality. *Annual Review

of Psychology, 32,* 439-476.

Basu, R., & Green, S. G. (1997). Leader-member exchange and transformational leadership: An

empirical examination of innovative behaviors in leader-member dyads. *Journal of Applied

Social Psychology, 27*, 477-499.

Binnewies, C., Ohly, S., & Sonnentag, S. (2007). Taking personal initiative and communicating about ideas: What is important for the creative process and for idea creativity? *European Journal of Work and Organizational Psychology, 16*, 432-455.

Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley.

Burke, C.S., Sims, D.E., Lazzara, E.H., & Salas, E. (2007). Trust in leadership: A multi-level review and integration. *Leadership Quarterly*, *18*, 606-632.

Burke, C.S., Stagl, K.C., Salas, E., Pierce, L., & Kendall, D. (2006). Understanding team adaptation: A conceptual analysis and model. *Journal of Applied Psychology, 91*, 1189-1207.

Carmeli, A., Ben-Hador, B., Waldman, D. A., & Rupp, D. E. (2009). How leaders cultivate social capital and nurture employee vigor: Implications for job performance. *Journal of Applied Psychology, 94*, 1553–1561.

Carmeli, A., Brueller, D., & Dutton, J. E. (2009). Learning behaviours in the workplace: The role of high-quality interpersonal relationships and psychological safety. *Systems Research and Behavioral Science, 26*, 81-98.

Carmeli, A., Gelbard, R., & Gefen, D. (2010). The importance of innovation leadership in cultivating strategic fit and enhancing firm performance. *The Leadership Quarterly*, Forthcoming.

Carmeli, A., & Schaubroeck, J. (2007). The influence of leaders' and other referents' normative expectations on individual involvement in creative work. *The Leadership Quarterly*, *18*, 35-48.

Chan, D. (2009). So why ask me? Are self-report data really that bad? In C. E. Lance, & R. J. Vandenberg (Eds.), *Statistical and methodological myths and urban legends: Received*

doctrine, verity, and fable in the organizational and social sciences (pp. 311-338). New

York: Routledge.

Cheung, G. W., & Lau, R. S. (2008). Testing mediation and suppression effects of latent

variables bootstrapping with structural equation models. *Organizational Research Methods,*

11, 296-325.

Csikszentmihalyi, M. (1990). *Flow*. New York: HarperCollins.

De Dreu, C.K.W., & West, M. (2001). Minority dissent and team innovation: The importance of

participation in decision making. *Journal of Applied Psychology, 86*, 1191-121.

Dewett, T. (2006). Exploring the role of risk in employee creativity. *Journal of Creative*

Behavior, 40, 27-45.

Edmondson, A. C. (1996). Learning from mistakes is easier said than done: Group and

organizational influences on the detection and correction of human error. *The Journal of*

Applied Behavioral Science, 32, 5-28.

Edmondson, A. (1999). Psychological safety and learning behavior in work teams.

Administrative Science Quarterly, *44*, 350-383.

Edmondson, A. C. (2002). The local and variegated nature of learning in organizations: A group

level perspective. *Organization Science, 13*, 128–146.

Edmondson, A.C. (2004). Psychological safety, trust, and learning in organizations: A group-

level lens. In R.M. Kramer, & K.S. Cook (Eds.), *Trust and distrust in organizations:*

Dilemmas and approaches (pp. 239-272). New York: Russell Sage Foundation.

Ekvall, G. (1986). Working climate and creativity: A study of an innovative newspaper office.

Journal of Creative Behavior, 20, 215-225.

Feist, G. (1998). A meta-analysis of personality in scientific and artistic creativity. *Personality and Social Psychology Review, 2*, 290-309.

Fletcher, J. K. (2004). The paradox of postheroic leadership: An essay on gender, power, and transformational change. *The Leadership Quarterly, 15*, 647−661.

Fletcher, J. K. (2007). Leadership, power, and positive relationships. In J. E. Dutton & B. R. Ragins (Eds.), *Exploring positive relationships at work: Building a theoretical and research foundation* (347-371). Mahwah, NJ: Lawrence Erlbaum Associates.

