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Observed Coworker Helping Behavior and Employees' Knowledge-Sharing Behavior: A Double-Edged Effect from a Third-Party Observer Perspective

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Abstract

Drawing on social information processing theory, this study adopts a third-party observer perspective to examine the mechanisms through which observed coworker helping behavior influences employees' knowledge sharing behavior, as well as the boundary conditions of this relationship. Using data collected from 297 participants, we develop and test a moderated dual-mediation model. The results show that observed coworker helping behavior has a double-edged effect on knowledge sharing behavior. On the one hand, it promotes knowledge sharing behavior by enhancing employees' perceived cooperative norms; on the other hand, it inhibits knowledge sharing behavior by increasing employees' perceived workplace ostracism. Further analyses reveal that task interdependence strengthens the positive effect of observed coworker helping behavior on perceived cooperative norms while weakening its positive effect on perceived workplace ostracism, thereby further moderating the two indirect pathways. This study extends research on helping behavior by introducing a third-party perspective and uncovers the dual mechanisms and contextual dependence underlying the effect of observed coworker helping behavior on employees' knowledge sharing behavior.

Keywords

Observed Coworker Helping Behavior, Perceived Cooperative Norms, Perceived Workplace Ostracism, Task Interdependence, Knowledge Sharing Behavior

1. Introduction

As an important form of extra-role behavior in organizations, helping behavior refers to employees' actions of showing concern for others and assisting them with work-related matters in the workplace [1]. Helping behavior not only facilitates cooperation and coordination among employees, but also enhances the flow of resources and the climate of support within organizations, thereby improving organizational adaptability to changes in the external environment and sustaining long-term development [2]. Particularly in today's context of increasing task complexity and collaboration intensity, helping behavior is no longer merely an individual-level altruistic act; rather, it has become an important social resource through which organizations achieve efficient functioning and strengthen their competitive advantage [3] [4]. Accordingly, a growing number of organizations have begun to value and encourage employees to engage in helping behavior at work in order to foster a positive and collaborative work environment.

In the existing literature, substantial research has examined helping behavior by investigating both its antecedents, such as individual traits, leadership styles, and organizational contexts, and its consequences, especially for helpers and recipients [5]-[7]. Prior studies have generally shown that helping behavior can enhance team performance and increase helpers' sense of meaning and self-worth, but it may also impose additional resource depletion and emotional burdens on helpers [3] [8]. However, extant research has largely overlooked another important actor in the helping process: third-party observers. Third-party observers, namely employees who observe a helping episode between coworkers but are themselves neither the helper nor the recipient in that focal episode. In fact, in real organizational settings, helping behavior is often highly visible and can be directly or indirectly observed by surrounding coworkers. These third-party employees are not merely passive recipients of information; rather, they interpret and evaluate the helping behavior they observe and subsequently generate corresponding psychological and behavioral responses [9] [10]. Therefore, helping behavior may affect not only helpers and recipients, but also third-party employees in the team through the social information it conveys.

However, existing research on helping behavior has paid only limited attention to the third-party perspective, which to some extent constrains a comprehensive understanding of the organizational effects of helping behavior. On the one hand, overlooking third parties' responses may lead us to assume that helping behavior affects only helpers and recipients, thereby underestimating its spillover effects in interpersonal interactions. On the other hand, although third-party employees frequently observe coworkers helping others in teams, existing research has yet to provide a clear explanation of how they behaviorally respond after witnessing such acts. Compared with helpers and recipients, third-party employees are not directly involved in the helping interaction, but they are likewise embedded in the organization's interpersonal network. Based on their observations of others' behavior, they form judgments about how team interactions unfold, how resources flow,

and where they stand in the relational structure, and these judgments, in turn, shape their subsequent behaviors within the team [9]-[11]. As a typical form of resource openness, knowledge sharing behavior reflects not only employees' willingness to provide others with their experience, information, and skills, but also depends to a large extent on how they perceive the team's cooperative climate and relational environment [12]. In other words, when employees observe coworkers helping others, this social cue is likely to further influence their own knowledge sharing behavior. Accordingly, this study focuses on observed coworker helping behavior and examines its effect on third-party employees' knowledge sharing behavior.

To unpack this mechanism, we draw on social information processing theory. This theory suggests that employees develop an understanding of their situation by observing, filtering, and interpreting social cues in their surrounding environment, and then adjust their attitudes and behaviors accordingly [13]. For third-party employees, coworkers' helping behavior constitutes an important social cue in itself. On the one hand, observing coworkers help others may strengthen employees' perceived cooperative norms. When employees frequently witness coworkers supporting one another, sharing experience, and assisting with work-related problems, they are more likely to view cooperation and sharing as behaviors that are valued and encouraged within the team. As a result, they are more likely to regard knowledge sharing behavior as legitimate and consistent with team expectations, thereby increasing their own willingness to share knowledge [12] [14]. On the other hand, observing coworkers' helping behavior may also heighten employees' perceived workplace ostracism. Although helping behavior is typically viewed as positive, third-party employees may also interpret such behavior as signaling that resources are flowing among particular members and even as implying the existence of relational boundaries within the team. Under such circumstances, employees may feel that they themselves are not included in this network of mutual assistance, thereby experiencing perceived workplace ostracism [15]. Perceived workplace ostracism undermines employees' sense of relational security and belonging within the team, making them more likely to adopt conservative and defensive strategies and thus less likely to engage in knowledge sharing behavior [16] [17]. Taken together, observed coworker helping behavior may activate two distinct psychological mechanisms simultaneously: it may promote knowledge sharing behavior by strengthening perceived cooperative norms, but it may also inhibit knowledge sharing behavior by increasing perceived workplace ostracism. In this sense, observed coworker helping behavior may exert a double-edged effect on third-party employees' knowledge sharing behavior.

Furthermore, social information processing theory suggests that social cues do not automatically elicit uniform responses; rather, how employees interpret and process external information is shaped by the work context in which they are embedded [13]. As an important job design characteristic, task interdependence re-

flects the extent to which employees rely on others' information, resources, and coordination in accomplishing their work tasks. Prior research has also shown that task interdependence significantly influences how employees interpret others' behaviors, as well as cooperative processes and behavioral outcomes within teams [3] [18]. When task interdependence is high, employees are more likely to interpret coworkers' helping behavior as a necessary form of collaboration for task completion and to regard it as an expression of resource sharing and cooperative norms within the team. Accordingly, observed coworker helping behavior is more likely to strengthen their perceived cooperative norms while being less likely to trigger perceived workplace ostracism. By contrast, when task interdependence is low, the degree of cooperation required for employees to complete their work is relatively limited. Under such conditions, coworkers' helping behavior is less likely to be viewed as natural collaboration driven by task requirements and more likely to be interpreted as selective support occurring among particular members. As a result, its positive effect on perceived cooperative norms is weakened, whereas its effect on perceived workplace ostracism is strengthened. On this basis, we further introduce task interdependence as a boundary condition to identify when observed coworker helping behavior is more likely to promote knowledge sharing behavior through perceived cooperative norms and when it is more likely to inhibit knowledge sharing behavior through perceived workplace ostracism [3] [19].

