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Social and Economic Leader-Member Exchange and Employee Creative Behavior: The Role of Employee Willingness to Take Risks and Emotional Carrying Capacity

In the current study we explore the relational aspect of leadership for stimulating employee creative behavior. Drawing on leader-member exchange (LMX) theory, we propose that the association between two distinct types of LMX relationships (social LMX and economic LMX) and creative behavior is mediated by employee willingness to take risks and moderated by emotional carrying capacity. Based on two-wave data from a sample of 147 employees, we surprisingly find only marginal support for the association between social LMX and creative behavior, and, as expected, we find no support for the association between economic LMX and creative behavior. We do find evidence of the full mediation of willingness to take risks in these two associations. Furthermore, we also find a positively significant interaction of social LMX with emotional carrying capacity, but no support for the interaction of economic LMX with emotional carrying capacity in predicting employee creative behavior. We contribute to a deeper view of understanding the leadership of employee creativity as a relational process, contingent upon both employee characteristics as well as the nature of LMX.

Keywords: creative behavior, leader-member exchange, social and economic leader-member exchange, willingness to take risks, emotional carrying capacity

1 INTRODUCTION

As the work environment becomes increasingly globalized, fast-paced, and competitive, the pressure on organizations to improve continuously, innovate, and adapt grows accordingly. As a result, innovation has become a highly important determinant of organizational performance, success, and long-term survival (e.g., Anderson et al., 2014; Oldham and Cummings, 1996). The term innovation is often used interchangeably with the related term creativity. However, despite being closely linked, creativity and innovation are distinct constructs (Isaksen and Ekvall, 2010; Shalley and Gilson, 2004; Škerlavaj et al., 2014). In other words, creativity can be seen as the development of new ideas, while innovation is the translation and application of these new ideas in practice (Mumford and Gustafson, 1988; West, 1990). In the present study we seek to increase our knowledge of what leads to creative behavior, as encouraging the creative behavior of employees is essential for continued growth in organizations (Simmons and Ren, 2009).

Among the factors identified as essential for promoting creative behavior in organizations, leadership is considered by many to be one of the most important (e.g., Hunter and Cushenbery, 2011; Jung et al., 2003; Mumford and Gustafson, 1988). Leaders are thought to influence creativity by facilitating original thinking and instantiating novel ideas (Anderson et al., 2014; Hunter and Cushenbery, 2011). Researchers have also started investigating the link between creativity and a relational concept of leadership, namely leader-member exchange (LMX), pointing to the importance of high-quality LMX relationships (e.g., Basu and Green, 1997; Scott and Bruce, 1994; Tierney et al., 1999; Volmer et al., 2012). For example, Basu and Green (1997) have demonstrated that LMX quality was positively related to employee innovative behaviors, both directly and indirectly, by increasing leader support of followers and follower commitment in organizations. Furthermore, LMX has been found to influence innovative workplace behavior indirectly, both through increased work engagement (Agarwal et al., 2012) and through increased psychological empowerment (Shermuly et al., 2013). However, by demonstrating heterogeneous findings (Hammond et al., 2011), these

studies point to the relevance of investigating potential third variables that can influence the association between LMX relationships and creativity.

In the present study we seek to increase our knowledge of the association between LMX and creative behavior by focusing on two distinct types of LMX (social and economic; Kuvaas et al., 2012). In addition, we include willingness to take risks (as mediating) and emotional carrying capacity (as moderator) as variables that can possibly influence the association. Willingness to take risks is defined as "a willingness to engage potential risks at work in an effort to produce positive organizationally relevant outcomes such that one is open to the possibility of negative personal outcomes as a result" (Dewett, 2006, p. 28-29). High-quality LMX relationships have been found to be associated with higher levels of risk-taking, compared to low-quality LMX relationships (Graen and Cashman, 1975; Liden and Graen, 1980), which is why willingness to take risks appears to hold potential to add explanatory power as a mediator in the LMX-creativity relationship. Emotional carrying capacity relates to connection or relationship quality, and refers to the relationship's capacity to express more emotion overall, both positive and negative emotions, and to do so in a constructive manner (Stephens et al., 2013). We propose that emotional carrying capacity positively affects the association between social and economic LMX relationships and willingness to take risks, as it contributes to creating a supportive environment where people dare to be themselves and are not afraid of making mistakes (Dutton and Heaphy, 2003; Carmeli et al., 2009), potentially helping LMX relationships to further enhance employees' willingness to take risks.

We draw on LMX theory (Graen and Uhl-Bien, 1995) and social exchange theory (Blau, 1964) that highlight people's tendency to reciprocate with the exchange partners from whom they receive support and benefits (Liden et al., 2003), and we intend to make three key contributions to the leadership and creativity literature. First, we propose that two distinct types of LMX relationships, social LMX and economic LMX, have different effects on employee creative behavior. Our second intended contribution is to introduce willingness to

take risks as a possible mediator in the associations between social and economic LMX on the one hand, and creative behavior on the other. Third, we extend the nomological net of the boundary conditions of LMX, and introduce emotional carrying capacity as a moderator in the association between social and economic LMX relationships, and willingness to take risks. In practice, our research should provide organizational knowledge on how to facilitate an environment where creative behavior can flourish.

2 THEORY AND HYPOTHESES

2. 1 Relational concept of leadership and its association with creativity

Many researchers investigating the impact of leaders on creativity explore the association between a relational concept of leadership and creativity (e.g., Schermuly et al., 2013; Volmer et al., 2012; Wang and Rode, 2010). In order to increase knowledge on the relationship between leadership and creativity, we draw on LMX theory, which addresses the dyadic interaction quality between leaders and employees (Graen and Uhl-Bien, 1995). Much LMX research relies on social exchange theory (Blau, 1964), which emphasizes reciprocation, referring to people's tendency to feel obligated to repay the exchange partners from whom they receive support and benefits (Liden et al., 2003).

Given the importance of employees' creative behavior, several researchers have examined whether it is possible to influence creative behavior through LMX relationships (Schermuly et al., 2013; Li et al., 2015). Among the studies employing LMX theory, a positive influence on creative behavior has been demonstrated (e.g., Basu and Green, 1997; Scott and Bruce, 1994). Furthermore, many studies point to the importance of high-quality LMX relationships in order to increase employee creative behavior (e.g., Basu and Green, 1997; Tierney et al., 1999; Volmer et al., 2012).

2.2 Social LMX and economic LMX

LMX relationships are traditionally believed to fall on a single continuum from low-quality to high-quality relationships. Low-quality exchange relationships involve short-term, economic, and transactional exchanges of behaviors. In such relationships, both leader and employee

expect direct reciprocity and adhere only to what is stipulated in the employment contract. In contrast, high-quality exchange relationships are relational and long-term, involving trust, generalized reciprocity, and exchanges of resources and support (Buch et al., 2014; Kuvaas et al., 2012; Liden and Graen, 1980; Sparrowe and Liden, 1997).

Based on pioneering work by Shore and colleagues (Shore, Tetrick, Lynch and Barksdale, 2006), who have emphasized the distinction between employees' social and economic exchange relationships with their organizations, Kuvaas and colleagues (2012) have offered an alternative to the traditional view on LMX relationships. In contrast to the dominant view of LMX relationships as a continuum from low to high quality, Kuvaas and colleagues (2012) have proposed that there are two forms of LMX relationships: Social LMX and economic LMX. They further argued that these two types of LMX relationships are exchanges of different qualities, as opposed to different levels of qualities, and therefore should not be assessed using a single-continuum approach. They further stressed that previous LMX research has only focused on investigating social exchange relationships in relation to employee outcomes, neglecting economic exchange relationships (Buch et al., 2014; Kuvaas et al., 2012).

