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# Using leader affiliative humor to encourage employee knowledge sharing: The multilevel role of knowledge sharing self-efficacy and team psychological safety



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#### ARTICLE INFO

Article History: Received 7 October 2022 Accepted 29 June 2023 Available online 8 July 2023

Keywords: Employee knowledge sharing Leader affiliative humor Knowledge sharing self-efficacy Team psychological safety

JEL classifications: M10 M12

# ABSTRACT

The aim of this study is to investigate the multilevel effect of leader affiliative humor on knowledge sharing behavior. Based on social information processing (SIP) theory, we frame a multilevel model of the effect of leader affiliative humor on employee knowledge sharing, focusing on the multilevel role of knowledge sharing self-efficacy and team psychological safety in the relationship between leader affiliative humor and employee knowledge sharing. By taking 286 responses (51 teams) as research samples, we adopt hierarchical linear model to test the proposed hypotheses. The results show that leader affiliative humor exerts positively direct and indirect effects on employee knowledge sharing via knowledge sharing self-efficacy, and team psychological safety, respectively. Moreover, team psychological safety positively moderates the relationship between knowledge sharing self-efficacy and employee knowledge sharing. These findings advance the literature by shedding light on whether, how, and when leader affiliative humor fosters employee knowledge sharing from the lens of SIP perspectives. Moreover, for organizations, this study highlights the central role of leader affiliative humor in fostering knowledge management and thereby innovation.

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## Introduction

Knowledge is considered one of the most important strategic (intangible) assets for organizations in the present era of the knowledge economy (Akram et al., 2020). The effectiveness of knowledge management contributes to the improvement of organization's competitiveness and organizational development (Zaim et al., 2019). In the same vein, prior research highlights the vital role of employees' motivation to participate in knowledge sharing activities in the success of knowledge management (Bavik et al., 2018; Kang et al., 2017). Ipe (2003) defines knowledge sharing as "the act of a specific individual providing or disseminating knowledge to others within an organization". It plays a crucial role in improving innovation capability and organizational performance (Muhammed & Zaim, 2020; Ganguly et al., 2019). Jha and Varkkey (2018) argue that most employees in the workplace are reluctant to share work-related knowledge due to its discretionary attribution. Serious threats are posed to organizational growth and the acquisition of competitive advantages when

\* Corresponding author. *E-mail address:* gongjing@lyu.edu.cn (J. Gong). employees refuse to share knowledge (Bavik et al., 2018; Lin, 2007). Hence, it is imperative to explore the factors influencing employee knowledge sharing, due to the theoretical and practical significance of knowledge sharing.

There has been substantial progress in the scholarly inquiry on the factors influencing employee knowledge sharing, such as organizational support, leadership, and goal orientation (Pereira & Mohiya, 2021; Bavik et al., 2018; Shariq et al., 2018). Notably, most researchers have investigated the impacts of different leadership styles and attribution on employee knowledge sharing since the leaders, as the agents of organizations and in charge of its limited resource, play an important role in the attitudes and behaviors of the employees (Yin et al., 2020; Robertson & Barling, 2013; Pereira & Mohiya, 2021). Therefore, the extant literature has explored the link between different leadership styles and employee knowledge sharing, and concluded that transformational leadership, ethical leadership, and servant leadership demonstrate significant effects on employee knowledge sharing, respectively (Yin et al., 2020; Bavik et al., 2018; Reslan et al., 2021). Similarly, prior studies have also demonstrated that leader attributions (e.g., leader competence) also exhibit important impact on employee knowledge sharing (Swanson et al., 2020).

https://doi.org/10.1016/j.jik.2023.100408

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However, several researchers have pointed out that leader humor, which highlights the degree to which a leader adopts humor with individual subordinates, as a social lubricant, enhances communication between leaders and employees, thereby, improving the leader's effectiveness (Cooper et al., 2018; Peng et al., 2020) and consequently, enhancing employee knowledge sharing. Indeed, leader humor has been shown to exert a stronger impact on the employee performance and behavior (job performance and organizational citizenship behavior) compared with other types of leadership attributes and behaviors, such as consideration behaviors, extraversion, and positive leadership traits (Kong et al., 2019; Cooper et al., 2018). As a result, this study aims to empirically investigate the relationship between leader humor and employee knowledge sharing.

Despite these promising findings, further discussion on several issues is necessary. First, there are only a few studies that have investigated the link between leader humor and employee knowledge sharing. For instance, Abdillah (2021) found that leader humor was positively correlated with knowledge sharing. However, Martin et al. (2003) categorized various types of leader humor, namely, affiliative, self-defeating, aggressive, and self-enhancing humor. Both leader affiliative and aggressive humor focus on the interpersonal dimensions of humor, whereas leader self-enhancing and self-defeating humor represent self-directed humor. Meanwhile, compared with leader aggressive humor, leader affiliative humor (LAFH), denoting a positive form of humor to amuse others, contributes to the facilitation of informal communication (Kong et al., 2019). Besides this, the extant literature has demonstrated that LAFH, perceived as an effective leadership tool, signals amicability and support, thus satisfying employee needs, including social, safety, and esteem needs, and strengthening information sharing among employees (Cooper, 2008; Cooper et al., 2018). Fayyad (2020) reports that leader aggressive humor negatively correlates with employee knowledge sharing. Hence, it is inevitable to distinguish the different effects of leader humor style on employee knowledge sharing. Thus, this study examines the positive effect of leader affiliative humor (LAFH) on employee knowledge sharing. Moreover, the existing literature ignores the multilevel attribution of LAFH and its multilevel effects on employee knowledge sharing.

