



## Leaders' expectations of innovation and employees' innovative behavior: The roles of employees' expected positive performance outcomes and innovative self-efficacy

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**Abstract:** Employees' innovative performance determines an organization's innovation, which critically impacts its structural optimization and sustainability. Applying expectancy theory, we examined how and when the Pygmalion effect occurs in the relationship between leaders' expectations of innovation and employee innovative behavior. Our sample comprised 201 frontline employees (female = 31.84%; mean age = 41.48 years, SD = 7.97 years) in a Chinese coal enterprise, who completed surveys on innovation expectations of leaders, expected positive performance outcomes, innovative self-efficacy and innovative behavior. The results revealed that employees' expected positive performance outcomes mediated the positive relationship between leaders' innovation expectations and their innovative behavior. Employees' innovative self-efficacy positively moderated the relationship between their expected positive performance outcomes and innovative behavior, with this relationship being stronger for employees with high innovative self-efficacy. Moreover, we validated the moderated mediation model. Findings suggest that leaders can stimulate employee innovative behavior through expressing expectations and they also need to consider the boundary conditions.

**Keywords:** expectations of innovation; expected positive performance outcomes; innovative behavior; innovative self-efficacy; organizational innovation

### Introduction

In the era of global digitalization and intelligence, employee innovation plays an integral role, enabling enterprises to establish new competitive advantages in the global market (Opland et al., 2022; Van Essen et al., 2022; Yi et al., 2023; Arthachinda & Charoensukmongkol, 2024). At the same time, leadership may be the most significant driver of an organization's innovative competitiveness by influencing the extent to which employees innovate in their jobs (Pundt, 2023; Sürücü et al., 2023; Li et al., 2024a; Dar et al., 2024). Van de Ven (1986) defined employees' innovative behavior as behavior that entails the generation and implementation of new ideas relating to products, services, and procedures within organizations. During the process of developing an innovation, employees are inevitably confronted with unprecedented challenges, which may arise from performance pressure, poor leader-member exchanges, resource deficiency, employment insecurity, and other factors (Ng, 2024; Arun Kumar & Lavanya, 2024). Therefore, in the field of innovation, which is ripe with uncertainty and potential risks (Akram et al., 2020; Wang et al., 2021; Su & Zhang, 2023), individuals' internal conflicts and struggles are particularly pronounced. The dilemmas facing individuals stem mainly from the contradiction between their desire to enhance their performance, demonstrate their self-worth, and gain recognition through innovation and their concerns about potential risks brought about by innovation (Elsayed et al., 2023). Engelen et al. (2018) pointed out that employees tend to rely heavily on the instructions and expectations of superiors in their work (Binyamin, 2020; Nie et al., 2023); especially in high power distance cultures (Liang et al., 2022). Unlike specific supportive behaviors (such as

providing funds, time, or training), clearly communicated expectations allow employees to understand leaders' value judgments relating to innovation more directly. Explicit communication of leaders' innovation expectations not only guides employees' actions but it also has a psychological function, helping them to overcome psychological barriers of risk aversion in innovation (Wang et al., 2024). It could therefore be more crucial than specific supportive behaviors (Liu et al., 2023). The above discussion suggests that clear communication of leaders' expectations of innovation is particularly important and effective in a collectivist cultural context such as China's, where the power distance and sense of risk aversion are high. Yet, research on leaders' expectations and employees' innovative behavior continues to lag behind, particularly in such cultural contexts. Consequently, we drew on the Pygmalion effect (Eden, 1984) to explore the relationship between leaders' expectations of innovation and employees' innovative behavior in the Chinese context.

Expectancy theory (Vroom, 1964) posits that the primary motivation driving individuals to engage in a certain activity is the expectation that the activity will yield positive outcomes. A large number of studies have confirmed that outcome expectations directly influence employees' behavioral decision making (Li et al., 2021; Lent et al., 2021; Blaese et al., 2021; Hu & Meng, 2023). Zeelenberg et al. (2000) noted that one approach for managing uncertainty when making decisions is to develop outcome expectations pertaining to the potential results of different actions. Outcome expectations are a predictive mechanism based on past behaviors and feedback obtained from the external environment and entailing the cognitive processing of future events or behavioral outcomes (Bandura, 1991). As innovative behavior is characterized by



high risks and rewards, outcome expectations will directly influence employees' decision making and play a key role in employees' assessments of the feasibility of innovation (Yuan & Woodman, 2010; Cingöz & Akdoğan, 2011; Battistelli et al., 2022). Employees consciously introduce new methods or technologies into their work roles or environments primarily because they expect them to be considerably better than existing ones, leading to improvements in both personal and organizational performance. Hence, we posit that employees' expected positive performance outcomes can mediate the influence of leaders' innovation expectations on their innovative behavior.

