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Pay for individual performance and knowledge sharing: A new explanation based on the nonlinear effect

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ABSTRACT

The innovation process is inseparable from knowledge sharing. How to stimulate employee knowledge sharing has always been researched by scholars. This study develops a nonlinear research model based on self-determination theory to explore how and when pay for individual performance (PFIP), as a form of extrinsic reward, stimulates employee knowledge sharing. The multiphase and multisource data was collected from 385 employees at 8 Chinese firms to test the hypotheses. The results show that PFIP has an inverted U-shaped effect on employee intrinsic motivation, which in turn influences knowledge sharing. In addition, the indirect curvilinear effect is moderated by core self-evaluation and empowering leadership. The findings are vital for scholars and managers to design and adopt an effective compensation system to encourage knowledge sharing and, consequently, improve knowledge management practices.

1. Introduction

Knowledge sharing (KS), a process through which individuals fulfill specific responsibilities and organizational goals by exchanging data, information, know-how, and expertise (Le & Lei, 2019), can facilitate the appreciation and socialization of knowledge as a strategic intangible asset (Grant, 1996), and drive continuous learning and innovation within organizations. Therefore, effective knowledge management hinges crucially on successfully motivating individual KS (Bereznoy et al., 2021).

Extrinsic rewards have been proven to be a significant incentive mechanism encouraging KS (Donnelly, 2019; Nguyen et al., 2019). Among various incentives, pay for individual performance (PFIP) is a prevalent form of extrinsic rewards (Gerhart & Newman, 2020). In the United States, approximately 95 % of employers have implemented some type of PFIP (Posthuma et al., 2023) because it has clear reward criteria, fosters fair competition, and motivates employees. Extensive empirical evidence underscores the benefits of PFIPs in stimulating individual initiatives, such as innovative behavior (Ederer & Manso, 2013). Surprisingly, however, little is known about how this reward system influences KS, leaving managers unable to harness the full incentive effects of PFIP for effective knowledge management. Furthermore, recent research has emphasized the potential risks associated with PFIP, including heightened competition, reduced collaboration, and even unethical behaviors (He et al., 2021), further obscuring the relationship between PFIP and KS.

In this study, we apply self-determination theory (SDT) to reveal how PFIP, as a unique form of extrinsic reward, influences employees' KS. SDT underscores the complexity of how extrinsic rewards influence individual motivation and subsequent behavior, hinging on the dual nature of rewards: informational and controlling (Gerhart & Fang, 2014, 2015). When the informational aspect of rewards dominates, extrinsic rewards can bolster an individual's IM. Conversely, when the controlling aspect prevails, extrinsic rewards can undermine IM. This perspective aligns with the complexity observed in PFIP within the current literature, where PFIP can both enhance individuals' recognition of their work and abilities, but also potentially evoke feelings of having their autonomy compromised (Zhang et al., 2022).

SDT provides a foundational framework for developing the PFIP–IM–KS model, but a lingering question remains: When do the informative and controlling aspects of PFIP predominate? Thus, we introduce the role of incentive intensity and elucidate the distinct effects of PFIP under different incentive intensities. Specifically, when PFIP is at a low-to-medium intensity, its informational nature dominates. The pay-

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for-work distribution system can guide employees to perceive greater competency and autonomy in a fair, goal-directed, and competitive workplace (Fang & Gerhart, 2012; Gerhart & Fang, 2014). However, at medium to high intensity, the controlling nature of PFIP prevails. The loss-effect framework leads employees to perceive insecurity, indeterminacy, and punishment, causing them to fail to affirm their self-competence and autonomy (Kahneman & Tversky, 1979). Specifically, we propose that the effect of PFIP on KS via IM follows an inverted U-shaped curve.

SDT suggests that boundary conditions may affect how recipients perceive the informational or controlling aspects of the reward (Deci et al., 2017). We identified core self-evaluation (CSE) and empowering leadership (EL) as two such conditions. First, the study showed that individuals who hold more positive self-evaluations are less susceptible to the influence of negative performance-relevant evaluations (Brockner, 1988), and we propose that employees with high CSE have a stronger belief in their capabilities and capacity to achieve performance goals from high PFIP (Judge et al., 1998). In addition, SDT posits that, if a leader creates a relatively autonomous environment for reward distribution, it helps individuals perceive the reward as informational (Deci et al., 2017). According to this logic, EL, which focuses on sharing power and encouraging employees to self-manage (Srivastava et al., 2006), can provide employees with the opportunity and resources to succeed in their work or tasks (Zhang, & Bartol, 2010), thus compensating for the damage to IM caused by high PFIP.

This study makes several theoretical contributions. First, we contribute to the knowledge management literature by examining the impact of PFIP on KS. While some scholars acknowledged the pivotal role of extrinsic rewards in shaping employee KS (Nguyen & Malik, 2020), to our knowledge, the relationship between extrinsic rewards and KS remains ambiguous (Chang et al., 2015; Nguyen et al., 2019). Few studies have attempted to unravel the intricate connection between PFIP and KS. Specifically, this study situates KS within the context of an organization's formal compensation system and explores the nonlinear relationship between PFIP and KS. This endeavor not only reconciles conflicting arguments from existing research but also enriches our understanding of the antecedents of KS. Second, we extend SDT by elucidating the mediating process through which PFIP influences KS via IM. By introducing the concept of incentive intensity and delineating PFIP's inverted U-shaped effect, we offer a motivational lens to explain why PFIP possesses an optimal range. Within this range, extrinsic rewards are more informative (Gerhart & Fang, 2014), fostering employee motivation and KS. Otherwise, they become more controlling (Gerhart & Fang, 2014), adversely affecting motivation and KS. Finally, the literature has yet to provide definitive answers on how to mitigate the crowding-out effects on IM and KS caused by inadequate or excessive PFIP incentive intensity. Our study sheds light on this gap by elucidating how CSE and EL attenuate the potential negative effects of PFIP, thereby further elucidating the boundary conditions of PFIP's influence on KS. This work enriches the research on KS by offering nuanced insights into the complex interplay between extrinsic rewards, intrinsic motivation, and KS.

2. Theoretical background and hypotheses

2.1. Extrinsic reward and KS

In the rapidly developing information age, the generation, transfer, and effective use of knowledge are regarded as key to improving the competitiveness of organizations. However, knowledge usually exists in individuals (Bock et al., 2005). Some research has suggested that the value of knowledge in individuals, teams, organizations, and knowledge bases ultimately depends on individual KS (Andreeva & Sergeeva, 2016; Grant, 1996). Thus, when KS is hindered by various factors, the possibility of creating knowledge gaps increases, resulting in low-level performance. Only by effectively motivating employees to share knowledge can organizations strengthen or maintain their competitive advantages (Grant, 1996).

Although KS has many benefits for organizations, it is not easy to have employees share knowledge actively, as the process of KS is always accompanied by a series of costs and risks, such as time, energy, and the potential threat of losing a favorable position in organizations (Nguyen et al., 2022). Research suggested that rewards, both intrinsic (e.g., oral praise) and extrinsic (e.g., monetary incentives), may be used to compensate for the expected cost of KS (Zhao et al., 2023).