In summary, this study focuses on the following research questions: How does observed coworker helping behavior exert a dual influence on employees' knowledge sharing behavior through the two pathways of perceived cooperative norms and perceived workplace ostracism? And how does task interdependence shape this process? To address these questions, this study seeks to make three contributions. First, First, by adopting a third-party observer perspective—that is, the perspective of employees who witness coworkers' helping interactions without being either the helper or the recipient—this study extends the scope of helping behavior research beyond its traditional focus on helpers and recipients and demonstrates that helping behavior also has important behavioral consequences for bystanding employees. Second, drawing on social information processing theory, this study introduces the two mediating pathways of perceived cooperative norms and perceived workplace ostracism, thereby revealing the double-edged mechanism through which observed coworker helping behavior may either promote or inhibit third-party employees' knowledge sharing behavior. In doing so, this study enriches research on the social consequences of helping behavior and the mechanisms underlying the emergence of knowledge sharing behavior. Third, by incorporating task interdependence as a boundary condition, this study responds to the view in organizational behavior research that the effects of social information are context dependent. It also offers practical implications for how organizations can optimize task design so that coworkers' helping behavior is more likely to translate into knowledge sharing rather than perceived workplace ostracism.

2. Theory and Hypotheses

2.1. Social Information Processing Theory

Social information processing theory suggests that employees' attitudes and behaviors are shaped not only by individual traits or objective job characteristics, but also by informational cues embedded in their surrounding social environment [13]. In organizational settings, employees continuously observe others' behaviors and interpret the meanings conveyed by those behaviors. Through this process, they form judgments about team norms, the relational environment, and their own standing, and then adjust their subsequent behaviors accordingly [13]. Because interpersonal interactions in organizations are often highly visible, employees are regularly exposed to social information conveyed through coworkers' behaviors and use such information to make sense of team interaction patterns, resource allocation, and relational structures [9]. Especially in team contexts, coworkers' behaviors serve as important reference points for understanding the organizational environment, thereby shaping employees' psychological evaluations and behavioral choices [9] [11]. Social information processing theory therefore provides a useful lens for explaining how employees form cognitions and behavioral responses based on others' actions.

2.2. Observed Coworker Helping Behavior, Perceived Cooperative Norms, and Knowledge Sharing Behavior

Social information processing theory suggests that employees' understanding of the work context is shaped not only by formal rules, job requirements, or personal preferences, but also by social cues embedded in the workplace [13]. By observing the overt behaviors of those around them, employees form judgments about patterns of interaction, behavioral norms, and relational structures within the team, and adjust their attitudes and behaviors accordingly. Prior research further indicates that coworkers are not merely part of the organizational backdrop; rather, their behaviors systematically shape individuals' perceptions, attitudes, and behaviors. This is especially true in team settings, where behaviors that occur frequently and carry clear social meaning are more likely to be treated as important cues for interpreting the team environment and to gradually crystallize into shared understandings of what behaviors are appropriate and encouraged [9] [20]. Helping Behavior is one such highly visible and interpersonally oriented social cue. Van Dyne and LePine defined it as an extra-role behavior through which employees voluntarily show concern for and assist others with work-related matters [1]. Because helping behavior is typically manifested through concrete interactions such as support, assistance, and the sharing of experience, it is readily visible not only to recipients but also to third-party employees.

From a social information processing perspective, when third-party employees frequently observe coworkers proactively helping others, what they receive is not merely fragmented information about particular members' altruistic tendencies, but a broader social cue about how cooperation occurs and how resources are

exchanged within the team. Such visible and recurring interpersonal behaviors are closely tied to the immediate context and thus are more likely to serve as a basis for employees' understanding of how the team operates in daily work. More importantly, third-party employees are unlikely to interpret helping behavior simply as an isolated act by an individual helper. Rather, through repeated observation, they are more likely to infer broader group interaction rules from specific acts and conclude that cooperation, support, and sharing are behaviors that are recognized, encouraged, and even expected within the team. The more frequently and consistently helping behavior occurs in the team, the more likely employees are to make this shift from interpreting isolated acts to inferring collective norms, and the more likely they are to develop strong perceived cooperative norms [14] [20].

Accordingly, we propose the following hypothesis:

Hypothesis 1: observed coworker helping behavior is positively related to employees' perceived cooperative norms.

Social information processing theory not only emphasizes that employees form cognitive judgments about the team environment based on surrounding social cues, but also suggests that these judgments subsequently shape their behavioral choices [13]. knowledge sharing behavior is fundamentally a form of resource openness. Whether employees are willing to provide others with their knowledge, experience, and information depends not only on their capabilities or altruistic motives, but also on how they understand the rules governing team interaction [12]. Prior research has shown that knowledge sharing behavior is strongly influenced by the organizational context, the communication climate, and social norms. When employees perceive cooperation, support, and sharing as behaviors that are recognized and encouraged within the team, knowledge sharing is no longer viewed merely as an extra voluntary contribution; instead, it is more likely to be understood as a behavior that aligns with team expectations, helps maintain positive relationships, and earns social approval [21] [22]. In other words, perceived cooperative norms provide both behavioral legitimacy and contextual justification for knowledge sharing behavior, thereby increasing employees' willingness and likelihood to share knowledge [23].

As discussed above, observed coworker helping behavior conveys social information about cooperation and sharing to third-party employees, thereby fostering stronger perceived cooperative norms. Once such norms are formed, employees are more likely to view knowledge sharing behavior as an appropriate response consistent with the team's interaction logic, and thus to engage in it more actively. This suggests that observed coworker helping behavior does not translate directly into knowledge sharing behavior; rather, it first shapes employees' understanding of team cooperative norms, which in turn influences their behavioral choices. Accordingly, perceived cooperative norms mediate the relationship between observed coworker helping behavior and knowledge sharing behavior.

Accordingly, we propose the following hypothesis:

Hypothesis 2: perceived cooperative norms are positively related to employees'

knowledge sharing behavior and mediate the relationship between observed coworker helping behavior and knowledge sharing behavior.