The research literature shows that the effects of leaders' expectations are conditional. Leaders' expectations can have varying impacts on different types of employees (Carmeli & Schaubroeck, 2007; Zhao & Guo, 2019; Veestraeten et al., 2021; Chen et al., 2023). Previous studies have confirmed Vroom's (1964) assertion, which emphasizes the joint influence of an individual's outcome expectations and beliefs in their own abilities on behavioral choices (Carmeli & Schaubroeck, 2007; Hsu et al., 2007; Townsend et al., 2010). Innovative self-efficacy reflects an individual's assessment and judgment of their ability to achieve expected innovative outcomes. Given its conceptual and practical relevance to employees' expected positive performance outcomes and innovative behavior, we selected innovation self-efficacy as a moderator that reflects individuals' characteristics to explore how it interacts with expected positive performance outcomes to influence employees' innovative behavior.

To sum up, this study answers questions on whether and how leaders' expectations of innovation influence subordinates' innovative behavior, and how this relationship changes under the influence of subordinates' innovative self-efficacy. Our study contributes to the existing literature in several ways. First, although research in this area has contributed to our understanding of the relationship between leadership and employees' innovative behavior, significant gaps remain. Previous studies have predominantly focused on the specific supportive behaviors of leaders toward employee innovation, such as positive feedback (Lee et al., 2021), knowledge sharing (Nurhidayati & Zaenuri, 2023), participative decision making (Farzana & Charoensukmongkol, 2023; Mata et al., 2023), and voice solicitation (Li et al., 2024b). However, few studies have explored whether leaders' innovation expectations, considered as a cognitive factor (Whiteley et al., 2012; Veestraeten et al., 2021), are conducive to employees' innovative behavior, especially in the Chinese context. In response to a call by Tierney and Farmer (2004) for "future tests of the Pygmalion process for creativity within different settings (pp. 429)," we investigated the relationship between leaders' expectations of innovation and employees' innovative behaviors in China and revealed the underlying mechanisms of this relationship.

Second, current understanding of how the Pygmalion effect occurs in the field of innovation remains limited. Therefore, we applied expectancy theory to explain the underlying mechanism and boundary condition of the Pygmalion effect in the context of employee innovation

in China. Unlike intrinsic motivation or creative engagement (Xu & Wang, 2018; Wang & Wang, 2022), which focuses more on individuals' internal experiences (Oldham, 1976; Schaufeli et al., 2006), expected positive performance outcomes reflect an individual's predictions about innovation results. This concept, which integrates cognitive judgments and potential behavioral expressions, is important in a study of the relationship between situational variables and innovative behavior (Yuan & Woodman, 2010). While the logic of the proposed relationship of leaders' expectations of innovation—expected positive performance outcomes—employee innovative behavior is appealing, its empirical verification remains a research gap.

Third, we would argue that the relationship between employees' expected positive performance outcomes and their innovation behavior is not straightforward, and there are other factors that work together with expected positive performance outcomes to affect employee innovation behavior. Malik et al. (2015) pointed out that an individual's perception of their own abilities forms the "background" for human behavior. Therefore, we investigated the moderating role of innovative self-efficacy between expected positive performance outcomes and innovative behavior and developed a moderated mediation model. The study explains how personal dispositions, such as innovative self-efficacy, positively influence the effect of leaders' innovation expectations on employees' innovative behavior through their expected positive performance outcomes, thus adding to the innovation knowledge base.

### ***Leaders' expectations of innovation and employees' innovative behavior***

According to the Pygmalion effect, individuals tend to act in accordance with the expectations of the reference group. The expectations of the reference group serve as a self-fulfilling prophecy, prompting individuals to establish higher behavioral standards and make greater efforts to meet that standard (Eden, 1984; Kierein & Gold, 2000). Employees decide what they should do at work according to the expectations of reference groups and perceive their behaviors to be compliant with the desires of those viewed as influential (Merton, 1957; Ajzen, 1991). This self-fulfilling prophecy often occurs in relationships characterized by disparities in status and power differences (Baldwin et al., 2009; Sabat et al., 2021). Leaders possess the authority to provide rewards, support, and feedback to employees. When employees perceive that their superiors' expectations of their performance are high, they tend to adjust their work behaviors according to those expectations (Goswami et al., 2022; Sims & Weinberg, 2024). Song et al. (2024) noted that in national cultures, in which the power distance and risk aversion level are high, employees want their leaders to issue propositions and directives clarifying what is considered appropriate. Previous studies have validated the Pygmalion effect in the field of employee creativity or innovation (Scott & Bruce, 1994; Tierney & Farmer, 2004; Carmeli & Schaubroeck, 2007; Jiang & Gu, 2017; Xu & Wang, 2018; Liu et al., 2021; Wang & Wang, 2022; Li et al., 2022; Chen et al., 2023).