Social LMX relationships are characterized by long-term orientation, ongoing exchanges, and diffuse obligations and have a focus on socio-emotional aspects of exchanges, such as "give and take" and "being taken care of." In such relationships exchange partners do not expect immediate payoff as they trust that the other partner will reciprocate (Blau, 1964; Cropanzano and Mitchell, 2005; Kuvaas et al., 2012; Shore et al., 2006). In contrast, economic LMX relationships are short-term, economic, formal, and transactional-based. These relationships have a contractual character based on clear obligations and expectations, are motivated by self-interest, and involve a demand for repayment within a particular time period (e.g. Buch et al., 2014; Kuvaas et al., 2012; Shore et al., 2006).

Research has revealed that social LMX and economic LMX relationships have different effects on employee outcomes. In a study investigating social LMX and economic LMX

relationships in relation to work performance and organizational citizenship behavior, Kuvaas and colleagues (2012) found that social LMX related positively, while economic LMX related negatively, to these employee outcomes. The reasoning behind these effects was that the positive qualities of social LMX relationships motivate employees to reciprocate the resources given to them by their leaders. Consequently, this may be positive for work performance and organizational citizenship behavior. In economic LMX relationships, by contrast, because of self-interest, employees are likely to withhold effort (Buch et al., 2014). These findings were later replicated by Buch and colleagues (2014), who investigated the two LMX relationships vis-à-vis work effort, which is an important part of work performance. Thus, several researchers argue for distinguishing between two types of LMX relationships.

2.3 Social and economic LMX and creative behavior

Studies have also demonstrated that there is a relationship between LMX and creativity. For example, Liao, Liu and Loi (2010) have found that LMX had unique and indirect effects on employee creativity via self-efficacy, and that these effects were moderated by LMX differentiation. An indirect effect was also identified by Volmer and colleagues (2012), revealing a positive association between LMX and creative work involvement that was moderated by job autonomy.

Research on LMX has further revealed that employees in high-quality LMX relationships get more work-related information, time, and emotional support from their supervisors as compared to employees in lower-quality relationships (Sparrowe and Liden, 1997). In addition, these employees are found to have more freedom and to be less restricted (Vecchio and Gobdel, 1984). More time and support from supervisors increase employee motivation to reciprocate their leader's positive contributions through increased effort and organizational commitment (DeConinck, 2011). Respectful engagement, which is characteristic for LMX relationships, also stimulates creativity (Carmeli et al., in press). In addition, freedom gives employees more opportunities to test and implement new ideas (Schermuly et al., 2013). According to Schermuly and colleagues (2013), such outcomes of

high-quality exchange relationships may lead to more creative and innovative behavior among employees.

Furthermore, high-quality relationships stemming from social LMX also relate to the process of generating ideas and the emotional and mental states that result from such relationships. Social LMX relationships can contribute to job satisfaction and overall positive mood among the employees (Fisk & Friesen, 2012). Such satisfaction at workplace that stems from high-quality relationships with supervisors has been shown to contribute to the development of a more open-minded cognitive state among the employees that is beneficial for creativity (Basadur, 2004). Furthermore, it can foster perceptions of competence and relatedness (Graves & Luciano, 2013), key psychological states for proactivity and creative behavior (Hennessey, 2000). On the other hand, when employees develop economic LMX relationships, the perceptions of long-term exchange and support in the dyadic association with their supervisors is missing. The transactional nature of these relationships results in lower levels of satisfaction and positive affect, indirectly reducing performance (Rowold & Rohmann, 2009). In turn, employees would be more likely to simply engage in quid-pro-quo exchanges where they would do exactly (and no more than) what they are required to do, but not proactively step outside of their established frames in order to proactively engage in creativity (Jung, 2001).

Based on these research findings, we suggest that there is an association between two distinct types of LMX relationships and creativity. A social LMX relationship is very similar to traditional conceptualizations of high-quality LMX relationships and might therefore affect employee outcomes in similar ways as LMX, adding to studies reporting positive associations between LMX and creativity (e.g., Liao et al., 2010). An economic LMX relationship is, by contrast, not similar to high-quality LMX relationships. As only social LMX relationships are demonstrated to create employee motivation to reciprocate the resources given to them by their leaders, social LMX relates positively while economic LMX relates negatively to employee outcomes (Buch et al., 2014; Kuvaas et al., 2012). Accordingly, it is reasonable to

believe that social LMX relationships will increase employee motivation to reciprocate by engaging in more creative behavior, while economic LMX relationships will not. Since leaders are perceived as agents of the organization who are focused on creativity and its translation into innovation, Schermuly and colleagues (2013) have argued that employees will respond to high-quality relationships with high levels of innovative workplace behaviors. Thus:

Hypothesis 1. Social LMX relationships are positively related to employee creative behavior.

Hypothesis 2. Economic LMX relationships are negatively related to employee creative behavior.

2.4 The importance of risk for creative behavior

Scholars have noted that risk is associated with creative behavior, as creative behavior often requires an employee to be willing to make risky decisions (Dewett, 2006; Jung et al., 2003). Risk can be defined as "the extent to which there is uncertainty about whether potentially significant and/or disappointing outcomes of decisions will be realized" (Sitkin and Pablo, 1992, p. 10). Being creative and producing novel work often entails challenging the status quo (Simmons and Ren, 2009). Creative thinking therefore involves changing the way things are typically done (Hunter and Cushenbery, 2011). Accordingly, tolerance of uncertainty and ambiguity is a part of the creative process (Isaksen and Ekvall, 2010). Furthermore, being creative often entails many failed attempts before succeeding (Hunter and Cushenbery, 2011). Hence, employees who engage in creative work may face uncertainty with regard to the actual production of creative work as well as the rewards that they may or may not obtain for it (Simmons and Ren, 2009).

Dewett (2006) has developed and tested the situational variable labelled willingness to take risks. Specifically, the construct is defined to address situations where willingness to take risks is intended to be productive within an organizational environment. Thus, the focus of this construct is not to capture all types of risk-taking at work, such as willingness to

engage in nonproductive risky behaviors (e.g., lying and embezzlement). Furthermore, willingness to take risks is a state (not a trait), it is context specific (not a general tendency), and includes specific considerations for the possibility of potential negative outcomes (Dewett, 2006).

Several scholars have noted the conceptual role of willingness to take risks promoting creativity (e.g., Amabile, 1983; Dewett, 2006). Dewett (2006) has conducted a field study to explore this relationship, and the results showed that willingness to take risks was positively and significantly related to employee creativity. The findings provided further preliminary support for the assertion that employees view creative behavior as inherently risky, and that their willingness to engage this risk is related to their creativity as judged by their immediate supervisors. Support for the positive relationship between risk-taking and creativity was also demonstrated in a study investigating whether a person's goal orientation enhances or diminishes the relationship between risk and creative performance (Simmons and Ren, 2009).

According to Dewett (2006), a focus on risk in creative performance is well justified. However, not much research has addressed the role of risk in association with creativity and the employee's willingness to engage that risk.