Ford, C. (1996). A theory of individual creative action in multiple social domains. *Academy of Management Review, 21*, 1112–1142.

George, J.M. (2008). Creativity in organizations. *Academy of Management Annals, 1*, 439-477.

George, J.M., & Zhou, J. (2007). Dual tuning in a supportive context: Joint contributions of positive mood, negative mood, and supervisory behaviors to employee creativity. *Academy of Management Journal, 50*, 605-622.

Gerstner, C.R., & Day, D.V. (1997). Meta-analytic review of leader-member exchange theory: Correlated and construct issues. *Journal of Applied Psychology, 82*, 827-844.

Hair, J. F, Anderson, P. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis.* NJ: Prentice Hall.

Harrington, D. M., Block, J. H., & Block, J. (1987). Testing aspects of Carl Rogers's theory of creative environments: Child-rearing antecedents of creative potential in young adolescents. *Journal of Personality and Social Psychology, 52*, 851-856.

Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology, 65*, 599-610.

Hoyle, R. H., & Smith, G. T. (1994). Formulating clinical research hypotheses as structural

   equation models: A conceptual overview. *Journal of Consulting and Clinical Psychology, 62*,

   429-440.

Hunter, S.T., Bedell, K.E., & Mumford, M.D. (2007). Climate for creativity: A quantitative

   review. *Creativity Research Journal, 19*, 69-90.

James, L. R., Mulaik, S. A., & Brett, J. M. (2006). A tale of two methods. *Organizational

   Research Methods, 9*, 233–244.

Jaussi, K.S., & Dionne, S.D. (2003). Leading for creativity: The role of unconventional leader

   behavior. *The Leadership Quarterly, 14*, 475-498.

Judge, T.A., Piccolo, R. F., & Ilies, R. (2004). The forgotten ones? The validity of consideration

   and initiating structure in leadership research. *Journal of Applied Psychology, 89*, 36-51.

Joreskog, K. G., & Sorbom, D. (1993). *LISREL 8: Structural equation modeling with the

   SIMPLIS command language*. Chicago, IL: Scientific International Software.

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at

   work. *Academy of Management Journal*, *33*, 692-724.

Kark, R., & Carmeli, A. (2009). Alive and creating: The mediating role of vitality in the

   relationship between psychological safety and creative work involvement. *Journal of

   Organizational Behavior, 30*, 785-804.

Kenny, D. A., Kashy, D., & Bolger, N. (1998). Data analysis in social psychology. In D. Gilbert,

   S. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (pp. 233-265). New York:

   McGraw-Hill.

Kline, R. B. (1998). *Principles and practice of structural equation modeling*. New York: The

   Guilford Press.

Lee, F., Edmondson, A. C., Thomke, S., & Worline, M. 2004. The mixed effects of

    inconsistency on experimentation in organizations. *Organization Science, 15*, 310-326.

Medsker, G. J., Williams, L. J., & Holahan, P. J. (1994). A review of current practices for

    evaluating causal models in organizational behavior and human resources management

    research. *Journal of Management, 20*, 439-464.

Mumford, M.D., Scott, G.M., Gaddis, B., & Strange, J.M. (2002). Leading creative people:

    Orchestrating expertise and relationships. *Leadership Quarterly, 13,* 705-750.

Mumford, M.D. & Hunter, S.T. (2005). Innovation in organizations: A multi-level perspective

    on creativity. *Multi-Level Issues in Strategy and Methods, 4,* 11-73.

Nembhard, I.M., & Edmondson, A.C. (2006). Making it safe: The effects of leader inclusiveness

    and professional status on psychological safety and improvement efforts in health care teams.

    Journal of Organizational Behavior, 27, 941-966.

Nicholson, N., & West, M.A. (1988). *Managerial job change: Men and women in transition*.

    Cambridge, UK: Cambridge University Press.

Oldham, G.R., & Cummings, A. (1996). Employee creativity: Personal and contextual factors at

    work. *Academy of Management Journal, 39*, 607-634.