Leaders' innovation expectations refer to their promotion of various creative professional activities among their subordinates (Tierney & Farmer, 2004). The innovation expectations of leaders convey three important messages to employees. The first concerns recognition and trust. Leaders communicate differentiated innovation expectations to different employees according to their innovative abilities and job innovation requirements (Qu et al., 2015; Qu et al., 2017; Xu & Wang, 2018; Liu et al., 2021; Liu et al., 2023; Nabi et al., 2023). Employees who receive and internalize these expectations will gradually form and reinforce their role identity, fostering the belief that "I am an innovator" (Carmeli & Schaubroeck, 2007; Farmer et al., 2003; Liu et al., 2023). These expectations and the trust demonstrated by their superiors enhance their confidence, motivating them to participate actively in innovation activities and strive to validate their leaders' expectations.

The second message concerns the organization's goals and innovation values. Leaders' expectations of innovation reflect the organization's recognition of creativity, while also setting clear innovation goals and directions for employees (Scott & Bruce, 1994; Jiang & Gu, 2017; Li et al., 2022; Tolcamp et al., 2022; Farrukh et al., 2022; Wang et al., 2022; Wang et al., 2024; Chen et al., 2023). In the context of China's collectivist and high power distance culture, employees demonstrate an implicit work norm of acting according to leaders' expectations (Wang et al., 2017; Stamkou et al., 2019). Clear innovation values guide employees in making choices that meet organizational requirements (Zhang et al., 2022), while established innovation goals inspire them to level up their performance through continuous improvement and innovation (Danaeefard & Torshab, 2021).

The third message concerns innovation support and rewards. Leaders who hold high expectations of their followers exhibit leading behaviors that are conducive to their followers' efforts, such as providing feedback, training, and promotions and building good relationships with subordinates (Tierney & Farmer, 2004; Whiteley et al., 2012; Wang et al., 2022). These supportive behaviors are reportedly beneficial for employees' innovative behaviors (Su et al., 2020; Choi et al., 2021; Lyu et al., 2022; Hosseini et al., 2024). Additionally, leaders' commitment to rewarding innovation efforts also motivates employees to innovate (Venkatesamy & Lew, 2024). Daniels and Greguras (2014) pointed out that in environments with high power distance, leaders exert a stronger influence on followers, as followers tend to defer to authority, show greater respect for leaders, and internalize their expectations more deeply.

#### ***The mediating role of expected positive performance outcomes***

The core of the Pygmalion effect lies in the transmission of beliefs (Karakowsky et al., 2012). Leaders' expectations influence the motivation and subsequent performance of their subordinates in various ways. Expectancy theory (Vroom, 1964) enables a systematic analysis of the process of formation of individual motivation (Eden, 1988). The use of a lens of expectancy theory elicits a deeper understanding of the mechanisms underlying

the Pygmalion effect. According to expectancy theory, individuals' behaviors are based on outcomes, or, more specifically, on the expected outcomes of their actions (Yuan & Woodman, 2010). From the perspective of efficiency, employees' innovations stem from their rational decisions aimed at maximizing personal or organizational performance (Abrahamson, 1991; Battistelli et al., 2022).

The expected positive performance outcomes of employees refer to their belief and expectation that their innovative behaviors can bring about improvements in their work outputs (Yuan & Woodman, 2010). However, innovation can be extremely risky and challenging in some work contexts and cultures, requiring careful cost-benefit analyses (Montani et al., 2021; Eisenbart et al., 2023; Qammar et al., 2024). Previous studies have shown that an outcome expectation is a logical inference about results derived from a comprehensive analysis of the environment (Pindard-Lejarraga & Lejarraga, 2024). Moreover, expectancy theory holds that the degree of effort expended by an individual on a particular behavior is determined by their perception of the outcomes that the behavior can bring about (Eisenberger & Aselage, 2009; Jiang et al., 2019). In this study, we posited that employees will use relevant environmental cues to anticipate whether innovation can bring about improvements in their performance outcomes and will accordingly decide whether or not to innovate (Shin et al., 2017). When individuals anticipate that their own performance or that of their organization will improve as a result of innovation, they will exert more effort innovating to achieve the expected performance. Schaarschmidt (2016) found that employees' perceived external reputations positively influence their expected positive performance outcomes, which ultimately affects their willingness to participate in the implementation of service innovation. Latif et al. (2017) confirmed this conclusion. By contrast, Farzaneh and Boyer (2019) found that employees' job insecurity reduces their innovative behavior by lowering their expected positive performance outcomes. Accordingly, we posited that leaders' expectations of innovation can foster organizational values and norms that affect employees' perceptions of potential performance enhancement associated with innovative behavior. Employees can innovate expecting positive performance outcomes.