Second, little is known regarding the mechanisms through which LAFH influences employee knowledge sharing. The social information processing (SIP) theory holds that an individual's perceptions, affective reactions, and consequent behaviors are influenced by social cues provided by others such as supervisors (Salancik & Pfeffer, 1978). From the perspective of SIP theory, LAFH involves a leader's use of jokes or funny things to amuse others at the individual level (Martin et al., 2003), is helpful to not only promote effective communication but to also enhance employees' positive beliefs, social support, and life goals, thus improving their sense of self-efficacy in knowledge sharing (namely knowledge sharing self-efficacy), and subsequently, enhancing employee knowledge sharing (Ergün & Avci, 2018). From the perspective of SIP theory, LAFH strengthens the shared perception of psychological safety (namely team psychological safety) at the team level, by deemphasizing hierarchical differences and reducing interpersonal tensions, which in turn affects employee knowledge sharing (Kakar, 2018; Yin et al., 2020). Hence, this study adopts knowledge sharing self-efficacy (KSSE) and team psychological safety as mediating roles to reveal the mechanism through which LAFH affects employee knowledge sharing.

Finally, SIP theory also points out that the information processing of employees is affected directly not only by social cues but also by task situations and job characteristics (Salancik & Pfeffer, 1978). As stated earlier, LAFH may shape team psychological safety. Specifically, team psychological safety is characterized by interpersonal trust and mutual respect in which individuals are comfortable being themselves, which further supports information- and knowledge sharing (Edmondson, 1999; Liu et al., 2015). Consistent with this, high team psychological safety is able to strengthen self-efficacy in knowledge sharing, thus activating employee knowledge sharing. However, low team psychological safety is harmful to mutual trust and self-efficacy, which eventually impedes employees' intention to share knowledge. Therefore, this study introduces team psychological safety to investigate the boundary conditions in enhancing the effect of knowledge sharing self-efficacy on employee knowledge sharing.

Overall, based on SIP theory, this study frames a multilevel linear model to explore the multilevel effect of LAFH on employee knowledge sharing. Using a field study, involving 286 responses (51 teams), and the findings support the proposed hypothesis that LAFH is positively related to employee knowledge sharing. In addition to this, the study findings also support the mediating mechanisms (knowledge sharing self-efficacy and team psychological safety) linking LAFH with employee knowledge sharing, along with the moderating role of team psychological safety. By doing so, this study makes three major theoretical contributions to the extant literature. First, this study highlights the humor literature by moving beyond the multilevel attribution of LAFH on employee knowledge sharing. Additionally, this study answers the call from recent humor studies (Kong et al., 2019; Cooper et al., 2018) by providing a novel theoretical understanding regarding how subordinates interpret and react to leader humor. Second, from the lens of SIP theory, this study unveils the paths by which LAFH affects employee knowledge sharing, as well as enriches the theoretical explanation of SIP theory in the link between LAFH and employee knowledge sharing. Finally, this study also contributes to the contextual characteristics of the relationship between LAFH and employee knowledge sharing by adopting team psychological safety as a moderator.

#### Literature review and hypothesis development

#### Employee knowledge sharing

Employee knowledge sharing in the workplace reflects the dissemination of knowledge by employee to solve workplace problems, develop ideas, or improve processes in the organization (Ahmad & Karim, 2019). Knowledge sharing includes not only coded information, such as production procedures but also personal knowledge that individuals have acquired in the current or previous organizations (Pereira & Mohiya, 2021). It has been acknowledged that employee knowledge sharing is beneficial for the creation of new knowledge, mutual learning, and improving job performance (Ullah et al., 2021; Yin et al., 2020). Hence, owing to the significance of employee knowledge sharing, previous studies have explored the antecedents of employee knowledge sharing, finding that leadership and leaders' attribution (e.g., transformational leadership, servant leadership, ethical leadership, and leader competence) positively correlate with employee knowledge sharing (Reslan et al., 2021; Yin et al., 2020; Bavik et al., 2018).

However, employee knowledge sharing is most often regarded as an extra-role behavior. Therefore, it is difficult for organizations to formally require or stipulate employees to share knowledge (Hameed et al., 2019; Yin et al., 2020). Indeed, an unwillingness to share knowledge is more common. For instance, Bavik et al. (2018) found that employees tend to view knowledge sharing negatively to avoid losing their unique status when they assume that their position in the organization depends on their knowledge. Meanwhile, leaders, as the agents of organizations, demonstrate a strong ability to impact employee knowledge sharing behavior (Reslan et al., 2021). Therefore, leaders can enhance employee knowledge sharing by encouraging the beliefs and shared perceptions of employees regarding climate safety.