Rank, J., Pace, V.L., & Frese, M. (2004). Three avenues for future research on creativity,

    innovation, and initiative. *Applied Psychology; An International Review, 53*, 518-528.

Redmond, M.R., Mumford, M.D., & Teach, R. (1993). Putting creativity to work: Effects of

    leader behavior on subordinate creativity. *Organizational Behavior and Human Decision

    Processes, 55,* 120-151.

Reiter-Palmon, R., & Illies, J.J. (2004). Leadership and creativity: Understanding leadership

    from a creative problem-solving perspective. *Leadership Quarterly, 15,* 55-77.

Rogers, C. (1954). Toward a theory of creativity. *International Society for General Semantics, 11,*249-260.

Schneider, B., Ehrhart, M. G., Mayer, D. M., Saltz, J. L., & Miles-Jolly, K. (2005). Understanding organization-customer links in service settings. *Academy of Management Journal, 48*, 1017-1032.

Scott, S.G., & Bruce, R.A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal, 37,* 580-607.

Seibert, S.E., Kraimer, M. L. & Crant, J.M. (2001). What do proactive people do? A longitudinal model linking proactive personality and career success. *Personnel Psychology, 54*, 845-874.

Shalley, C.E., & Gilson, L.L. (2004). What leadership need to know: A review of social and contextual factors that can foster or hinder creativity. *Leadership Quarterly, 15,* 33-53.

Shin, S.J., & Zhou, J. (2003). Transformational leadership, conservation, and creativity: Evidence from Korea. *Academy of Management Journal, 46*, 703-714.

Sternberg, R. J. (1988) *The Nature of Creativity: Contemporary Psychological Perspectives.* Cambridge: Cambridge University Press.

Sternberg, R.J. & Lubart, T. I. (1991). An investment theory of creativity and its development. *Human Development, 34*, 1-31.

Tierney, P. (2008). Leadership and employee creativity. In J. Zhou & C. E. Shalley (Eds.), *Handbook of Organizational Creativity* (pp. 95-123). New York: Lawrence Erlbaum Associates.

Tierney, P., & Farmer, S.M. (2004). The Pygmalion process and employee creativity. *Journal of Management*, *30*, 413-432.

Tierney, P., Farmer, S. M., & Graen, G. B. (1999). An examination of leadership and employee creativity: The relevance of traits and relations. *Personnel Psychology*, *52*, 591-620.

Uhl-Bien, M. (2006). Relational Leadership Theory: Exploring the social processes of leadership and organizing. *The Leadership Quarterly, 17*, 654-676.

Weisberg, R. W. (1988) Problem solving and creativity. In R. J. Sternberg (ed.), *The nature of creativity: Contemporary psychological perspectives* (pp. 148–176). Cambridge: Cambridge University Press.

West, M. A. (1990). The social psychology of innovation in groups. In M. A. West, J. L. Farr, & e. al (Eds.), *Innovation and creativity at work: Psychological and organizational strategies* (pp. 309-333). Chichester, England UK: John Wiley & Sons.

West, M. A., & Richter, A. W. (2008). Climates and cultures for innovation and creativity at work. In J. Zhou & C. E. Shalley (Eds.), *Handbook of Organizational Creativity* (pp. 211-236). New York: Lawrence Erlbaum Associates.

Woodman, R.W., Sawyer, J.E., & Griffin, R.W. (1993). Toward a theory of organizational creativity. *Academy of Management Review, 18,* 293-321.

Zajonc, R. B. (1965). Social facilitation. *Science*, 149, 269–274.

Zhou, J., Shin, S. J., & Cannella, A. A. (2008). Employee self-perceived creativity after mergers and acquisitions: Interactive effects of threat-opportunity perception, access to resources, and support for creativity. *Journal of Applied Behavioral Science, 44*, 397-421.