#### ***The moderating role of employees' innovative self-efficacy***

According to expectancy theory, both the expectation that a certain action will produce desired outcomes (e.g., performance improvement or image enhancement) and the perceived ability to perform that action jointly constitute the driving force behind people's actions (Gist & Mitchell, 1992). Therefore, if outcome expectations are posited as the only rationale for innovative behavior, they are unlikely to suffice. Innovative self-efficacy is understood to be a personality factor that reflects employees' ability and confidence to accomplish desired outcomes (Mehboob & Haque, 2024; Kafeel et al., 2024; Chughtai & Khan, 2024). Employees will draw on their self-efficacy to evaluate whether their innovative activities will be successful, considering risks and uncertainties before implementing an



innovation. Innovative self-efficacy refers to an individual's level of confidence regarding successful implementation of the innovation and to their evaluation of their own abilities to bring about innovation in specific situations (Tierney & Farmer, 2002). When employees decide whether to invest in innovative activities, expected positive performance outcomes become a critical extrinsic motivating factor. At the same time, innovation requires individuals to possess strong intrinsic motivational strength, which is reflected in their beliefs regarding their ability to innovate. Employees with high levels of innovative self-efficacy are confident in their abilities to innovate and believe that they can implement creative ideas and achieve corresponding outcomes (Zhang & Wang, 2022; Sun et al., 2024; Gelaidan et al., 2024). However, individuals with low levels of innovative self-efficacy fear that the leadership may deny them. Consequently, the likelihood of their demonstrating innovative behaviors is greatly reduced.

### Goals of the Study

We aimed to explore the relationship between leaders' expectations of innovation and employees' innovative behavior. We also examined the mediating role of employees' expected positive performance outcomes and the moderating role of employees' innovative efficacy. Applying the above arguments, we posited that employees' innovative self-efficacy would moderate the mediating effect of employees' expected positive performance outcomes in the relationship between leaders' expectations of innovation and employees' innovative behavior. Specifically, we assumed that expectations of innovation conveyed by leaders would result in employees' positive evaluations of innovation-induced performance outcomes and would therefore increase their willingness to innovate at work. Employees demonstrating innovative self-efficacy are convinced that they have the ability to innovate. Under the psychological influence of an "I can" belief, employees will be more likely to transform their willingness ("I want") into actual actions and demonstrate innovative behaviors. In other words, innovative self-efficacy enhances the impact of leaders' innovative expectations on employees' innovative behavior through their expected positive performance outcomes. Figure 1 summarizes all of the hypothesized relations.

We formulated and tested the following hypotheses:

Hypothesis 1: Leaders' expectations of innovation are positively related to employees' innovative behavior.

Hypothesis 2: Employees' expected positive performance outcomes mediate the relationship between leaders' expectations of innovation and their innovative behavior.

Hypothesis 3: Employees' innovative self-efficacy positively moderates the relationship between their expected

positive performance outcomes and their innovative behavior. Higher levels of employees' innovative self-efficacy correspond to a stronger relationship.

Hypothesis 4: Employees' innovative self-efficacy positively moderates the mediating effect of their expected positive performance outcomes on the relationship between leaders' expectations of innovation and employees' innovative behavior, such that the mediating effect is stronger when employees have a high level of innovative self-efficacy.

### Method

#### Participants and setting

In this study, data were collected from 217 frontline employees of a coal enterprise in China. Of the 201 individuals who provided usable responses, 68.16 percent were male. The average age of respondents was 41.48 years ( $SD = 7.97$ ), with 83.58 percent of them having worked in the organization for over 10 years.

#### Measures

The employees completed measures of leaders' innovation expectations, expected positive performance outcomes, innovative self-efficacy and innovative behavior. Employees reported the extent to which they agreed with each statement using a 5-point Likert scale (1 = *strongly disagree* and 5 = *strongly agree*). Table 1 presents all the items used to measure the study variables.

#### Procedure

The study was approved by Sichuan University in China. Data was collected randomly from the selected organization in coordination with the human resource department. The respondents consented to participate in the study after we had assured them of the confidentiality and anonymity of their responses. The survey was conducted at three time points, with an average interval of one month between time points. At Time 1, employees rated perceived leaders' expectations of innovation and provided demographic information on their sex, age, education level, and company tenure. At Time 2, employees rated their own expected positive performance outcomes and innovative self-efficacy. At Time 3, they rated their own innovative behaviors. We initially explained the purpose of our study and provided guidelines for responding to the questionnaire to ensure that all participants would fully understand the content. Each employee who consented to participate was given a unique identification code known only to us. At the same time, special identification codes were marked on each questionnaire used at each of three time points before the data collection process. We distributed the questionnaires to the corresponding employees based on the pre-assigned codes. All completed questionnaires were returned to us directly. At the end of the third phase, we matched all of the questionnaires received from the respondents according to the identification codes. A total of 201 respondents provided usable data at the three time points.

