LMX and a perceived supportive environment for corporate entrepreneurship: the mediating role of psychological empowerment

Received 10 July 2023
Revised 8 November 2023
Accepted 25 November 2023

Mariam Yasmin, Asiye Zeytonli and Jeffery D. Houghton
Department of Management, West Virginia University, Morgantown, West Virginia, USA, and

Lewis Hardway
Department of Accounting, West Virginia University, Morgantown, West Virginia, USA

Abstract

Purpose – This paper aims to explore the potential explanatory mechanisms linking leader–member exchange (LMX) and a perceived supportive environment for corporate entrepreneurship. Specifically, this paper develops and tests a hypothesized moderated mediation model of the relationship between LMX and a perceived supportive environment for corporate entrepreneurship through psychological empowerment as conditional upon the level of control orientation.

Design/methodology/approach – Data were collected from a sample of 682 full-time working adults in the USA and were examined in a moderated mediation model in PROCESS.

Findings – The findings suggest that higher LMX augments perceptions of a supportive environment for corporate entrepreneurship with a mediating role for psychological empowerment and a moderating role for control orientation on that conditional relationship.

Research limitations/implications – This research suggests that high quality LMX relationships may enrich the human capital of firms, helping them to innovate and outperform competitors in the context of modern competitive dynamics. The study findings are limited by several factors including a cross-sectional design and a student-recruited sampling approach.

Originality/value – The study offers unique contributions to the leadership and entrepreneurship literature by being among the first to empirically investigate the relationship between LMX and a perceived supportive environment for corporate entrepreneurship as mediated by psychological empowerment and

Compliance with ethical standards: All procedures performed in research involving human participants were in harmony with the ethical standards of the institutions; prior approval from IRB was obtained and participants were asked their willingness to take part in this survey.

Declaration of conflicting interests: The authors declared no potential conflicts of interest in respect to the research, authorship and/or publication of this article.

Asia Pacific Journal of Innovation and Entrepreneurship
Vol. 18 No. 1, 2024
pp. 55-72
Emerald Publishing Limited
e-ISSN: 2398-7812
p-ISSN: 2071-1395
DOI 10.1108/APJIE-07-2023-0136

moderated by control orientation, yielding important insights regarding effective leadership practices for facilitating innovative behaviors and corporate entrepreneurship.

Keywords Leader–member exchange (LMX), Corporate entrepreneurship, Control orientation, Empowerment, Moderated mediation model

Paper type Research paper

1. Introduction

There is increasing interest in corporate entrepreneurship as a vital strategy for firms to facilitate internal growth and innovation to survive in dynamic business environments (Glinyanova *et al.*, 2021; Han and Park, 2017; Phan *et al.*, 2009). Although the terms corporate entrepreneurship and intrapreneurship have been used interchangeably in previous literature (Hornsby *et al.*, 2002), more recently, researchers have begun to distinguish these two terms along the lines of process initiation and ownership (Amo, 2010). Intrapreneurship involves employees taking the initiative to suggest an idea and striving to overcome possible resistance from their organization, whereas corporate entrepreneurship, in contrast, focuses on managerial efforts to persuade employees to bring forth ideas for evaluation and approval (Amo, 2010). Sharma and Chrisman (1999, p. 8) define *corporate entrepreneurship* as "the process whereby an individual or a group of individuals, in association with an existing organization, create a new organization or instigate renewal or innovation within that organization." Traditionally, firms have grown either externally through mergers and acquisitions or internally via organic growth. Although mergers and acquisitions can quickly expand firm capacities, they can also create unforeseen challenges involving integrating operations, enacting proposed synergies and aligning the corporate cultures (Schuler and Jackson, 2001). In contrast, organic growth may provide a relatively smoother avenue for expansion by tapping into the firm's existing resources. In her seminal paper, Penrose (1955) discussed limits on firm growth, noting that the internal services necessary to facilitate growth may only be achieved by individuals who are already within the firm and who have the knowledge and abilities necessary to create new ideas and move the firm forward. Indeed, Penrose (1955) discussed the concept of "unused services," calling them both a challenge and an incentive because firms are already incurring associated service costs that are not producing efficient returns.

However, there is limited understanding regarding how these unused services or so-called "shadow options" can be unlocked to facilitate organic growth (Andriani *et al.*, 2019). Shadow options may be defined as "investment opportunities awaiting recognition" (Bowman and Hurry, 1993, p. 763). As an example of a shadow option, in the 1960s, Corning developed a strengthened glass that they named Chemcor (Graham and Shuldiner, 2001). After failing to find a successful market application for the glass (e.g. safety glasses or automobile windshields), the technology languished as an untapped resource within the firm until 2007, when Steve Jobs asked Corning if they could develop a thin, strengthened glass in six months. Chemcor was refined and repurposed as Gorilla Glass, a now ubiquitous component of smart phones and Jobs' request helped Corning to recognize and develop a shadow option already existing within the firm (Andriani and Cattani, 2022). Although theorists have discussed the potential of unused services for facilitating growth and innovation (Chen *et al.*, 2012), few studies have focused on the possible means for engaging these shadow options (for a notable exception, see Andriani and Cattani, 2022). Corporate entrepreneurship is one such potential key for unlocking unused services to facilitate organizational growth. Consequently, the current research seeks to explore perceptions of a supportive environment for corporate entrepreneurship as a means of enhancing organic

internal firm growth and innovation through invigorating heretofore unused services, skillsets and ideas already existing within the firm. Without growth, firms become stagnant and suffer losses in competitive advantage. Corporate entrepreneurship is considered vital for facilitating firms' efforts to exploit current competitive advantages and to explore new opportunities and additional competencies to gain or sustain competitive advantages (Covin and Miles, 1999; Teng, 2007).

The purpose of our study is to explore leader influences on perceptions of a supportive environment for corporate entrepreneurship based on the quality of dyadic leader–follower relationships using leader–member exchange (LMX) theory. However, just because leaders may impact followers does not guarantee that followers will engage their entrepreneurial spirits to enhance firm innovation and growth. Psychological empowerment is a concept that has been shown to facilitate innovative behaviors in followers (Helmy *et al.*, 2019; Singh and Sarkar, 2012). Hence, we further explore psychological empowerment as a key potential mediating mechanism for triggering entrepreneurial responses in individuals predisposed to an entrepreneurial zeal. In addition, we probe the possible role of followers' control orientation (Deci and Ryan, 1985), which refers to the extent to which people are influenced by the directives and demands of others, as a potential moderator of these relationships. Among potential individual differences, control orientation seems especially appropriate as a moderator of the effects of LMX because people high in control orientation are more likely to be reactive to the external influence of a leader. In short, our study, therefore, offers unique contributions to the leadership and entrepreneurship literature by being among the first to empirically investigate the relationship between LMX and a perceived supportive environment for corporate entrepreneurship as mediated by psychological empowerment and moderated by control orientation. Additionally, our findings yield important insights to guide practitioners regarding effective leadership practices to foster innovative behaviors and corporate entrepreneurship (Tseng and Tseng, 2019).

