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Helping others but Hurting Yourself? The underlying mechanism linking helping behavior to task performance

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ABSTRACT

Helping behavior positively influences organizational effectiveness, which is why the importance of this behavior is highlighted in Chinese enterprises, and employees are encouraged to engage in it. However, from an actor-centric perspective, helping behavior is not always beneficial. In this paper, cognitive-affective personality system theory is applied to link helping behavior to task performance, thus enhancing the understanding of the effects of helping behavior. By adopting a two-wave questionnaire survey, data from 202 leader-subordinate dyads were gathered. Then, the BruceR (V0.7.2) package of Rstudio (V4.1.1) was used to generate a multi-mediated moderation model and test the hypotheses. The following results were obtained: 1) Helping behavior was negatively associated with task performance. 2) Cognitive irritation and emotional exhaustion serially mediated the influences of helping behavior on task performance. 3) Team-level communal goal striving moderated the indirect influence of helping behavior on task performance; the indirect influence was only significant when the levels of team communal goal striving were low. From an actor-centric perspective, this paper presents evidence for the connection between helping behavior and task performance. Numerous implications for management approaches are presented to maximize the management of helping behavior.

1. Introduction

Chinese culture is collectivist and both the state and private enterprises highlight and encourage helping behavior. In particular, the Chinese government has highlighted the importance of helping behavior as a mechanism for coping with the crisis caused by the COVID-19 pandemic.

Previous research has shown the beneficial effects helping behavior achieves that foster organizational resilience and improve team performance [1,2]. However, other studies have explored the negative influences of helping behavior from an actor-centric perspective. For example, Gabriel et al. [3] demonstrated a positive association between helping behavior and ego depletion on a daily basis. Lin et al. [4] found a positive relationship between helping behavior and emotional exhaustion. Although earlier research has examined the double-edged effects helping behavior can have for helpers from both emotional and cognitive perspectives, it still remains unknown how helping behavior affects task performance. Task performance is vital for both employees and organizations, as

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it supports both the development of organizations and the career growth of employees [5]. Examinations of the link between helping behavior and task performance can provide a deeper understanding of the results of helping behavior and thus play a vital role in leveraging the management of helping behavior.

Previous research has highlighted the underlying emotional and cognitive paths that link helping behavior to its outcomes (i.e., spousal support, sustained helping behavior, and thriving at work) [4,6,7]. However, emotional and cognitive paths are intertwined [8]. To better understand the underlying mechanism that links helping behavior to task performance, in this study, cognition-affect personality system theory (CAPS [9,10]) was applied to address the double-edged influences of organizational citizenship behavior on actors. CAPS proposes that external events stimulate individual reactions through both cognitive and affective processing. A previous study has proposed that cognitive appraisals shape affective experiences [11]. Consistent with that premise, this study assumes that helping behavior first triggers cognitive reactions, then influences the affective experience, and ultimately leads to changes in task performance. Following this logic, this study applies the constructs of both cognitive irritation and emotional exhaustion. These constructs serve as serial mediators that expose the cognitive and affective mechanism through which helping behavior affects task performance.

Furthermore, research has shown that helping behavior has double edged influences on work-related outcomes. One potential explanation for this paradoxical result is that there is a moderator in the relationship between helping behavior and its outcomes. CAPS posits that individual behavior is shaped by situations [12]. Employees work within team units, and team climates both influence and play vital roles in activating cognition, affect, and behavior in response to various stimuli [13,14]. Based on prior research, this study also focuses on the behavior of team communal goal striving, which is selected because of its association with proactive relationship-building behavior [15]. Thus, a conceptual model (see Fig. 1) is proposed that links situation, event (helping behavior), cognitive pathway (cognitive irritation), and affective pathway (emotional exhaustion). This model is used to explore employee task performance.

A two-stage questionnaire survey was used to gather information from leader-subordinate dyads to test the conceptual model. This study contributes to the literature on helping behavior and CAPS. First, this study found that helping behaviour threatens task performance in a long run, which aids scholars to identify the negative side of helping behaviour. Second, this study further unveils how helping behaviour is negative associated with task performance by exploring the mediating roles of cognitive irritation and emotional exhaustion. This contributes a theoretical perspective to illustrate the negative impacts of helping behaviour within the theoretical framework of CAPS. Third, this study identifies the boundary condition of the indirect association between helping behaviour and task performance through cognitive irritation and emotional exhaustion by examining the cross-level moderating role of team communal goal striving. This enlarges the scope of CAPS and the negative side of helping behaviour by incorporating team climate in this line of research. Our study also provides managerial values to the practitioners by announcing the potential threats of consistently encouraging helping behaviour and highlighting the importance of constructing team communal goal striving in ensuring the benefits of helping behaviour.

2. Literature review and hypotheses development

2.1. Helping behavior and task performance

Helping behavior refers to voluntary assistance directed to coworkers with the goal to accomplish goals or prevent problems [16]. Previous research confirmed that helping behavior has significant favorable effects on team performance [17,18]. Considering its vital role in encouraging favorable interpersonal interactions at work, managers implement an array of strategies to stimulate helping behavior. However, scholars have started to explore its outcomes for actors at the individual level. For example, Koopman et al. [19] argued that times resources are valuable and relatively fixed at work. When helping behavior expends limited time resources, helping employees may face impeded progress in their own work, which can fuel psychological stress and threaten their well-being [3,19]. Lin et al. [6] noted that helping behavior may require extended work hours for actors to catch up with delayed work, resulting in actor rumination that may undermine employee engagement and task performance.