However, previous studies have indicated that the above two types of rewards have different impacts on KS. While intrinsic rewards were found to be positively related to KS (Donnelly, 2019; Nguyen et al., 2022), whether extrinsic rewards promote KS is unsettled. Some research shows that extrinsic rewards compensate employees for the cost of KS to a certain extent, satisfy individual economic expectations, and then promote KS (Donnelly, 2019; Nguyen et al., 2019). However, other studies demonstrate non or negative effects of extrinsic rewards on KS (Bock, et al., 2005; Chang et al., 2015; Hau et al., 2013). Despite the inconsistent effects of extrinsic rewards on KS that have caught scholars' attention to explore boundary conditions of extrinsic reward (e.g., transformational leadership) (Zhao et al., 2023), research rarely focuses on the essential causes of these inconsistent effects by investigating the impact of one form of specific extrinsic reward (e.g., PFIP), and challenging the posit of the extrinsic rewards–KS linear relationship. A clear understanding of the impact of extrinsic rewards on KS can provide effective theoretical guidance for managers to use extrinsic rewards to motivate KS.

2.2. PFIP and SDT

Compensation is a managerial policy that organizations use to attract, motivate, and retain employees. Numerous competitive organizations routinely use PFIP, one of the prevalent compensation practices in which the level of pay is linked to individual performance so to motivate performance improvement (Gerhart et al., 2009; Gerhart & Fang, 2014). Although PFIP has incentive effects on employees' in-role task performance, for example, a study by Lazear (2000) showed a 44 % increase in productivity when an automobile glass installation company switched from salaries to individual incentives, few studies focus on how PFIP, as a form of extrinsic rewards, impacts KS. In other words, it is unclear whether and when employees tend to exchange the rewards that organizations provide for their performance by KS. We argue that IM (a type of motivation for employees because the work itself is interesting or enjoyable) (Gagné & Deci, 2005) is a crucial mechanism to explore the PFIP–KS relationship. Indeed extensive empirical evidence supports that IM is an important antecedent affecting KS (Nguyen et al., 2019) and that PFIP is highly correlated with IM (Gerhart & Fang, 2015).

Although the argument that IM is positively related to KS is rarely challenged, current studies on the effects of PFIP on IM have drawn inconsistent conclusions. On the one hand, some concerns indicate that a disadvantage of PFIP is that it undermines IM, as the more managers stress what an employee can gain for work, the less interested that an employee will be in the work itself (Pfeffer, 1998). The academic research basis for the above claims is mainly SDT's mini-theory, cognitive evaluation theory (CET) (Deci & Ryan, 1980). Under CET, PFIP, as a performance-contingent extrinsic reward, tends to be experienced as externally controlling individual behavior and thus has a "crowding out" effect on IM (Deci et al., 2017). On the other hand, some scholars have begun to revise their views of extrinsic rewards in CET. Fang and Gerhart (2012) stated that the positive effects of extrinsic rewards (e.g., PFIP) on intrinsic outcomes (e.g., IM) have been mostly ignored (Fang & Gerhart, 2012). The key architect of CET, Edward Deci, is moving toward supporting the fact that SDT modifies and extends CET by emphasizing that extrinsic rewards that provide meaningful, positive, and ability-related information in an autonomy-supportive climate can mitigate or even reverse the negative effects of extrinsic rewards on IM

(Deci et al., 2017; Gerhart & Fang, 2014). In addition, CET also provides an effective theoretical framework to conciliate the extrinsic rewards–IM debates, indicating that the practical effects of extrinsic rewards such as PFIP on IM depend on whether individuals interpret rewards as informational or controlling (Zhang et al., 2022). Specifically, performance-contingent rewards are expected to be experienced as external requirements or constraints (i.e., the nature of controlling), which may undermine IM (Deci et al., 1999). In contrast, PFIP can also satisfy individual psychological needs to increase IM because PFIP plays an informational role by providing a tangible symbol of achievement (Fang & Gerhart, 2012).

In a nutshell, according to SDT, one of the key principles to clarify the above relationship is to consider whether employees can distinguish between the informational and controlling aspects of PFIP and determine when they are more inclined to interpret PFIP as indicators of their effective performance rather than as controllers of their behavior (Deci et al., 1999; Fang & Gerhart, 2012). We argue that incentive intensity is a neglected and important conditional factor, which may influence employees' dominant evaluation and judgment of the dual natures of PFIP because previous studies showed that the implementation of PFIP under high intensity usually leads to a greater risk for employees to obtain rewards, which in turn produces an aversion to work (Gerhart & Fang, 2014), or low PFIP may be ineffective because the difference between ordinary employees and excellent employees is weak (Larkin et al., 2012). High or low PFIP cannot motivate employees' intrinsic outcomes, indicating that rewards may play a role in controlling their behavior. Therefore, we have reason to question whether there may exist a moderate intensity of PFIP, which can increase employees' interest and enjoyment of work by providing information on perceived autonomy and self-competence (Fang & Gerhart, 2012), thus motivating them to share knowledge. Following these previous findings, we explain how PFIP impacts IM and KS under different incentive intensities.

2.3. PFIP, intrinsic motivation, and KS: A curvilinear hypothesis

Drawing on SDT (Deci et al., 1999), we first posit that low PFIP leads to low IM, but it gradually produces effectiveness with an increase in intensity. Pay impacts individual performance mainly via two different mechanisms—incentive effects and sorting effects (Gerhart & Fang, 2014). One reason why low PFIP leads to low IM is that there is no relevant relationship between rewards and self-determined performance efforts (Byron & Khazanchi, 2012). In other words, a lack of sufficient performance rewards may cause employees to refuse to invest much time and energy in engaging in a work-related activity because their effort cannot be rewarded and recognized (Deci & Ryan, 2013). Another reason is that low PFIP fails to reflect the unique advantages of excellent employees over ordinary employees, which leads to the weak function of PFIP in transmitting competency information (Gerhart & Fang, 2014; Larkin et al., 2012). In the above two cases, employees cannot satisfy their competency needs in a lack of a competitive work environment and have lower self-determination to obtain rewards (Eisenberger & Aselage, 2009). Thus, employees might regard PFIP as a controlling system and do not have the function of transmitting positive information under the condition of low PFIP, and their IM is difficult to stimulate.

Then, with the gradual increase in PFIP within a reasonable intensity interval, the informational function of rewards to guide employees to focus on work-related activities is also enhanced. PFIP emphasizes fairness, competition, and efficiency and focuses on individual productivity (Milkovich & Newman, 2002). Therefore, reasonable performance returns are conducive to prompting employees to earn enough rewards and recognition for their merits (Gerhart & Fang, 2014). Meanwhile, moderate PFIP brings stresses that do not require large income risks and can also satisfy employees' competence needs and fulfillment. As mentioned in the classification hypothesis of challenge-hindrance stressors, the stress brought about by challenging work can be overcome by individuals and positively affects their professional growth and development. It can also guide individuals to gain more interest and satisfaction in the activities or tasks they perform (Lepine et al., 2005). Therefore, PFIP itself possesses substantial intrinsic incentive values, making it more likely to be regarded as an effective reward system. This results in an amplification of its positive impact on transmitting relevant information, thereby enhancing IM.