2. Background and hypothesis development

2.1 Corporate entrepreneurship and leader–member exchange

Corporate entrepreneurship is a process of organizational renewal involving two separate yet intertwined phenomena within organizations (Phan *et al.*, 2009). First, corporate entrepreneurship entails activities focusing on innovation and corporate venturing aimed at creating and integrating new businesses within the firm's overall portfolio (Narayanan *et al.*, 2009). Second, corporate entrepreneurship also enhances the ability of the firm to take competitive risks in identifying and exploiting opportunities to create a sustained competitive advantage, an internal organizational capacity that some have referred to as strategic entrepreneurship and which may or may not result in new businesses (Ireland *et al.*, 2003; Kuratko and Audretsch, 2009).

Beyond these two basic phenomena that characterize corporate entrepreneurship, prior research has suggested that organizational environments that support and promote entrepreneurial alertness, innovation and risk-taking are critical for facilitating corporate entrepreneurship activities (Hornsby *et al.*, 2009; Kuratko *et al.*, 1990; Tseng and Tseng, 2019). More specifically, researchers have noted five key dimensions that may help to determine whether an environment is favorable for encouraging entrepreneurial behavior, including support from top management, autonomy and work discretion, reinforcements and rewards, availability of time and flexible organizational boundaries (Kuratko *et al.*, 2014; Tseng and Tseng, 2019). Importantly, these findings highlight the critical role of individual *perceptions* or *alertness* of the presence of these environmental factors in shaping subsequent corporate entrepreneurship behaviors and activities (Hornsby *et al.*, 1999;

Hornsby *et al.*, 2002; Simsek *et al.*, 2007; Tseng and Tseng, 2019). Consequently, in the present study, we focus on individual perceptions of the extent to which their environment is supportive of corporate entrepreneurship.

A substantial amount of prior research has focused on identifying possible antecedents of corporate entrepreneurship (Chang *et al.*, 2022; Ireland *et al.*, 2003), and recent research has focused on the role of leadership in shaping corporate entrepreneurship (Verma and Mehta, 2022). One heretofore unexplored potential antecedent of corporate entrepreneurship is the quality of the relationships between leaders and followers. As described by Martin *et al.* (2010), LMX theory was first introduced in the mid-1970s, focusing on these types of leader–member relationships or so-called vertical dyad linkages. Perhaps the most refined conceptualization of LMX is offered by Scandura *et al.* (1986, p. 580):

> Leader member exchange is (a) a system of components and their relationships (b) in both members of a dyad (c) involving interdependent patterns of behavior and (d) sharing mutual outcome instrumentalities and producing conceptions of environments, cause maps, and value.

Essentially, leaders and followers interact with one another independently of other relationships to form their own bond upon which they base their working relationship. However, some of these relationships will be stronger and more effective than others. Martin *et al.* (2010) defined *low-quality* LMX relationships as those in which exchanges between the leader and followers are primarily focused solely on their working relationship. For instance, a leader and a subordinate may work very well together, but that relationship may focus strictly on what the job entails with little talk of nonwork-related influences. On the other hand, *high-quality* LMX relationships may offer both the leader and the follower an opportunity to voice ideas and concepts outside the strict realm of their specific roles within the firm (Martin *et al.*, 2010). Indeed, research has suggested that high-quality LMX relationships increase employee voice behaviors and, ultimately, innovative work behaviors (Nazir *et al.*, 2021).

It is in the context of these nonrole-specific interactions for individuals with high-quality LMX relationships that the leader and follower may find themselves expanding into new areas in which they think the firm could reasonably operate. Returning to Penrose's (1955) idea of unused firm services, it is reasonable to expect individuals within the firm to use their creativity and inside knowledge of the firm and its operations to ascertain ways in which the firm could expand and benefit from either deploying or simply better using, existing unused or underused assets. These ideas, which we consider entrepreneurial in nature, can come from any level of the firm and are certainly not relegated to those individuals in research and development or at certain leadership levels. In fact, until reaching the level of owner or firm chief executive officer, all internal organizational members report to someone and therefore participate in some form of LMX scenario as a subordinate. This provides an excellent avenue for individuals with big ideas about the firm to make their voices heard (Nazir *et al.*, 2021).

Empirical research findings provide additional support for these theoretical arguments, suggesting a relationship between LMX and corporate entrepreneurship. For instance, Hsieh (2012) reported a positive relationship between high-quality LMX dyads and perceptions of supervisor support in a sample of 370 bank employees in Taiwan. Moreover, Farr-Wharton *et al.* (2011) showed a relationship between high-quality supervisor-subordinate LMX relationships and perceptions of autonomy. Similarly, Sanders and her colleagues (Sanders *et al.*, 2010) found that high-quality LMX was related to satisfaction with human resources practices, including employee influence (i.e. discretion and autonomy) and reward outcomes (both monetary and nonmonetary) and, ultimately, employee

innovative behaviors. It seems reasonable to suggest, therefore, that high-quality LMX relationships will be related to follower perceptions of a supportive environment (e.g. leader support, autonomy, discretion, reward satisfaction, etc.) for corporate entrepreneurship behaviors. Consequently, based on these empirical, theoretical and rational bases, we advance:

H1. Followers with higher-quality LMX relationships with their leaders perceive a more supportive environment for corporate entrepreneurship activity.

2.2 The mediating role of psychological empowerment

The arguments supporting our first hypothesis are based on the assumption that given a high-quality LMX relationship, a subordinate with an innovative idea will be comfortable in acting upon it and/or suggesting it to their leader (Nazir *et al.*, 2021). Realistically, however, the subordinate may feel uncomfortable in doing so and, therefore, despite their high-quality relationship, may choose not to act upon their idea or share it with their leader. To better explain this behavioral contingency, we introduce psychological empowerment as a potential mediating mechanism of the effects of leader/subordinate relationships on follower perceptions of a supportive environment for corporate entrepreneurship. We first provide an overview of the foundational concepts of psychological empowerment before discussing their relevance to our hypothesized model.

Expanding on the work of Conger and Kanungo (1988), Thomas and Velthouse (1990) began with the idea that through empowerment, workers would find an internal commitment for performing their tasks, in contrast to simply responding to a push to conform by management. They go on to develop a cognitive model of empowerment that begins with interventions affecting both external environmental events and internal interpretive styles of employees, both of which act on task assessments. Task assessments are global in nature but also specific to discrete events. These assessments lead to behaviors that interact with environmental events, and the model continues in a circular fashion. The four task assessments representing the psychological impact of empowerment are impact, competence, meaningfulness and choice (Thomas and Velthouse, 1990). Both Thomas and Velthouse (1990) and Spreitzer *et al.* (1999) offer additional explanations of these four components, ultimately arriving at the idea that these factors compel individual employees to engage in their work situations and to shape them via their own actions and that through their joint operation, these four factors combine to form the overall construct of psychological empowerment (Spreitzer, 1995).

Having provided an overview of the basic components of psychological empowerment, we turn now to explicating how and why psychological empowerment may serve as a mediating mechanism between LMX and corporate entrepreneurship. Based on role theory (Biddle, 1986), supervisory-subordinate relationships can have a high impact on the subordinate's role clarity (Wang *et al.*, 2016). In high-quality LMX relationships, supervisors provide subordinates with valuable resources such as information, autonomy, decision latitude and social support (Zhou *et al.*, 2012). These resources relate directly to the four dimensions of psychological empowerment. First, the easier access to information and challenging assignments provided in high-quality LMX relationships can lead to more enjoyment of the job and provide a greater sense of meaningfulness (Aryee and Chen, 2006). Second, more social support can lead to more success, which can improve the feeling of competence (Zhou *et al.*, 2012). Third, the ability to participate in decision-making processes can lead to enhanced perceptions of making a difference or having an impact on outcomes at work, which can lead to self-determination and impact feelings (Wang *et al.*, 2016). Thus, based on the positive relationship between high-quality LMX and psychological

empowerment's key dimensions, it seems likely that high-quality LMX relationships will positively influence an individual's feelings of psychological empowerment.