## Leader affiliative humor and employee knowledge sharing

The classification described by Martin et al. (2003) proposes that leader humor can be categorized into leader affiliative humor (telling jokes and saying funny things to enhance a relationship with others), leader aggressive humor (putting others down in a detrimental fashion), leader self-enhancing humor (enhancing the self in a benevolent fashion), and leader self-defeating humor (saying funny things at the expense of oneself). LAFH, as an effective communication tactic, acts as a social lubricant, compared with the other three styles of leader humor, and thus can build a high-quality relationship between leaders and their followers, and subsequently affect employees' behavior and performance (Liu et al., 2020). Certainly, prior literature demonstrates that LAFH signals benevolence, and exerts a positive effect on employee voice, job satisfaction, and performance (Liu et al., 2020; Robert et al., 2016).

SIP theory proposes that employees actively seek information and clues related to the workplace environment from the team members, to adjust their beliefs, attitudes, and behaviors through the interpretation and understanding of these clues (Salancik & Pfeffer, 1978). LAFH also signals benevolence by telling jokes and saying funny things. Furthermore, LAFH not only contributes to reducing status differences between leaders and their subordinates (Neves & Karagonlar, 2020) but also solidifies employees' trust in their leaders (Karakowsky et al., 2020). Consequently, LAFH enhances communication, which, in turn, improves the exchange of knowledge and information, ultimately enhancing knowledge sharing. Moreover, Abdillah (2021) concluded that leader humor exerts a significant impact on employee knowledge sharing. Hence, this study proposes the following hypothesis:

Hypothesis 1. LAFH is positively associated with employee knowledge sharing.

#### The mediating role of KSSE

Self-efficacy represents individuals' evaluation regarding their own abilities and thus reflect a recognition of individuals' abilities (Latikka et al., 2019; Bandura, 1982). An employee with high self-efficacy shows more willingness to perform a specific behavior as they have sufficient confidence (Barbaranelli et al., 2018). Specifically, KSSE denotes a person's confidence leading to the effective sharing of information (Van Acker et al., 2014). Moreover, the extant literature suggests that KSSE helps employees overcome the problems related to knowledge exchange in the workplace (Arain et al., 2020; Van Acker et al., 2014).

Based on SIP theory, LAFH, denoting a positive form of humor to amuse others, signals benevolence and support, which help employees understand which behavior is appropriate and encouraged in the workplace through the processing of these signals and cues (Salancik & Pfeffer, 1978; Naseer et al., 2020). In parallel, LAFH (e.g., a leader often joking with his/her subordinates), is considered a more secure and lower-risk form of humor that reflects support and confidence (Cooper et al., 2018) and is able to promote formal or informal communication between leaders and employees (Kong et al., 2019), which can increase their confidence in providing knowledge that other employees consider valuable. In addition to this, LAFH is beneficial to creating a relaxed and pleasant climate in the organization (Kim et al., 2016), thereby enhancing their confidence in information sharing. Furthermore, the extant literature highlights the enhancement of employee self-efficacy induced by leader humor (Neves & Karagonlar, 2020; Cooper et al., 2018).

Previous studies have confirmed that employees with high selfefficacy not only trust their own abilities but also show more willingness to accept workplace challenges (Fast et al., 2014; Ozyilmaz et al., 2018). As a result, employees with high KSSE are often confident in providing knowledge without encouragement. They believe that sharing their own knowledge can effectively help colleagues solve difficulties in the workplace (Fast et al., 2014; Kim & Lee, 2013). Parallel to this, employees with high KSSE are not afraid of losing their competitive advantage by sharing knowledge with others. Instead, these employees believe that competitive advantages can be gained by acquiring knowledge from team members (Arain et al., 2020; Barbaranelli et al., 2018). For instance, Ergün and Avcı (2018) argue that KSSE positively correlates with employee knowledge sharing.

SIP theory advocates that leaders, as an imperative social cue, convey information and views to the team, which influence employees' attitudes and behaviors through cognitive responses (Salancik & Pfeffer, 1978). In the line with this, KSSE triggered by LAFH denotes their confidence to share knowledge that is perceived as valuable by other employees in their team. Hence, this study posits that LAFH positively affects employee knowledge sharing via KSSE. Based on the argument above, the following hypothesis is proposed:

Hypothesis 2. KSSE mediates the relationship between LAFH and employee knowledge sharing.

## The mediating role of team psychological safety

Team psychological safety represents the common belief of team members in the interpersonal risks related to teamwork. This belief ensures that team members feel that it is safe to take calculated risks in the team (Edmondson, 1999). This indicates, for instance, that team members are confident that they will not be punished or receive retaliation for questioning current practices in the organization. Since team psychological safety possesses the team attributes, therefore, team members form the same perception of their common experience (Schulte et al., 2012). Prior studies have indicated that leaders can shape team psychological safety, for instance, transformational leadership, authentic leadership, responsible leadership, and ethical leadership demonstrate a significant impact on team psychological safety, respectively (Yin et al., 2020; Walters & Diab, 2016; Haider et al., 2022; Men et al., 2020).