2.5 Relational leadership, willingness to take risks, and creative behavior

In addition to being related to employee creative behavior, the LMX relationship is suggested to be one of several contextual factors that can influence willingness to take risks. For example, employees in high-quality LMX relationships have been found to engage in more job-related risk-taking as compared to employees in low-quality LMX relationships (Graen and Cashman, 1975, as cited in Tierney et al., 1999). Furthermore, Liden and Graen (1980) have found that employees in high-quality LMX relationships seemed to engage in more challenging and relevant tasks as compared to employees in low-quality LMX relationships.

In relation to the different outcomes of social LMX and economic LMX as well as antecedents of risk-taking, Neves and Eisenberger (2014) have published a study investigating perceived organizational support and employee risk-taking. According to the researchers,

employees who receive valuable resources from their organizations will experience higher degrees of POS. This will, based on the reciprocity norm (Gouldner, 1960), create the desire in employees to repay by contributing to achieving the goals of the organization (Neves and Eisenberger, 2014).

Neves and Eisenberger (2014) have further argued that higher degrees of POS, which entails the belief that the organization is concerned with employee well-being and that it values employee contributions, would increase the chances of employees engaging in risk-taking. The reasoning behind this was that high degrees of POS would lead to more failure-related trust, which would increase the chances that employees would feel safe enough to put themselves in vulnerable positions and hence to engage in risk-taking. Failure-related trust relates to an expectation that employee's willingness to help the organization will be taken into account in cases of mistakes being made (Neves and Eisenberger, 2014). Thus, with increased POS and, consequently, failure-related trust, employees can engage in risk that might benefit the organization without being afraid of possible negative consequences.

The study by Neves and Eisenberger (2014) provided evidence for the importance of POS in employee willingness to take risks. Just as the positive characteristics of POS are important for willingness to take risks, so may the similar positive characteristics of social LMX be related to willingness to take risks. As emphasized earlier, high-quality LMX relationships are also suggested to be influential in relation to willingness to take risks (Graen and Cashman, as cited in Tierney et al., 1999), and social LMX relationships are noted to have similarities with high-quality LMX relationships. Furthermore, as being creative often entails many failed attempts before succeeding (Hunter and Cushenbery, 2011), the long-term aspect of the social LMX relationships, which involves trust and the decreased need for immediate payoff (Kuvaas et al., 2012; Shore et al., 2006), may further increase employee willingness to take risks.

Conversely, economic LMX relationships with economic, formal, and transactional-based characteristics are expected to be negatively related to willingness to take risks. As

economic LMX relationships do not have characteristics similar to perceived organizational support and social LMX, these relationships are not likely to create failure-related trust. Furthermore, with its emphasis on clear obligations and expectations and the demand for repayment within a particular time period (Kuvaas et al., 2012; Shore et al., 2006), it is reasonable to expect that economic LMX relationships will not increase employee willingness to take risks. Based on this reasoning, we derive the following hypotheses:

Hypothesis 3. Social LMX relationships characterized by trust, support, long-term orientation, and socio-emotional aspects of exchanges are positively related to employees' willingness to take risks.

Hypothesis 4. Economic LMX relationships with short-term, economic, formal, and contractual-based characteristics are negatively related to employees' willingness to take risks.

As willingness to take risks was previously found to be positively related to employee creativity (Dewett, 2006), this study will also replicate this finding in order to provide further evidence for willingness to take risks as an important antecedent for creative behavior:

Hypothesis 5. Willingness to take risks is positively related to employees' creative behavior.

2.6 Moderating role of emotional carrying capacity

Focusing on the quality of connection between employees is essential for understanding individual and organizational behavior and critical in order to understand why and how people thrive at work (Dutton and Heaphy, 2003). Researchers focusing on LMX relationships use a broad array of definitions to describe the quality of these connections (Schriesheim et al., 1999). However, Dutton and Heaphy (2003) have defined the quality of the connection in terms of whether the connective tissue between individuals is life-giving or life-depleting. A high-quality connection between two people is described as flexible, strong, and resilient. In contrast, in a low-quality connection, people communicate and interact, but the connective tissue between them is damaged (Dutton and Heaphy, 2003). A low-quality connection can be

both emotionally and physiologically damaging for individuals in organizations (Williams and Dutton, 1999).

Dutton and Heaphy (2003) have identified three characteristics of connections that are defined as high quality. First, high quality connections have a higher emotional carrying capacity. Greater emotional carrying capacity within a connection is evidenced by both the expression of more emotion and the expression of both positive and negative emotions. Furthermore, these emotions are expressed in a constructive manner (Stephens et al., 2013), and the connections therefore have the capacity to tolerate emotions of varying kinds. Second, high quality connections are characterized by tensility, which is related to its capacity to withstand strain, to function in a variety of circumstances, and to bounce back after setbacks. The degree of connectivity is the third characteristic of the connection and is a measure of a relationship's openness to new ideas and influences as well as its ability to divert behaviors that will shut down generative processes (Dutton and Heaphy, 2003). Teams with a high degree of connectivity have been shown to display an atmosphere of buoyancy, creating possibilities for creativity (Losada, 1999).

In a study from 2009, Carmeli and colleagues investigated how the quality of work relationships promotes learning behaviors such as actively searching for new information and testing assumptions. Carmeli and colleagues (2009) argued that organizational learning is dependent upon interactions among organizational members, and that psychological safety, which can be established in interpersonal relationships, is an important enabler of learning behavior. Psychological safety entails that people are comfortable being themselves (Edmondson, 1999) and show personal engagement without being afraid that this may lead to negative consequences for their self-image, status, or career.

Carmeli and colleagues (2009) have further argued that the dimensions of high-quality relationships are important for psychological safety and learning behaviors. Specifically, in relationships characterized by high emotional carrying capacity, people see that both positive and negative emotions can be expressed without leading to interpersonal consequences such

as feeling embarrassed. In this way, relationships with high emotional carrying capacity can create psychological safety. The results of the study confirmed that positive relationships at work contribute to perceptions of both psychological safety and learning behaviors in organizations (Carmeli et al., 2009).

It has become evident that emotional carrying capacity contributes to psychological safety in relationships. Thus, emotional carrying capacity in work relationships is an important factor for creating an environment where people dare to be themselves and show personal engagement. It is therefore reasonable to believe that emotional carrying capacity will have a positive effect on employee willingness to take risks as risk-taking is dependent upon a supportive environment. In a supportive environment, employees are not afraid of making mistakes, which is a necessary and likely consequence of creative effort (Dewett, 2006). Hence, emotional carrying capacity contributes to psychological safety, which is necessary for willingness to take risks. Furthermore, willingness to take risks has been established as an important antecedent of creative behavior. Based on this reasoning, emotional carrying capacity is included as a moderator in the hypothesized association between social LMX relationships and willingness to take risks as well as between economic LMX relationships and willingness to take risks.

Hypothesis 6. Emotional carrying capacity moderates the association between social LMX and willingness to take risks: The higher the emotional carrying capacity, the more positive the association between social LMX and employee's willingness to take risks.

Hypothesis 7. Emotional carrying capacity moderates the association between economic LMX and willingness to take risks: With high emotional carrying capacity, a positive association emerges between economic LMX and employee's willingness to take risks.

Below, our conceptual framework is presented (Figure 1).