2.3. Observed Coworker Helping Behavior, Perceived Workplace Ostracism, and Knowledge Sharing Behavior

Social information processing theory suggests that employees do not respond mechanically or uniformly to external social cues. Rather, they form subjective judgments about the organizational environment through observing, interpreting, and assigning meaning to those cues [13]. The same behavior may therefore be processed as either a positive or a negative signal, depending on how employees interpret its relational and resource implications. Recent observer-based research further suggests that third-party employees do not always respond positively to coworkers' constructive behaviors. For example, Fong *et al.* [24] found that when employees observe coworkers engaging in job crafting, they may develop divergent reactions, including both willingness to cooperate and relational conflict. Poulton *et al.* [25] similarly showed that when employees observe managers endorsing coworkers' voice, they may experience both approach-oriented and avoidance-oriented responses. In addition, Li *et al.* [26] found that when employees perceive coworkers as receiving developmental idiosyncratic deals, they may experience relative deprivation and subsequently reduce their pro-organizational behaviors. Taken together, these studies suggest that when third-party employees observe others' positive and constructive behaviors, they do not necessarily interpret them solely as signals of cooperation; rather, they may also process them as social information laden with comparative, relational, and resource-related implications.

Perceived workplace ostracism reflects employees' subjective sense that they are not included in important relational ties and resource exchange networks, which closely parallels the feelings of being ignored, isolated, and marginalized emphasized in workplace ostracism research [15] [27]. From a social information processing perspective, when third-party employees observe coworkers' helping behavior, they perceive not only the fact that one person is helping another, but also relational information about how supportive ties are distributed, how resources flow, and who is included in these exchanges. Importantly, observed helping does not always convey the same social meaning. When helping appears broadly distributed across team members, third-party employees are more likely to interpret it as a general cooperative norm that is open and accessible to everyone. By contrast, when helping occurs repeatedly among particular members, it is more likely to signal selective support ties and uneven access to relational and work-related resources. Helping behavior typically involves a clearly identifiable target and interaction boundary. Therefore, when third-party employees repeatedly observe helping concentrated among particular coworkers, they are more likely to infer that support within the team is not equally available to everyone, but instead flows more readily among members with closer relationships. In turn, they may become

more aware of differences in relational closeness and develop the sense that they themselves are not fully included in important support networks—that is, they may experience perceived workplace ostracism.

Accordingly, we propose the following hypothesis:

Hypothesis 3: observed coworker helping behavior is positively related to employees' perceived workplace ostracism.

Social information processing theory further suggests that employees' judgments formed on the basis of social cues do not remain at the cognitive level, but instead shape their subsequent behavioral choices [13]. In the case of perceived workplace ostracism, the core of this judgment lies in employees' sense that they are not fully included in the team's important relational ties and resource exchange networks. Prior research has shown that experiences of ostracism undermine employees' sense of belonging, control, and relational security, and in turn trigger withdrawal, defensiveness, and avoidance [15]. In addition, Cruz *et al.* found that employees' perceptions of coworker ostracism impair task performance and organizational citizenship behavior while increasing interpersonal deviance [28]. These findings suggest that once employees perceive themselves as occupying a peripheral position in the relational network, they are more likely to reduce cooperative and open behaviors and adopt more cautious, self-protective strategies.

Knowledge sharing behavior is inherently a form of resource openness, and it typically depends on a certain level of trust, expected reciprocity, and relational security [12] [21]. Accordingly, when employees perceive themselves as being on the margins of team relationships and unable to access important resource exchange networks on equal terms, they are more likely to withhold knowledge in order to avoid one-sided resource outflows or further exposure of their disadvantaged position.

Prior research has consistently shown that workplace ostracism significantly inhibits knowledge sharing behavior. For example, Takhsha *et al.* found that workplace ostracism negatively affects knowledge sharing [16]. Wang *et al.*, using a sample of Chinese teachers, likewise reported a significant negative relationship between workplace ostracism and knowledge sharing behavior [17]. Luo *et al.* further demonstrated that workplace ostracism has a significant negative effect on knowledge sharing [29]. Taken together, these studies indicate that knowledge sharing behavior is not simply an altruistic choice, but a behavior that depends heavily on relational assurance and exchange expectations. When third-party employees develop strong perceived workplace ostracism after observing coworkers' helping behavior, they are more likely to view knowledge sharing as a form of resource openness that lacks a sufficient relational foundation and reciprocity guarantee, and thus reduce their knowledge-sharing responses. This suggests that observed coworker helping behavior does not directly inhibit knowledge sharing behavior; rather, it influences third-party employees' willingness to share knowledge by shaping their judgments about their own relational position. Accordingly, per-

ceived workplace ostracism mediates the relationship between observed coworker helping behavior and knowledge sharing behavior.

Accordingly, we propose the following hypothesis:

Hypothesis 4: perceived workplace ostracism is negatively related to knowledge sharing behavior and mediates the relationship between observed coworker helping behavior and knowledge sharing behavior.

2.4. The Moderating Role of Task Interdependence

Social information processing theory suggests that the effects of social cues on employees are not fixed, but are shaped by the specific work context [13]. In other words, when third-party employees observe coworkers' helping behavior, whether they interpret it as an indication of cooperative norms depends on whether such behavior carries clear task-related meaning in the focal context. Task interdependence is a key job design feature in this regard. Prior research typically defines task interdependence as the extent to which employees depend on others for information, resources, materials, and support in completing their work [13]. When task interdependence is high, employees rely more heavily on collaboration, coordination, and resource exchange to accomplish their tasks. As a result, helping among team members is more likely to be understood as a routine and necessary form of collaboration rather than as an occasional interpersonal act [3] [18]. Research further shows that task interdependence not only strengthens the functional significance of helping behavior and makes its positive effects on collective performance more salient, but also facilitates knowledge sharing and the development of social capital within teams [3] [30]. These findings suggest that under conditions of high task interdependence, employees are more likely to process others' cooperative behaviors as legitimate, task-relevant signals and, in turn, form stronger perceptions of norms emphasizing cooperation and sharing.

Accordingly, when task interdependence is high, third-party employees who observe coworkers helping others are more likely to interpret such behavior as a natural expression of mutual support in the workflow and joint task accomplishment, and thus more readily infer team cooperative norms from specific acts. By contrast, when task interdependence is low, employees rely more on individual effort to complete their work and have less need for collaboration with others. Under such conditions, coworkers' helping behavior is less likely to be viewed as a common response to task demands and more likely to be interpreted as spontaneous or relationship-driven interaction. Therefore, the higher the level of task interdependence, the more likely observed coworker helping behavior is to be processed as a cue of cooperative norms, and the more strongly it should enhance third-party employees' perceived cooperative norms.

Accordingly, we propose the following hypothesis:

Hypothesis 5: task interdependence positively moderates the relationship between observed coworker helping behavior and perceived cooperative norms, such that the positive effect of observed coworker helping behavior on perceived

cooperative norms is stronger when task interdependence is higher.