We further posit that if PFIP exceeds an optimal intermediate point, the positive effect of PFIP on IM will reverse. First, high PFIP means that employees have little chance of getting rewards (Gerhart & Fang, 2014). Although employees work hard, the frustration of not achieving performance goals weakens their perceptions of competence (Deci et al., 1999). In addition, as the proportion of risk returns increases, employees might face greater losses. According to the loss-effect framework (Kahneman & Tversky, 1979), people are inherently loss-averse. Thus, employees tend to treat their work motivation as controlled rather than self-driven. Second, high PFIP brings excessive performance stress to employees, and PFIP changes from a challenge stressor to a hindrance stressor. Research has found that hindrance stressors lead to lower work motivation because employees do not believe that they can satisfy such demands, much less that such demands bring valuable rewards (Lepine et al., 2005). It will greatly reduce employees' sense of competence and self-determination. Third, high PFIP is correlated with employees' physical and mental health. Large reward differences between employees in similar jobs may cause a perception of unfairness and jealousy in the short term (Kim et al., 2009). Without intervention, it can cause persistent anxiety and even depression. We argue that it is hard for employees to have fun when they experience mental health problems at work. Thus, under high PFIP conditions, the informational nature of PFIP might be overtaken by its controlling nature. Employees may turn to paying attention to external factors, which may lead to diminished IM.

Overall, given the positive effect of PFIP from described low to moderate intensity levels, along with the diminished (or possibly adverse) effect of high PFIP beyond an optimal intermediate level, we propose the following hypothesis:

H1. PFIP has an inverted U-shaped effect on IM.

In the previous section, we examined the relationship between PFIP and IM. Moving forward, we propose how PFIP impacts KS through IM grounded in the SDT framework.

First, PFIP inherently possesses substantial intrinsic incentive values. This reward system, through acknowledging and recognizing individual employee performance, can enhance employees' sense of self-efficacy and autonomy (Gerhart & Fang, 2014; Zhang et al., 2022). When the intensity of PFIP is moderate, these incentive effects can encourage employees to share their knowledge, as they feel that their efforts have been appropriately rewarded and recognized. However, when the intensity of PFIP is excessively high or low, the situation may shift. On the one hand, an overly high level of PFIP may intensify competition among employees, leading them to focus more on individual performance targets rather than on the collective goals of the team or organization. In such circumstances, employees may hesitate to share knowledge or withhold KS due to concerns about the performance of their colleagues. On the other hand, an overly low level of PFIP indicates that there is a weak correlation between KS and receiving benefits and that KS is not explicitly part of a formal job description. Therefore, the incentive effect of rewards is relatively weak.

Furthermore, one of the significant contributions of SDT is its disclosure of the black box between extrinsic rewards and individual behavior, which is the role of IM (Deci et al., 2017). Furthermore, given the essential role of IM in motivating individuals to share knowledge (Foss et al., 2009), we consider IM a key mechanism for explaining the nonlinear relationship between PFIP and KS. Specifically, based on the theoretical analysis in the previous section, it is shown that low PFIP or high PFIP will expand the controlling nature of extrinsic rewards. Low PFIP indicates that employees' compensation is primarily dominated by a fixed salary, which means that employees lack enough autonomy to

obtain positive information feedback on performance-contingent rewards. High PFIP means that employees need to face higher risk and potential loss, which will consume employees' positive cognition and evaluation of their work. Therefore, in the above two cases, employees tend to interpret performance-contingent rewards as controlling, which weakens their IM. Once IM is weaker, employees may be more reluctant to engage in KS because of a lack of intrinsic incentives for KS (Zhao et al., 2016). Conversely, we propose that moderate PFIP can deliver positive information (e.g., competence) to employees, which leads to extrinsic rewards that can be transformed into intrinsic incentives (Deci et al., 2017). Once IM is stronger, employees may share knowledge with others contentedly and actively in exchange for expected performance-contingent rewards (Hau et al., 2013). Therefore, we propose the following hypothesis:

H2. IM mediates the inverted U-shaped relationship between PFIP and KS.

2.4. Moderating effects of CSE and EL

As mentioned above, IM is a key mediator in the nonlinear relationship between PFIP and KS, which is caused by the impact of PFIP at different intensities on IM. It is necessary to explore which factors neutralize such an undesirable trend in the relationship between PFIP and IM.

Drawing on SDT (Deci et al., 1999), individuals with more positive self-evaluations are more likely to avoid negative information and have greater confidence in overcoming difficulties during the reward-acquisition process (Brockner, 1988; Gerhart & Fang, 2015). Thus, they are more likely to make independent decisions than to be controlled by the reward. We expect that CSE, as the positive fundamental self-evaluation with four personality traits comprising self-esteem, generalized self-efficacy, emotional stability, and locus of control (Judge et al., 1998, 2003), may be a potential moderator to mitigate or even reverse the curvilinear relationship between PFIP and IM. Previous studies have indicated that individuals with high CSE tend to view their environment positively, are less sensitive to negative stimuli (e.g., stresses) (Chang et al., 2012), and see themselves as capable, worthy, and in control of their lives (Judge et al., 2004).

First, a sense of self-control is a central component of CSE (Judge et al., 2003). In the face of the uncertain and risky situations brought about by high PFIP, employees with a high sense of self-control tend to believe that these challenges from high-performance requirements are within their control and can overcome them and obtain corresponding performance rewards through their efforts (Malik et al., 2015). Second, self-esteem represents the perception of individual self-worth (Fleishman, 1984). One of the main reasons why high PFIP has a more obvious informational effect on employees with high self-esteem is that these employees pursue higher achievement goals and focus on the affirmation of their worth through rewards. Third, generalized self-efficacy refers to an individual's overall perception or belief in their abilities (Bandura, 1982), while emotional stability reflects the stability of an individual's emotions rather than their fluctuation (Bolger & Schilling, 1991). Some studies have pointed out that individuals who are confident and emotionally stable should also have a sense of environmental control, thus believing that events are influenced by their behavior rather than uncontrollable external factors (Haynie et al., 2016). As a result, employees with high self-efficacy and emotional stability are less likely to have their sense of self-determination undermined by the control of high PFIP. Instead, they have personal trait advantages in responding to stress from performance rewards. In sum, we expect that the facilitative effect of PFIP on IM should be prolonged for high-CSE employees. As such, we propose the following hypothesis:

H3. CSE moderates the curvilinear effect of PFIP on IM such that the inverted U-shaped curve becomes smoother when CSE is high.

Furthermore, SDT posits that the interpersonal context of reward distribution is likely to influence individual evaluation and experience of PFIP (Deci et al., 1981) if the provider creates a relatively autonomous environment for reward distribution, it helps individuals perceive the reward as informational (Deci et al., 2017). Therefore, there is reason to believe that, as advocates and practitioners of performance-based compensation, employees' perceptions of their leaders' leadership styles are likely to have a significant impact. In the past two decades, EL, with its core of sharing power and encouraging employee self-management, has been favored by scholars. EL is a series of behaviors in which the leader emphasizes the work value of subordinates, affirms their capabilities, grants them greater decision-making power, and allows them to perform work tasks or activities more autonomously (Ahearne et al., 2005; Zhang & Bartol, 2010).