Insert Figure 1 about here

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3 METHODS

3.1 Sample

During Spring of 2015, we distributed two web-based questionnaires to employees in five different companies or institutions located in Norway. Our research data was collected and stored using the Qualtrics Survey Database, and the employees were invited to complete the questionnaires online. The five companies/institutions are recognized as innovative and represent both the public and the private sectors (lottery, sports and instant gaming; government; retail; telecommunications; media). Before distributing the questionnaires, all employees received an e-mail informing them about the objectives of the study, the confidentiality of participation, and the requirements for participation. The population of employees in those companies/institutions is characterized by the majority of the respondents on permanent contracts, and more men in comparison with women (ranging from 37% to 23%). Their average age ranges from 40 to 46 years, and average organizational tenure from 7 to 12 years.

We sent the first questionnaire to 305 employees, all of whom met the criterion of being employed in a position that requires a certain degree of creativity. In this first round, the questionnaire included measures of economic LMX, social LMX, and willingness to take risks. In total, 174 employees responded to the first round of questionnaires. After a period of two weeks, we distributed the second questionnaire to the employees who had responded to the first one. In this second round, the questionnaire included measures of emotional carrying capacity and creative behavior. In total, 147 employees responded to both questionnaires, making up a total response rate of 48%.

3.2 Measures

The two self-report questionnaires were sent out at two different points in time in order to reduce common method bias (Podsakoff et al., 2013). Temporal separation can have beneficial effects, as formerly recalled information and details disappear from short-term memory.

As we collected data from companies or institutions that have both English and Norwegian as their formal working languages, we translated the questionnaires from English to Norwegian and distributed them in both languages. The respondents could choose the language of the survey they felt more comfortable responding in. For the questionnaire in Norwegian, we followed the back-translation procedure (Brislin, 1986); the questionnaires were translated from the source (English) to the target language (Norwegian) and then back to the source language by two different bilingual translators. We then compared the back-translated version with the original version, resulting in a couple of small adjustments to the Norwegian questionnaire. Measurement items for the constructs included in the study come from established scales that meet the criteria of validity and reliability. All items used a 7-point Likert-type scale anchored at 1 ("strongly disagree") to 7 ("strongly agree"), or at 1 ("extremely uncharacteristic") to 7 ("extremely characteristic").

Dependent variable. We based the assessment of creative behavior on a 13-item scale developed by Zhou and George (2001) and adapted for self-reporting. Example items include "I suggest new ways to achieve goals or objectives."

Independent variables. We measured social LMX and economic LMX by employing an instrument based on a 16-item scale developed by Shore and colleagues (2006). This instrument has been adjusted and trimmed down by Kuvaas and colleagues (2012) in order to measure leader-member relationships instead of organization-member relationships. This resulted in four items measuring social LMX and four items measuring economic LMX. Similar to Buch and colleagues (2014), we replaced "store manager" with "immediate supervisor" in all the items. Examples of sample items include "My relationship with my immediate supervisor is based on mutual trust" (social LMX) and "I do what my immediate supervisor demands of me, mainly because he or she is my formal boss" (economic LMX) (Buch et al., 2014).

Mediation variable. We assessed willingness to take risks by using an 8-item measurement tool developed by Dewett (2006). Example items include "I will take informed risks at work in order to get the best results, even though my efforts may fail."

Moderation variable. We based the assessment of emotional carrying capacity on a scale developed by Carmeli and Gittell (2009), which was originally created in order to measure high-quality relationships. The scale has been adapted by Carmeli and colleagues (2009) and contains five items. Example items include "I am able to express my frustrations without offending anyone."

Control variables. We included two control variables in our study in order to help us rule out alternative explanations for the observed findings. The participants in our study work in innovative companies/institutions. However, not all positions require the same amount of creative behavior and output. Furthermore, research has shown that if employees perceive that creativity is an important component of the job, this can lead to more active engagement in creative processes (Shalley et al., 2000). We have therefore controlled for creative job requirements by collecting information about the creativity required at jobs with the help of an HR-manager in each company or institution. The degree of creativity required in the different positions was rated on a scale ranging from 1 ("not creative at all") to 7 ("very creative").

3.3 Analyses

We first applied confirmatory factor analysis (CFA) procedures to test the factor structure in our data. The expected five-factor solution of our focal variables (emotional carrying capacity, economic LMX, social LMX, willingness to take risks, and creative behavior) without any residuals being allowed to correlate displayed adequate fit with the data (Chi-square [289] = 488.830, CFI = .88, RMSEA = .07, SRMR = .07). Factor loadings ranged from .62 to .80 for the emotional carrying capacity items, from .51 to .86 for the economic LMX items, from .27 to .87 for the social LMX items, from .32 to .71 for the willingness to take risks items, and from .76 to .87 for the creative behavior items.

We tested the hypotheses using IBM SPSS Statistics v. 22. We conducted two hierarchical moderated regressions to test the hypotheses, with creative behavior and willingness to take risks as outcome variables, one for each regression. Before conducting the analysis, we computed the interaction term by centering the independent variables and the moderator before multiplying them with each other. We did this in order to facilitate interpretability and reduce multicollinearity problems (Aiken and West, 1991), which interaction terms often create due to their correlations with main effects (Kuvaas et al., 2013).

The hierarchical regression analysis with creative behavior as the outcome variable consisted of four steps, which we performed in two rounds, one for each independent variable. In step one we entered the control variable (creative job requirements), followed by the independent variable (economic LMX and social LMX) in step two. The mediation variable (willingness to take risks) was entered in step three. Finally, we entered the interaction term of the independent variable and the moderator (emotional carrying capacity) in step four.

The hierarchical regression analysis with willingness to take risks as the outcome variable consisted of three steps, which we performed in two rounds, one for each independent variable. In step one we entered the control variable, followed by the independent variable in step two. Lastly, the interaction term of the independent variable and the moderator was entered in step three.

In order to test the whole moderated-mediation model and confirm the findings from the regression analyses, we applied Hayes' PROCESS macro (Model 7). We performed the analysis in two rounds, one for each independent variable.

4 RESULTS

Means, standard deviations, correlations and coefficient alphas for the study variables are presented in Table 1.

Insert Table 1 about here

The results of the hierarchical regression analyses are presented in Tables 2-5.

Insert Tables 2-5 about here

Step two of the hierarchical regression analysis with creative behavior as the outcome variable revealed no significant relationship between the predictor variables, social LMX and economic LMX, and creative behavior. Thus, hypotheses 1 and 2 were not supported. In step three, willingness to take risks was found to be significantly positively related to the dependent variable creative behavior ($\beta = .39$, $p < .01$). This supports hypothesis 5, which is in accordance with the preliminary finding that willingness to take risks is an important antecedent for creative behavior.

Step two of the hierarchical regression analysis with WTR as the outcome variable revealed no significant relationship between the predictor variables, social LMX and economic LMX, and willingness to take risks. Thus, hypotheses 3 and 4 were not supported. Further, step three revealed that there was no significant relationship between economic LMX and the outcome variable when including emotional carrying capacity as a moderator. Hypothesis 7 was therefore not supported. However, the moderator was found to affect the relationship between social LMX and willingness to take risks significantly and positively ($\beta = .17$, $p < .05$), supporting hypothesis 6 and demonstrating the importance of this moderator for a significant relationship to occur.