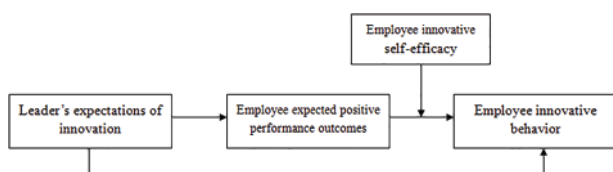


Figure 1. Hypothesized model

**Table 1.** Items used to measure the study variables

Name of construct	Items	
<i>Leaders' expectations of innovation</i>	My supervisors think of me as a creative employee. My supervisor thinks that creativity is important to me. My supervisor expects me to be creative. My supervisor would probably be disappointed in me if I was not creative.	<a href="#">Carmeli and Schaubroeck (2007)</a> Cronbach's alpha 0.793
<i>Expected positive performance outcomes</i>	The more innovative I am, the better my job performance. Coming up with creative ideas helps me do well on my job. My work unit will perform better if I often suggest new ways to achieve objectives.	<a href="#">Yuan and Woodman (2010)</a> Cronbach's alpha 0.835
<i>Innovative self-efficacy</i>	I possess the skills and abilities required for innovation. I possess the power and resources required for innovation. I am confident that I can successfully implement the innovation. I am confident that I can successfully overcome challenges and barriers in implementing the innovation.	<a href="#">Choi and Chang (2009)</a> Cronbach's alpha 0.819
<i>Innovative behavior</i>	I always search out new technologies, processes, techniques, and product ideas at work. I always generate creative ideas at work. I always promote and champion ideas to others at work. I always investigate and secure funds needed to implement new ideas at work. I always develop adequate plans and schedules for the implementation of new ideas at work. I am innovative at work.	<a href="#">Scott and Bruce (1994)</a> Cronbach's alpha 0.787

### Data analysis

We first conducted confirmatory factor analysis (CFA), using Amos 17.0, to verify the uniqueness of the measurement model. Thereafter, we used SPSS 26.0 to complete hierarchical regression analysis testing the mediating role of employees' expected positive performance outcomes on the relationship between leaders' expectations of innovation and employees' innovative behavior ([Baron & Kenny, 1986](#)). We used Model 4 in the PROCESS macro in SPSS26.0 with 5000 bootstraps resamples and a 95% confidence interval to test direct, indirect, and total effects. Finally, we also conducted a hierarchical regression analysis to test the moderating effect of employees' innovative self-efficacy on the relationship between expected positive performance outcomes and innovative behavior and used the PROCESS macro in SPSS26.0 with Model 14 to investigate the moderated mediation effect ([Hayes, 2013](#)).

As shown in [Table 2](#), our hypothesized 4-factor measurement model (leaders' expectations of innovation, expected positive performance outcomes, innovative self-efficacy, and employee innovative behavior) provided a good fit with the data ( $\chi^2 = 152.794$ ,  $df = 113$ ,

$\chi^2/df = 1.352$ , CFI = 0.965, TLI = 0.958, IFI = 0.966, and RMSEA = 0.042), and all of the indicators significantly loaded on their corresponding latent factors ( $p < 0.001$ ). We also compared this 4-factor model with other alternative models.  $\chi^2$  difference tests showed that the 4-factor model had a significantly better fit than a 3-factor model (A) ( $\Delta\chi^2 = 220.045$ ,  $\Delta df = 3$ ,  $p < 0.001$ ), 3-factor model (B) ( $\Delta\chi^2 = 175.845$ ,  $\Delta df = 3$ ,  $p < 0.001$ ), a 2-factor model ( $\Delta\chi^2 = 367.201$ ,  $\Delta df = 5$ ,  $p < 0.001$ ), and a single-factor model ( $\Delta\chi^2 = 498.188$ ,  $\Delta df = 6$ ,  $p < 0.001$ ).

### Results

#### Descriptive statistics

[Table 3](#) presents means, standard deviations, correlations, and scale reliabilities for the variables in this study. As we hypothesized, leaders' expectations of innovation were significantly and positively correlated with employees' innovative behavior ( $r = 0.371$ ,  $p < 0.01$ ). Leaders' expectations of innovation were also significantly positively related to employees' expected positive performance outcomes ( $r = 0.237$ ,  $p < 0.01$ ), which, in turn, were significantly positively related to employees' innovative

**Table 2.** Results of confirmatory factor analysis

Model	$\chi^2$	$\Delta \chi^2$	df	$\chi^2/\text{df}$	CFI	TLI	IFI	RMSEA
4-factor model	152.794		113	1.352	0.965	0.958	0.966	0.042
3-factor model A	372.839	220.045***	116	3.214	0.777	0.738	0.780	0.105
3-factor model B	328.639	175.845***	116	2.833	0.815	0.783	0.818	0.096
2-factor model	519.995	367.201***	118	4.407	0.650	0.597	0.656	0.131
Single-factor model	650.982	498.188***	119	5.470	0.537	0.471	0.544	0.150

Note. \*\*\* $p < 0.001$ ; 3-factor model A combined innovative self-efficacy and employee innovative behavior, 3-factor model B combined expected positive performance outcomes and innovative self-efficacy, 2-factor model combined leader's expectations of innovation, expected positive performance outcomes and innovative self-efficacy, single-factor model combined all variables.