Although there is no direct evidence for the relationship between helping behavior and task performance, such a relationship can be inferred based on the literature on the relationship between helping behavior and work-goal progress. Time is among an employee's most scarce resources and time resource limits are often assigned to relevant work-goals. Studies have shown that helping behavior consumes time and involves the transfer of time from the helpers to their coworkers [20,21]. Under work time restrictions, helpers face

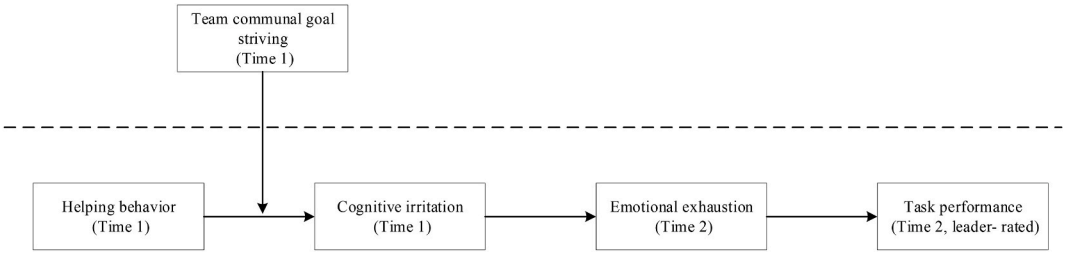

Fig. 1. Conceptual model.

a trade-off between achieving their own assigned work goals and helping others. Thus, helping others would reduce the amount of time available for on-going work-goal progress to maintain expected task performance [22,23]. Moreover, helping behavior usually occurs in response to unexpected requests for assistance, thus likely disrupting ongoing performance episodes and threatening task performance [24,25]. For these reasons, it can be expected that helping behavior is negatively associated with task performance; thus, the following hypothesis is proposed.

H_1: Helping behavior is negatively associated with task performance.

2.2. The serial-mediation effect of cognitive irritation and emotional exhaustion

2.2.1. Helping behavior and cognitive irritation

In the workplace context, cognitive irritation is defined as a class of conscious thoughts that revolve around a common instrumental theme, and that recur in the absence of immediate environmental demands requiring such thoughts [26]. Cognitive irritation reflects a state of rumination, in which employees regularly consider automatic and regulated processing-related matters. This impedes goal attainment [26]. Cognitive irritation at work emerges from a discrepancy between a certain proposed work goal and a given situation [26]. An employee's priority is the completion of assigned tasks, and research has shown that an employee will experience cognitive irritation when he or she fails to finish those tasks [27,28].

Time is a finite resource and helping behavior is a time-dependent activity [29]. The time of a helper is a crucial resource that is transferred to others through helping behavior. Workdays are divided into a relatively fixed number of performance episodes to which diverse work goals are assigned [30]. Helping behavior competes with other work-related progress, thus forcing a trade-off between helping behavior and other work activities [31]. As mentioned above, helping behavior transfers the time resources of helpers from being available to complete their own work-related goals to assisting coworkers in their work to overcome difficulties [23]. This transfer disrupts ongoing performance episodes and leaves less time to assign to current work [32]. Helpers frequently remember poor job experiences as a maladaptive reaction to impeded work progress [33]. When work-goals are impeded, cognitive irritation levels are increasing [30,34,35]. This line of argument suggests the following study hypothesis.

H_2: Helping behavior is positively associated with cognitive irritation.

2.3. Cognitive irritation and emotional exhaustion

Emotional exhaustion is a state in which employees undergo sustained depletion of emotional resources [36]. It arises from the aggregation of unfavorable affective experiences, under limited supplemental emotional resources [37,38]. To recover from emotional exhaustion, employees need to stimulate positive emotions and either generate or receive extra emotional resources [39,40]. Cognitive irritation impedes these processes.

CAPS addresses the role of cognitive appraisal in shaping emotional responses [41]. Cognitive irritation drives individuals to think repetitive and unintentional perseverative thoughts in the absence of relevant external cues [42]. Rumination prolongs physiological and affective activations associated with unfavorable experiences (e.g., organizational politics, unexpected organizational changes, and abusive supervision) [43]. Such prolonged activation can induce a decrease in psychological detachment from work [44]. Such psychological detachment is a basic way to recover from work stressors, and also supplements emotional and physical resources that have been consumed by such stressors [45]. Without obtaining emotional resources, employees with high cognitive irritation are more likely to experience emotional exhaustion.

Irritating thoughts are repetitive, unintentional, intrusive, and difficult to control [46]. Cognitive irritation arises from an employee's failure to meet desired goals [26]. These frustrating experiences maintain negative emotions and prolong the unfavorable influence of daily stressors experienced at work. This leads to the enhancement of negative experiences in the mind, which in turn, generates more negative emotions [47]. Donahue et al. [48] have verified the positive relationship between cognitive irritation and emotional exhaustion. They suggested that cognitive irritation impedes recovery from negative work experiences, thereby enhancing emotional exhaustion. also, Perko et al. [49] and Hadi et al. [50] suggested that cognitive irritation describes the dysfunctional process of unintentional perseverative thinking and is related to feelings of loss of control, thereby contributing to emotional exhaustion. Therefore, the following hypothesis is proposed.

H_3: Cognitive irritation is positively associated with emotional exhaustion.