Specifically, EL emphasizes the subordinates' work contribution and worth (Conger & Kanungo, 1988), which is beneficial to enhance their work meaningfulness and satisfy their psychological needs (e.g., competence), to prevent the erosion of IM by performance-contingent rewards. Second, EL gives greater confidence in subordinates' ability to work and in high-performance prospects in daily work (Ahearne et al., 2005). The increase in subordinates' self-efficacy helps them reduce their fear of PFIP and weakens their concerns about the uncertainty and risk of high PFIP. In this way, subordinates can improve their sense of competence from the work challenges brought by PFIP, and then promote their IM (Gerhart & Fang, 2014). Third, EL encourages subordinates to make their own decisions about how to do their work by granting autonomy and self-determination prospects (Cheong et al., 2019). Although high PFIP may control individuals' behavior through external stresses (Ryan & Deci, 2000), if subordinates are more autonomous in their work, they are more able to use the informational role of PFIP as an incentive tool for self-direction, self-evaluation, and self-realization of work goals to promote IM. Finally, EL increases subordinates' sense of self-control and influence over their work (Zhang & Bartol, 2010). In this case, subordinates have a greater influence on work results and are likely to demonstrate competence and receive positive recognition (Spreitzer, 1995). In sum, we expect that the facilitative effect of PFIP on IM should be prolonged under high EL. As such, we propose the following hypothesis:

H4. EL moderates the curvilinear effect of PFIP on IM such that the inverted U-shaped curve becomes smoother when team EL is high.

2.5. Overall moderated mediation model

H2 of this study suggests that IM mediates the relationship between PFIP and KS, whereas **H3** suggests that CSE moderates the relationship between PFIP and IM. Following the above theoretical deductions and integrating a complete framework, we further expect that CSE moderates the association between PFIP and KS via IM. Thus, we propose the following:

H5. CSE moderates the indirect curvilinear relationship of PFIP with KS via IM, such that CSE attenuates the diminishing returns of excessive PFIP on KS via IM.

Similarly, **H2** of this study suggests that IM mediates the relationship between PFIP and KS, whereas **H4** suggests that EL moderates the relationship between PFIP and IM. Following the above theoretical deductions and integrating a complete framework, we further expect that EL moderates the association between PFIP and KS via IM. Thus, we propose the following:

H6. EL moderates the indirect curvilinear relationship of PFIP with KS via IM, such that EL attenuates the diminishing returns of excessive PFIP on KS via IM.

We summarize all the hypothesized relationships in Fig. 1.

3. Methodology

3.1. Participants and procedure

To reduce the common method bias (CMB) (Podsakoff et al., 2012),

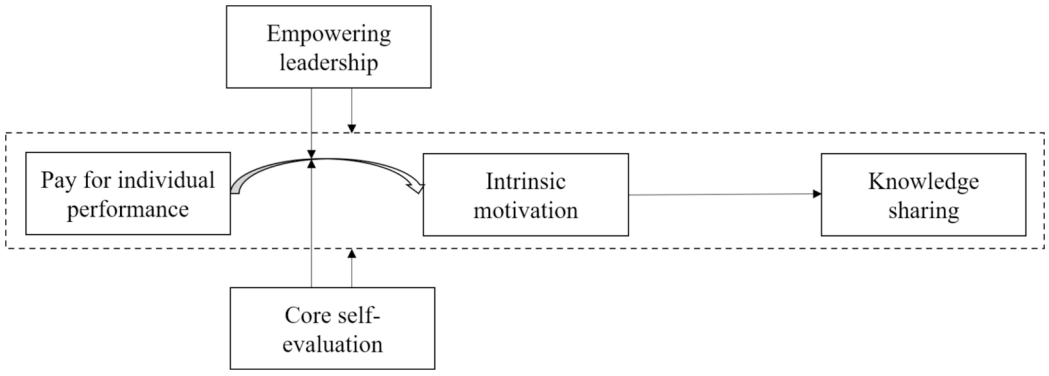

Fig. 1. Theoretical model. *Note:* Marquee represents the indirect effect of PFIP on KS via IM.

data were collected through a time-lagged, multi-source survey of 385 employees in eight Chinese companies from different industries (i.e., finance, manufacturing, and healthcare). With the help of the HR managers in these companies, the research team conducted on-site visits to each organization under the premise of promising anonymity and confidentiality of the information, and invited employees and their colleagues to voluntarily participate in this survey. At Time 1, out of 419 initial participants, 396 completed employee questionnaires that measured PFIP, collective PFIP, CSE, EL, IM, EM, job autonomy, task independence, industry, and basic demographic information (e.g., gender). At Time 2, 1 month later, to measure employee KS, we asked the participants' colleagues to evaluate their KS, as colleagues, compared to their leaders, are better equipped to understand whether the participants proactively share knowledge at work. After excluding invalid, incomplete, or nonmatchable responses, final data from 385 matched employee–colleague dyads were received, resulting in a response rate of 91.9 %. Among the final participating employees, 59.5 % were female, and 84.4 % had college degrees. The average age of the employees was 31.6 years (SD = 4.9), and their mean tenure was 2.6 years (SD = 1.06).

3.2. Measures

We adopted well-established scales for measurement. To ensure the accuracy and consistency of the Chinese versions of the scales, we complied with Brislin's (1986) back-translation approach by translating English versions of the measures (Brislin R, 1986). Unless otherwise indicated, participants were required to rate on a 7-point Likert scale (1 = *Strongly disagree* to 7 = *Strongly agree*). The results of constructs or measurement items on standardized factor loadings, CR, AVE, and Cronbach's α are presented in Table 1.

Pay for individual performance. PFIP was measured using the percentage measure of PFIP developed by Du and Choi (2010), as we focused on the dynamic intensity changes in PFIP (Du & Choi, 2010). This parameter refers to the proportion of individual performance-based variable pay in one's total pay package (Gerhart & Fang, 2015). This measurement approach has shown acceptable reliability and discriminant validity in previous research (He et al., 2021). One item was operationalized as the objective proportion of one's performance-based pay in one's total pay: "As an employee of this company, what proportion of your pay is determined by individual performance? Please indicate the proportion of individual performance-based pay (including bonus) in your total pay using eight categories: (1) 0–5 %, (2) 5–15 %, (3) 15–30 %, (4) 30–50 %, (5) 50–70 %, (6) 70–85 %, (7) 85–95 %, and (8) 95–100 %.".

Intrinsic motivation. IM was measured using a 3-item scale developed by Gagné et al. (2014). This scale provides validation evidence in seven languages and nine countries (Gagné et al., 2014). Participants answered three questions after reading the introductory sentence, "Why do you or would you put effort into your current job?" One sample item was "Because what I do in my work is exciting" (α = 0.874).

Core self-evaluation. Despite CSE being a multi-dimensional construct, we measured CSE directly using the integrated approach as in previous studies (Walumbwa et al., 2018). CSE was measured using a

Table 1
Constructs or measurement items: Standardized factor loadings, CR, AVE, and Cronbach's α.