Beyond these theoretical rationales for a relationship between LMX and psychological empowerment, empirical research has provided evidence in support of this linkage (Dulebohn *et al.*, 2012; Zhou *et al.*, 2012). For example, Kim and George (2005) reported a positive relationship between high-quality LMX and psychological empowerment in a sample of 173 restaurant workers in the USA. Similarly, Hill *et al.* (2014) showed a positive relationship between LMX, psychological empowerment and a variety of subsequent follower work outcomes in a sample of 353 early-career professionals from several different industries and organizations. Finally, Newman *et al.* (2017) found a strong positive relationship between LMX relationship quality and psychological empowerment.

Additionally, theorists have long linked the concepts of innovation and empowerment in entrepreneurial firms (e.g. Kanter, 1984; Spreitzer *et al.*, 1999; Yasir *et al.*, 2023), with particular attention paid to the context of corporate entrepreneurship. For instance, Hill and Rothaermel (2003) found that advances in product specifications and performance are associated with technology breakthroughs in firms with innovation-based corporate entrepreneurship (Kelley *et al.*, 2009). Moreover, Rafique *et al.* (2023) provided evidence in support of psychological empowerment as a mediator of the relationship between innovative behaviors and several organizational antecedents in a sample of 346 faculty members at Pakistani public sector universities. In addition, Mahmoud *et al.* (2022) showed a linkage between psychological empowerment and individual performance as mediated by intrapreneurial behaviors in a sample of 355 medium enterprises production/operations managers. Finally, Rafique *et al.* (2022) found LMX to be linked to innovative employee behaviors as mediated by employee empowerment. Taken together, the evidence suggests that psychological empowerment, innovation and corporate entrepreneurship may be linked together in a variety of different circumstances (Shafique *et al.*, 2020).

Given the theoretical and empirical evidence outlined above, it seems reasonable to advance psychological empowerment as a mediator between LMX relationship quality and followers' perceptions of a supportive environment for corporate entrepreneurship activity. Indeed, psychological empowerment has been found to serve as a key mediator of the relationships between LMX and a wide variety of important outcomes including task performance, employee voice, job satisfaction, psychological withdrawal behaviors, emotional exhaustion and depression (Aryee and Chen, 2006; Schermuly and Meyer, 2016; Wang *et al.*, 2016. Young *et al.*, 2021). Thus, relying on the theoretical and empirical framing outlined above, we hypothesize:

H2. Psychological empowerment mediates the relationship between higher-quality LMX and followers' perceptions of a supportive environment for corporate entrepreneurship activity.

2.3 The moderating role of control orientation

Deci and Ryan (1985, p. 111) define *causality orientations* as "people's (explicit or implicit) understanding of the nature of causation of behavior, which is a stable disposition over time and across domains." In other words, causality orientation involves individual differences in how people typically perceive the source of their behavioral initiation (Vansteenkiste *et al.*, 2010). *Autonomy-orientated* people tend to look for self-determination and choice and are more likely to interpret their situations as more autonomy-promoting. They organize their actions based on their own interests and values. High levels of autonomy orientation are associated with being internally motivated and interpreting extrinsic events as affirmative

of self-competence and self-effectivity (Deci and Ryan, 1985). Such people tend to gravitate toward jobs that are challenging and require initiative. On the other hand, *control-oriented* individuals are extrinsically motivated, with their motivation promoted by external factors such as status and pay. People high in control orientation are more likely to be controlled by other's directives and are more attuned to the demands of others than to their own wants. Consequently, people high in autonomy orientation are likely to feel empowered whether they experience low-quality or high-quality LMX relationships because they interpret the extrinsic events as a chance to enhance their self-competence and because they are already experiencing high levels of high self-esteem and autonomy (Deci and Ryan, 1985). In contrast, individuals high in control orientation will experience different levels of psychological empowerment in the face of low or high-quality LMX. Thus, the opportunity to participate in more decision-making activities and to engage in more challenging tasks as the result of high-quality LMX should allow high control-oriented people to perceive extrinsic motivation and feel more empowered compared to those who are low in control orientation. Based on this logical line of reasoning, we propose the following moderating hypotheses:

H3. Control orientation moderates the relationship between LMX and psychological empowerment such that the relationship is stronger when control orientation is higher.

H4. The indirect relationship between LMX and followers' perceptions of a supportive environment for corporate entrepreneurship activity via psychological empowerment is moderated by control orientation, such that the indirect relationship becomes stronger when control orientation is higher.

Our hypothesized moderated mediation model of the relationship between LMX quality and followers' perceptions of a supportive environment for corporate entrepreneurship activity through psychological empowerment as conditional upon the level of follower control orientation is summarized in Figure 1.

3. Method

3.1 Procedure and sample

After receiving institutional review board (IRB) approval, participants were solicited through the networks of undergraduate students from an introductory business management course at

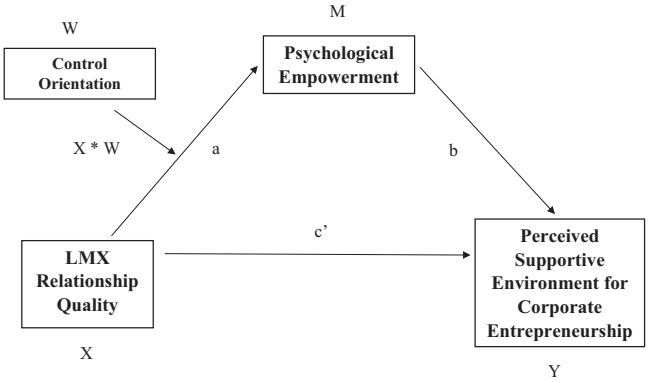

Figure 1. Hypothesized research model

a large mid-Atlantic university in the USA. Students were offered extra credit to recruit participants who met the inclusion criteria of being at least 18 years old, being currently employed, working full-time and living in the USA. Volunteers were vetted with a series of filter questions to ensure that they met the inclusion criteria. A total of 712 completed surveys were received. After removing responses with missing data and for people who failed in answering an attention check question, we arrived at a final sample of 682. The sample was comprising of 45% men, 52% women and 3% who preferred not to say and represented a variety of industries. A majority of the respondents (51%) have a college degree and were used at their organizations for at least six months. Participants ranged in age from 18 to 65 years old and represented 33 different states in the USA.