2.4. Emotional exhaustion and task performance

Affect reflects emotional and physiological reactions to external experiences, and in CAPS, affect is treated as the "hot" unit. Affective arousal is rapid and automatic, and quickly transformed into behavioral decisions [9]. CAPS addresses the vital role of affective experiences in shaping task performance [51]. When experiencing emotional exhaustion, an employee is in a state of mental and physical fatigue [52]. In this scenario, the employee is driven to minimize the loss of emotional resources, rather than being engaged in work and maintaining high task performance.

Prior research has confirmed that the relationship between emotional exhaustion and task performance is negative. For example, Reb et al. [53] explored the negative influences of emotional exhaustion on turnover intention and task performance. Yang et al. [54]

posited that emotional exhaustion mediates the relationship between human resource management practice and job performance in Guanxi. Affective force is one of the motivational factors that influence individual attachment to an organization. Uncomfortable affective experiences may undermine an employee's respect for the organization [55]. In this context, employees may consider their work to be less meaningful and thus lower their own assessment of their suitability for the job. This can lead to increased tardiness and lower task performance [56]. This background informs the following hypothesis.

H_4: Emotional exhaustion is negatively associated with task performance.

Integrating the statements above, it can be hypothesized that helping behavior occupies assigned work time, which leads to impeded work progress, thus enhancing the helper's cognitive irritation. The intrusiveness and discomfort of cognitive irritation make it difficult to maintain positive emotions and recover from work stressors. Thus, cognitive irritation increases emotional exhaustion, which in turn decreases task performance. Accordingly, the following hypothesis is proposed.

H_5: "Cognitive irritation – emotional exhaustion" mediates the relationship between helping behavior and task performance.

2.5. Moderating Role of Team Communal Goal Striving

CAPS theorizes that situational characteristics shape individual cognitive, affective, and behavioral responses to external events [12]. Employees work in teams, and organizational behavior research has shown that the team climate shapes the typical situational characteristics, such as the propensity to pursue goals together. In the present study, team communal goal striving is adopted as a team level moderator to reflect the team climate. Team communal goal striving implies that team members attempt to interact and bond with their co-workers to complete the socialization process and facilitate the pursuit of team goals [15]. Previous research has confirmed the influence of team communal goal striving on motivating employees' proactive relationship-building behavior. Considering the social interactive nature of helping behavior, in this study, team communal goal striving is adopted as the focal situational characteristic, and its influences on the outcomes of helping behavior are examined.

The creation of a team establishes a situation where people work and interact with their coworkers. Teams with a high level of communal goal striving can be expected to motivate employees to develop action plans with a strong relational element [57]. Such a team climate directs and encourages team members to proactively seek opportunities to bond and interact with other team members. Social interactions serve as an effective instrument for realizing both personal and team goals. When helpers are working in a team that has a high level of communal goal striving, they are usually experiencing beneficial social exchange relationships [15]. This means that because of helping behavior, they can receive support from other team members when facing obstacles in work progress [58]. With support from other coworkers, helpers are more likely to complete their tasks on time and are less likely to experience cognitive irritation [59]. When such support is not available, employees may focus on their own jobs, rather than paying attention to the needs of their coworkers. In that case, helpers are more easily trapped by impeded work progress and are more likely to experience cognitive irritation. This logic informs the following hypothesis.

H_6: Team communal goal striving moderates the relationship between helping behavior and cognitive irritation; this relationship is weaker if the level of team communal goal striving is high, and lower otherwise.

Integrating the concepts above indicates that a high level of team communal goal striving offers job resources for helpers, thus supplementing the time resources consumed by helping behavior. As a result, helpers are less likely to be concerned about impeded work progress, may experience fewer negative outcomes (i.e., cognitive irritation and emotional exhaustion), and may consequently experience a higher level of task performance. In contrast, a low level of communal goal striving in a team leads employees to concentrate on their own jobs, rather than supporting other team members. In this case, the negative aspects of helping behavior may emerge, which result in increased cognitive irritation， emotional exhaustion, and decreased task performance. This situation merits a slight variation of hypothesis H_6.

H_7: Team communal goal striving moderates the indirect relationship between helping behavior and cognitive irritation; this indirect relationship is weaker under a high level of team communal goal striving, and lower otherwise.

3. Method

3.1. Participants and procedure

The hypotheses were tested using a sample of workers from a construction company based in Beijing, China, conducted in 2019. The sample was selected by a professional network associate affiliated to a renowned business school in the area. To better oversee the survey procedure, the authors first explained the study approach to human resource managers. A research assistant helped the human resource managers send notices to group leaders to estimate their interest in participating in the survey. A total of 76 group leaders gave their approval. Then, these group leaders received links to the website of the survey, which they distributed to the team members.

A two-wave and leader-subordinate questionnaire survey design was employed to avoid the common variance problem. In the first wave, the employees assessed their own helping behavior and use of strengths. In the second wave, which happened six weeks later,

employees were asked to complete an emotional demands questionnaire, and team leaders were tasked with rating the performance of each team member on each assignment. In the surveys, respondents were prompted to provide demographic data, such as their age, level of education, and gender. Each leader received a unique code that matched the questionnaires.