Based on SIP theory, LAFH signals support and amicability (Cooper et al., 2018; Kong et al., 2019). This helps reduce hierarchical differences, facilitate informal communication, and strengthen mutual trust, thus creating a positive team climate, specifically, team psychological safety. Consequently, LAFH, which involves a leader's use of jokes or humorous language to amuse others and facilitate relationships (Martin et al., 2003), contributes to creating a relaxed and comfortable climate in the organization, thus improving the sense of closeness between the leaders and employees and enhancing the sense of psychological safety (Hu et al., 2018). Furthermore, Yuan et al. (2022) confirmed that leader humor exerts a positive impact on psychological safety.

Team psychological safety is a major factor contributing to the provision of a safe interpersonal climate of trust for the employees (Edmondson, 1999). Psychological safety encourages employees to put forward different suggestions, opinions, and ideas for organizational development (Edmondson, 1999). Consequently, employees are encouraged to propose different ideas related to the current tasks in the workplace without fear of being ridiculed by leaders and colleagues, thus promoting the exchange of knowledge and information. Moreover, Kakar (2018) surveyed a development team of 34 software projects in China and found that team psychological safety had a positive impact on knowledge sharing. Taken together, from the perspective of SIP theory, employees, perceiving an inclusive climate through the telling of jokes or saying funny things, experience greater psychological safety (Yam et al., 2018; Gonzalez et al., 2020), leading to increased knowledge sharing. Thus, the following mediating role is hypothesized:

Hypothesis 3. Team psychological safety mediates the relationship between LAFH and employee knowledge sharing.

# The moderating role of team psychological safety

SIP theory points out that the process of individual information processing is not only directly affected by the sources of social information but also by the characteristics of workplace situations (Salancik & Pfeffer, 1978). Team psychological safety encourages employees to put forward different suggestions and views, admit and pay attention to mistakes, accept challenging tasks, seek cooperation among employees, and advocate mutual encouragement, stimulating their internal motivation and work engagement (Edmondson, 1999). In particular, high team psychological safety encourages employees to recommend different ideas, suggestions, and exchange knowledge without concern regarding a possible adverse influence on their career development, status, and self-image (Yin et al., 2020). In this situation, KSSE leads employees in the workplace to further strengthen their confidence in knowledge exchange, thus enhancing their knowledge sharing. However, in case of low team psychological safety, there are doubts and precautions among the members, and the focus of employees' becomes the reduction of the negative influence of work errors and interpersonal risks. To avoid these adverse situations, employees reduce knowledge sharing even when the KSSE is high. As a result, the following hypothesis is proposed:

Hypothesis 4. Team psychological safety moderates the relationship between KSSE and employee knowledge sharing, that is the higher the team psychological safety, the stronger the positive relationship between KSSE and employee knowledge sharing.

Fig. 1 represents the theoretical model adopted in this study. From the perspective of SIP theory, this study aims to investigate the multilevel effect of LAFH on employee knowledge sharing, focusing on the mediating and moderating roles of KSSE and team psychological safety.

## Research methodology

## Sample and procedures

This study used questionnaires for data acquisition. The respondents were from different enterprises, including communication, biopharmaceutical firms, medical treatment, machinery production, and other fields in Beijing, Shanghai, Qingdao, Jinan, and other regions in China. The selected variables were LAFH, team psychological safety, KSSE, and employee knowledge sharing. A two-stage method of data collection was used to reduce common method bias. The LAFH, team psychological safety, KSSE, and demographic variables (such as age, gender, and education level) were measured during the first stage of the study, undertaken between January and March 2022. The HR directors and managers of the enterprises were informed about the purpose of the study to obtain their support. Meanwhile, the researchers actively communicated with the supervisors/managers to seek their consent on the time and place of the survey. The survey respondents were approached at the appointed time to collect the research data. A total of 470 paper-based questionnaires were directly distributed to the surveyed employees, resulting in the recovery of 390 questionnaires for the first stage. The number of correctly completed questionnaires was further reduced to 375, with an effective recovery rate of 79.79%, after the exclusion of questionnaires



Fig. 1. Theoretical model.

that were not completed correctly or showed substantial data loss. The second stage of the survey lasted from March 2022 to May 2022. This stage essentially measured employee knowledge sharing and team information. The same procedures used during the first stage were used for the second stage, specifically, the distribution of 375 questionnaires to the surveyed employees. This led to the recovery of 295 questionnaires due to reasons such as the transfer of team members. The final number of included questionnaires was 286, after the exclusion of poorly completed questionnaires or those that were missing data. In summary, the final questionnaire recovery rate was 60.85%.

The demographic characteristics of the respondents showed that 50.7% of the participants were male and 49.3% were female. In addition, 46.8% of the employees were aged 26-35 years, 25.0% were aged 36-45, and 28.2% were aged over 40. Moreover, in terms of educational level, those with master's degree or above accounted for 18.6%, those with undergraduate qualifications accounted for 52.4%, and those with junior college accounted for 29.0%. Further analysis indicated that the average length of service was 4.03 years (SD = 1.89). The average time of establishment at the team level was 6.15 years (SD = 3.16). Lastly, the average team size was 5.6, with the number of team members ranging from 3 to 15.