Core variables	Items	Standardized factor loadings	CR	AVE	α
IM	IM1	0.887	0.924	0.801	0.874
	IM2	0.901			
	IM3	0.897			
EM	EM1	0.812	0.882	0.653	0.820
	EM2	0.782			
	EM3	0.781			
	EM4	0.854			
EL	EL1	0.756	0.933	0.536	0.919
	EL2	0.761			
	EL3	0.679			
	EL4	0.695			
	EL5	0.751			
	EL6	0.753			
	EL7	0.785			
	EL8	0.719			
	EL9	0.765			
	EL10	0.644			
	EL11	0.711			
	EL12	0.756			
KS	KS1	0.773	0.906	0.580	0.878
	KS2	0.774			
	KS3	0.772			
	KS4	0.781			
	KS5	0.723			
	KS6	0.726			
	KS7	0.783			
CSE	CSE1	0.762	0.938	0.558	0.926
	CSE2	0.791			
	CSE3	0.686			
	CSE4	0.716			
	CSE5	0.753			
	CSE6	0.794			
	CSE7	0.785			
	CSE8	0.737			
	CSE9	0.752			
	CSE10	0.708			
	CSE11	0.699			
	CSE12	0.770			

Due to limited space, only core latent variables have been presented here.

12-item scale developed by Judge et al. (2003). These items were rated on a 5-point Likert scale ranging from 1 = *Strongly disagree* to 5 = *Strongly agree*. One sample item was "Overall, I am satisfied with myself" (α = 0.926).

Empowering leadership. We measured EL using a 12-item scale developed by Zhang and Bartol (2010). Participants were required to rate their agreement with statements such as, "My leader helps me understand how my objectives and goals relate to those of the company." These items were rated on a 5-point Likert scale ranging from 1 = *Strongly disagree* to 5 = *Strongly agree* (α = 0.919).

Knowledge sharing. KS was measured using a 7-item scale developed by Xiao et al. (2017). Among these items, four were explicit for KS, such as "This employee shares work reports and documents with team members," and three items were implicit for KS, such as "This employee shares experience or know-how from work with other team members" (α = 0.878).

Control variables. At the individual level, we controlled for the employees' gender, age, education, and tenure with the organization because previous research shows these variables may impact KS (Andreeva & Sergeeva, 2016). Job autonomy (JA) as an important job characteristic was also employed as a control variable because employees with high JA might engage in a high level of KS (Pee & Lee, 2015). JA was measured using a 3-item scale developed by Hackman and Oldham (1976). The reliability of these three items was 0.794. In addition, we controlled for task independence (TI) because the relationship between TI and KS has been tested in empirical studies (Lee et al., 2021). TI was measured using a 5-item scale developed by Bachrach et al. (2007). The reliability of these 5 items was 0.890. Furthermore, given that organizations might tend to offer stronger incentive intensity to higher-paid employees (Zhang et al., 2022), we controlled employees' actual pay level as measured by the employees' monthly income, which ranged from 1 = *less than 5000 yuan* to 5 = *more than 20,000 yuan*. Finally, although EM plays a role in explaining the incentive effect of extrinsic rewards on KS (Cho et al., 2015), this study focused on the mechanistic role of IM. Thus, we controlled EM measured using a 4-item scale developed by Grant and Berry (2011). The reliability of these four items was 0.820.

At the firm level, following Zhang et al. (2022), we ruled out the potential influence of collective PFP, because collective PFP might influence employees' collaboration (e.g., KS). Thus, a dummy variable in which 1 represents the employment of collective PFP. In addition, as participants in our survey come from various industries that may impact KS, we also used dummy variables to control for any difference between various industries.

3.3. Analytical strategy

Considering the nested nature of the data (employees nested within different companies), we first checked whether there were significant differences in the focal variable across companies. A one-way analysis of variance (ANOVA) showed that there were significant differences in IM ($F = 4.752$, $p < 0.001$, ICC1 = 0.058) and KS ($F = 7.087$, $p < 0.001$, ICC1 = 0.087) between companies. To test our hypothesis, we employed a multilevel model to account for the nested structure of the data. In addition, following He et al. (2021), to facilitate the interpretation of the results, we group-mean centered Level 1 predicting variables and control variables (except dummies) to obtain an unbiased estimate of the individual-level relationship (Hofmann & Gavin, 1998).

4. Results

4.1. Confirmatory factor analysis

To examine the discriminants of the five latent variables (i.e., IM, EM, CSE, EL, and KS), we conducted a confirmatory factor analysis (CFA). Given that we aimed to distinguish the differences among the core variables rather than explore the relationships between items, following Little et al. (2002), we packaged the two multidimensional variables of EL and KS according to different dimensions. The results of CFA (Table 2) showed that the hypothesized five-factor model had an acceptable fit and outperformed the other four-factor competitive models: $\chi^2/df = 1.937$, CFI = 0.950, TLI = 0.943, RMSEA = 0.049, and SRMR = 0.042.

4.2. Common method bias (CMB)

CMB may be present in the current study. Therefore, a few statistical remedies were adopted (Podsakoff et al., 2012). First, we used several methods in the research design to reduce CMB problems (e.g., setting up the rules of anonymous filling). In addition, through CFA, a five-factor model was extended to include a CMB factor ($\chi^2/df = 1.554$, CFI = 0.973, TLI = 0.967, RMSEA = 0.031, and SRMR = 0.038). The results showed that the fit indices of the five-factor model with the CMB factor included did not significantly change for CFI, TLI, RMSEA, and SRMR. Thus, the CMB in this study was not a significant problem.

4.3. Descriptive statistics and correlation analysis

Table 3 presents the means, standard deviations, and correlations among all research variables.

4.4. Hypotheses testing

We adopted a hierarchical linear model (HLM) to test our hypotheses (see Table 4), because individual-level data are nested within the firm level.

Specifically, Step 1 based on Model 6 demonstrated a positive impact of PFIP on KS ($B = 0.117$, $SE = 0.023$, $p < 0.001$), but $PFIP^2$ had a negative coefficient ($B = -0.056$, $SE = 0.012$, $p < 0.001$), indicating an inverted U-shaped relationship between PFIP and KS. Step 2, which was based on Model 2, confirmed a positive impact of PFIP on IM ($B = 0.272$, $SE = 0.032$, $p < 0.001$), but $PFIP^2$ again had a negative coefficient ($B = -0.113$, $SE = 0.017$, $p < 0.001$), indicating an inverted U-shaped relationship between PFIP and IM. The results supported Hypothesis 1. Step 3 aimed to demonstrate the mediating effect of IM. Based on Model 6, IM was added to the model, including PFIP and KS. The significant

Table 2
Structural model comparison.

Model	χ^2	*df*	$\Delta\chi^2$ (*Δdf*)	*SRMR*	*RMSEA*	*CFI*	*TLI*
Five-factor model (M0)	513.505	265	–	0.042	0.049	0.950	0.943
Four-factor model (M1)	1038.741	269	525.236 (4)	0.082	0.086	0.845	0.827
Four-factor model (M2)	2887.645	269	2374.14 (4)	0.228	0.159	0.473	0.412
Four-factor model (M3)	746.099	269	232.594 (4)	0.055	0.068	0.904	0.893
Five-factor model + CMV	372.876	240	140.629 (25)	0.038	0.031	0.973	0.967

A four-factor model (M1), which combined IM and EM into one factor; A four-factor model (M2), which combined CSE and EL; A four-factor model (M3), which combined IM and KS.