A total of 227 employees responded to the survey in the first wave and 202 responded to the second wave, resulting in a total response rate of 86.8 %. The second wave had a response rate of 93.2 %, with 68 of 73 group leaders completing the surveys. The questionnaire was ultimately completed by 202 employees, nested with 68 group leaders, and each group contained around 3 team members on average; 48.5 % of respondents were men and 51.5 % were women. In terms of their educational attainment, 19.3 % of respondents had a college diploma or less, 62.9 % had a bachelor's degree, and 17.8 % had a master's degree or above. The respondents were 32.32 (±6.33) years old on average. For leaders, 85.3 % of leaders are males and 14.7 % males; 17.6 % had a college diploma, 67.7 % were bachelors, and 14.7 % had a master's degree or above. The average age of the leaders was 36.63 (±6.47). The detailed demographic information for leaders and employees is shown in Table 1. As well, detailed demographic information distribution of each group is listed in the appendix.

3.2. Measures

Because the original scales were created in English, the translation-back translation approach was used as outlined by Brislin [60] to ensure the accuracy of the measures. A five-point Likert scale was employed, with 1 indicating strongly disagree and 5 indicating strongly agree, unless there was a specific phrase connected to the scale.

Helping Behavior. At time point 1, three items created by Yue et al. [16] were adopted to assess employee helping behavior. The frequency of employee's helping behavior over the previous month was assessed using a five-point Likert scale, with 1 = never and 5 = always. Cognitive irritation. Three items developed by Mohr et al. [26] were adopted to measure cognitive irritation. Emotional exhaustion. Three items used by Watkins et al. [36] were adopted to assess emotional exhaustion. Task performance. The four-item task performance scale developed by Ashford et al. [61] and adopted by Lu and Chou [62] was used at time point 2. The team leaders were asked to assess the task performance of each team member based on routine activities. Team communal goal striving. Six items by Tan et al. [15] were used for this scale. Employees rated this scale at time point 1 and then aggregated at the team level.

Control variables. Given that both helping behavior and task performance are influenced by gender (coded as 0 = male and 1 = female), age (measured as a continuous variable), and education (coded as 1 = college or below, 2 = bachelor's degree, 3 = master's degree or above) [7,63], demographic data were controlled in the hierarchical regression analysis.

3.3. Analytical strategy

As data were collected through two-wave, multi-source, and multi-level questionnaires, the data were nested and had a two-level hierarchical structure. Therefore, hierarchical linear modeling was adopted for analysis, which comprises two stages. First, ICC (1) and ICC (2) were examined to assess the need to aggregate communal goal striving at the team level. The results of ICC (1) = 0.55 and ICC (2) = 0.78 indicated that communal goal striving has a nested effect. This variable was aggregated at the team level and a multilevel analysis was employed to analyze the data. Second, hierarchical linear modeling (version 6.080) was conducted using a restricted maximum likelihood estimation for parameter calculations. A moderated mediation model analysis with a random slope and robust estimators was performed in Level 1 to obtain the individual effect. The variables in Level 1 (i.e., helping behavior, cognitive irritation, and emotional exhaustion) were group-centered, and team communal goal striving in Level 2 was grand-centered. Variances at Level 1 and Level 2 are reported. Moreover, pseudo R^2, which reflects the proportional reduction in variance components of the conditional

Table 1
Demographic information.

Roles	Demographic Information	Group	N	Percentage
Employees	Gender	Male	98	48.50 %
		Female	104	51.50 %
	Education	College or below	39	19.30 %
		Bachelor	127	62.90 %
		Master or above	36	17.80 %
	Age	20–25	26	12.87 %
		26–30	72	35.64 %
		31–35	48	23.76 %
		36–40	37	18.32 %
		41 or above	19	9.41 %
Leaders	Gender	Male	58	85.29 %
		Female	10	14.71 %
	Education	College or below	12	17.64 %
		Bachelor	46	67.65 %
		Master or above	10	17.41 %
	Age	26–30	12	17.65 %
		31–35	21	30.88 %
		36–40	17	25.00 %
		41 or above	18	26.47 %

models in comparison to the unconditional model without predictors (unconditional model minus conditional model divided by unconditional model; Raudenbush & Bryk [64]) was adopted to obtain the model fit.

3.4. Ethical considerations

The participating university's research ethics committees approved this study (the ethics code was DUT22RW217). Before inclusion, all participants were informed of the relevant information and research purposes.

4. Results

4.1. Confirmatory factor analysis

Confirmatory factor analysis (CFA) was used to test the proposed five-factor measurement model. The data presented in Table 2 indicate that the proposed five-factor model had a good fit compared to other models (χ^2 (159) = 1.90, RMSEA = 0.07, CFI = 0.93, TLI = 0.92, and SRMR = 0.07), passing the common method bias test.

4.2. Reliability and validity

The results indicate acceptable reliability and consistency in Table 3. The values of Cronbach's alpha are shown in Table 3, and they exceed the 0.7 threshold. We also calculate the CR values, which are all above the 0.7 threshold. Moreover, the results in Table 3 reveal that the coefficients of standardized factor loading of each item exceed the 0.7 threshold and thus reach the level of significance. The values of AVE range from 0.58 to 0.76, which exceed the 0.5 threshold. These research results indicate the acceptable convergent validity for the measurements adopted in our research.

To test the discriminant validity, we first conduct the cross-loading analysis by using exploratory factor analysis (EFA). The results in Table 3 indicate that the measurements adopted in this study can be distinguished from each other. Moreover, we compared the shared variance between AVE and the constructs. Results in Table 4 show that the square roots of the AVE are higher than the correlations between every pair of variables adopted in the research. These two results indicate the discriminant validity of our measurements are acceptable.