The results from PROCESS macro confirmed most of the observed findings from the regression analyses. Specifically, no direct effect was found between economic LMX and creative behavior (hypothesis 2), nor between the predictor variables and willingness to take risks (hypotheses 3 and 4). Furthermore, emotional carrying capacity did not affect the relationship between economic LMX and willingness to take risks; we could thus not find support for hypothesis 7 (Figure 3).

The PROCESS macro did, however, identify a marginally significant effect ($b = .159$, $t = 1.934$, $p < .06$) between social LMX and creative behavior. Furthermore, the analysis confirmed the moderating effect of emotional carrying capacity on the relationship between

social LMX and willingness to take risks (b = .045, t = 2.067, p < .05), supporting hypothesis 6. We plot this moderation in Figure 4, where it is evident that for high levels of emotional carrying capacity, the relationship between social LMX and willingness to take risks is more positive (simple slope analysis: gradient = 1.00, t-value = 2.34, $p < .05$). In addition, we found that willingness to take risks was significantly positively related to creative behavior in the social LMX model (b = .297, t = 5.267, p < .001), as well as in the economic LMX model (b = .298, t = 5.198, p < .001). Thus, hypothesis 5 was supported (Figures 2 and 3).

Insert Figures 2, 3 and 4 about here

Additionally, we applied the PROCESS macro to explore the whole model using economic LMX and social LMX individually as predictor variables. In line with our previous findings, we found no mediation effect by willingness to take risks in the models. However, when both social LMX and emotional carrying capacity were included, we observed a moderated mediation effect (CI = .000, .028). This supports hypothesis 6, showing that both social LMX and emotional carrying capacity are needed for willingness to take risks to occur.

5 DISCUSSION

In the present study we set out to extend the line of research on LMX and creative behavior by including two different types of LMX relationships and by examining the association between these two types of relationships and employee creative behaviors in more detail. Our results provide evidence, but could not support hypothesis 1, instead revealing only a marginally positive association between social LMX and creative behavior. This association was strengthened when mediated by willingness to take risks and moderated by emotional carrying capacity, resulting in a significant relationship. No significant direct association between social LMX and willingness to take risks was detected, disproving hypothesis 3. However, when emotional carrying capacity was included as a moderator, a significant

positive association between social LMX and willingness to take risks emerged, supporting hypothesis 6.

Our study also demonstrates the lack of associations between economic LMX and the other measured variables, thus disproving hypotheses 2, 4, and 7. In support of hypothesis 5, we replicated the positive association between willingness to take risks and employee creative behavior. Taken together, our findings stress the importance of willingness to take risks as an antecedent for creative behavior, and they demonstrate the need for both social LMX and emotional carrying capacity to be present in order for willingness to take risks to occur.

5.1 Theoretical contributions

Firstly, our findings contribute to the leadership and creativity literature by shedding additional light on the previously found link between LMX relationships and creative behavior. We found that LMX relationships are positively (although it needs to be emphasized that this relationship is only marginally significant) associated with employee creative behavior when this relationship is characterized as social, which means that it is long-term with an emphasis on social-emotional aspects of exchange, similar to traditional conceptualizations of high-quality LMX relationships. Furthermore, our research complements previous research that points to the relevance of third variables affecting this relationship (e.g., Liao et al., 2010; Schermuly et al., 2013; Volmer et al., 2012) that has thus far resulted in mixed findings. We found the basic relationship between LMX and creativity to be strengthened by employee relationships with a high degree of emotional carrying capacity as well as by employee willingness to take risks, adding to the known moderators of autonomy (Volmer et al., 2012), psychological empowerment (Schermuly et al., 2013) and self-efficacy (Liao et al., 2010).

Our findings also add to the extant literature that has previously examined linkages of creative behavior with other concepts that look at social, long-term nature of relationships versus economic, short-term ones. For example, research on psychological contract (e.g. Gong et al., 2012) or psychological safety (e.g. Aggarwal & Bharawa, 2009) has

demonstrated positive associations with creativity. The unique contribution to the creativity literature is related to investigating the role of social and economic LMX. In this sense, our research is complementary to the one of psychological contract (examining employees' beliefs about reciprocal obligations between them and their organization; Rousseau, 1989) or psychological safety (a belief that an individual is safe for interpersonal risk-taking; Edmondson, 1999) in that we narrowed in on leaders as specific targets of those short vs. long-term relationships. Our findings support the positive role of social long-term relations in the form of social LMX relationships, and further confirm the benefit of fostering such high-quality relations in organizations.

Secondly, our study complements the aforementioned previous research findings (e.g., Amabile, 1983; Dewett, 2006) by demonstrating that willingness to take risks is positively significantly related to creative behavior. Furthermore, high-quality LMX relationships have been demonstrated to be a contextual factor influencing willingness to take risks. For example, employees in such relationships are found to engage in more job-related risk-taking (Graen and Cashman, 1975, as cited in Tierney et al., 1999). Studies have also found that when employees feel supported and valued by their organization, it increases the chances that they will engage in risk (Neves and Eisenberger, 2014). However, contrary to predictions, we did not discover an association between social LMX relationships and willingness to take risks.

Speaking to this finding, our study answers calls to explore possible third variables by introducing emotional carrying capacity as a moderator. Relationships with high degrees of emotional carrying capacity are characterized by psychological safety (Carmeli et al., 2009), which we argued creates good conditions for risk-taking because individuals experience their surroundings as safe (e.g. Dewett, 2006; Edmondson, 1999; Neves and Eisenberger, 2014; Scott and Bruce, 1994). Our study demonstrates that neither social LMX relationships nor emotional carrying capacity is directly related to willingness to take risks. However, an interaction effect of social LMX relationships and emotional carrying capacity on willingness

to take risks was identified. This implies that a positive relationship between social LMX relationships and willingness to take risks is moderated by emotional carrying capacity. This finding is in line with the notion that LMX relationships may be contingent upon other relationships and factors in the work-unit as employees do not work alone with their supervisors but are also exposed to other environmental factors (Pan et al., 2012).

Thirdly, our research reveals a moderated mediation effect in the research model as a whole. This further signifies the need for an interaction between social LMX relationships and emotional carrying capacity in order for willingness to take risks to occur. Additionally, when this interaction is present, willingness to take risks mediates the relationship between social LMX and creative behavior, resulting in a positively significant relationship between the two. High emotional carrying capacity is thus essential. This is in line with several studies that have suggested that social relationships at work are important and highly relevant when it comes to understanding behavior in the workplace (Cropanzano and Mitchell, 2005); they influence experiences, attitudes, and behaviors (Grant and Parker, 2009) and are needed to accomplish much of the work in organizations (Dutton and Heaphy, 2003). As risk involves uncertainty regarding the outcome of decisions (Simmons and Ren, 2009; Sitkin and Pablo, 1992), our study suggests that it is the joint combination of qualities of social LMX relationships and high emotional carrying capacity in relationships that encourage employees to take risks.