Social information processing theory emphasizes that employees derive not only normative information from others' behaviors but also relational information [13]. Accordingly, when third-party employees observe coworkers' helping behavior, they may interpret it either as a signal of cooperation or as a cue about relational boundaries and the distribution of resources. This interpretive tendency is likewise shaped by task interdependence. When task interdependence is high, employees are already required to interact, communicate, and support one another frequently in the course of their work. Under such conditions, helping behavior is more likely to be understood as a common form of collaboration required for task accomplishment rather than as selective support exchanged among particular members. By contrast, when task interdependence is low, helping behavior lacks a clear task-dependent context, making third-party employees more likely to attribute it to greater relational closeness between specific coworkers and to infer that support and resources primarily flow among only some members. Prior research similarly suggests that interdependence structures shape employees' experiences of the relational environment: cooperative interdependence reduces the likelihood of exclusion, whereas competitive or weakly cooperative interdependence is more likely to trigger relational conflict and feelings of exclusion [31]. In addition, task interdependence can buffer the negative consequences of workplace ostracism, such as its effects on team exchange and task performance [19]. Taken together, these studies suggest that task interdependence not only influences whether employees interpret cooperative behavior in task-related terms, but also shapes their sensitivity to relational boundaries.

Accordingly, we argue that under conditions of high task interdependence, when third-party employees observe coworkers helping others, they are more likely to attribute such behavior to necessary collaboration embedded in the workflow and are therefore less likely to perceive it as reflecting relational exclusivity. As a result, the positive effect of coworkers' helping behavior on perceived workplace ostracism should be weakened. By contrast, under conditions of low task interdependence, helping behavior is less likely to be interpreted as natural cooperation driven by task demands, and third-party employees are more likely to infer that support and resources primarily flow toward members with closer relationships, thereby strengthening perceived workplace ostracism. In other words, the higher the level of task interdependence, the less likely observed coworker helping behavior is to be processed as a cue of relational exclusion.

Accordingly, we propose the following hypothesis:

Hypothesis 6: task interdependence negatively moderates the relationship between observed coworker helping behavior and perceived workplace ostracism, such that the positive effect of observed coworker helping behavior on perceived workplace ostracism is weaker when task interdependence is higher.

2.5. Moderated Mediation Effects

As discussed above, observed coworker helping behavior influences third-party

employees' knowledge sharing behavior through perceived cooperative norms, and task interdependence strengthens the positive effect of observed coworker helping behavior on perceived cooperative norms. Integrating these arguments, we further propose that under conditions of high task interdependence, third-party employees are more likely to process coworkers' helping behavior as a cue that cooperation and sharing are normative within the team. This, in turn, strengthens their perceived cooperative norms and leads them to view knowledge sharing behavior as a response consistent with team expectations and task requirements. By contrast, when task interdependence is low, helping behavior is less likely to be elevated into an inference about team cooperative norms, and its positive indirect effect on knowledge sharing behavior through perceived cooperative norms should therefore be weaker. In other words, task interdependence not only moderates the relationship between observed coworker helping behavior and perceived cooperative norms, but also shapes the strength of the indirect effect of this pathway on knowledge sharing behavior.

Accordingly, we propose the following hypothesis:

Hypothesis 7: task interdependence positively moderates the indirect effect of observed coworker helping behavior on knowledge sharing behavior through perceived cooperative norms, such that this positive indirect effect is stronger when task interdependence is higher.

Similarly, as argued above, observed coworker helping behavior influences third-party employees' knowledge sharing behavior through perceived workplace ostracism, whereas task interdependence weakens the positive effect of observed coworker helping behavior on perceived workplace ostracism. It can therefore be further inferred that when task interdependence is high, third-party employees are less likely to interpret coworkers' helping behavior as a signal of relational boundaries and selective support. As a result, the inhibiting effect of helping behavior on knowledge sharing behavior through perceived workplace ostracism should be weaker. By contrast, when task interdependence is low, third-party employees are more likely to perceive differences in relational closeness from coworkers' helping behavior and to develop stronger perceived workplace ostracism, which in turn further reduces their knowledge sharing behavior. Thus, task interdependence not only shapes the relational interpretation of coworkers' helping behavior by third-party employees, but also alters the strength of the negative indirect effect of this relational pathway on knowledge sharing behavior.

Accordingly, we propose the following hypothesis:

Hypothesis 8: task interdependence negatively moderates the indirect effect of observed coworker helping behavior on knowledge sharing behavior through perceived workplace ostracism, such that this negative indirect effect is weaker when task interdependence is higher.

Figure 1 presents the research framework and summarizes the study's hypothesized model.

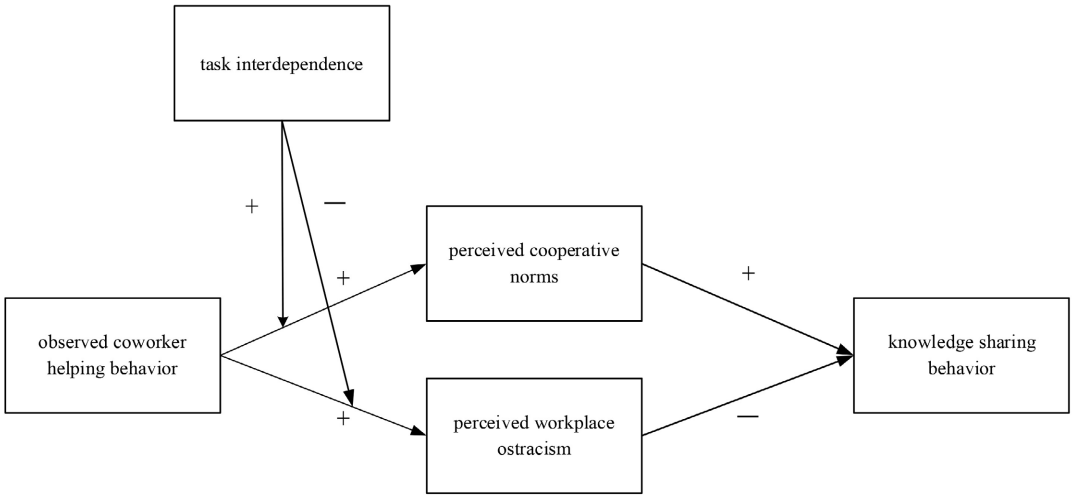

Figure 1. The research framework.

3. Research Design

3.1. Sample and Data Collection

This study sampled employees and their immediate supervisors from the manufacturing, food processing, and electronic assembly industries in Gansu Province, Hebei Province, and Beijing. These settings are well suited to the present research context because frontline employees in production, assembly, and inspection work typically rely heavily on collaboration, interact frequently, and work in relatively fixed areas, which allows them to observe one another's helping behaviors more directly.