4.3. Descriptive statistics and correlation analysis

Table 5 presents the statistical results, including the mean and standard deviation for each variable, as well as the correlations between variables.

4.4. Hypotheses test

Table 6 shows that helping behavior was negatively correlated with task performance (Model 5, $\beta = -0.19$, $p < 0.05$), thus supporting H_1. Helping behavior was positively correlated with cognitive irritation (Model 1, $\beta = 0.30$, $p < 0.01$), thus supporting H_2. Cognitive irritation was positively correlated with emotional exhaustion (Model 4, $\beta = 0.20$, $p < 0.01$), thus supporting H_3. Emotional exhaustion was negatively correlated with task performance (Model 7, $\beta = -0.98$, $p < 0.01$), thus supporting H_4.

To test the serial mediation effects of cognitive irritation and emotional exhaustion in the relationship between helping behavior and task performance, a Monte Carlo bootstrapping analysis was applied. The indirect effect was significant (Effect = −0.07, SE = 0.03, CI = [−0.14, −0.02]), thus supporting H_5.

The moderating effect of team communal goal striving in the relationship between helping behavior and cognitive irritation was also tested. Table 6 shows that the interactive item of helping behavior with team communal goal striving was negatively correlated with cognitive irritation (Model 2, $\beta = -0.24$, $p < 0.05$). The results of the bootstrapping analysis shown in Table 7 indicate that the positive association between helping behavior and cognitive irritation was only significant in the condition of low team communal goal striving (Effect = 0.48, SE = 0.10, CI = [0.27, 0.68]) but not under high team communal goal striving (Effect = 0.14, SE = 0.10, CI = [−0.06, 0.34]). The difference was significant (Effect = −0.34, SE = 0.15, CI = [−0.64, −0.03]), thus supporting H_6. Fig. 2 shows the

Table 2
Results of confirmatory factor analysis.

Model	Factors	χ^2	*df*	χ^2/df	$\triangle \chi^2$	CFI	TLI	RMSEA	SRMR
Five-Factor Model	EH, CI, EE, TP, TCSG	302.79	159	1.90		0.93	0.92	0.07	0.07
Four-Factor Model	EH + CI, EE, TP, TCSG	427.31	163	2.62	124.52**	0.88	0.86	0.09	0.10
Three-Factor Model	EH + CI + EE, TP, TCSG	592.96	166	3.57	290.17**	0.80	0.77	0.12	0.09
Two-Factor Model	EH + CI + EE + TP, TCSG	730.89	168	4.35	428.09**	0.74	0.70	0.13	0.11
One-Factor Model	EH + CI + EE + TP + TCSG	1336.07	169	7.91	1033.28**	0.40	0.32	0.20	0.20

Note: N = 202; **p < 0.01; EH = Helping Behavior, CI = Cognitive Irritation, EE = Emotional Exhaustion, TP = Task Performance, TCSG = Team Communal Goal Striving.

Table 3
Scale items and validation.

Items	Standardized Loadings	CR	AVE	Cronbach's Alpha
Helping Behaviour				
EH1:I help my colleagues when it is clear their workload is too high.	0.72	0.80	0.58	0.77
EH2:I lend a helping hand to coworkers when needed.	0.82			
EH3:I willingly assist other employees in meeting their job requirements.	0.73			
Emotional Exhaustion				
EE1:I feel emotionally drained from my work.	0.71	0.83	0.63	0.83
EE2:I feel burned out from my work.	0.88			
EE3:I feel exhausted when I think about having to face another day on the job.	0.77			
Cognitive Irritation				
CI1: I have difficulty relaxing after work.	0.75	0.90	0.76	0.87
CI2:Even at home I often think of my problems at work.	0.94			
CI3:Even on my vacations I think about my problems at work.	0.92			
Task Performance				
TP1:The employee is effective in his/her job.	0.87	0.89	0.67	0.89
TP2:The quality of work this employee produces is high.	0.85			
TP3:The employee achieves the objectives of the job.	0.84			
TP4:The employee fulfills all the requirements of the job.	0.72			
Team Communal Goal Striving				
TCGS1:I am willing to take the initiative to get to know my co-workers personally.	0.89	0.93	0.69	0.92
TCGS2:I enjoy initiating conversations with my supervisor and/or co-workers to get to know them.	0.93			
TCGS3:I value helping co-workers with their tasks in an attempt to forge close relationships.	0.71			
TCGS4:It is important for me to form a good relationship with my supervisor by the end of the internship.	0.77			
TCGS5:I prefer to work in environments where I can interact and socialize with co-workers.	0.76			
TCGS6:It is important for me to stay in contact with my co-workers even after my internship. Reference:	0.92			

Note: N = 202.

Table 4
Results of cross-loading analysis.