Thus, an important contribution of our study is the preliminary finding that safety and trust in relationships with both supervisors and colleagues seems necessary for willingness to take risks, and hence creative behavior, to take place. We further suggest that this assertion is supported by the fact that we did not detect any significant association between economic LMX relationships and the other measured variables in our study. Even when emotional carrying capacity was included as a moderator in the association between economic LMX relationships and willingness to take risks, the interaction between these variables did not create a significant association. Hence, in itself, emotional carrying capacity in relationships is

not sufficient for creating the kind of safe environment that seems to be needed to encourage employee willingness to take risks. This finding, we suggest LMX relationships are needed for willingness to take risks, and hence creative behavior, to occur. As research findings consistently show that the work environment plays an essential role in promoting creativity (e.g., Amabile et al., 1996; Oldham and Cummings, 1996), our findings support this line of research by indicating that creating an environment where employees experience trust and psychological safety leads to creative behavior. Hence, our study stresses the interplay between social LMX relationships and emotional carrying capacity, and it thereby accentuates the need for a more nuanced understanding of how creative behaviors in organizations arise.

5.2 Practical implications

Our research offers important practical implications for organizations and organizational leaders. First of all, our research confirms the preliminary finding of willingness to take risks as an important antecedent for creative behavior. We suggest focusing on developing an environment characterized by support (Edmondson, 1999). As a high risk-taking climate is characterized by making decisions without having all the necessary information available and hence being uncertain about the decision (Isaksen and Ekvall, 2010), context support can reduce this uncertainty because it involves providing access to information and resources (Edmondson, 1999). Furthermore, context support can also contribute to an environment in which employees are willing to take risks because it leads to the belief that well-intentioned risk will not be punished (Edmondson, 1999). We suggest that in order for employees to feel safe enough to engage in risk-taking behaviors, leaders will find it advantageous to focus on developing long-term and trusting exchange relationships with their employees. For example, leaders can develop these social exchange relationships by making it clear that they are not expecting immediate payoff from their exchanges, and by trying to engage in ongoing exchanges with their employees.

We propose that training programs can highlight ways to develop social LMX relationships, as research has recommended that leadership-training programs should teach

leaders how to improve the quality of their relationships with employees (Basu and Green, 1997; Schermuly et al., 2013). It has, for example, been suggested that leaders should learn how to identify the needs and the development potential of their employees in order to improve the quality of their exchange relationships (Schermuly et al., 2013). Accordingly, we suggest that such training can be beneficial for developing these relationships as investment in employees demonstrates that the leaders are interested in long-term exchange relationships.

Our research also demonstrates that organizations should facilitate the development of relationships with a high degree of emotional carrying capacity as this can provide the psychological safety that is needed for employee willingness to take risks. We therefore suggest that leaders should be supportive and coaching-oriented as this leads to employees experiencing the work environment as safe and hence encourages them to be more willing to engage in risk-taking (Edmondson, 1999).

5.3 Limitations and future research

Our contributions should be considered in light of several limitations. First, our exclusive use of subjective measures in the study is an important limitation. Relying solely on self-report questionnaires may also lead to common method bias due to the fact that the same person provides the measure of both the predictor and criterion variable (Podsakoff et al., 2013). Although this issue was partly addressed by including a temporal separation of two weeks when distributing the questionnaires, it is important to state that common method bias possibly could have disrupted the validity of the conclusions made about the relationships between measures (Podsakoff et al., 2013).

One way of controlling for common method bias is by collecting the measures of variables from different sources. Initially, we planned on measuring creative behavior by collecting supervisor ratings in addition to employee self-ratings in order to reduce bias. However, some supervisors conceded that they were not working closely with their employees and therefore experienced difficulties providing an accurate rating of their employees' creative behaviors. In addition to the feedback regarding the lack of interaction,

we also received feedback from supervisors who did not feel comfortable rating their employees' creative behavior. The use of only subjective measures of creative behavior can limit the generalizability and external validity of our findings (Jung et al., 2003). However, meta-analytic evidence revealed that while self-reported ratings of creativity generally exhibited larger effect sizes than other methods of reporting, the relationships were generally found to be similar (Ng and Fledma, 2012). Furthermore, performance ratings by supervisors were found to be more biased than self-report measures (Murphy, 2008), and team leaders can have some response bias because it is more advantageous for them to rate their teams as creative (Gilson and Shalley, 2004). Accordingly, it is possible that the use of supervisor ratings would not have generated better data. Despite these shortcomings, future research is advised to aim at employing multiple measures of creative behavior.

Although control variables were included in the study, we cannot rule out the possibility of alternative explanations for the observed relationships (Kuvaas et al., 2012). Firstly, research has identified that several demographic variables, such as age and education, have the potential to influence employees' innovative behavior and performance (Jung et al., 2003). Furthermore, although shown to be minimal and dependent upon educational level, gender differences in creative thinking have been identified (Matud et al., 2007). In other words, it could have been beneficial to control for these variables in our study, and future research on creative behavior is advised to include additional control variables. In addition, our findings should be interpreted with caution, as some of the results and subsequent implications are based merely on marginally significant findings (in particular, the relationship between social LMX and creative behavior). To add to this, the alpha for social LMX was rather low (.59), which does add to concerns related to reliability and validity. Nevertheless, the confirmatory factor analysis results for the model containing our focal constructs are at sufficient levels, which is why we believe this finding is not that problematic. In any case, future research is warranted that would conduct replication studies in different settings and on larger sample sizes in order to provide more definite support for our findings.

Finally, our use of innovative companies/institutions within different fields and sectors can be considered a limitation. Although collecting data from several organizations can enhance the external validity and generalizability of our results, significant differences have been found to exist across professional fields. These include differences in the workforce (Feist, 1999) and the kinds of innovations the organizations are seeking (Damanpour, 1991), as well as the requirements for innovation. Therefore, unobserved differences between the organizations in the study could potentially have confounded our results.

An interesting avenue for future research is to continue the investigation of how social relationships at work affect creative behavior. Furthermore, despite the fact that willingness to take risks is identified as an important antecedent for creative behavior, not much research has been conducted in this field (Dewett, 2006). We therefore encourage future research to address this relationship more closely. Lastly, it has been demonstrated that employees and supervisors have different perceptions of their exchange relationships (Maslyn and Uhl-Bien, 2001). Therefore, it would be interesting for future research to investigate the social and economic LMX relationships measured from both employee and supervisor perspectives, as well as to follow a recent line of research in the LMX literature and differentiate between the effects and manifestations of LMX at different levels of analysis (cf., Cobb and Lau, 2015; Li et al., 2015).

6 Conclusion

Our study highlights that interactions between various factors should be considered in order to boost creative behavior in organizations. There is no single thing leaders can do to encourage creativity; facilitating for creativity depends on understanding factors, dynamics, and processes that precede creative and innovative outcomes (Hunter and Cushenbery, 2011). Our findings demonstrate that willingness to take risks should be acknowledged as an important antecedent for creative behavior and that the interaction between social LMX relationships and emotional carrying capacity is essential for willingness to take risks to occur. Hence, our study provides preliminary evidence for the importance of developing trusting and long-term

LMX relationships as well as facilitating an environment where employees can develop a sense of psychological safety in their relationships at work. By focusing on creating an environment where safe, trusting, and long-term relationships can develop, risk-taking, creativity, and innovation can flourish.