Table 3
Means, standard deviations, and correlation coefficient matrix of the research variables.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.Gender	0.595	0.492	–																
2.Year	31.545	4.949	0.013	–															
3.Education	1.919	0.475	−0.029	0.019	–														
4.Tenure	2.596	1.062	0.020	0.080	−0.013	–													
5.Income	2.631	0.819	0.042	0.043	0.171**	0.051	–												
6.JA	5.505	0.924	−0.032	−0.086	0.051	−0.047	−0.005	–											
7.TI	5.873	0.848	−0.077	−0.020	−0.019	0.061	−0.087	0.031	–										
8.EM	5.657	0.958	−0.026	−0.009	−0.027	−0.004	−0.083	−0.037	−0.009	–									
9.Collective PFP	0.527	0.500	−0.018	0.053	0.015	−0.007	0.082	−0.012	−0.037	−0.004	–								
10.I1	0.304	0.461	−0.041	−0.017	0.041	−0.097	−0.033	0.014	0.045	0.026	0.207**	–							
11.I2	0.410	0.493	0.043	0.037	−0.037	0.024	0.015	−0.029	−0.067	−0.035	0.356**	−0.551**	–						
12.I3	0.286	0.452	−0.005	−0.023	−0.002	0.073	0.018	0.018	0.027	0.012	−0.599**	−0.418**	−0.528**	–					
13.PFIP	3.787	1.643	0.025	0.017	0.008	−0.004	−0.072	0.097	−0.024	0.145**	0.039	−0.083	0.105*	−0.030	–				
14.IM	5.256	1.175	−0.042	−0.087	0.065	0.043	−0.117*	0.126*	−0.050	0.097	−0.047	−0.030	−0.023	0.056	0.336**	–			
15.KS	5.705	0.798	−0.048	−0.122*	0.004	−0.066	0.003	0.010	0.179**	−0.052	−0.030	0.060	−0.039	−0.018	0.172**	0.304**	–		
16.EL	3.801	0.647	0.011	−0.019	0.056	−0.060	0.004	0.324**	0.063	−0.007	0.056	0.062	−0.036	−0.023	0.033	0.059	0.001	–	
17.CSE	3.899	0.669	0.019	−0.067	0.119*	−0.050	−0.069	0.026	0.030	0.059	−0.026	0.010	−0.028	0.020	−0.040	0.094	0.098	0.049	–

$N = 385$. I1, finance; I2, manufacturing; I3, healthcare. Values in parentheses are alpha coefficients. $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

impact of $PFIP^2$ on KS changed from ($B = -0.056$, $SE = 0.012$, $p < 0.001$) to ($B = -0.042$, $SE = 0.012$, $p < 0.01$). Additionally, a Monte Carlo approach was used to estimate the confidence intervals (CI). Based on 20,000 bootstrap replications, the indirect effect of PFIP on KS through IM was − 0.015 with a 95 % CI of [−0.025, −0.006]. These results supported Hypothesis 2.

Hypothesis 3 states that the curvilinear effect of PFIP on IM may be moderated by CSE. To test this hypothesis, we added an interaction term between PFIP and CSE and between $PFIP^2$ and CSE into Model 3, based on Model 2. The results of Model 3 showed that the interaction between PFIP and CSE on IM was not significant ($B = -0.085$, $SE = 0.049$, $p > 0.05$), and the interaction term for PFIP and CSE was significant ($B = 0.082$, $SE = 0.026$, $p < 0.01$). To further clarify the direction and magnitude of the moderating effect, we plotted this interaction at the conditional values of CSE (± 1 SD of the mean). Fig. 2 illustrates that for high CSE, the point of inflection of the inverted U-shaped relationship between PFIP and IM moved backward, and the above inverted U-shaped curve became smoother. Consistent with Hypothesis 3, the diminishing returns of PFIP on IM were attenuated when employees possessed high CSE. Meanwhile, Hypothesis 5 estimated that the indirect curvilinear effect of PFIP on KS via IM would be contingent on CSE. To test this moderated mediation model, we again used the Monte Carlo method with 20,000 bootstrap replications. The results showed that for high CSE, the indirect curvilinear effect was significant (Estimate = 0.008, 95 % CI = [−0.016, −0.001]); for low CSE, the indirect curvilinear effect was significant (Estimate = − 0.022, 95 % CI = [−0.036, −0.009]). In addition, the indirect curve effect difference between high CSE and low CSE was significant (Estimate = 0.014, 95 % CI = [0.004, 0.028]). These results supported Hypothesis 5, indicating that PFIP influenced KS through its curvilinear association with IM when CSE was low but not when it was high.

Similarly, Hypothesis 4 proposed that the curvilinear effect of PFIP on IM would be moderated by EL. To test this hypothesis, we added an interaction term between PFIP and EL and between $PFIP^2$ and EL into Model 4, based on Model 2. The results of Model 4 showed that the interaction between PFIP and EL on IM was not significant (B = 0.064, SE = 0.046, p > 0.05), but the interaction term for $PFIP^2$ and EL was significant (B = 0.057, SE = 0.022, p < 0.05). To further clarify the direction and magnitude of the moderating effect, following Aiken and West (1991), we plotted this interaction at conditional values of EL (± 1 SD of the mean) (Aiken & West, 1991). Fig. 3 illustrates that for high EL, the point of inflection of the inverted U-shaped relationship between PFIP and IM moved backward, and the above inverted U-shaped curve became smoother. Consistent with Hypothesis 4, the diminishing returns of PFIP on IM were attenuated with high EL. Hypothesis 6 estimated that the indirect curvilinear effect of PFIP on KS via IM would be contingent upon EL. To test this moderated mediation model, we used the Monte Carlo method with 20,000 bootstrap replications. The results showed that for high EL, the indirect curvilinear effect was significant (Estimate = − 0.010, 95 % CI = [−0.020, −0.003]); for low EL, the indirect curvilinear effect was significant (Estimate = − 0,020, 95 % CI = [−0.034, −0.009]). In addition, the indirect curve effect difference between high EL and low EL was significant (Estimate = 0.010, 95 % CI = [0.002, 0.021]). These results supported Hypothesis 6, indicating that PFIP influenced KS through its curvilinear association with IM when EL was low but not when it was high.

5. Discussion

Drawing on SDT and proposing IM as a key mechanism between PFIP and KS, this study reconciled the debate about extrinsic rewards and KS in the knowledge management literature by exploring the incentive intensity change in PFIP and whether and how it has a curvilinear effect on KS. Specifically, we conducted a field study in China to test our hypotheses, illustrating an inverted U-shaped relationship between PFIP and IM, which in turn influences KS. Furthermore, from the individual

Table 4
HLM regression analysis.