3.2 Measures

Perceived supportive environment for corporate entrepreneurship. We used the 48-item Corporate Entrepreneurship Assessment Instrument developed by Hornsby *et al.* (2002) to operationalize the corporate entrepreneurship construct. The scale measures employee perceptions of the extent to which their work environment is supportive of corporate entrepreneurship using the five key dimensions as outlined above (Kuratko *et al.*, 2014). Nineteen items assessed the "management support for corporate entrepreneurship" dimension. A sample item is: "Those employees who come up with innovative ideas on their own often receive management encouragement for their activities." Ten items measured the "work discretion" dimension. A sample item is: "I have the freedom to decide what I do on my job." Six items measure the dimension of "rewards/reinforcement" with a sample item as follows: "My supervisor will give me special recognition if my work performance is especially good." Six items reflect the "time availability" dimension. An exemplary item is: "I always seem to have plenty of time to get everything done." Finally, seven items evaluate the "organizational boundaries" dimension as demonstrated by the following item: "There are many written rules and procedures that exist for doing my major tasks." Responses are assessed using a seven-point Likert-type scale ranging from "strongly disagree" to "strongly agree." Hornsby *et al.* (2002) reported coefficient alpha reliabilities ranging from 0.69 to 0.92 across the five subscales.

3.2.1 Leader–member exchange relationship quality. We measured LMX relationship quality using the 11-item scale developed by Liden and Maslyn (1998). Sample items include: "My supervisor is the kind of person one would like to have as a friend" and "I do work for my supervisor that goes beyond what is specified in my job description." The items were assessed using a seven-point Likert-type scale with anchors ranging from "strongly disagree" to "strongly agree." Liden and Maslyn (1998) found coefficient alpha reliabilities ranging from 0.60 to 0.92 across four subscales.

3.2.2 Psychological empowerment. To operationalize the mediator, psychological empowerment, we used the 12-item scale developed by Spreitzer (1995). Specific items include: "The work I do is very important to me" and "I have considerable opportunity for independence and freedom in how I do my job." The items are measured on a seven-point Likert-type scale ranging from "strongly disagree" to "strongly agree." Spreitzer (1995) reported a coefficient alpha reliability of 0.72 for the overall 12-item psychological empowerment scale, representing the four distinct scale dimensions.

3.2.3 Control orientation. We used the 17-item control orientation subscale from Deci and Ryan's (1985) general causality orientations scale to measure our moderator. The Deci and Ryan (1985) instrument is a vignette-based scale. For each vignette, respondents are asked to rate how likely they would be to think or respond in accordance with each of the scale's three dimensions of autonomy orientation, control orientation and interpersonal orientation. Ratings are made using a seven-point Likert-type scale ranging from "very unlikely" to

"very likely." A sample item is: "You have been offered a new position in a company where you have worked for some time. The first question that is likely to come to mind is: a) What if I can't live up to the new responsibility? b) Will I make more at this position? c) I wonder if the new work will be interesting?" Because of the vignette-based nature of the questions, respondents rated 17 items for each of the three dimensions. However, we only used the items for the control-orientation subscale in our analyses. Coefficient alpha reliabilities ranged from 0.70 to 0.74 across the three subscales, with the control orientation subscale showing a reliability estimate of 0.74 (Deci and Ryan, 1985).

4. Results

Table 1 contains internal reliability coefficients, descriptive statistics and correlations for the study variables. Common method bias (CMB) refers to the potential bias in data caused by the measurement method rather than the actual constructs being studied (Podsakoff *et al.*, 2003). CMB, often considered a primary source of measurement error, can adversely affect the validity of research findings and lead to misleading conclusions, as noted by Campbell and Fiske (1959). To assess the presence of CMB in this study, Harman's single factor test was conducted using SPSS, which resulted in an explanation of only 21% of the variance, which is below the 50% (e.g. Baumgartner *et al.*, 2021; Cohen and Ehrlich, 2019; Fuller *et al.*, 2016). This outcome suggests that CMB issues are unlikely to be a significant concern in our data set.

We test our hypotheses using a moderated mediation model (PROCESS Model 7) computed with PROCESS as recommended by Hayes (2017). As shown in Table 2, the total effect of the model was 0.3139, with a total indirect effect of 0.1377 (95% CI: 0.1077, 0.1702). There was also evidence of LMX relationship quality (*X*) directly affecting corporate entrepreneurship (*Y*) in the model ($c' = 0.1762$, 95% CI: 0.1360, 0.2164). Consequently, *H1* and *H2*, concerning the direct relationship between LMX relationship quality and the perceived supportive environment for corporate entrepreneurship and the indirect effects of LMX relationship quality on the perceived supportive environment for corporate entrepreneurship through psychological empowerment, respectively, were supported. These findings thus support our assertions that the quality of the relationship between leaders and followers in organizations may be a critical factor for unleashing shadow options and facilitating corporate entrepreneurship through feelings of psychological empowerment.

As further reflected in Table 2, there is evidence of an interaction between LMX relationship quality and control orientation ($X*W = 0.0803$, 95% CI: 0.0203, 0.1402). Following Cohen *et al.*'s (2003) recommendations, we plotted this interaction at conditional values of control orientation (1 *SD* above and below the mean). As shown in Figure 2, when control orientation is higher, the relationship between LMX relationship quality and psychological empowerment is stronger, thus lending support for *H3*. To test *H4*, we estimated the indirect effect of LMX relationship quality (*X*) on the perceived supportive

Variable	M	SD	A	1	2	3	4
1. Supportive environment for corporate entrepreneurship	4.6	0.75	0.93	–			
2. Empowerment	5.32	0.98	0.90	0.61**	–		
3. LMX	5.40	1.18	0.95	0.50**	0.45**	–	
4. Control orientation	3.80	0.88	0.83	0.22*	0.05	−0.01	–

Notes: M = mean; SD: standard deviation; A = Cronbach's α coefficient; *$p < 0.05$; **$p < 0.01$

Table 1. Descriptive statistics and correlations

Table 2.
OLS Regression coefficients and indirect effects

Regression model	*β*	SE	*t*	*ρ*	LLCI	ULCI
Outcome: Psychological empowerment						
$F(3, 678) = 61.9, p = 0.0000, R^2 = 0.215$						
Constant	5.3204	0.0333	159.7491	0.0000	5.2550	5.3858
LMX (*a*)	0.3746	0.0282	13.2666	0.0000	0.3187	0.4294
Control orientation	0.0390	0.0385	1.0139	0.3110	–0.0366	0.1146
Interaction (*X* W*)	0.0803	0.0305	2.6275	0.0088	0.0203	0.1402
Outcome: Supportive environment for corporate entrepreneurship						
$F(2, 679) = 258.15, p = 0.0000, R^2 = 0.43$						
Constant	1.6919	0.1299	13.0287	0.0000	1.4369	1.9468
LMX(*c'*)	0.1762	0.0205	8.5999	0.0000	0.1360	0.2164
Psychological empowerment (*b*)	0.3677	0.0247	14.8715	0.0000	0.3192	0.4163
Indirect effects	*β*	*Boot SE*			*Boot LLCI*	*Boot ULCI*
*a * b* ($X \rightarrow M \rightarrow Y$)	0.1377	0.0159			0.1077	0.1702
W = Mean – SD	0.1116	0.0213			0.0707	0.1541
W = Mean	0.1375	0.0162			0.1075	0.1705
W = Mean + SD	0.1635	0.0189			0.1282	0.2019