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
TCSG1	**0.87**	0.03	0.09	−0.07	−0.10
TCSG2	**0.91**	0.02	0.04	−0.04	−0.08
TCSG3	**0.80**	−0.03	−0.12	−0.03	−0.15
TCSG4	**0.78**	0.01	−0.16	−0.10	0.07
TCSG5	**0.83**	0.01	−0.14	−0.08	0.06
TCSG6	**0.90**	0.00	0.04	0.00	−0.08
TP1	−0.10	**0.82**	−0.05	−0.20	0.02
TP2	0.06	**0.82**	−0.26	−0.04	−0.08
TP3	0.05	**0.86**	−0.23	−0.05	−0.04
TP4	0.02	**0.82**	−0.30	−0.11	0.03
EE1	−0.09	−0.17	**0.71**	0.08	0.00
EE2	−0.06	−0.28	**0.81**	0.07	0.06
EE3	0.00	−0.40	**0.73**	0.11	0.12
CI1	−0.02	0.21	0.03	**0.75**	0.32
CI2	−0.14	−0.20	0.13	**0.91**	0.09
CI3	−0.11	−0.26	0.14	**0.88**	0.10
EH1	−0.05	−0.04	−0.11	0.00	**0.79**
EH2	−0.14	−0.12	0.26	0.13	**0.75**
EH3	−0.03	−0.04	0.53	0.10	**0.71**

Note: N = 202.

moderating effect of team communal goal striving. Moreover, the results of the conceptual model test are shown in Fig. 3.

To test the moderated serial-mediation model, a Monte Carlo bootstrapping analysis was used to test the conceptual model. The indirect relationship was only significant in the condition of low team communal goal striving (Effect = −0.11, SE = 0.04, CI = [−0.20, −0.03]) but not under high team communal goal striving (Effect = −0.03, SE = 0.03, CI = [−0.09, 0.01]). The difference was significant (Effect = 0.08, SE = 0.04, CI = [0.01, 0.18]), thus supporting H_7.

Table 5
Means, standard deviations, and correlation analysis.

	1	2	3	4	5	6	7
1.Gender							
2.Age	0.04						
3.Edu	0.20**	0.06					
4.Helping Behavior	−0.10	0.12	0.05	(0.76)			
5. Cognitive Irritation	−0.18*	0.01	−0.02	0.36**	(0.93)		
6. Emotional Exhaustion	−0.15*	−0.04	0.02	0.24**	0.23**	(0.91)	
7. Task Performance	0.14*	0.04	−0.03	−0.24**	−0.24**	−0.38**	(0.94)
Mean	1.51	32.32	1.99	3.55	3.31	3.74	2.24
SD	0.50	6.33	0.61	0.59	0.73	0.61	0.60

Note: $N = 202$; *$p < 0.05$, **$p < 0.01$; Values in the parentheses are the square root of AVE values.

5. Discussion

5.1. Theoretical implications

In this study, the relationship between helping behavior and task performance was explored. The results showed that helping behavior is a potentially risky activity that can contribute to cognitive irritation, increase emotional exhaustion, and decrease task performance. Furthermore, team communal goal striving is applied as an indicator of the team climate, which buffers the underlying mechanism that links helping behavior and task performance. This study offers three theoretical implications to the literature on helping behavior and CAPS.

First, this study presents evidence of the relationship between helping behavior and task performance. Previous studies have examined the positive effects of helping behavior on enhancing team performance [17,65]; however, few studies have implemented an actor-centric approach to examine how helping behavior affects individual-level task performance. Previous research has mainly highlighted the positive aspects of helping behaviour for the organizational effectiveness. Since Koopman et al. [24], the negative side of helping behaviour for actors have captured researchers' attention. Present studies have suggested that helping behaviour impedes work-goal progress, enhances ego depletion, and increases emotional exhaustion [4,24,66]. These results are all associated with decreased task performance [67–69]. Consistent with and extending prior research, the findings of this study confirm that helping behavior occupies fixed work time resources and does not support individual task performance from an actor-centric perspective [22–24]. Moreover, prior studies mainly focused on the negative influences of helping behavior at the within-person level [70,71]. In the present study, this line of research is extended to the between-person level, thus providing evidence for the long-term negative aspects of helping behavior.

Second, by examining the mediating role of cognitive irritation and emotional exhaustion within the CAPS framework, this research also demonstrates the adverse process by which helping behavior hinders task performance. Previous studies have addressed the negative influences of helping behavior that trigger ego depletion at the episode level [3]. By examining the relationship between helping behavior and cognitive irritation at the between-person level, this line of research is continued in this study. The results of Lin et al. [4] are confirmed by examining the mediating role of emotional exhaustion in the relationship between helping behavior and task performance. However, it should be addressed that this line of studies has discussed the emotional and cognitive results of helping behaviour for actors respectively. These results cannot reveal helpers' psychological responses stimulated by helping behaviour comprehensively. CAPS suggests that individuals' psychological reaction processes are composed of cognitive and emotional units, and these two units are happening sequentially [11,12]. Following this logic, this study attempts to illustrate the psychological responses to helping behaviour by examining the serial "cognitive-emotional" stimulation process. Prior findings are integrated by adopting cognitive irritation and emotional exhaustion as serial mediators; this approach illustrates the cognitive–affective paths in which helping behavior does not benefit task performance. CAPS was previously applied at the episode level as a theoretical framework to explain the influences of helping behavior [19]. The present study broadens the scope of CAPS by supporting research at the between-person level; the mediating variables between helping behavior and task performance are complemented accordingly.

Third, this study contributes to the research on helping behavior by exploring the boundary condition under which helping behavior hinders task performance. Although existing literature has mainly focused on the negative side of helping behavior for actors, several scholars have also provided several positive outcomes of helping behavor. For instance, Lin et al. [4] provided helping behaviour may result in positive emotions at the episode level. To explain the paradoxical outcomes of helping behaviour, studies have attempted to find a moderator between helping behaviour and its outcomes. Previous studies have mainly considered different personality characteristics as moderators that shape actors' responses to helping behavior. For instance, Gabriel et al. [3] examined the moderating effects of promotive and preventive regulator focus, showing that helpers with high promotive regulatory focus are more likely to obtain benefits from helping behavior. Lin et al. [6] examined the moderating role of prosocial preference and found that such a personality characteristic will amplify the positive influences of helping behavior on spousal support and buffer its negative influences.