#### Measurement

Research scales from published studies were adopted. The selected studies had also been verified by follow-up studies, with high reliability and validity. In addition, a questionnaire revision team was formed, mainly including a professor, an associate professor, and two PhDs from management sciences. The scales were individually revised through the "back-translation" procedure to ensure their applicability in the Chinese context. Besides, the selected scales used a 5-point Likert scale ranging from "1 = strongly disagree" to "5 = strongly agree".

#### LAFH

An 8-item scale developed by Martin et al. (2003) was adopted to measure LAFH. A representative item of LAFH was, "My leaders often joke with his/her close colleagues or subordinates." The reliability coefficient of LAFH was 0.837.

## KSSE

A 3-item scale developed by Lin et al. (2009) was used to estimate KSSE. A representative item of KSSE was, "I have confidence in my ability to provide knowledge that other employees in our team consider valuable." The reliability coefficient of LAFH was 0.766.

#### Team psychological safety

A 7-item scale developed by Edmondson (1999) was used to assess team psychological safety. A representative item of team psychological safety was, "if you make mistakes in the team, you will not be opposed and ridiculed by your colleagues." The reliability coefficient of team psychological safety was 0.879.

#### Employee knowledge sharing

A 5-item scale developed by Hsu et al. (2007) was applied to assess employee knowledge sharing. A representative item was, "I frequently participate in knowledge sharing activities in my team." The reliability coefficient of team psychological safety was 0.812.

The reliability coefficients of the above scales were higher than the recommended standard ( $\alpha > 0.7$ ). In addition to this, previous studies considered that individual-level variables (such as educational level and gender) and team-level variables (such as time size and the average duration of team establishment) influence employee knowledge sharing (Muhammed & Zaim, 2020; Bavik et al., 2018). Therefore, this study incorporated the proposed variables as control variables.

## Data analysis and results

## Confirmatory factor analysis

SPSS 22.0 and Mplus 7.4 software were used for statistical analysis. A confirmatory factor analysis was conducted on LAFH, team psychological safety, KSSE, and employee knowledge sharing to test the construct discrimination of the understudy variables. The results of the confirmatory factor analysis were illustrated in Table 1. The fourfactor model and data fit ( $\chi^2$ =554.848, df=224,  $\chi^2$ /df=2.477; GFI=0.916; CFI=0.937; NFI=0.930; RMSEA=0.067) represent the most ideal and significant model in comparison with other models. This indicated that the four variables chosen in this study represent four different constructs.

#### Common method bias

The anonymous surveys were based on a two-stage method of data survey. Nevertheless, it still did not fully conform to the procedures for the control of common method bias. Therefore, Harman single-factor analysis was performed to test common method bias. All items of the questionnaire were subjected to factor analysis without rotation, and the variation explained by the first principal component was found to be 22.39%, which did not account for half of the total explained variation (61.56%). Thus, this implied that there was insignificant common method bias in this study.

#### Team level data aggregation

Both LAFH and team psychological safety represented team-level variables in this study. Therefore, the degree of consistency of team members was tested to determine whether individual data could be converted into team data. Subsequently, inter-group variability (ICC) and R<sub>wg</sub> (James et al., 1984) were applied to perform aggregation tests on LAFH and team psychological safety. The statistical analysis indicated that the R<sub>wg</sub>, ICC (1), and ICC (2) of LAFH were 0.85, 0.26, and 0.76, respectively. Meanwhile, the R<sub>wg</sub>, ICC(1) and ICC(2) of team psychological safety were 0.91, 0.31, 0.90, respectively, which fulfilled the aggregation criteria of R<sub>wg</sub>>0.7, ICC(1)>0.12, ICC(2)>0.7.

#### Descriptive statistics and correlation analysis

Table 2 presents the descriptive statistics and correlation analysis. The correlation analysis revealed that KSSE was positively correlated with employee knowledge sharing (r=0.41, p < 0.01), and a positive association was observed between LAFH and team psychological safety (r=0.66, p < 0.01). This provides evidence supporting the further investigation of the hypotheses.

#### Table 1

Confirmatory factor analysis (CFA).

Model	$\chi^2/df(df)$	GFI	CFI	NFI	RMSEA
Model 1:LAFH; KSSE; TPS; EKS	2.477(224)	0.916	0.937	0.930	0.067
Model 2:LAFH+KSSE; TPS; EKS	3.931(227)	0.814	0.832	0.820	0.082
Model 3:LAFH; KSSE+TPS; EKS	3.472(227)	0.825	0.843	0.839	0.080
Model 4:LAFH+KSSE+TPS; EKS	4.546(229)	0.730	0.773	0.749	0.112
Model 5:LAFH+KSSE+TPS+EKS	6.256(230)	0.698	0.726	0.685	0.122

Notes:"+" denotes the combination of variables;LAFH denotes leader affiliative humor; KSSE denotes knowledge sharing self-efficacy; TPS denotes team psychological safety; EKS denotes employee knowledge sharing.