Notes: X, LMX, M, psychological empowerment; Y, supportive environment for corporate entrepreneurship; W, control orientation. Coefficients are unstandardized (*β*). Statistics were generated using PROCESS in SPSS with 10,000 bootstrapped samples and 95% bias-corrected confidence intervals (CIs). Lower and upper-level confidence intervals (LLCI; ULCI) do not include 0 and thus indicate significant mediation. Coefficients and indirect effects shown represent unique variance accounted for by individual variables and indirect paths (i.e. while simultaneously controlling for other effects in the model)
Source: Table created by the authors

environment for corporate entrepreneurship (*Y*) via psychological empowerment (*M*) at different levels of control orientation (*W*) (1 *SD* above and below the mean) using Bauer *et al.*'s (2006) method. The indirect effect was significant at all levels of the moderator. In the third level (Mean +1SD), the indirect effect ($\beta = 0.1637$ (95% CI: 0.1282, 0.2019) was larger than at the mean level ($\beta = 0.1375$ (95% CI: 0.1075, 0.1705)) and the smallest effect was at the lower level (Mean –1SD) of control orientation ($\beta = 0.1116$ (95% CI: 0.0707, 0.1541). Hence, *H4* was also supported. These results support the important notion that the effects of leadership on psychological empowerment and, ultimately, corporate entrepreneurship may be constrained by individual differences. In particular, followers with a high control orientation are likely to experience greater feelings of psychological empowerment as a result of high-quality interactions with their leaders.

5. Discussion

We found statistical support for our hypotheses that high-quality LMX is positively related to a perceived supportive environment for corporate entrepreneurship, that this relationship is positively mediated by psychological empowerment and that control orientation moderates the conditional relationship between high-quality LMX and a perceived supportive environment for corporate entrepreneurship through psychological empowerment. Our results add to the findings of Hornsby *et al.* (2002) and Urbano *et al.* (2022), whose research confirms the role of internal organizational factors such as management and leadership on corporate entrepreneurship. Our results suggest that high-quality LMX relationships may be especially effective in engendering corporate entrepreneurship activity. Low-quality LMX relationships are driven by economic exchanges based on the reciprocity of tangible assets, such as employment contracts that specify pay amounts for defined job performance (Dulebohn *et al.*, 2012). In contrast, high-quality LMX relationships are founded on social exchange rather than economic exchange, resulting in social reciprocity characterized by trust, support, open communication and loyalty (Dulebohn *et al.*, 2012). The richness of social interactions characterized by high-quality LMX makes it more likely for followers to experience feelings of psychological empowerment and perceptions of a supportive environment for corporate entrepreneurship, both of which make it more likely that unused resources and shadow options may be identified and evaluated. Consequently, among various leadership theories, LMX theory seems an especially useful lens for understanding how corporate entrepreneurship activities

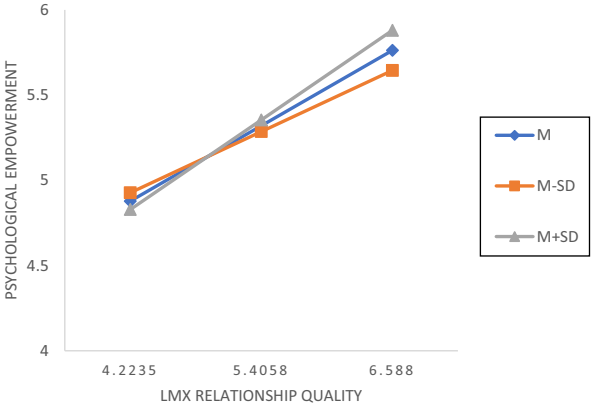

Figure 2.
Control orientation moderates the effect of LMX relationship quality on psychological empowerment

may be promoted in organizations. Indeed, as Reid *et al.* (2018) note, the positive affective qualities of leaders and leadership style on entrepreneurial endeavors have great promise for future research, and our results bolster this positive outlook. In short, for organizational leaders and managers, it is particularly important to know how to orchestrate the interplay of the organizational and individual drivers of perceptions of a supportive environment for corporate entrepreneurship.

5.1 Theoretical and managerial implications

Our study's findings offer important implications for theory and practice. First, relatively few leadership scholars have studied the macrolevel outcomes of leadership styles. In contrast, our research emphasizes the importance of the microlevel mechanism of the dyadic relationship between a leader and a follower and how it may benefit firms at the macrolevel. Our results imply that developing high-quality relationships with followers should encourage feelings of psychological empowerment, resulting in perceptions of a supportive environment for corporate entrepreneurship, which in turn should lead to greater levels of corporate entrepreneurship activities in the firm (Zahra, 1993). These findings, therefore, should encourage future researchers to study other aspects of leadership style relative to other various macro-level outcomes of the firm, including but not limited to corporate entrepreneurship.

Second, our study takes an important first step toward better understanding the means and mechanisms for unlocking unused services in the firm and engaging such shadow resources to enhance corporate entrepreneurship and, ultimately, organic firm growth. Specifically, our findings suggest that high-quality LMX relationships can have both a direct impact on perceptions of a supportive environment for corporate entrepreneurship as well as an indirect effect through enhanced psychological empowerment. Moreover, our findings reveal an important attenuating factor on these mechanisms: the extent to which the follower has a high or low control orientation. Those followers with a high control orientation will be more reactive to the positive effects of a high-quality LMX relationship in terms of their feelings of psychological empowerment. In contrast, individuals with a low control orientation and/or high in autonomy orientation will be less reactive to the positive effects of high-quality LMX because they will be more likely to experience psychological empowerment simply as a result of their disposition. In short, high-quality LMX may be more effective in enhancing corporate entrepreneurship activities for certain followers and in certain situations. Future research should explore other potential mediators and moderators of the effects of LMX on corporate entrepreneurship, along with the role of other leadership styles and approaches in unlocking the shadow resources of the firm.

Finally, from a more practical standpoint, this research informs managers in terms of how their leadership style may play a vital role in empowering employees and in encouraging or discouraging innovation and risk-taking in their jobs. It further implies that managers should encourage individuals to take a leading role in corporate entrepreneurial projects even if they involve high risks of failure. In short, managers aiming to facilitate corporate entrepreneurial projects should strive to develop high-quality relationships with their followers and empower them to facilitate perceptions of support for entrepreneurial behaviors and, ultimately, more actual entrepreneurial activities at work.

5.2 Limitations and future research

Although this study provides beneficial implications for both theory and practice, certain limitations should be acknowledged. First, our data collection procedures used a student-recruited network sampling technique through which study participants were recruited via the family, personal and social media networks of undergraduate students. Student-