CAPS has suggested that the impacts of specific events on psychological responses can be attenuated/amplified by situational characteristics [12]. Existing previous research has suggested that whether individuals are engaging in pro-social behaviour depends on the team climate. This line of research suggests that a pro-social climate may decrease the consumption of resources for helping

Table 6
Results of hierarchical linear modelling.

	Cognitive Irritation						Emotional Exhaustion						Task Performance							
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8		Model 9		Model 10	
	γ	SE	γ	SE	γ	SE	γ	SE	γ	SE	γ	SE	γ	SE	γ	SE	γ	SE	γ	SE
Intercept	3.30	0.07	3.42	0.20	3.41	0.19	3.74	0.05	3.88	0.17	3.91	0.18	2.24	0.05	2.15	0.17	2.13	0.18	2.30	0.06
Level 1																				
Gender			−0.18	0.09	−0.17	0.09			−0.18	0.08	−0.16	0.08			0.16	0.08	0.14	0.08	−0.01	0.02
Age			0.01	0.01	0.01	0.01			0.00	0.01	0.00	0.01			0.00	0.01	0.00	0.01	0.00	0.00
Education			0.08	0.09	0.08	0.09			0.07	0.07	0.04	0.07			−0.08	0.07	−0.05	0.07	−0.02	0.02
Helping Behavior			0.30**	0.08	0.31	0.07			0.20*	0.09	0.13	0.09			−0.19*	0.09	−0.12	0.09	0.01	0.02
Cognitive Irritation											0.23**	0.08					−0.24**	0.08	−0.01	0.02
Emotional Exhaustion																			−0.98**	0.02
Level 2																				
Team Communal Goal Striving			−0.14	0.10	−0.15	0.10														
Interactive Item																				
Helping Behavior × Team Communal Goal Striving					−0.24*	0.11														
Variances in Level 1 (σ2)	0.35		0.32		0.31		0.34		0.29		0.26		0.33		0.28		0.24		0.19	
Variances in Level 2 (τ00)	0.19		0.18		0.18		0.03		0.05		0.06		0.04		0.06		0.06		0.08	
Pseudo R^2			0.06		0.06				0.06		0.13				0.06		0.13		0.22	

Note: Level 1 = 202, Level 2 = 68; *$p < 0.05$, **$p < 0.01$; Pseudo R^2 is calculated based on the formulas of Snijders & Bosker (1999), representing percentages of residual. Variance accounted for by predictors and calculated as 1-((predicted within σ2 + predicted between σ2)/(baseline within σ2 + baseline between σ2)).

Table 7
Results of Monte Carlo bootstrapping analysis.

	Effect	SE	Confidence Interval	
			95%LL	95%UL
Moderating Effect of Team Communal Goal Striving				
Low Team Communal Goal Striving (M-SD)	0.48	0.10	0.27	0.68
High Team Communal Goal Striving (M + SD)	0.14	0.10	−0.06	0.34
Difference	−0.34	0.15	−0.64	−0.03
Multiple Mediation Effect				
Indirect Effect	−0.07	0.03	−0.14	−0.02
Direct Effect	0.01	0.02	−0.03	0.05
Moderated Mediation Effect				
Low Team Communal Goal Striving (M-SD)	−0.11	0.04	−0.20	−0.03
High Team Communal Goal Striving (M + SD)	−0.03	0.03	−0.09	0.01
Difference	0.08	0.04	0.01	0.18

Note: Bootstrapping = 20,000.

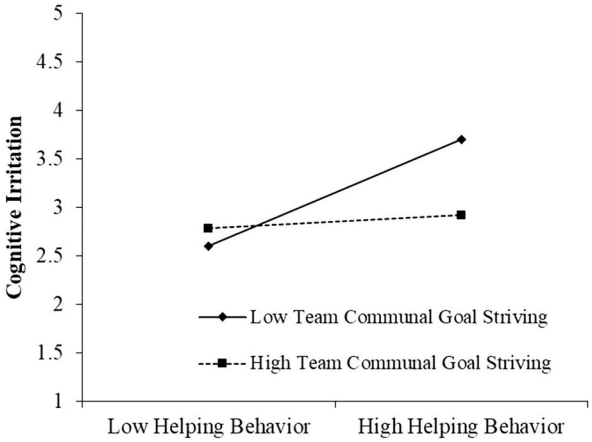

Fig. 2. Moderating role of team communal goal striving.