**Table 3.** Means, standard deviations, correlations, and reliabilities

Variables	M	SD	1	2	3	4	5	6	7	8
1. Gender	—	—	1							
2. Age	41.483	7.973	0.165*	1						
3. Education	—	—	−0.046	−0.574**	1					
4. CT (month)	232.468	96.491	0.090	0.886**	−0.584**	1				
5. LEI	3.744	0.613	0.089	0.014	0.057	0.016 (0.793)	1			
6. EPPO	3.776	0.655	0.169*	0.134	−0.103	0.108 0.237** (0.835)		1		
7. ISE	3.560	0.596	0.194**	−0.030	−0.025	−0.023 0.253** 0.395** (0.819)			1	
8. EIB	3.802	0.459	0.120	0.017	0.067	0.018 0.371** 0.390** 0.283** (0.787)				1

Note. \* $p < 0.05$ , \*\* $p < 0.01$ ; Internal consistency reliabilities are in parentheses; CT = company tenure, LEI = leader's expectations of innovation, EPPO = expected positive performance outcomes, ISE = innovative self-efficacy, EIB = employee innovative behavior.

behavior ( $r = 0.390$ ,  $p < 0.01$ ). Moreover, employees' innovative self-efficacy was positively related to innovative behavior ( $r = 0.283$ ,  $p < 0.01$ ).

#### Tests for mediation of employees' expected positive performance outcomes

Table 4 shows the results of the hierarchical regression. We found that leaders' expectations of innovation were significantly associated with employees' innovative behavior ( $M4$ ,  $\beta = 0.358$ ,  $p < 0.001$ ). Therefore, Hypothesis 1 was supported. Furthermore, leaders' expectations of innovation was significantly related to employees' expected positive performance outcomes ( $M2$ ,  $\beta = 0.229$ ,  $p < 0.01$ ). After we included employees' expected positive performance outcomes in the regression equation, the effect of leaders' expectations of innovation on employees' innovative behavior diminished but remained significant ( $M6$ ,  $\beta = 0.284$ ,  $p < 0.001$ ). Partial mediation of employee expected positive performance outcomes was found. Therefore, Hypothesis 2 was supported.

The results shown in Table 5 indicate that the indirect effect of leaders' expectations of innovation on employees' innovative behavior through employees' expected positive performance outcomes was significant as the zero fell outside the 95% confidence level (0.022 and 0.127). They also revealed that the direct relationship between leaders' expectations of innovation and employees' innovative behavior was significant (0.117 and 0.308). Thus, both direct and indirect effects were significant in the same direction, confirming the partial mediation of employees' expected positive performance outcomes.

#### Testing for moderation of employees' innovative self-efficacy

Hypothesis 3 suggests that the positive relationship between employees' expected positive performance outcomes and their innovative behavior would be stronger among those with high levels of innovative self-efficacy than among those with lower levels. The results shown in Table 6 were aligned with Hypothesis 3, as the coefficient for the interaction of employees' expected positive performance outcomes and innovative self-efficacy was significant ( $M9$ ,  $\beta = 0.141$ ,  $p < 0.05$ ). This result indicates that employees' expected positive performance outcomes interacted significantly with innovative self-efficacy to influence employees' innovative behavior. Therefore, Hypothesis 3 was supported.

Figure 2 elucidates the nature of this moderation. Specifically, it shows that the relationship between employees' expected positive performance outcomes and their innovative behavior was stronger for those with high ( $M+1\text{SD}$ ) levels of innovative self-efficacy compared with those with lower levels ( $M-1\text{SD}$ ). The positive moderating effect of employees' innovative self-efficacy on the relationship between their expected positive performance outcomes and their innovative behavior was thus confirmed.

#### Moderated mediation analysis

The results shown in Table 7 indicated that the index of moderated mediation was 0.033, and its corresponding 95% confidence interval did not include a zero (0.002 and 0.073). There was also no zero in the 95%

**Table 4.** Regression analysis results for mediation

Variable	Expected positive performance outcomes		Employee innovative behavior			
	M1	M2	M3	M4	M5	M6
Gender	0.152*	0.132	0.120	0.088	0.061	0.045
Age	0.101	0.104	−0.011	−0.007	−0.051	−0.041
Education	−0.053	−0.076	0.115	0.079	0.136	0.104
Company tenure	−0.026	−0.044	0.084	0.057	0.094	0.071
LEI		0.229**		0.358***		0.284***
EPPO					0.390***	0.323***
R <sup>2</sup>	0.042	0.094	0.023	0.150	0.169	0.244
ΔR <sup>2</sup>	0.042	0.052	0.023	0.127	0.146	0.095
ΔF	2.144	11.145**	1.171	29.021***	34.200***	24.272***

Note. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ ; Values are standardized coefficients; LEI = leader's expectations of innovation, EPPO = expected positive performance outcomes.