recruited sampling procedures may increase the potential of a nonrepresentative sample because students are likely to refer relatives and friends from their personal networks, which could be focused on a specific subpopulation such as upper-middle-class families. This raises concerns regarding the external validity of our sample and whether the results found here are generalizable to other populations of interest (Demerouti and Rispens, 2014). However, Demerouti and Rispens (2014) note that student-recruited samples have several advantages, including reduced costs, and a recent meta-analysis by Wheeler *et al.* (2014) suggests that student-recruited samples demonstrate a similar degree of representativeness when compared to samples recruited using other approaches. Nonetheless, future research could engage a more randomized sampling strategy that could reduce the potential biases described above and increase the generalizability of results. Second, our study design involved cross-sectional, self-reported data. Cross-sectional data may be especially susceptible to the risk of common method variance (CMV). While some methodology experts have speculated that the negative effects stemming from CMV may be somewhat inflated and, at best, are not clearly understood (Malhotra *et al.*, 2006; Spector, 2006; Spector *et al.*, 2019), we nonetheless engaged in several *ex-ante* strategies to attenuate the possibility of method biases (Podsakoff *et al.*, 2003). These strategies included building attention check items into our survey and using differing scale formats, including vignette-based scale items. Nevertheless, readers should engage caution when interpreting the findings reported here. To help alleviate the threat of CMV, future researchers could use multisource data collection to measure the responses of both the leaders and the followers. Moreover, a comparative study could be conducted between employees at an *early* stage of their careers relative to employees at a more *advanced* stage of their careers. Third, the data collected for this research was limited to the USA. Future researchers could conduct a cross-cultural examination of the current model and expand on the results reported here by comparing the responses from participants working in tech versus non-tech firms or firms that are highly innovative versus firms that are comparatively less innovative. Additionally, the same model could be explored in public versus private firms. Finally, as with most studies that explore hypothesized models, our findings and interpretations are limited by the possibility of unmeasured variable concerns, which involve the potential existence of additional causal variables not included in the conceptual model, allowing for alternative explanations of the findings (James, 1991). For example, contextual factors such as communication climate, process factors such as reward alignment and individual factors such as self-efficacy have all been suggested as possible antecedents to corporate entrepreneurship (Rutherford and Holt, 2007) but were excluded from our hypothesized model. Consequently, future research should explore other possible antecedents, mediators and moderators of perceptions of a supportive environment for corporate entrepreneurship in organizations.

5.3 Conclusion

In closing, we used control orientation as a moderator to help us better understand how control-oriented individuals who are externally motivated and who do not instinctively pursue ways to enhance their competence, autonomy and job meaning can be psychologically empowered by high-quality relationships with their leaders. These findings are exciting because they offer one clear path toward unlocking firm's unused resources and shadow options, potentially releasing more creativity and innovation, enhancing a perceived supportive environment for corporate entrepreneurship and, ultimately, actual corporate entrepreneurship behaviors and actions. Our results may further serve as a practical guide for managers to enhance the feeling of individual empowerment by creating high-quality

relationships with their subordinates so that the firm itself can ultimately benefit from corporate entrepreneurship and sustained organic growth for the future.

References

Amo, B.W. (2010), "Corporate entrepreneurship and intrapreneurship related to innovation behaviour among employees", *International Journal of Entrepreneurial Venturing*, Vol. 2 No. 2, pp. 144-158.

Andriani, P. and Cattani, G. (2022), "Functional diversification and exaptation: the emergence of new drug uses in the pharma industry", *Industrial and Corporate Change*, Vol. 31 No. 5, pp. 1177-1201.

Andriani, P., Cattani, G., Givry, P. and Narduzzo, A. (2019), "Unused services of a firm's resources: a penrosian view of shadow options", *Academy of Management Proceedings*, Vol. 2019 No. 1, p. 18684.

Aryee, S. and Chen, Z.X. (2006), "Leader–member exchange in a Chinese context: Antecedents, the mediating role of psychological empowerment and outcomes", *Journal of Business Research*, Vol. 59 No. 7, pp. 793-801.

Bauer, D.J., Preacher, K.J. and Gil, K.M. (2006), "Conceptualizing and testing random indirect effects and moderated mediation in multilevel models: new procedures and recommendations", *Psychological Methods*, Vol. 11 No. 2, pp. 142-163.

Baumgartner, H., Weijters, B. and Pieters, R. (2021), "The biasing effect of common method variance: some clarifications", *Journal of the Academy of Marketing Science*, Vol. 49 No. 2, pp. 221-235.

Biddle, B.J. (1986), "Recent developments in role theory", *Annual Review of Sociology*, Vol. 12 No. 1, pp. 67-92.

Bowman, E.H. and Hurry, D. (1993), "Strategy through the option lens: an integrated view of resource investments and the incremental-choice process", *The Academy of Management Review*, Vol. 18 No. 4, pp. 760-782.

Campbell, D.T. and Fiske, D.W. (1959), "Convergent and discriminant validation by the multitrait-multimethod matrix", *Psychological Bulletin*, Vol. 56 No. 2, pp. 81-105.

Chang, Y.Y., Hughes, P., Hodgkinson, I., Chang, C.Y. and Seih, Y.T. (2022), "The antecedents of corporate entrepreneurship: multilevel, multisource evidence", *Review of Managerial Science*, Vol. 16 No. 2.

Chen, Z., Doyle, E. and Fanning, C. (2012), "Penrose's 'unused services': a cross-cultural perspective on growth of firms", *Journal of Knowledge-Based Innovation in China*, Vol. 4 No. 1, pp. 66-79.

Cohen, J., Cohen, P., West, S. and Aiken, L. (2003), *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*, 3rd ed., Erlbaum, Hillsdale, NJ.

Cohen, A. and Ehrlich, S. (2019), "Exchange variables, organizational culture and their relationship with constructive deviance", *Management Research Review*, Vol. 42 No. 12, pp. 1423-1446.

Conger, J.A. and Kanungo, R.N. (1988), "The empowerment process: integrating theory and practice", *The Academy of Management Review*, Vol. 13 No. 3, pp. 471-482.

Covin, J.G. and Miles, M.P. (1999), "Corporate entrepreneurship and the pursuit of competitive advantage", *Entrepreneurship Theory and Practice*, Vol. 23 No. 3, pp. 47-63.

Deci, E.L. and Ryan, R.M. (1985), "The general causality orientations scale: self-determination in personality", *Journal of Research in Personality*, Vol. 19 No. 2, pp. 109-134.

Demerouti, E. and Rispens, S. (2014), "Improving the image of student-recruited samples: a commentary", *Journal of Occupational and Organizational Psychology*, Vol. 87 No. 1, pp. 34-41.

Dulebohn, J.H., Bommer, W.H., Liden, R.C., Brouer, R.L. and Ferris, G.R. (2012), "A meta-analysis of antecedents and consequences of leader-member exchange: integrating the past with an eye toward the future", *Journal of Management*, Vol. 38 No. 6, pp. 1715-1759.

Farr-Wharton, R., Brunetto, Y. and Shacklock, K. (2011), "Professionals' supervisor–subordinate relationships, autonomy and commitment in Australia: a leader–member exchange theory

perspective", *The International Journal of Human Resource Management*, Vol. 22 No. 17, pp. 3496-3512.

Fuller, C.M., Simmering, M.J., Atinc, G., Atinc, Y. and Babin, B.J. (2016), "Common methods variance detection in business research", *Journal of Business Research*, Vol. 69 No. 8, pp. 3192-3198.

Glinyanova, M., Bouncken, R.B., Tiberius, V. and Cuenca Ballester, A.C. (2021), "Five decades of corporate entrepreneurship research: measuring and mapping the field", *International Entrepreneurship and Management Journal*, Vol. 17 No. 4, pp. 1731-1757.

Graham, M.B.W. and Shuldiner, A.T. (2001), *Corning and the Craft of Innovation*, Oxford University Press, Oxford.

Han, J. and Park, C.M. (2017), "Case study on adoption of new technology for innovation: perspective of institutional and corporate entrepreneurship", *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 11 No. 2, pp. 144-158.

Hayes, A.F. (2017), *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, Guilford publications, New York, NY.