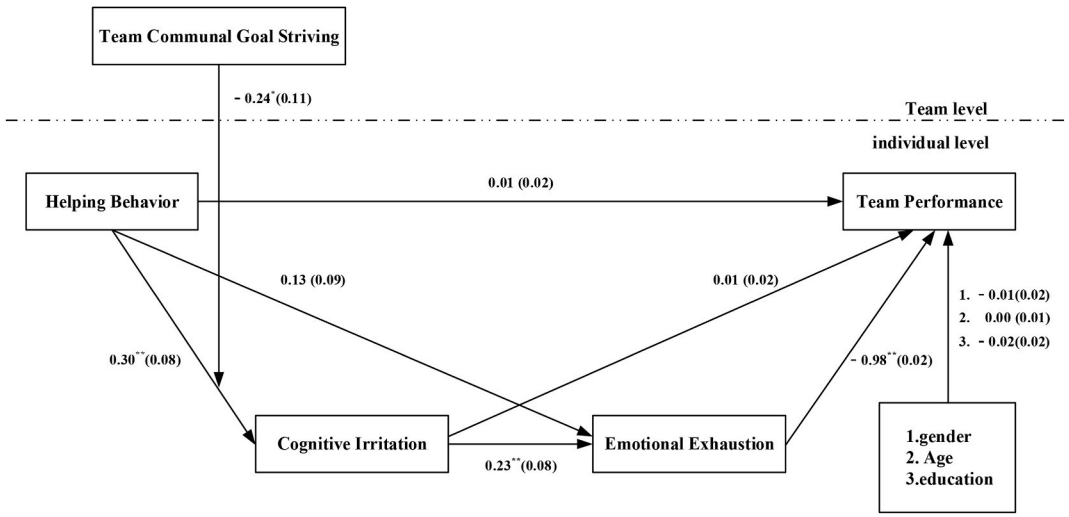

Fig. 3. Results of multilevel structural equation modelling.

behaviour and provide extra access to new resources for helpers [72,73]. Thus, the present study extends the line of research, which are mainly focusing on the moderating role of helpers' personalities, by adopting a moderator (i.e., team communal goal striving) at the team level. Helpers' psychological states and work behavior are shaped by the team climate [13]. Whether helping behavior fits the

team climate determines the outcomes of helping behavior. Team communal goal striving both motivates and encourages employees to perform beneficial social interactive behaviors, which is consistent with the nature of helping behavior. Consistent with the CAPS hypothesis, the moderating role of team communal goal striving is explored in the indirect relationship between helping behavior and task performance. By doing so, this research enriches the helping literature, as it extends the boundary conditions from individual-level to team-level factors.

5.2. Practical implications

Several practical strategies for organizations can be extracted based on the results of this study. Overall, this study confirmed that from an actor-centric perspective, helping behavior does not benefit task performance. Organizations should develop organizational policies that mitigate the negative influences of helping behavior for individuals while amplifying the positive influences for teams.

First, helpers tend to experience increases in cognitive irritation and emotional exhaustion. Chinese enterprises tend to emphasize the influences of collectivist culture and want employees to perceive other team members as family members [74]. In this context, helping behavior is encouraged and employees may experience pressure to display such behavior, as helping is beneficial for teams and organizations [65]. However, it is also important to acknowledge the negative influences of helping behavior for actors. Previous research showed that deficiencies in helping behavior are triggered by a loss of job resources. Thus, to avoid the negative influences of helping behavior, additional job resources should be provided to helpers. These resources could include help from the leader, psychological availability, and coworker support.

Second, organizations can encourage team communal goals striving to decrease depletion caused by helping behavior. Prior studies have examined different team goal orientations, such as performance goal orientation and learning goal orientation. Extending these studies, Tan et al. [15] developed the concept of a team communal goal striving to represent the social motives that are involved in the adoption of proactive relationship-building behavior. In this context, helping behavior is less socially risky and networking behavior is encouraged. Tan et al. [15] observed that a better way to enhance team communal goal striving is to recruit employees with a high level of that particular social motive. Given the importance of the individuals in a team, selecting appropriate team members is essential for team building.

5.3. Limitations and future study

As with any research, this study is subject to limitations, which provide avenues for future research. First, this research could not fully rule out common method variance (CMV) [75]. To avoid the bias introduced by CMV, data were gathered at two different time points. Also, leader-rated task performance was used as the dependent variable. However, data on helping behavior, cognitive irritation, and team communal goal striving were collected through self-reported questionnaires at the same time points. Therefore, the possibility exists that CMV introduced potential bias into the results. To further decrease the influences of CMV, future studies could separate the variables at different time points.

Second, evidence to conclusively link helping behavior to task performance was insufficient. In this study, helping behavior was not manipulated. Thus, it cannot be concluded that helping behavior leads to low task performance. Future studies can use an experimental design or a cross-lagged panel design to determine the causal link between helping behavior and task performance.

Third, this research focused on a case study that reflects Chinese culture. Because of China's collectivist culture, Chinese enterprises show a high level of recognition of helping behavior. Helping behavior and pressures towards citizenship may take different forms under different cultures. Thus, future studies could apply a cross-cultural analysis to further examine the applicability of the study findings to other cultures.

Fourth, other team climates should be considered in future research. While the present study focused on examining the moderating role of team communal goal striving, the team ethical climate, team cohesion, and team harmony have also been recognized as beneficial team climates that encourage helping behavior. Future research could further examine the influences of different team climates and compare their effects.

Ethics approval statement

The study procedures were approved by the Ethics Committee of Dalian University of Technology, which are in line with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent forms were signed and obtained from all individual participants included in the study.

Data availability statement

The data that support the results presented in this paper are available from the corresponding author, upon reasonable request.

CRediT authorship contribution statement

Xiaona Bao: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Resources, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Wenfei Gao:** Writing – review & editing, Writing – original draft, Methodology, Investigation. **Yifei Shen:** Writing – original draft, Methodology, Investigation. **Zhenduo**

Zhang: Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Data curation, Conceptualization. **Xiaojing Shao:** Writing – review & editing, Methodology.

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.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.heliyon.2023.e21024.

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