**Table 5.** Total, direct and indirect effect of leader's expectations of innovation on employee innovative behavior

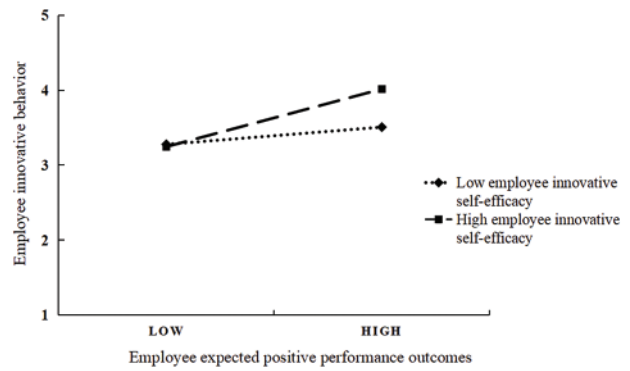
Mediation effect	Effect	SE	95% confidence interval	
			Lower limit	Upper limit
Direct effect	0.213	0.048	0.117	0.308
Indirect effect	0.055	0.019	0.022	0.127
Total effect	0.268	0.050	0.170	0.367

**Table 6.** Regression analysis results for moderation

Variable	Employee innovative behavior		
	M7	M8	M9
Gender	0.120	0.038	0.035
Age	−0.011	−0.023	−0.026
Education	0.115	0.143	0.168*
Company tenure	0.084	0.086	0.094
EPPO		0.333***	0.337***
ISE		0.149*	0.158*
EPPO × ISE			0.141*
R <sup>2</sup>	0.023	0.187	0.206
ΔR <sup>2</sup>	0.023	0.164	0.019
ΔF	1.171	19.533***	4.713*

Note. \* $p < 0.05$ , \*\*\* $p < 0.001$ ; Values are standardized coefficients; EPPO = expected positive performance outcomes, ISE = innovative self-efficacy.

confidence intervals for the indirect conditional effect of leaders' expectations of innovation on employees' innovative behavior at the low (−1 SD) and high (+1 SD) levels of the moderator ([0.001, 0.069] and [0.027, 0.124], respectively). In addition, there was no zero in the 95% confidence intervals for the differences between the low and high levels (0.002 and 0.087). These results

**Figure 2.** The moderating effect of employee innovative self-efficacy

demonstrated that employees' innovative self-efficacy significantly strengthened the positive indirect effect of leaders' expectations of innovation on employees' innovative behavior through their expected positive performance outcomes. Therefore, Hypothesis 4 was supported.

### Discussion

To gain an in-depth understanding of the Pygmalion effect in employee innovation, we investigated the relationship between leaders' expectations of innovation and employees' innovative behavior. Drawing on expectancy theory, we hypothesized how (through employees' expected positive performance outcomes) and when (with high employees' innovative self-efficacy) leaders' innovation expectations affect followers' innovative behavior and constructed a moderated mediation model. We tested our hypotheses, which were validated. Our research results have important theoretical implications.

We found that leaders' expectations are associated with employees' work innovation. This conclusion confirms Eden's (1984) assertion that "the Self-Fulfilling Prophecy is a promising tool in management (pp. 72)." It can help to advance research by extending the Pygmalion effect to the field of organizational innovation. Research on the Pygmalion effect in the organizational domain has already expanded from job performance



**Table 7.** Results of moderated mediation analysis

Employee innovative self-efficacy	Indirect effect	SE	95% confidence interval		Index	SE	95% confidence interval	
			Lower limit	Upper limit			Lower limit	Upper limit
Low (−1 SD)	0.030	0.017	0.001	0.069	0.033	0.018	0.002	0.073
High (+1 SD)	0.070	0.025	0.027	0.124				
Differences between low and high	0.040	0.022	0.002	0.087				

(Chen & Klimoski, 2003; Whiteley et al., 2012) to creativity (Tierney & Farmer, 2004; Carmeli & Schaubroeck, 2007; Jiang & Gu, 2017; Xu & Wang, 2018; Liu et al., 2021; Wang & Wang, 2022; Chen et al., 2023). However, few studies have explored the relationship between leaders' expectations and employees' innovative behavior. As all employees' innovative activities are likely to contribute to organizational innovation, shifting the focus to innovative behavior would allow for a more comprehensive and realistic analysis than simply focusing on the generation of ideas (creativity) (Kmieciak, 2021; Tsameti et al., 2023). This study was conducted in the Chinese context and confirmed the existence of the Pygmalion effect in employees' innovative behavior. Our results indicate that in a culture characterized by high power distance and risk avoidance, whereas specific supportive behaviors would evidently impact positively on innovation, such behaviors may struggle to fully motivate employees' willingness without the prerequisite of leader's clear and explicit innovation expectations (Xu & Wang, 2018).