Helmy, I., Adawiyah, W.R. and Banani, A. (2019), "Linking psychological empowerment, knowledge sharing, and employees' innovative behavior in SMEs", *The Journal of Behavioral Science*, Vol. 14 No. 2, pp. 66-79.

Hill, N.S., Kang, J.H. and Seo, M.G. (2014), "The interactive effect of leader–member exchange and electronic communication on employee psychological empowerment and work outcomes", *The Leadership Quarterly*, Vol. 25 No. 4, pp. 772-783.

Hill, C.W. and Rothaermel, F.T. (2003), "The performance of incumbent firms in the face of radical technological innovation", *The Academy of Management Review*, Vol. 28 No. 2, pp. 257-274.

Hornsby, J.S., Kuratko, D.F. and Montagno, R.V. (1999), "Perception of internal factors for corporate entrepreneurship: a comparison of Canadian and US managers", *Entrepreneurship Theory and Practice*, Vol. 24 No. 2, pp. 9-24.

Hornsby, J.S., Kuratko, D.F., Shepherd, D.A. and Bott, J.P. (2009), "Managers' corporate entrepreneurial actions: examining perception and position", *Journal of Business Venturing*, Vol. 24 No. 3, pp. 236-247.

Hornsby, J.S., Kuratko, D.F. and Zahra, S.A. (2002), "Middle managers' perception of the internal environment for corporate entrepreneurship: assessing a measurement scale", *Journal of Business Venturing*, Vol. 17 No. 3, pp. 253-273.

Hsieh, H.L. (2012), "Building employees' organizational commitment with LMX: the mediating role of supervisor support", *Global Journal of Engineering Education*, Vol. 14 No. 3, pp. 250-255.

Ireland, R.D., Hitt, M.A. and Sirmon, D.G. (2003), "A model of strategic entrepreneurship: the construct and its dimensions", *Journal of Management*, Vol. 29 No. 6, pp. 963-989.

Ireland, R.D., Kuratko, D.F. and Covin, J.G. (2003), "Antecedents, elements, and consequences of corporate entrepreneurship strategy", *Academy of Management Proceedings*, Vol. 2003 No. 1, pp. L1-L6.

James, L.R. (1991), "Testing hypotheses in the context of the unmeasured variables problem", *Human Resource Management Review*, Vol. 1 No. 4, pp. 273-291.

Kanter, R.M. (1984), *Change Masters*, Simon and Schuster, London.

Kelley, D.J., Peters, L. and O'Connor, G.C. (2009), "Intra-organizational networking for innovation-based corporate entrepreneurship", *Journal of Business Venturing*, Vol. 24 No. 3, pp. 221-235.

Kim, B. and George, R.T. (2005), "The relationship between leader-member exchange (LMX) and psychological empowerment: a quick casual restaurant employee correlation study", *Journal of Hospitality and Tourism Research*, Vol. 29 No. 4, pp. 468-483.

Kuratko, D.F. and Audretsch, D.B. (2009), "Strategic entrepreneurship: exploring different perspectives of an emerging concept", *Entrepreneurship Theory and Practice*, Vol. 33 No. 1, pp. 1-17.

Kuratko, D.F., Hornsby, J.S. and Covin, J.G. (2014), "Diagnosing a firm's internal environment for corporate entrepreneurship", *Business Horizons*, Vol. 57 No. 1, pp. 37-47.

Kuratko, D.F., Montagno, R.V. and Hornsby, J.S. (1990), "Developing an intrapreneurial assessment instrument for an effective corporate entrepreneurial environment", *Strategic Management Journal*, Vol. 11, pp. 49-58.

Liden, R.C. and Maslyn, J.M. (1998), "Multidimensionality of leader-member exchange: an empirical assessment through scale development", *Journal of Management*, Vol. 24 No. 1, pp. 43-72.

Mahmoud, M.A., Ahmad, S. and Poespowidjojo, D.A.L. (2022), "Psychological empowerment and individual performance: the mediating effect of intrapreneurial behaviour", *European Journal of Innovation Management*, Vol. 25 No. 5, pp. 1388-1408.

Malhotra, N.K., Kim, S.S. and Patil, A. (2006), "Common method variance in is research: a comparison of alternative approaches and a reanalysis of past research", *Management Science*, Vol. 52 No. 12, pp. 1865-1883.

Martin, R., Epitropaki, O., Thomas, G. and Topakas, A. (2010), "A review of leader-member exchange (LMX) research: future prospects and directions", *International Review of Industrial and Organizational Psychology*, Vol. 25, pp. 35-88.

Narayanan, V.K., Yang, Y. and Zahra, S.A. (2009), "Corporate venturing and value creation: a review and proposed framework", *Research Policy*, Vol. 38 No. 1, pp. 58-76.

Nazir, S., Shafi, A., Asadullah, M.A., Qun, W. and Khadim, S. (2021), "Linking paternalistic leadership to follower's innovative work behavior: the influence of leader–member exchange and employee voice", *European Journal of Innovation Management*, Vol. 24 No. 4, pp. 1354-1378.

Newman, A., Schwarz, G., Cooper, B. and Sendjaya, S. (2017), "How servant leadership influences organizational citizenship behavior: the roles of LMX, empowerment, and proactive personality", *Journal of Business Ethics*, Vol. 145 No. 1, pp. 49-62.

Penrose, E. (1955), "Limits to the growth and size of firms", *The American Economic Review*, Vol. 45 No. 2, pp. 531-543.

Phan, P.H., Wright, M., Ucbasaran, D. and Tan, W.L. (2009), "Corporate entrepreneurship: Current research and future directions", *Journal of Business Venturing*, Vol. 24 No. 3, pp. 197-205.

Podsakoff, P.M., MacKenzie, S.B., Lee, J.Y. and Podsakoff, N.P. (2003), "Common method biases in behavioral research: a critical review of the literature and recommended remedies", *Journal of Applied Psychology*, Vol. 88 No. 5, pp. 879-903.

Rafique, M.A., Hou, Y., Chudhery, M.A.Z., Gull, N. and Ahmed, S.J. (2023), "The dimensional linkage between public service motivation and innovative behavior in public sector institutions; the mediating role of psychological empowerment", *European Journal of Innovation Management*, Vol. 26 No. 1, pp. 207-229.

Rafique, S., Khan, N.R., Soomro, S.A. and Masood, F. (2022), "Linking LMX and schedule flexibility with employee innovative work behaviors: mediating role of employee empowerment and response to change", *Journal of Economic and Administrative Sciences*.

Reid, S.W., Anglin, A.H., Baur, J.E., Short, J.C. and Buckley, M.R. (2018), "Blazing new trails or opportunity lost? Evaluating research at the intersection of leadership and entrepreneurship", *The Leadership Quarterly*, Vol. 29 No. 1, pp. 150-164.

Rutherford, M.W. and Holt, D.T. (2007), "Corporate entrepreneurship: an empirical look at the innovativeness dimension and its antecedents", *Journal of Organizational Change Management*, Vol. 20 No. 3, pp. 429-446.

Sanders, K., Moorkamp, M., Torka, N., Groeneveld, S. and Groeneveld, C. (2010), "How to support innovative behaviour? The role of LMX and satisfaction with HR practices", *Technology and Investment*, Vol. 1 No. 1, pp. 59-68.