Table 2
Mean, standard deviation and correlation analysis.

Variable	Mean	SD	1	2	3
Individual level					
Gender	1.56	0.33			
Educational level	2.83	0.80	0.05		
KSSE	4.24	0.54	-0.08	0.16	
EKS	3.84	0.75	0.01	0.11	0.41**
Team level					
Team size	5.16	2.46			
Team establishment time	1.13	3.24	0.07		
LAFH	4.38	0.42	0.06	0.07	
TPS	4.22	0.38	0.09	0.08	0.66**
Notes:					
* n < 0.05					

\*\* *p* < 0.01

#### Hypothesis testing

A hierarchical linear model (HLM 6.08) was used to measure the multilevel mediating effect of KSSE. First of all, a null model was established with employee knowledge sharing as the outcome variable. It was found that  $\chi^2$ =0.41, p < 0.001, and ICC (1) =0.27, thus, exceeding the empirical standard value of 0.12, and allowing the following multilevel linear analysis. The results are shown in Table 3, and revealed that LAFH exhibited a significant positive effect on employee knowledge sharing (M4:  $\gamma_{01}$ =0.60, p < 0.01), leading to the acceptance of Hypothesis 1. Meanwhile, LAFH demonstrated a significant positive effect on KSSE (M2: $\gamma_{01}$ =0.54, p < 0.01). There was a significant decrease in the influence of LAFH on employee knowledge sharing (M4: $\gamma_{01}$ =0.60,  $p < 0.01 \rightarrow$  M5: $\gamma_{01}$ =0.49, p < 0.01), when LAFH and KSSE were included in the model to explain the effect on employee knowledge sharing. Moreover, the Monte Carlo method was used to evaluate the mediating effect. The mediation results suggested that the effect of LAFH on employee knowledge sharing through KSSE was 0.1715 at the team level, with a confidence interval of [0.0895, 0.2784] at the 95% level, excluding 0. Consequently, Hypothesis 2 was also accepted.

Similarly, the hierarchical linear model (HLM 6.08) was also used to test the multilevel mediating effect of team psychological safety (Table 4). As shown in Table 4, LAFH was found to be positively related to team psychological safety (M7: $\gamma_{01}$ =0.50, p < 0.01). Additionally, the influence of LAFH on employee knowledge sharing decreased significantly (M9: $\gamma_{01}$ =0.60,  $p < 0.01 \rightarrow$  M10: $\gamma_{01}$ =0.21, p < 0.01), when LAFH and team psychological safety were included in the model to explain the impact on employee knowledge sharing. Furthermore, the Monte Carlo method was used to assess the mediation effect. The results predicted that the effect of LAFH on employee knowledge sharing through team psychological safety was 0.2842 at

Table 3	
The results of multilevel mediating effect of KSSE.	

Variable	KS	SE	Employe	e knowledg	e sharing
	M1	M2	М3	M4	M5
Intercept ( $\gamma_{00}$ )	4.22**	3.26**	4.21**	3.82**	3.36**
Gender	-0.04	-0.04	-0.06	-0.06	-0.03
Educational level	0.01	0.01	0.06	0.05	0.04
Team size	0.05	0.03	0.11	0.07	0.04
Team establishment time	0.03	0.03	0.06	0.03	0.03
LAFH $(\gamma_{01})$		0.54**		0.60**	0.49**
KSSE $(\gamma_{10})$					0.33**
$\sigma^2$	0.20	0.19	0.40	0.39	0.37
$ au_{00}$	0.09	0.03	0.17	0.11	0.12

Notes:

\* *p* < 0.05,

\*\*  $p < 0.01; \sigma^2$  is the residual of level 1,  $\tau_{00}$  is the intercept residual of level 2

Variable	Team psyc	Team psychological safety		Employee knowledge sharing		
	M6	M7	M8	M9	M10	
Intercept ( $\gamma_{00}$ )	3.68**	2.75**	4.21**	3.82**	2.12**	
Gender	0.05	0.03	-0.06	-0.06	-0.04	
Educational level	0.02	0.01	0.06	0.05	0.05	
Team size	0.06	0.05	0.11	0.07	0.05	
Team establishment time	0.04	0.03	0.06	0.03	0.02	
LAFH $(\gamma_{01})$		0.50**		0.60**	0.21**	
Team psychological safety ( $\gamma_{02}$ )					0.56**	
$\sigma^2$	0.25	0.22	0.40	0.39	0.36	
$ au_{00}$	0.12	0.09	0.17	0.11	0.08	

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The results of multilevel mediating effect of team psychological safety.

Notes:

Table 4

\* *p* < 0.05,

\*\* p < 0.01;  $\sigma^2$  is the residual of level 1,  $\tau_{00}$  is the intercept residual of level 2

the team level, with a confidence interval of [0.1249, 0.4623] at 95%, excluding 0. Thus, Hypothesis 3 was also accepted.