Table 1
Means, Standard Deviations (s.d.), and Correlations

	Mean	s.d.	1	2	3	4	5
1. Respondent age	32.27	7.11	--				
2. Organizational tenure	3.70	5.08	.55**	--			
3. Inclusive leadership	3.84	0.86	-.06	-.16*	(.94)		
4. Psychological safety	3.31	0.68	.02	.01	.39**	(.74)	
5. Employee involvement in creative work	3.52	0.82	-.05	-.00	.25**	.34**	(.89)

$N = 150$, Two-tailed test; Alpha reliabilities appear in parentheses
* $p < .05$, ** $p < .01$

Table 2
*Testing the Mediation Model: Comparisons and Path Coefficient of Structural Equation Models[a]*

Hypothesized model		Model 1	
IL →PS	.47[**]	IL →PS	.47[**]
PS → EC	.43[***]	PS → EC	.38[**]
Age → EC	-.08 (p=.37)	IL → EC	.08
Tenure → EC	.02 (p=.83)	Age → EC	-.09 (p=.35)
		Tenure → EC	.03 (p=.73)
χ^2	301.6		301
df	167		166
$\Delta\chi^2$			.6, *ns*
RMSEA	.074		.074
CFI	.925		.924
TLI	.914		.913
IFI	.926		.925

[a] IL = Inclusive Leadership; PS = Psychological Safety; EC = Employee involvement in creative work. In all models the control variables (respondent age and tenure in the organization) were linked to employee involvement in creative work.
[*] $p < .05$, [**] $p < .01$

Figure Caption

Figure 1. Results for the hypothesized mediation model.
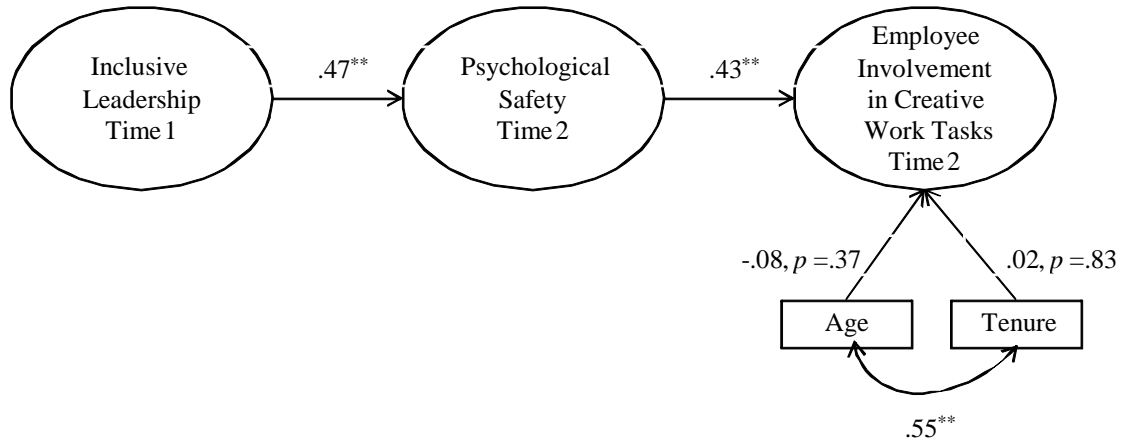
* *p* < .05, ** *p* < .01, *** *p* < .01

Appendix A
Items used to measure the study variables
Items measuring Inclusive Leadership (Alpha = .94)
The manager is open to hearing new ideas (Openness)
The manager is attentive to new opportunities to improve work processes (Openness)
The manager is open to discuss the desired goals and new ways to achieve them (Openness)
The manager is available for consultation on problems (availability)
The manager is an ongoing 'presence' in this team-someone who is readily available (availability)
The manager is available for professional questions I would like to consult with him/her (availability)
The manager is ready to listen to my requests (availability)
The manager encourages me to access him/her on emerging issues (accessibility)
The manager is accessible for discussing emerging problems (accessibility)
Items measuring Psychological Safety (Alpha = .76)
I am able to bring up problems and tough issues
People in this organization sometimes reject others for being different
It is safe to take a risk in this organization
It is easy for me to ask other members of this organization for help
No one in this organization would deliberately act in a way that undermines my efforts
Items measuring Employee involvement in creative work (Alpha = .89)
Demonstrate originality at my work
Try out new ideas and approached to problems
Identify opportunities for new products/processes
Generate novel, but operable work-related ideas