Our findings revealed that expected positive performance outcomes constitute an important mechanism driving the Pygmalion effect and enriching the exploration of the self-fulfilling prophecy relating to innovation. Previous studies have analyzed the impact of leaders' innovation expectations on employees' creative activities from the perspective of psychological mechanisms, such as intrinsic motivation (Wang & Wang, 2022), creative process engagement (Xu & Wang, 2018), self-expectations of innovation (Liu et al., 2021; Carmeli & Schaubroeck, 2007), and creative self-efficacy (Tierney & Farmer, 2004; Jiang & Gu, 2017). The theoretical framework of the present study incorporated the Pygmalion effect, expectancy theory, and employee innovation. We examined how outcome expectations served as the psychological mechanism behind the relationship between leaders' expectations and employees' innovative behavior. The results indicate that leaders' expectations of innovation create a positive environment for employees' expected positive performance outcomes (Farrukh et al., 2022). At the same time, outcome expectations involving considerations of potential costs and benefits are important extrinsic motivational factors that merit attention alongside employees' intrinsic interest (Yuan & Woodman, 2010).

A final point to be noted is that previous studies on employees' innovative self-efficacy and innovative behaviors have primarily treated innovative self-efficacy as a state variable (Wilaphan et al., 2023; Yuan & Jiang, 2024).

In this study, we examined innovative self-efficacy as a trait variable, exploring its moderating role in the relationship between expected positive performance outcomes and innovative behavior. Our findings confirmed that leaders' expectations of innovation have significantly different impacts on individuals with varying levels of innovative self-efficacy. We explored the boundary conditions of the Pygmalion effect, and our results support an important point proposed by Karakowsky et al. (2012), namely that subordinates in the Pygmalion model are active cognitive agents rather than passive targets. When employees are faced with leaders' expectations of innovation, they can actively predict innovation outcomes and assess their own innovative capabilities.

### *Managerial implications*

Leaders should actively communicate their innovation expectations to their subordinates and foster relationships of trust between both parties. They should clearly and specifically convey these expectations and be adept at listening to subordinates' ideas, thus confirming that their expectations have been understood. In addition, during the process of innovation, leaders should provide necessary support and feedback, encouraging subordinates to make full use of various resources and motivating them to achieve innovation goals.

The results extend innovation research by empirically demonstrating that leaders' expectations are beneficial for promoting employees' innovative behaviors. Employees take account of challenges and risks associated with innovation, examining the situation and context for clues that can help them to decide whether innovation is possible. A key situational factor that employees consider is the leadership within their organizations. Leaders' attitudes and actions concerning innovation strongly impact employees' willingness to face challenges and take risks (Amankwaa et al., 2022).

Leaders can share case studies of successful innovation within the industry and reward employees who have achieved significant improvements in their performance through innovation. They can also build an innovation platform within the company on which they can publish various innovation needs, and they can encourage employees to collaborate and participate in innovation projects. Employees who are committed to the innovation process may attain positive results brought about by the innovation, which will encourage them to be more proactive in finding creative ways to solve practical problems at work.



Leaders should provide various forms of training, create a fault-tolerant organizational atmosphere, and promptly recognize employees' innovative performance to enhance their confidence in the innovation process. Employees with high levels of innovative self-efficacy are more likely to come up with new ideas and solutions, thus accelerating the organization's innovation process.

### **Strengths, limitations, and future directions**

We adopted an interactional approach, which showed that employees' innovative behavior is influenced by the joint effect of willingness to innovate and their evaluation of their own capabilities. Previous studies have suggested that leaders' innovation expectations are strongly motivating for employees with high levels of self-efficacy (Carmeli & Schaubroeck, 2007). It can be inferred that employees' responses to leaders' encouragement are highly contingent on their perceptions of their own abilities. More attention should therefore be paid to the boundary conditions that could promote or constrain employees' innovative behaviors.

This study had several limitations. First, as all of the variables were assessed by employees, same-source bias may have influenced our findings. Future studies should attempt to expand the sample size and measure variables from different sources to endorse these findings.

Second, we used a cross-sectional design, which meant that we could not ascertain causal relationships between variables. Future studies should be conducted using a longitudinal design to reconfirm the causal inferences that we made.

Third, the possible benefits derived from innovation are multidimensional. In addition to performance outcomes, which were the focus of this study, there are other potential benefits, such as job promotion and image enhancement (Battistelli et al., 2022). This study only focused on the benefits of performance outcomes from the perspective of efficiency. Future studies should focus on other benefits that innovation can bring about from multiple perspectives to develop a more in-depth understanding of the role of outcome expectations in employees' innovation practices.

### **Conclusion**

The findings of our study indicate that individuals usually consider the potential benefits that innovation may bring based on leaders' expectations when engaging in innovative activities. Thinking rationally helps individuals to make innovation-related decisions and improve their performance. We also identified a boundary condition for this model. Employees' innovative self-efficacy positively moderated the relationship between their expected positive performance outcomes and their innovative behavior. A higher level of innovative self-efficacy corresponded to a stronger positive impact of the employee's expected positive performance outcomes on their innovative behavior. Furthermore, the results indicated that employees' innovative self-efficacy positively moderated the mediation of their expected positive performance outcomes.

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**Availability of Data and Materials:** The data that support the findings of this study are available from the corresponding author, Hao Zhou, upon reasonable request.

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