This study constructed a multilevel linear model (Table 5) to determine the impact of the interaction between team psychological safety and KSSE on employee knowledge sharing from the perspective of the multilevel moderating effect of team psychological safety. Table 5 indicates that team psychological safety positively moderated the relationship between KSSE and employee knowledge sharing (M13: $\gamma_{11}$ =0.12, p < 0.01). Thus, Hypothesis 4 was also supported. Moreover, Fig. 2 shows the interactive effect of team psychological safety and KSSE on employee knowledge sharing based on the simple slope-drawing method proposed by Aiken and West (1994). It is clear from Fig. 2 that the higher the level of team psychological safety, the more positive impact of KSSE on employee knowledge sharing is significantly greater than at the lower level of team psychological safety.

## Conclusion

To sum up, this study investigated the multilevel effect of LAFH on employee knowledge sharing, with a particular focus on the role of team psychological safety and KSSE as links between the understudy variables, from the perspective of SIP theory and the extant literature. Furthermore, a sample comprising 286 respondents (51 teams) was used for data collection. The study findings put forward the following inferences:

(1) LAFH was found to exert a significant positive effect on employee knowledge sharing, indicating that H1 is supported. This is

Table	5

The results of multilevel moderating effect of team psychological safety.

Variable	Employee knowledge sharing			
	M11	M12	M13	
Intercept ( $\gamma_{00}$ )	3.82**	2.39**	2.12**	
Gender	-0.04	-0.03	-0.04	
Educational level	0.06	0.05	0.05	
Team size	0.09	0.06	0.05	
Team establishment time	0.06	0.05	0.04	
KSSE $(\gamma_{10})$	0.33	0.27**	0.18**	
Team psychological safety ( $\gamma_{01}$ )		0.55**	0.36**	
KSSE * Team psychological safety ( $\gamma_{11}$ )			0.12**	
$\sigma^2$	0.38	0.34	0.30	
$ au_{00}$	0.18	0.08	0.10	

Notes:

p < 0.05

\*\* p < 0.01;  $\sigma^2$  is the residual of level 1,  $\tau_{00}$  is the intercept residual of level 2

consistent with the findings of a study showing that LAFH was positively associated with knowledge sharing (Abdillah, 2021). Specifically, LAFH, as an effective tactic, signals benevolence, thus strengthening communication and cooperation among employees (Liu et al., 2020; Robert et al., 2016), and subsequently promoting employee knowledge sharing.

- (2) LAFH was found to have a positive effect on employee knowledge sharing via two mediating variables, namely, team psychological safety and KSSE, thus supporting H2 and H3. In terms of SIP theory, LAFH transmits information related to support and amicability, thus further satisfying the basic needs of employees (Neves & Karagonlar, 2020; Cooper et al., 2018). This activates employees' self-efficacy in knowledge sharing, thereby promoting knowledge sharing among employees. Meanwhile, LAFH also reduces hierarchical differences (Cooper et al., 2018), consequently, creating a positive team climate (e.g., team safety climate), which, in turn, facilitates employee knowledge sharing.
- (3) Team psychological safety was found to play a significant multilevel moderating effect on the relationship between KSSE and employee knowledge sharing; thereby, the higher the team psychological safety, the stronger the positive relationship between the aforementioned variables, supporting H4. SIP theory holds that in the workplace, employees do not operate in a vacuum, which indicates that the information processing of employees may be influenced by team climate (Salancik & Pfeffer, 1978). Notably, team psychological safety represents mutual trust (Edmondson, 1999), which in turn, affects employees' self-efficacy in knowledge sharing, and thus ultimately influences employee knowledge sharing.



Fig. 2. The interactive effect of KSSE and team psychological safety (TPS) on knowledge sharing.

# Theoretical implications

This study advances the theoretical background and literature related to leader humor and knowledge sharing in multiple ways. First, the findings contribute to the literature on leader humor and knowledge sharing by shedding light on the positive consequences of LAFH on knowledge sharing. The results provide evidence that LAFH enhances employee knowledge sharing. As a result, this study not only answers call from the scholars to examine the positive effects of leader humor (Cooper et al., 2018; Yam et al., 2019), but also expands on the antecedents that facilitate employee knowledge sharing (Pereira & Mohiya, 2021; Bavik et al., 2018). Moreover, the findings also enrich the multilevel effect of leader humor on employees' behavior, thus adding to the literature on leader humor.

Second, this study showed that LAFH demonstrates a positive effect on employee knowledge sharing through team psychological safety and KSSE, from the context of SIP theory (Salancik & Pfeffer, 1978). Thus, the findings contribute to the elucidation of the mechanism by which LAFH affects employee knowledge sharing and also verify and expand the theoretical explanation of SIP theory on the relationship between LAFH and employee knowledge sharing. Meanwhile, this study also integrated two different perspectives of team climate (team psychological safety) and employee cognition (KSSE) to identify the mechanism through which LAFH affects employee knowledge sharing. This is conducive to deepening the systematic understanding of the effects of LAFH on employee knowledge sharing.