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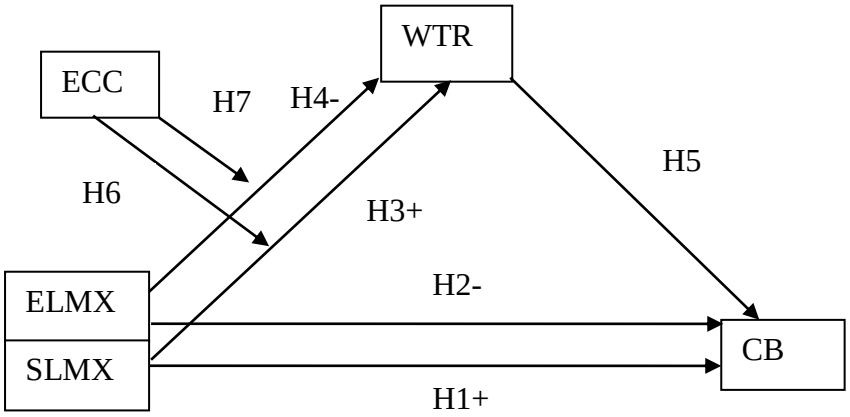
Figure 1. Conceptual model with hypotheses



SLMX = social leader-member exchange

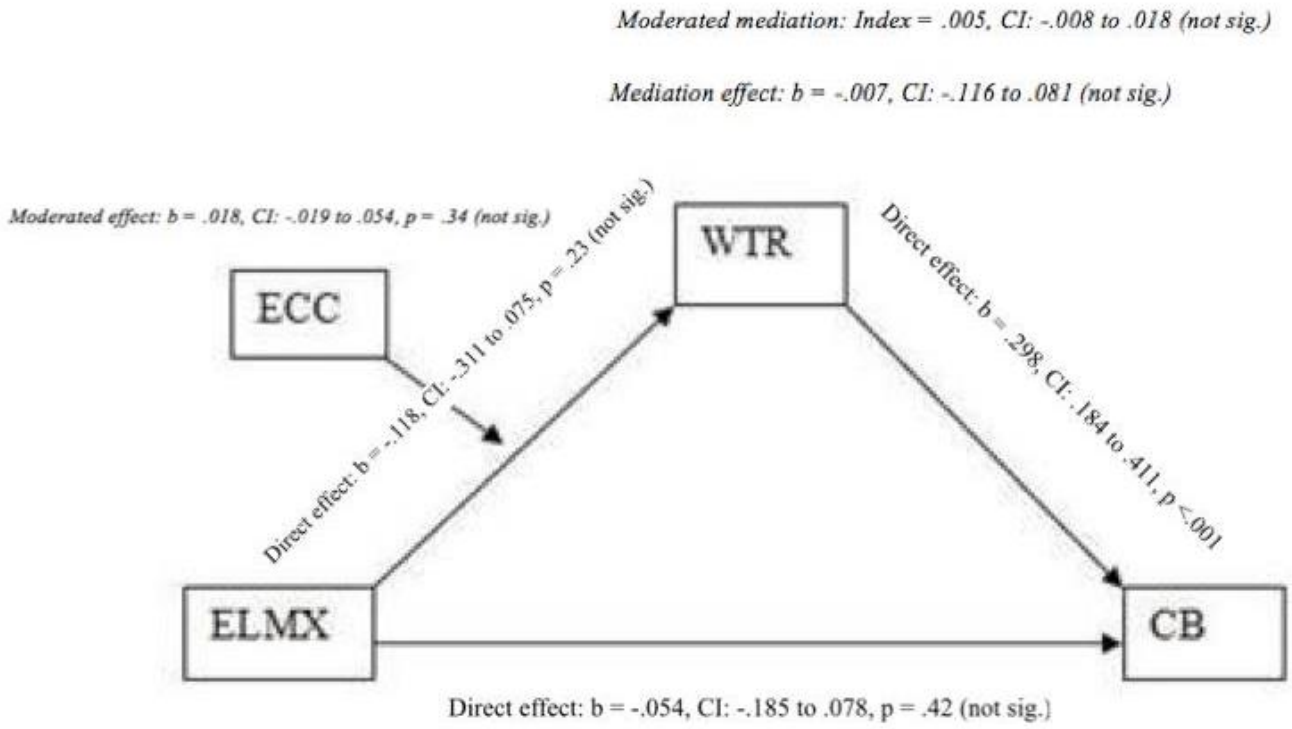
ELMX = economic leader-member exchange

ECC = emotional carrying capacity

WTR = willingness to take risks

CB = creative behavior

Figure 2. The model with results concerning ELMX and creative behavior



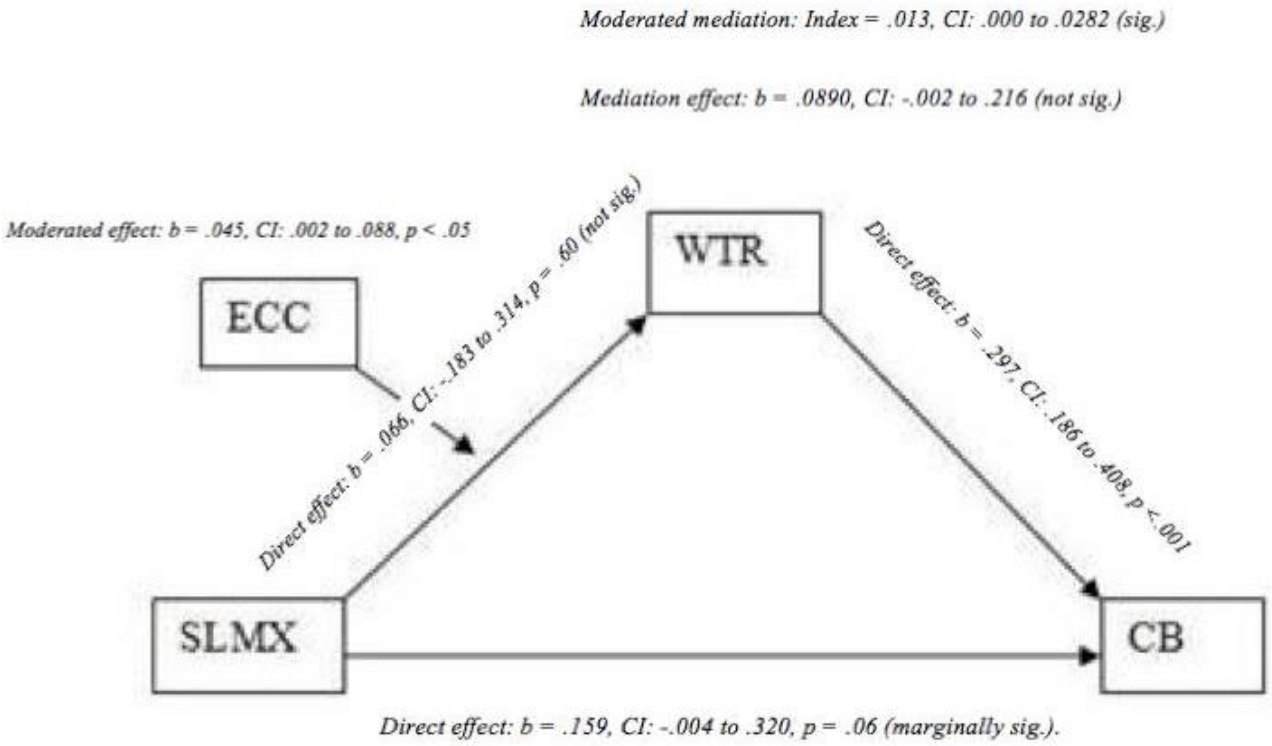
SLMX = social leader-member exchange

ECC = emotional carrying capacity

WTR = willingness to take risks

CB = creative behavior

Figure 3. The model with results concerning social LMX and creative behavior



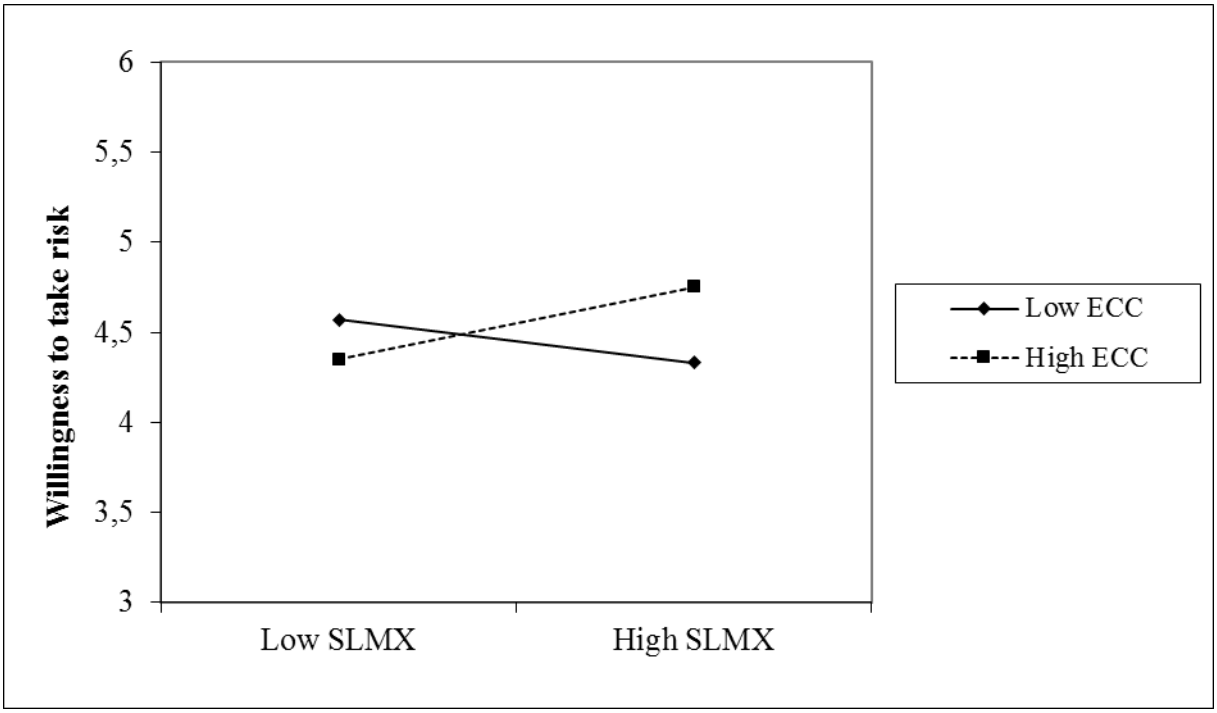
SLMX = social leader-member exchange

ECC = emotional carrying capacity

WTR = willingness to take risks

CB = creative behavior

Figure 4. The moderating role of emotional carrying capacity in the relationship between social LMX and willingness to take risk



SLMX = social leader-member exchange

ECC = emotional carrying capacity

Table 1. *Descriptive statistics*

Variables	Mean	SD	1	2	3	4	5	6
1. Creative job requirements	5.80	.889	-					
2. Creative Behavior	5.23	.880	.064	(.92)				
3. Economic leader-member exchange	3.04	1.265	.085	-.105	(.77)			
4. Social leader-member exchange	5.21	1.012	-.001	.166*	-.146*	(.59)		
5. Willingness to take risks	4.69	.840	.106	.404**	-.110	.052	(.85)	
6. Emotional carrying	4.59	1.045	-.186*	.238**	-.163*	.303**	.035	(.84)

N=147; Coefficient alphas are displayed on the diagonal in parentheses. ** $p<.01$. * $p<.05$.

Table 2. *Regression analyses predicting creative behavior*

	Step 1				**Step 2**				**Step 3**				**Step 4**			
Variables	b	s.e.	β	t	b	s.e.	β	t	b	s.e.	β	t	b	s.e.	β	t
CJR	.06	.08	.06	.78	.06	.08	.06	.78	.06	.08	.06	.78	.02	.08	.02	.32
SLMX					.15	.07	**.17**	1.98†	.13	.07	.15	1.93	.13	.07	**.**15	1.95