Variables	IM				KS		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Constant	5.322(0.261)***	5.581(0.228)***	5.564(0.227)***	5.554(0.229)***	5.827(0.178)***	5.958(0.160)***	5.218(0.248)***
Gender	−0.095(0.109)	−0.098(0.103)	−0.114(0.101)	−0.100(0.102)	−0.058(0.076)	−0.060(0.074)	−0.047(0.073)
Year	−0.020(0.011)	−0.019(0.010)	−0.017(0.010)	−0.019(0.010)	−0.018(0.008)*	−0.017(0.007)*	−0.015(0.007)*
Education	0.163(0.115)	0.214(0.109)*	0.165(0.108)	0.201(0.110)	−0.033(0.080)	−0.008(0.078)	−0.036(0.078)
Tenure	0.086(0.051)	0.087(0.048)	0.094(0.047)*	0.098(0.047)*	−0.038(0.035)	−0.037(0.034)	−0.049(0.034)
Income	−0.120(0.068)	−0.094(0.064)	−0.068(0.064)	−0.086(0.064)	0.054(0.047)	0.067(0.046)	0.080(0.046)
JA	0.122(0.058)*	0.132(0.055)*	0.138(0.054)*	0.135(0.058)*	−0.024(0.041)	−0.019(0.040)	−0.036(0.040)
TI	−0.109(0.064)	−0.102(0.061)	−0.098(0.060)	−0.094(0.060)	0.152(0.045)**	0.156(0.044)***	0.169(0.043)***
EM	0.078(0.057)	0.064(0.054)	0.070(0.053)	0.054(0.053)	−0.051(0.039)	−0.058(0.039)	−0.066(0.038)
Collective PFP	−0.051(0.270)	−0.031(0.231)	−0.023(0.230)	0.011(0.233)	−0.179(0.184)	−0.175(0.161)	−0.179(0.134)
I1	0.222(0.250)	0.279(0.214)	0.318(0.213)	0.279(0.215)	0.312(0.171)	0.340(0.149)*	0.315(0.124)*
I2	0.126(0.331)	0.114(0.282)	0.140(0.282)	0.173(0.284)	−0.076(0.227)	−0.092(0.197)	−0.119(0.162)
PFIP	0.221(0.033)***	0.272(0.032)***	0.285(0.032)***	0.264(0.032)***	0.092(0.023)***	0.117(0.023)***	0.081(0.025)**
$PFIP^2$		−0.113(0.017)***	−0.112(0.016)***	−0.118(0.017)***		−0.056(0.012)***	−0.042(0.012)**
IM							0.132(0.037)***
CSE			−0.111(0.104)				
EL				−0.205(0.112)			
PFIP × CSE			−0.085(0.049)				
$PFIP^2$ × CSE			0.082(0.026)**				
PFIP × EL				0.064(0.046)			
$PFIP^2$ × EL				0.057(0.022)*			
Residual variance (within firms)	1.079	0.966	0.934	0.939	0.526	0.500	0.488
Residual variance (between firms)	0.066	0.043	0.044	0.045	0.030	0.021	0.010

All entries are unstandardized regression coefficients. The standard error of the coefficients is in parentheses. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. The reference group for industry was I3.

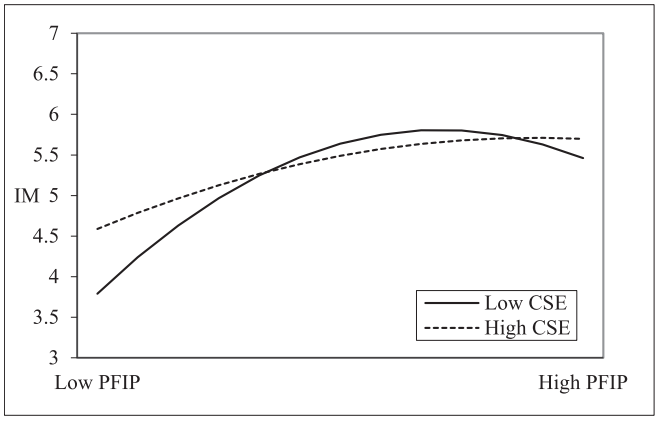

Fig. 2. Moderating effect of CSE.

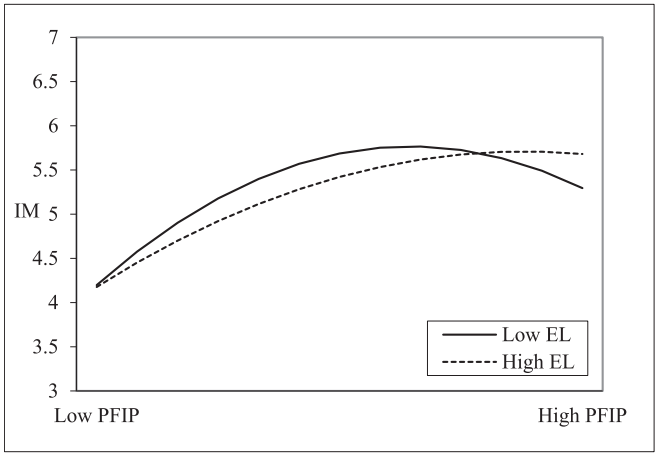

Fig. 3. Moderating effect of EL.

characteristics and the interpersonal environment of reward allocation, this study revealed that CSE and EL could neutralize the detrimental effects of PFIP on IM and KS.

5.1. Theoretical implications

First, this study sheds light on the intricate ways in which PFIP, a particular type of extrinsic reward that fluctuates with performance levels, influences individual KS. Despite the robust theoretical and practical demands from scholars in knowledge management to investigate the impact of extrinsic rewards on KS, previous research has either generally explored the overall impact of extrinsic rewards on KS (Nguyen & Malik, 2020) or specifically analyzed the role of certain specific extrinsic rewards closely related to tasks (e.g., rewards for KS in a virtual community) (Wang et al., 2021), often neglecting the unique role of PFIP as a common and widely used compensation system in facilitating or hindering KS. Furthermore, given the complexity of the types and content of extrinsic rewards, the debate continues regarding the current perspectives on the relationship between extrinsic rewards and KS (Bock et al., 2005; Chang et al., 2015; Nguyen et al., 2019). This study extends this line of inquiry by exploring PFIP and its influence on KS by manipulating IM under varying levels of incentive intensity. We found that an inverted U-shaped relationship existed between PFIP and KS. As such, our findings underscore the uniqueness of this reward format by highlighting the dominant effects of PFIP's informational and controlling aspects at different incentive intensities (Gerhart & Fang, 2014), respectively. Simultaneously, we reconcile the discordant voices surrounding the relationship between extrinsic rewards and KS, thereby facilitating a broader understanding of how KS emerges and evolves within organizations.

Second, this study contributes to SDT by empirically examining when PFIP undermines or enhances individuals' IM, thereby influencing their behavior. SDT is a fundamental theory that explains the relationship between rewards and individual behavior from a motivational perspective (Deci et al., 2017). However, in its initial form, SDT posited that extrinsic rewards had a significant crowding-out effect on IM and governed human behavior (Deci et al., 1999). As research progressed,

the continually evolving SDT emphasized the complexity of how extrinsic rewards impact individual motivation and behavior, suggesting that the actual effects depend on whether the informational or controlling aspects of the reward dominate (Ryan & Deci, 2000; Zhang et al., 2022). While the long-held view suggests that IM is fostered when the informational aspect prevails and harmed when the controlling aspect dominates (Gerhart & Fang, 2014, 2015), surprisingly, it remains unclear under what conditions of the reward itself either the informational or controlling aspect assumes primacy. In other words, little is known about how rewards should be designed to enhance IM and thereby promote positive behavior. PFIP, as a floating rather than a fixed form of extrinsic reward, offers an opportunity to address the questions because HR can design the ratio of performance-based compensation based on actual situations. We introduced the concept of incentive intensity and, through a set of field survey data, examined how behavior (i.e., KS) mediated by IM changes with variations in PFIP's incentive intensity, revealing an inverted U-shaped relationship. In doing so, we demonstrated that an optimal incentive range exists as the intensity of extrinsic reward motivation varies. Within this range, the informational attribute of the reward is stronger, yielding the strongest incentive effect on individuals' IM. However, before reaching this range and after exceeding it, the controlling attribute of the reward becomes more prominent, leading to the erosion of IM. These insights further support and refine SDT.