Before the formal survey, the research team, with assistance from the firms' human resource departments, coded the sample to enable matching across multiple waves and data sources. The data were collected from 90 immediate supervisors and 321 employees using a three-wave, multi-source design with a two-week interval between waves. Before answering the survey, employees were instructed to evaluate helping episodes that they had personally observed between other coworkers and to focus on situations in which they themselves were neither the helper nor the recipient. At Time 1, 321 employee questionnaires were distributed to measure observed coworker helping behavior, task interdependence, and the control variables; 317 questionnaires were collected, of which 315 were valid. Two weeks later, at Time 2, the employees who had participated in the first-wave survey were invited to report perceived cooperative norms and perceived workplace ostracism; 315 questionnaires were distributed, 309 were collected, and 306 were valid. Another two weeks later, at Time 3, immediate supervisors evaluated employees' knowledge sharing behavior; 306 supervisor-rating questionnaires were distributed, 302 were collected, and 300 were valid. After matching the responses across the three waves and excluding improperly completed or unmatched questionnaires, the final dataset comprised 297 valid matched employee-supervisor dyads, representing a matched response rate of 92.52%.

In the final sample, 53.5% of the employees were male and 46.5% were female. Their average age was 29.38 years, 78.45% had a junior college degree or above, and their average organizational tenure was 3.47 years.

3.2. Measures

All variables in this study were measured using well-established scales from the organizational behavior and knowledge management literature, with appropriate adaptations to fit the third-party observer context of the present research. Except for the dependent variable, which was rated by employees' immediate supervisors, all variables were self-reported by employees. All measures used a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The wording of the representative items was adjusted to reflect the focal research setting, observational perspective, and team context.

Observed coworker helping behavior. We measured observed coworker helping behavior using the six-item scale developed by de Jong *et al.* [32], which assesses the extent to which employees observe coworkers helping other team members with work-related matters in daily work. A representative item is: "I have witnessed coworkers helping others handle heavy workloads, even when doing so was not part of their job." The scale demonstrated high internal consistency in this study (Cronbach's alpha = 0.937).

Perceived cooperative norms. We measured perceived cooperative norms using an adapted version of the five-item scale developed by Chatman and Flynn [14], which captures employees' perceptions of whether cooperation and sharing constitute prevailing behavioral norms within the team. A representative item is: "In our team, members maintain a high level of cooperation." The scale demonstrated high internal consistency in this study (Cronbach's alpha = 0.947).

Perceived workplace ostracism. We measured perceived workplace ostracism using a 10-item scale adapted from Ferris *et al.* [27], which assesses employees' subjective sense that they are not fully included in important relational ties and resource exchange networks within the team. A representative item is: "In daily team interactions, I often feel excluded from some important exchanges." The scale demonstrated high internal consistency in this study (Cronbach's alpha = 0.920).

Task interdependence. We measured task interdependence using the five-item scale developed by Bachrach *et al.* [3], which assesses the extent to which employees depend on coworkers' information, resources, and coordination to complete their work tasks. A representative item is: "I need information and advice from my coworkers to do my job well." The scale demonstrated high internal consistency in this study (Cronbach's alpha = 0.946).

Knowledge sharing behavior. We measured knowledge sharing behavior using an adapted version of the five-item scale developed by Srivastava *et al.* [33], which assesses the extent to which employees proactively share work-related knowledge, information, and experience with others. To reduce common method bias, this

variable was rated by employees' immediate supervisors. A representative item is: "This employee shares a great deal of useful work-related information and ideas with other employees in the organization." The scale demonstrated high internal consistency in this study (Cronbach's alpha = 0.970).

Control variables. Consistent with prior research on knowledge sharing and coworker interaction, we controlled for employees' gender, age, educational level, and organizational tenure to account for the potential influence of demographic characteristics on the study results.

4. Data Analysis and Results

4.1. Confirmatory Factor Analysis and Common Method Bias

First, to assess the discriminant validity of the study variables, we conducted confirmatory factor analyses using Mplus 8.3. As shown in Table 1, the results indicated that the five-factor model fit the data well: x^2 = 989.911, df = 892, x^2/df = 1.110, RMSEA = 0.019, CFI = 0.991, TLI = 0.990, and SRMR = 0.037. Compared with the alternative models, the five-factor model exhibited clearly superior fit across all indices, indicating satisfactory discriminant validity among the focal constructs.

Table 1. Confirmatory factor analysis results.

	x^2	*df*	x^2/df	RMSEA	CFI	TLI	SRMR
Five-factor model	989.911	892	1.11	0.019	0.991	0.99	0.037
Four-factor model	1887.223	896	2.106	0.061	0.904	0.899	0.086
Three-factor model	3059.515	899	3.403	0.09	0.791	0.78	0.124
Two-factor model	4212.369	901	4.675	0.111	0.679	0.663	0.166
One-factor model	6000.264	902	6.652	0.138	0.507	0.482	0.179

Note(s): Five-factor model = Observed Coworker Helping Behavior, Perceived Cooperative Norms, Perceived Workplace Ostracism, Knowledge-Sharing Behavior, and Task Interdependence; Four-factor model = Observed Coworker Helping Behavior, Perceived Cooperative Norms + Perceived Workplace Ostracism, Knowledge-Sharing Behavior, and Task Interdependence; Three-factor model = Observed Coworker Helping Behavior + Task Interdependence, Perceived Cooperative Norms + Perceived Workplace Ostracism, and Knowledge-Sharing Behavior; Two-factor model = Observed Coworker Helping Behavior + Task Interdependence + Perceived Cooperative Norms + Perceived Workplace Ostracism, and Knowledge-Sharing Behavior; One-factor model = Observed Coworker Helping Behavior + Perceived Cooperative Norms + Perceived Workplace Ostracism + Knowledge-Sharing Behavior + Task Interdependence.

Because most of the key variables in this study were measured using questionnaires, common method bias could not be entirely ruled out. Nevertheless, several procedural remedies were implemented to mitigate this concern, including a three-wave time-lagged design and the use of supervisor ratings for the dependent variable. To further assess this issue, we conducted Harman's single-factor test by subjecting all measurement items to an unrotated exploratory factor analysis. The

results showed that five factors with eigenvalues greater than 1 were extracted. The first factor had an eigenvalue of 14.918 and accounted for 33.905% of the total variance, which is well below the critical threshold of 40% [34]. These results suggest that common method bias was not a serious concern in this study.