WTR									.41	.08	**.39**	5.18**	.40	.08	.39	4.99**
SLMX x ECC													.04	.06	**.05**	.55
R^2		.01				.03				.19				.19		
ΔR^2						.02				.18				.18		
F		.60				2.37				10.84**				8.20**		

N=147; **Bold values indicate hypothesized relationships.** In all tables, CJR=Creative Job Requirements; SLMX=Social Leader-Member Exchange; WTR=Willingness to Take Risks; ECC=Emotional Carrying Capacity. $^{\dagger}p < .10$, $^{*}p<.05$, $^{**}p<.01$

Table 3. *Regression analyses predicting creative behavior*

	Step 1				**Step 2**				**Step 3**				**Step 4**			
Variables	b	s.e.	β	t	b	s.e.	β	t	b	s.e.	β	t	b	s.e.	β	t
CJR	.06	.08	.06	.78	.07	.08	.07	.89	.03	.08	.03	.37	.03	.08	.03	.36
ELMX					-.08	.06	**-.11**	-1.35	-.05	.05	-.07	-.84	-.05	.05	-.07	-.89
WTR									.41	.08	**.39**	5.12**	.42	.08	.40	5.13**
ELMX x ECC													-.03	.05	**-.05**	-.65
R^2		.01				.02				.17				.17		
ΔR^2						.01				.16				.16		
F		.60				1.21				9.63**				7.30**		

N=147; **Bold values indicate hypothesized relationships.** $^{*}p<.05$, $^{**}p<.01$

Table 4. *Regression analyses predicting willingness to take risks*

	Step 1				Step 2				Step 3			
Variables	b	s.e.	β	t	b	s.e.	β	t	b	s.e.	β	t
CJR	.10	.08	.11	1.28	.10	.08	.11	1.28	.10	.08	.11	1.32
SLMX					.04	.07	**.05**	.63	.04	.07	.06	.71
SLMX x ECC									.13	.06	**.17**	2.05*
R^2		.01				.01				.04		
ΔR^2						.00				.03		
F		1.63				1.01				2.09		

N=147; **Bold values indicate hypothesized relationships.** *p<.05, **p<.01

Table 5. *Regression analyses predicting willingness to take risks*

	Step 1				Step 2				Step 3			
Variables	b	s.e.	β	t	b	s.e.	β	t	b	s.e.	β	t
CJR	.10	.08	.11	1.28	.11	.08	.11	1.40	.11	.08	.12	1.40
ELMX					-.08	.06	**-.12**	-1.48	-.08	.06	-.11	-1.36
ELMX x ECC									.05	.05	**.08**	.99
R^2		.01				.03				.03		
ΔR^2						.02				.02		
F		1.63				1.87				1.57		

N=147; **Bold values indicate hypothesized relationships.** *p<.05, **p<.01