Third, the critical roles of CSE and EL as individual traits and an individual's perceived leadership behavior tendency, respectively, contribute to a more comprehensive understanding of SDT and the relationships among PFIP, IM, and KS. While a pivotal innovation of this study lies in delineating and validating the nonlinear model of PFIP's influence on KS, the existing literature offers limited insights into whether and how the inverted U-shaped relationship between PFIP and KS is modulated by individual employee characteristics and external environmental factors. In other words, we remain largely unaware of how the process whereby extrinsic rewards impact KS through IM is influenced by the recipient and the context in which rewards are administered, particularly when the intensity of rewards falls within or outside the optimal range. To address this critical gap, this study concurrently demonstrates the contextualized effects of CSE (Judge et al., 1998) as a positive self-perception and EP (Srivastava et al., 2006) as a proactive leadership style. Our findings present encouraging evidence that, while PFIP can exert a crowding-out effect on individual IM, leading to a decline in KS when operating outside the optimal incentive range, higher levels of CSE and EP serve as potent buffers against these negative consequences. The emphasis on CSE and EP is paramount, as it extends SDT's assertions regarding the contingent nature of rewards' motivational impact on individuals, contingent upon individual traits, and the social context in which rewards are distributed (Deci et al., 2017; Zhang et al., 2022). By doing so, we shed light on how these additional factors mitigate the detrimental crowding-out effects of PFIP on IM and KS across varying levels of incentive intensity. This contributes to a more nuanced understanding of the dynamic interplay between PFIP, individual factors, and environmental contingencies in shaping work motivation and performance outcomes.

5.2. Practical implications

First, to motivate employees to share knowledge, PFIP, as a form of extrinsic reward, can produce a positive effect at a moderate intensity interval. However, our findings also remind managers that the effect of PFIP is distinctive under different incentive intensities. The implementation effect of low PFIP is almost as weak as that of a fixed salary, but high PFIP may undermine the intrinsic incentive of KS. Given that the charm of a performance-based pay system lies in activating individuals' positive subjective initiative, KS requires sufficient intrinsic incentives. Thus, to motivate employees' KS, managers should break linear thinking into the design and implementation of the pay system, set PFIP intensity at a medium level, and fully leverage PFIP.

Second, our findings highlight the important role of CSE in neutralizing the negative effect of excessive PFIP intensity. To give full play to the incentive role of PFIP, managers should find ways to enhance employees' positive self-assessment (e.g., recruiting, selecting, or training employees with high CSE) (Xing et al., 2021). In addition, individuals' differences in the PFIP–IM–KS relationship indicate that managers should pay special attention to the different implementation effectiveness of PFIP in different incentive intensities on employees with different levels of CSE. Specifically, for low-CSE employees, organizations should reduce the difficulty of obtaining performance rewards. On the contrary, for high-CSE employees, moderately improving the difficulty of obtaining performance rewards can stimulate their IM and then promote KS.

Third, managers should focus on how the interpersonal context of extrinsic reward distribution affects the effect of PFIP and the role of the leader's behavior. Our findings show that when EL and PFIP are properly coordinated, it is beneficial to maximize IM, which will promote KS. Thus, if organizations urge them to break through development dilemmas via the pay system and KS, managers should encourage departments or team leaders to appropriately empower members (Ahearne et al., 2005). Leaders who excel at empowerment can not only expand the incentive role of PFIP, but also fully activate the vitality of members to develop, use, and recreate knowledge within the organization. In sum, empowering leaders can help to better leverage the motivational effects of external rewards.

5.3. Limitations and future research

This study has several limitations that should be addressed in future research. First, although we adopted a multi-phase and multi-source data collection approach to minimize the interference of CMB, the causal relationships between related variables may still fail to be ascertained. In future research, experimental methods can also be adopted to enhance the causal inferences of the theoretical model. In addition, the survey data were all collected in China, which can control the influence of interference factors (e.g., cultural background), but to a certain extent, it limits the generalization of research conclusions. Thus, future research should be conducted with our model and hypotheses in a cross-cultural context, such as in certain individualist cultural regions or countries.

Second, from the perspective of motivation, we investigated the mediating role of IM in the PFIP–KS relationship, but other mediators could exist. For example, fairness may also be a key mechanism, that is, moderate PFIP guided by more pay for more work will make employees feel that their efforts are matched with their returns, and fairly reflect their relative ability level with others (Gerhart & Fang, 2015). However, low or high PFIP may lead to a mismatch between employees' expectations and actual rewards. At this time, it is difficult for employees to ensure that their efforts can be fairly evaluated and recognized; therefore, they tend to hide knowledge in a relatively unfair work environment. We advise future research to investigate other psychological mechanisms through which the PFIP–KS relationship operates.

Third, theoretically, there might be other boundary conditions that neutralize the curvilinear effect we found. Scholars are encouraged to explore individual differences, such as psychological capital and initiative personality, which could explain who performs better in the PFIP system. Moreover, we call on scholars to find other moderators at the team level, such as team competitive climate and team incentive (individual-oriented vs. team-oriented), that could account for how PFIP can best be leveraged. For example, under the superposition of a high team competitive climate and high PFIP, team members may be very self-interested and have strong motivations to retain their knowledge. In sum, future research should further advance our findings regarding how individuals, teams, and firms cope with undesirable effects resulting from excessive PFIP intensity.

Finally, pay for performance (PFP) stands out as the predominant method of enhancing employee performance and is widely applicable across various organizations (He et al., 2021). We specifically delved into individual-level compensation systems, shedding light on the impact of PFIP. However, the realm of compensation systems encompasses a diverse array, including collective PFP, in which the organizational context assumes a pivotal role. Consequently, in instances where the organizational environment fails to foster or, worse, impedes KS practices, individuals may harbor negative sentiments toward engaging in such activities. Future research endeavors could delve deeper into the intricate interplay between the organizational environment and individual behaviors. A key inquiry pertains to the design of collective incentive mechanisms aimed at bolstering KS to drive superior organizational capabilities. Moreover, the restructuring of performance incentives linked to KS could serve as a potent tool for motivating employees to actively participate in KS. In essence, the landscape of performance-contingent extrinsic reward measures is vast and multifaceted. This study marks a promising starting point; further nuanced and comprehensive discussions are imperative in future research endeavors.

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CRediT authorship contribution statement

Shaorong Jin: Writing – original draft, Investigation, Funding acquisition. **Jialiang Pei:** Writing – review & editing, Supervision, Resources, Methodology. **Pengxiang Nian:** Visualization, Validation, Formal analysis. **Wenzhu Lu:** Writing – review & editing, Resources, Methodology. **Sibin Wu:** Investigation, Formal analysis, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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