4.2. Descriptive Statistics and Correlations

Table 2 presents the means, standard deviations, and correlations for all study variables. As shown in Table 2, observed coworker helping behavior was positively correlated with perceived cooperative norms ($r = 0.229$, $p < 0.01$), and perceived cooperative norms was positively correlated with knowledge sharing behavior ($r = 0.497$, $p < 0.01$). At the same time, observed coworker helping behavior was positively correlated with perceived workplace ostracism ($r = 0.231$, $p < 0.01$), whereas perceived workplace ostracism was negatively correlated with knowledge sharing behavior ($r = -0.198$, $p < 0.01$). In addition, observed coworker helping behavior was also positively correlated with knowledge sharing behavior ($r = 0.253$, $p < 0.01$). Taken together, these results provide preliminary support for Hypotheses 1, 2, 3, and 4.

Table 2. Descriptive statistics and correlations.

Variables	Mean	Standard deviation	1	2	3	4	5	6	7	8	9
1 Gender	1.46	0.5	1								
2 Age	2.25	1.061	−0.012	1							
3 Educational Level	2.45	1.013	−0.035	−0.295**	1						
4 Years of work	2.52	0.969	0.052	0.605**	−0.308**	1					
5 Observed coworker helping behavior	3.74	0.85	−0.113	−0.313**	0.305**	−0.290**	**0.937**				
6 Perceived cooperative norms	3.88	0.97	0.071	−0.038	0.115*	−0.088	0.229**	**0.947**			
7 Perceived workplace ostracism	3.81	1.05	−0.08	−0.139*	0.053	−0.069	0.231**	−0.144*	**0.920**		
8 Task interdependence	3.86	1.08	0.109	0.017	−0.025	0.088	−0.324**	0.186**	−0.344**	**0.946**	
9 Knowledge sharing behavior	3.74	0.90	0.002	0.058	0.116*	0.061	0.253**	0.497**	−0.198**	0.210**	**0.970**

Note(s): N = 297, *p < 0.05, **p < 0.01, ***p < 0.001; Cronbach's alpha coefficients are reported in bold on the diagonal.

4.3. Hypothesis Testing

4.3.1. Tests of the Main Effects and Mediating Effects

As shown in Table 3, the hierarchical regression analyses were conducted to test the hypotheses, with perceived cooperative norms, perceived workplace ostracism, and knowledge sharing behavior as the dependent variables, while controlling for gender, age, educational level, and organizational tenure. The results indicated that observed coworker helping behavior had a significant positive effect on perceived cooperative norms ($B = 0.267$, $p < 0.001$) and perceived workplace ostracism ($B = 0.264$, $p = 0.001$), thereby supporting Hypotheses 1 and 3.

Further analyses revealed that observed coworker helping behavior was positively related to knowledge sharing behavior (B = 0.313, p < 0.001). After perceived cooperative norms and perceived workplace ostracism were included in the model, perceived cooperative norms had a significant positive effect on knowledge sharing behavior (B = 0.397, p < 0.001), whereas perceived workplace ostracism had a significant negative effect on knowledge sharing behavior (B = −0.153, p = 0.001). At the same time, the direct effect of observed coworker helping behavior on knowledge sharing behavior remained significant (B = 0.248, p < 0.001). These findings provide preliminary support for Hypotheses 2 and 4. Whether the mediating effects hold, however, still requires further examination based on the bootstrap results.

Table 3. Hierarchical regression results.

Variables	Perceived cooperative norms				Perceived workplace ostracism				Knowledge sharing behavior		
	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M12
Gender	0.156 (0.112)	0.202 (0.111)	0.164 (0.107)	0.181 (0.100)	−0.174 (0.122)	−0.128 (0.120)	−0.085 (0.115)	−0.097 (0.112)	0.009 (0.105)	0.063 (0.101)	−0.037 (0.089)
Age	0.043 (0.067)	0.083 (0.067)	0.113 (0.064)	0.100 (0.060)	−0.154* (0.073)	−0.115 (0.072)	−0.150* (0.069)	−0.140* (0.067)	0.052 (0.062)	0.098 (0.061)	0.048 (0.053)
Educational Level	0.100 (0.059)	0.053 (0.059)	0.032 (0.057)	0.047 (0.053)	0.015 (0.064)	−0.033 (0.064)	−0.009 (0.061)	−0.019 (0.060)	0.139* (0.055)	0.083 (0.054)	0.057 (0.047)
Years of work	−0.088 (0.074)	−0.063 (0.072)	−0.085 (0.070)	−0.095 (0.065)	0.037 (0.080)	0.061 (0.079)	0.086 (0.075)	0.094 (0.073)	0.067 (0.069)	0.096 (0.066)	0.130* (0.058)
Observed coworker helping behavior		0.267*** (0.071)	0.385*** (0.072)	0.235** (0.071)		0.264** (0.077)	0.129 (0.078)	0.237** (0.080)		0.313*** (0.065)	0.248*** (0.059)
Task interdependence			0.263*** (0.052)	0.162** (0.051)			−0.302*** (0.056)	−0.230*** (0.058)			
Observed coworker helping behavior × Task interdependence				0.420*** (0.064)				−0.302*** (0.072)			
perceived cooperative norms											0.397*** (0.048)
perceived workplace ostracism											−0.153** (0.044)
R^2	0.024	0.069	0.144	0.255	0.027	0.065	0.149	0.198	0.026	0.098	0.326
ΔR^2	0.024	0.045	0.075	0.111	0.027	0.038	0.084	0.049	0.026	0.072	0.227
F	1.773	4.336**	8.134***	14.147***	2.004	4.036**	8.460***	10.184***	1.946	6.348***	19.934***

Note(s): N = 297, *p < 0.05, **p < 0.01, ***p < 0.001; The coefficients reported in the table are unstandardized coefficients.

Further, we used a bootstrap procedure with 5000 resamples to test the parallel mediating effects of perceived cooperative norms and perceived workplace ostracism. The results showed that the total effect of observed coworker helping behavior on knowledge sharing behavior was significant (Effect = 0.3132, p < 0.001). After the two mediators were included, the direct effect remained significant (Ef-

fect = 0.2476, $p < 0.001$), indicating that perceived cooperative norms and perceived workplace ostracism played partial mediating roles.

Specifically, the indirect effect of observed coworker helping behavior on knowledge sharing behavior through perceived cooperative norms was significant (Effect = 0.1062, 95% BootCI = [0.0415, 0.1818]), supporting Hypothesis 2. Likewise, the indirect effect through perceived workplace ostracism was also significant (Effect = −0.0405, 95% BootCI = [−0.0793, −0.0117]), supporting Hypothesis 4.