Scandura, T.A., Graen, G.B. and Novak, M.A. (1986), "When managers decide not to decide autocratically: an investigation of leader-member exchange and decision influence", *Journal of Applied Psychology*, Vol. 71 No. 4, pp. 579-584.

Schermuly, C.C. and Meyer, B. (2016), "Good relationships at work: the effects of leader–member exchange and team–member exchange on psychological empowerment, emotional exhaustion, and depression", *Journal of Organizational Behavior*, Vol. 37 No. 5, pp. 673-691.

Schuler, R. and Jackson, S. (2001), "HR issues and activities in mergers and acquisitions", *European Management Journal*, Vol. 19 No. 3, pp. 239-253.

Shafique, I., Ahmad, B. and Kalyar, M.N. (2020), "How ethical leadership influences creativity and organizational innovation: examining the underlying mechanisms", *European Journal of Innovation Management*, Vol. 23 No. 1, pp. 114-133.

Sharma, P. and Chrisman, J.J. (1999), "Toward a reconciliation of the definitional issues in the field of corporate entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 23 No. 3, pp. 11-28.

Simsek, Z., Veiga, J.F. and Lubatkin, M.H. (2007), "The impact of managerial environmental perceptions on corporate entrepreneurship: towards understanding discretionary slack's pivotal role", *Journal of Management Studies*, Vol. 44 No. 8, pp. 1398-1424.

Singh, M. and Sarkar, A. (2012), "The relationship between psychological empowerment and innovative behavior", *Journal of Personnel Psychology*, Vol. 11 No. 3, pp. 127-137.

Spector, P.E. (2006), "Method variance in organizational research: truth or urban legend?", *Organizational Research Methods*, Vol. 9 No. 2, pp. 221-232.

Spector, P.E., Rosen, C.C., Richardson, H.A., Williams, L.J. and Johnson, R.E. (2019), "A new perspective on method variance: a measure-centric approach", *Journal of Management*, Vol. 45 No. 3, pp. 855-880.

Spreitzer, G.M. (1995), "Psychological empowerment in the workplace: dimensions, measurement, and validation", *Academy of Management Journal*, Vol. 38 No. 5, pp. 1442-1465.

Spreitzer, G.M., De Janasz, S.C. and Quinn, R.E. (1999), "Empower to lead: the role of psychological empowerment in leadership", *Journal of Organizational Behavior*, Vol. 20 No. 4, pp. 511-526.

Teng, B.S. (2007), "Corporate entrepreneurship activities through strategic alliances: a resource-based approach toward competitive advantage", *Journal of Management Studies*, Vol. 44 No. 1, pp. 119-142.

Thomas, K.W. and Velthouse, B.A. (1990), "Cognitive elements of empowerment: an 'interpretive' model of intrinsic task motivation", *Academy of Management Review*, Vol. 15 No. 4, pp. 666-681.

Tseng, C. and Tseng, C.C. (2019), "Corporate entrepreneurship as a strategic approach for internal innovation performance", *Asia Pacific Journal of Innovation and Entrepreneurship*, Vol. 13 No. 1, pp. 108-120.

Urbano, D., Turro, A., Wright, M. and Zahra, S. (2022), "Corporate entrepreneurship: a systematic literature review and future research agenda", *Small Business Economics*, Vol. 59 No. 4, pp. 1541-1565.

Vansteenkiste, M., Niemiec, C.P. and Soenens, B. (2010), "The development of the five mini- theories of self-determination theory: an historical overview, emerging trends, and future directions", *Advances in Motivation and Achievement*, Vol. 16, pp. 105-165.

Verma, S. and Mehta, M. (2022), "Corporate entrepreneurship and leadership theories: conceptual review", *Journal of Entrepreneurship in Emerging Economies*, Vol. 14 No. 5, pp. 902-925.

Wang, D., Gan, C. and Wu, C. (2016), "LMX and employee voice: a moderated mediation model of psychological empowerment and role clarity", *Personnel Review*, Vol. 45 No. 3, pp. 605-615.

Wheeler, A.R., Shanine, K.K., Leon, M.R. and Whitman, M.V. (2014), "Student-recruited samples in organizational research: a review, analysis, and guidelines for future research", *Journal of Occupational and Organizational Psychology*, Vol. 87 No. 1, pp. 1-26.

Yasir, M., Majid, A., Yousaf, Z., Nassani, A.A. and Haffar, M. (2023), "An integrative framework of innovative work behavior for employees in SMEs linking knowledge sharing, functional flexibility and psychological empowerment", *European Journal of Innovation Management*, Vol. 26 No. 2, pp. 289-308.

Young, H.R., Glerum, D.R., Joseph, D.L. and McCord, M.A. (2021), "A meta-analysis of transactional leadership and follower performance: double-edged effects of LMX and empowerment", *Journal of Management*, Vol. 47 No. 5, pp. 1255-1280.

Zahra, S.A. (1993), "Environment, corporate entrepreneurship, and financial performance: a taxonomic approach", *Journal of Business Venturing*, Vol. 8 No. 4, pp. 319-340.

Zhou, L., Wang, M., Chen, G. and Shi, J. (2012), "Supervisors' upward exchange relationships and subordinate outcomes: testing the multilevel mediation role of empowerment", *Journal of Applied Psychology*, Vol. 97 No. 3, pp. 668-680.

Further reading

Arnold, J.A., Arad, S., Rhoades, J.A. and Drasgow, F. (2000), "The empowering leadership questionnaire: the construction and validation of a new scale for measuring leader behaviors", *Journal of Organizational Behavior*, Vol. 21 No. 3, pp. 249-269.

Burgers, J.H., Jansen, J.J., Van den Bosch, F.A. and Volberda, H.W. (2009), "Structural differentiation and corporate venturing: the moderating role of formal and informal integration mechanisms", *Journal of Business Venturing*, Vol. 24 No. 3, pp. 206-220.

Dansereau, F., Graen, G.B. and Haga, W. (1975), "A vertical dyad linkage approach to leadership in formal organizations", *Organizational Behavior and Human Performance*, Vol. 13 No. 1, pp. 46-78.

Graen, G.B. and Cashman, J.F. (1975), "A role-making model of leadership in formal organizations: a developmental approach", *Leadership Frontiers*, Vol. 143 No. 165, pp. 143- 165.

Ling, Y., Simsek, Z., Lubatkin, M.H. and Veiga, J.F. (2008), "Transformational leadership's role in promoting corporate entrepreneurship: examining the CEO-TMT interface", *Academy of Management Journal*, Vol. 51 No. 3, pp. 557-576.

Maula, M.V., Autio, E. and Murray, G.C. (2009), "Corporate venture capital and the balance of risks and rewards for portfolio companies", *Journal of Business Venturing*, Vol. 24 No. 3, pp. 274-286.

Niemann, C.C., Mai, R. and Dickel, P. (2022), "Nurture or nature? How organizational and individual factors drive corporate entrepreneurial projects", *Journal of Business Research*, Vol. 140, pp. 155-169.

Teece, D.J., Pisano, G. and Shuen, A. (1997), "Dynamic capabilities and strategic management", *Strategic Management Journal*, Vol. 18 No. 7, pp. 509-533.

Corresponding author

Jeffery D. Houghton can be contacted at: jeff.houghton@mail.wvu.edu