Third, studies on leadership not only explain how leaders affect employee behavior but also focus on the situational characteristics and boundary conditions of the relationship between these two variables (Swanson et al., 2020; Peng et al., 2020). The results confirmed that team psychological safety moderated the positive relationship between KSSE and employee knowledge sharing. This not only provides information on the boundary conditions and situational characteristics of the effects of leadership (Swanson et al., 2020; Peng et al., 2020), but also indicates the boundary conditions of LAFH that affect employee knowledge sharing, thus enriching the situational characteristics of the relationship between the two variables.

#### Managerial implications

The results suggest that leaders should consider using affiliative humor to motivate employee knowledge sharing. For instance, organizations should design and develop training courses to enhance leader affiliative humor and encourage leaders to adjust their leadership styles for the effective use of various humorous expressions in the leadership process to improve leadership efficacy. Moreover, leaders need to change their mindset and recognize the importance of affiliative humor.

The results also indicate that LAFH positively affects employee knowledge sharing through KSSE (employee cognition). This indicates that the leaders' ability to activate the KSSE of employees serves as an important condition for improved knowledge sharing. Based on this, organizational leaders should construct communication platforms and set up incentive systems to enhance the KSSE of employees. Meanwhile, organizational leaders should also strengthen cooperation with their subordinates to enhance the KSSE of employees, thereby improving employee knowledge sharing.

In addition, team psychological safety not only mediates the relationship between LAFH and employee knowledge sharing but also positively moderates the relationship between KSSE and employee knowledge sharing. Therefore, managers should incorporate measures to enhance team psychological safety. For instance, managers should strive to establish a communication platform tailored to the elements of sincerity, mutual trust, fairness, and equal opportunity to improve the level of cooperation between employees.

# Limitations and future research directions

There are certain limitations associated with this study. First, although this study integrated individual and team levels to build a multilevel impact of LAFH on employee knowledge sharing, it still lacked the embedding of organizational-level variables. Therefore, future research should consider building a multilevel model including the three levels of the individual, team, and organization to systematically predict the relationship between LAFH and knowledge sharing. For instance, future studies should embed different factors into the research model such as organizational values, environmental dynamics, and other important organizational factors.

Second, this study adopted two stages for the collection of data to avoid common method bias. Nevertheless, the cross-sectional characteristics of this study do not allow for causal inference between the proposed variables. Therefore, future studies based on multi-source and multi-stage data would be useful for determining the causal relationships between the proposed variables.

Third, this study explored the mechanism by which LAFH affects employee knowledge sharing from the perspectives of employee cognition (KSSE) and team climate (team psychological safety). However, there may be other variables involved in the influence of LAFH on employee knowledge sharing. Therefore, future research should incorporate individual-level variables (such as leader-member exchange and positive affect), together with team-level variables (such as team cohesion and team psychological capital) to enrich the theoretical framework of LAFH and employee knowledge sharing.

# **Declaration of Competing Interest**

The authors declare that there's no conflict of interest.

## Acknowledgment

The work is supported by the Shandong Provincial Natural Science Foundation (Grant No. ZR2020QC018) and the Humanities and Social Science Foundation of the Ministry of Education of China (Grant No. 19YJC630134, 21YJCZH143).

#### Appendix A. Measure Items

*Note.* (R) represents reverse-coded items. **Leader Affiliative Humor** 

- 1. My leader often jokes with his/her close colleagues or subordinates.
- 2. My leader usually doesn't laugh or joke around much with his/her close colleagues or subordinates. (R)
- 3. My leader doesn't have to work very hard at making his/her close colleagues or subordinates laugh.
- 4. My leader rarely makes other people laugh by telling funny stories about himself. (R)
- 5. My leader laugh and joke a lot with his/her close colleagues or subordinates.
- 6. My leader usually doesn't like to tell jokes or amuse people. (R)
- 7. My leader doesn't often joke around with his/her close colleagues or subordinates. (R)
- 8. My leader usually can't think of witty things to say when he/her is with other people. (R)

## **Knowledge Sharing Self-efficacy**

1. I have confidence in my ability to provide knowledge that other employees in our team consider valuable.

- 2. I have the expertise, experiences, and insights needed to provide knowledge that is valuable for other members in our team.
- 3. I have confidence in responding or adding comments to messages or articles posted by other members in our team.

## **Team Psychological Safety**

- 1. If you make mistakes in the team, you will not be opposed and ridiculed by your colleagues.
- 2. Members in our team are able to bring up problems and tough issues.
- 3. Members in our team sometimes reject others for being different. (R)
- 4. It is safe to take a risk in our team.
- 5. It is difficult to ask other members of our team for help. (R)
- 6. No one in our team would deliberately act in a way that undermines my efforts.
- 7. Working with members in our team, my unique skills and talents are valued and utilized.

## **Employee Knowledge Sharing**

- 1. I frequently participate in knowledge sharing activities in my team.
- 2. I usually spend a lot of time conducting knowledge sharing activities in my team.
- When participating in my team, I usually actively share my knowledge with others.
- 4. When discussing a complicated issue, I am usually involved in the subsequent interactions.
- 5. I usually involve myself in discussions of various topics rather than specific topics.

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