4.3.2. Moderating Effect Analysis

To test the moderating role of task interdependence, we conducted hierarchical regression analyses with perceived cooperative norms and perceived workplace ostracism as the dependent variables. After controlling for gender, age, educational level, and organizational tenure, the interaction between observed coworker helping behavior and task interdependence had a significant positive effect on perceived cooperative norms (B = 0.420, $p < 0.001$), indicating that task interdependence strengthened the positive relationship between observed coworker helping behavior and perceived cooperative norms. In contrast, the interaction term had a significant negative effect on perceived workplace ostracism (B = −0.302, $p < 0.001$), indicating that task interdependence weakened the positive relationship between observed coworker helping behavior and perceived workplace ostracism. These findings support the moderating role of task interdependence.

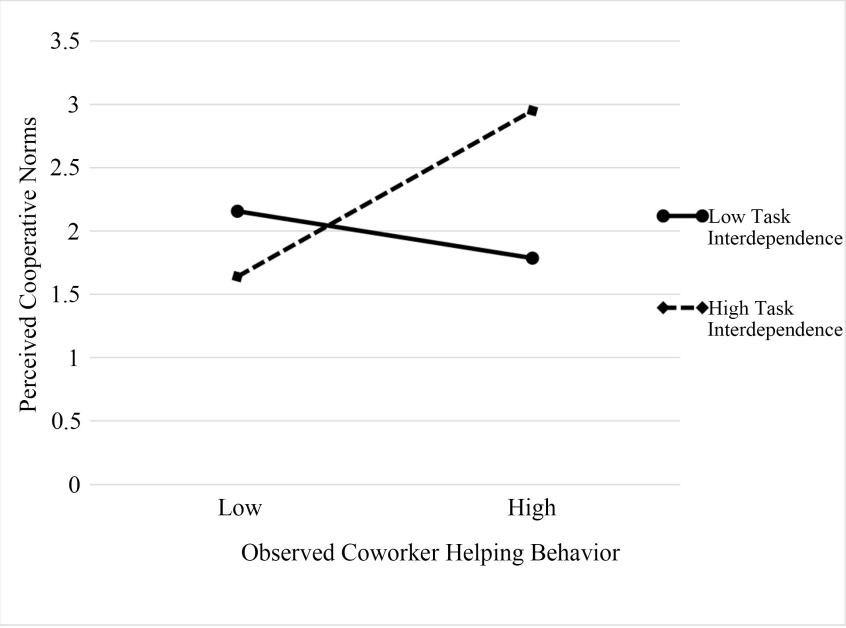

Figure 2. The moderating effect of task interdependence on the relationship between observed coworker helping behavior and perceived cooperative norms.

Further simple slope analyses, presented in **Figure 2** and **Figure 3**, show that when task interdependence was high, the positive relationship between observed

coworker helping behavior and perceived cooperative norms was stronger, whereas the positive relationship between observed coworker helping behavior and perceived workplace ostracism was weaker. When task interdependence was low, the opposite pattern emerged. These results provide further support for the proposed moderating effects.

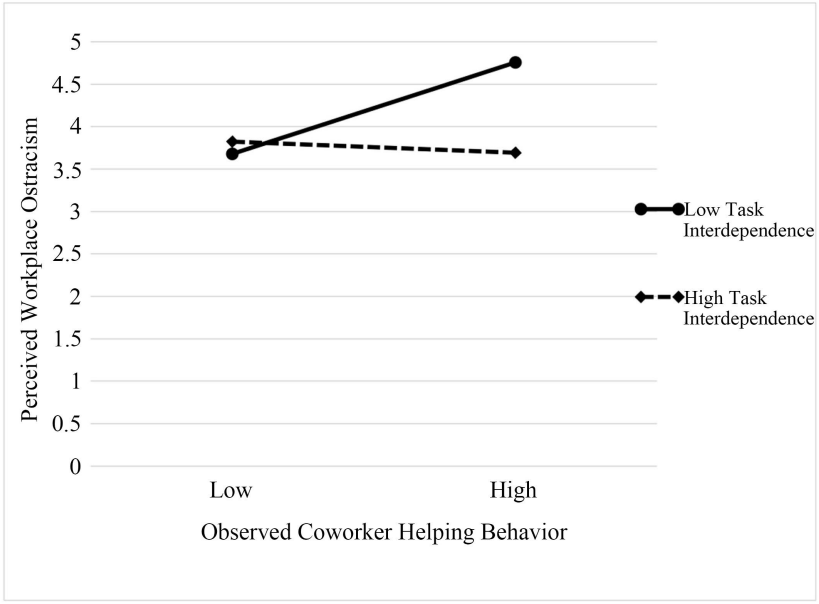

Figure 3. The moderating effect of task interdependence on the relationship between observed coworker helping behavior and perceived workplace ostracism.

4.3.3. Moderated Mediation Effect Analysis

As shown in **Table 4**, we further tested the moderated mediation effects using PROCESS Model 7 with 5000 bootstrap resamples. The results showed that the moderated mediation effect through perceived cooperative norms was significant (Index = 0.1669, 95% BootCI = [0.0911, 0.2570]). Specifically, when task interdependence was low, the indirect effect of observed coworker helping behavior on knowledge sharing behavior through perceived cooperative norms was not significant (Effect = −0.0861, 95% BootCI = [−0.1980, 0.0105]). In contrast, when task interdependence was high, this indirect effect was significantly positive (Effect = 0.2729, 95% BootCI = [0.1589, 0.3972]), indicating that the higher the level of task interdependence, the stronger the positive indirect effect.

At the same time, the moderated mediation effect through perceived workplace ostracism was also significant (Index = 0.0462, 95% BootCI = [0.0168, 0.0823]). Specifically, when task interdependence was low, the indirect effect of observed coworker helping behavior on knowledge sharing behavior through perceived workplace ostracism was significantly negative (Effect = −0.0859, 95% BootCI = [−0.1573, −0.0308]). When task interdependence was high, however, this indirect effect was not significant (Effect = 0.0134, 95% BootCI = [−0.0163, 0.0477]), indicating that the higher the level of task interdependence, the weaker the negative indirect effect.

Table 4. Moderated mediation analysis.

Mediator	Conditional indirect effects			Index of moderated mediation	
	Level of moderator	Effect	95% CI	Index	95% CI
Perceived cooperative norms	Low task interdependence	−0.0861	[−0.1980, 0.0105]	0.1669	[0.0911, 0.2570]
	High task interdependence	0.2729	[0.1589, 0.3972]		
Perceived workplace ostracism	Low task interdependence	−0.0859	[−0.1573, −0.0308]	0.0462	[0.0168, 0.0823]
	High task interdependence	0.0134	[−0.0163, 0.0477]		

5. Conclusions and Discussion

5.1. Research Conclusion

Drawing on social information processing theory, this study develops and tests a dual-path model linking observed coworker helping behavior to third-party employees' knowledge sharing behavior. The results show that observed coworker helping behavior affects employees' knowledge sharing behavior through two opposing pathways: on the one hand, it promotes knowledge sharing behavior by enhancing perceived cooperative norms; on the other hand, it inhibits knowledge sharing behavior by increasing perceived workplace ostracism. In addition, task interdependence significantly moderates the effects of observed coworker helping behavior on both mediators. Under conditions of high task interdependence, observed coworker helping behavior is more likely to strengthen employees' perceived cooperative norms and less likely to trigger perceived workplace ostracism. By contrast, under conditions of low task interdependence, its positive effect on perceived cooperative norms is weakened, whereas its positive effect on perceived workplace ostracism is strengthened.

5.2. Theoretical Implications

First, this study extends the analytical boundaries of helping behavior research by adopting a third-party observer perspective. Prior research has focused primarily on helpers and recipients, paying relatively little attention to how other team members respond after observing coworkers' helping behavior. By shifting the focus to third-party employees, this study examines how observed coworker helping behavior influences their knowledge sharing behavior. The findings indicate that helping behavior affects not only the two actors directly involved in the interaction, but also generates important spillover effects through third-party employees' observation and interpretation, thereby broadening the scope of helping behavior research.

Second, this study uncovers the dual-path mechanism through which observed coworker helping behavior influences third-party employees' knowledge sharing behavior, thereby deepening understanding of how this effect unfolds. Drawing on social information processing theory, we validate two mediating pathways with opposite directions—perceived cooperative norms and perceived workplace ostracism. These findings suggest that third-party employees may interpret cowork-

ers' helping behavior either as a positive signal that promotes cooperation or as an exclusionary signal that reflects relational boundaries. This insight moves beyond the prevailing view of helping behavior as a uniformly positive signal and offers a new explanation for how coworkers' behavior shapes knowledge sharing behavior.

Third, this study identifies a key boundary condition shaping the effect of observed coworker helping behavior on third-party employees' knowledge sharing behavior, thereby enriching understanding of the context-dependent nature of social information effects. The results show that task interdependence significantly affects how third-party employees interpret coworkers' helping behavior: high task interdependence strengthens its meaning as a cue of cooperative norms while weakening its meaning as a cue of relational exclusion, whereas low task interdependence has the opposite effect. In this way, the study not only extends the application of task interdependence in helping behavior research, but also reveals how work context becomes embedded in the chain linking observed coworker helping behavior, cognitive processing, and knowledge sharing behavior.

5.3. Managerial Implications

First, managers should recognize that coworkers' helping behavior can exert a double-edged effect on third-party employees' knowledge sharing behavior. On the one hand, it may be interpreted as a positive signal of cooperation and sharing, thereby encouraging knowledge sharing. On the other hand, it may be construed as a relational signal that resources are flowing toward particular members, thereby triggering perceived workplace ostracism and discouraging knowledge sharing. Accordingly, while encouraging employees to help one another, organizations should also pay attention to how helping behavior is distributed and diffused within the team, so as to avoid situations in which helping becomes concentrated among only a small number of members over time.

Second, managers should strengthen the normative meaning of helping behavior and reduce its potential exclusionary interpretation through institutional arrangements and team management practices. Because employees' willingness to share knowledge depends to a large extent on how they interpret the social information conveyed by coworkers' helping behavior, organizations should encourage employees to view helping more as a routine aspect of teamwork rather than as a marker of relational boundaries. This can be achieved by promoting cooperative values, reinforcing a knowledge-sharing orientation, and increasing the visibility and prevalence of helping behavior across the team. At the same time, organizations may reduce the target-specific nature of helping by encouraging cross-role collaboration, experience sharing, and job rotation support.

Finally, managers should pay close attention to task interdependence as a key contextual factor and optimize work design to amplify the positive effects of helping behavior while suppressing its negative effects. Our findings suggest that high

task interdependence helps employees interpret helping behavior as a natural and necessary form of collaboration for task accomplishment, thereby strengthening perceived cooperative norms and reducing perceived workplace ostracism. Organizations can therefore increase task interdependence by assigning cross-functional collaborative tasks, reinforcing shared goals, and strengthening workflow interconnections, thereby fostering a team climate that is more conducive to knowledge sharing behavior.

5.4. Limitations and Future Directions

First, although this study adopted a multiwave research design and measured the outcome variable through employee-supervisor matching, thereby reducing the risk of common method bias to some extent, the independent, mediating, and moderating variables still relied primarily on employee self-reports. As a result, the dynamic process linking these variables was not captured in a sufficiently fine-grained manner. In particular, how observed coworker helping behavior is continuously processed by third-party employees in everyday interactions, and how it subsequently shapes perceived cooperative norms and perceived workplace ostracism, remains to be examined at a more detailed temporal level. Future research could combine experimental designs, experience sampling methods, or longitudinal tracking to more accurately identify the causal mechanisms through which observed coworker helping behavior influences third-party employees' knowledge sharing behavior, thereby further strengthening internal validity.

Second, this study focuses on perceived cooperative norms and perceived workplace ostracism to explain the dual-path mechanism through which observed coworker helping behavior affects knowledge sharing behavior. However, third-party employees' responses to coworkers' helping behavior may not be limited to these two mechanisms. Future research may draw on additional theoretical perspectives to explore other mediating variables. For example, observed coworker helping behavior may also influence employees' knowledge sharing behavior by shaping psychological safety, organizational identification, reciprocity expectations, relative deprivation, or fairness perceptions. Future studies could further integrate social comparison theory, social exchange theory, or conservation of resources theory to provide a more comprehensive account of the mechanisms through which observed coworker helping behavior affects third-party employees' behavior.

Third, this study focuses on task interdependence as a boundary condition at the level of job design, highlighting how work structure shapes third-party employees' interpretations of coworkers' helping behavior. However, the roles of other contextual and individual-difference variables remain to be examined. Future research could incorporate organizational contextual variables such as team climate, leadership style, performance evaluation systems, shared mental models, and inclusive management practices to investigate whether these factors further shape employees' normative or relational interpretations of observed coworker

helping behavior. At the same time, individual characteristics such as need to belong, relational sensitivity, competitive orientation, and social value orientation may also be introduced to explain more systematically why different employees respond differently to the same helping behavior.

Finally, because the sample was drawn from employees in Chinese firms, with certain limitations in terms of industry and organizational background, the external validity of the findings still requires further examination. Employees' interpretations of coworkers' helping behavior and their knowledge sharing behavior may differ across organizational types, industries, and cultural contexts. Future research could replicate the present model across different regions, industries, and cross-cultural samples to enhance the generalizability of the findings and deepen understanding of the observational effects of helping behavior and their knowledge-related consequences.

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Conflicts of Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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