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<https://doi.org/10.1057/s41599-025-05836-2>

OPEN

Why and when workplace friendship has a differentiated effect on relationship norms and helping behavior: a relationship motivation theory approach

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Existing scholarship acknowledges workplace friendships as complex relationships integrating exchange and communal interaction patterns governed by distinct norms. However, critical gaps remain in understanding how these relational complexities differentially influence organizational citizenship behaviors, particularly regarding contextual boundary conditions. This study advances a motivational framework examining how workplace friendships shape helping behaviors through dual normative pathways. We propose that perceived relationship motivations determine whether workplace friendships activate communal norms (fostering proactive helping) or exchange norms (promoting reactive helping). Using multi-wave field surveys (Study 1, $N = 615$) and experimental methods (Study 2, $N = 214$), results demonstrate that autonomous relationship motivation perceptions strengthen the link between workplace friendships and communal norms, enhancing proactive helping. Conversely, controlled relationship motivation perceptions amplify the connection between workplace friendships and exchange norms, increasing reactive helping. These findings resolve theoretical ambiguities about normative pluralism in workplace relationships, identify motivational antecedents of norm activation, and establish boundary conditions for relationship-driven citizenship behaviors.

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Introduction

Workplace friendship encompasses informal social connections that develop organically among current colleagues within organizational settings (Pillemer & Rothbard 2018; Ingram & Zou 2008). Prior organizational research recognizes these relationships as constructive interpersonal dynamics exhibiting dualistic characteristics - simultaneously embodying affective components (e.g., trust, mutual support) and instrumental dimensions (e.g., resource exchange; Khaleel et al. 2016; Pillemer & Rothbard 2018). Empirical evidence demonstrates their multifaceted benefits, including enhancing emotional support (Murphy & Bedford 2024), promoting career development outcomes (Ferreira 2019), and facilitating prosocial workplace behaviors such as knowledge dissemination and innovative problem-solving (Wang et al. 2024; Helmy et al. 2020). Emerging scholarship highlights the complexity of workplace friendship, which has simultaneously conflicting informal friendship characteristics (communal norms, socioemotional goals, and voluntariness) and formalized organizational characteristics (exchange norms, instrumental goals, and involuntariness) (Pillemer & Rothbard 2018; Ingram & Choi 2025). Emerging research further reveals paradoxical consequences arising from workplace friendships, particularly when navigating goal-setting and norm adherence processes. Specifically, these detrimental effects include instrumental goal conflicts (Fasbender et al. 2023), role ambiguity (Ahmad et al. 2023), reduced loyalty (Fasbender & Drury, 2022), productivity losses (Methot et al. 2016), resource exhaustion (Telecan et al. 2024), and compulsory citizenship behaviors (Wang et al. 2023), as evidenced by multiple studies. The contextual contingency of such a negative effect has been validated in recent cross-cultural studies. The research found that under the strict hierarchy of Romanian military organizations, relational benefits of friendship are overshadowed by costs when workplace friends are excessive (Telecan et al. 2024). Similarly, in the South Asian service industry, close colleague relationships, when confronted with a competitive environment for promotion, may lead to uncivilized behavior through the spread of negative gossip.

Although emerging scholarship emphasizes workplace friendships as mixed, complex relationships integrating exchange and communal interaction norms, which are characterized by inherent tensions between instrumental goal compliance and socioemotional goal alignment (Pillemer & Rothbard 2018), the existing literature still fails to systematically explain how these two norms coexist and under what conditions one norm dominates. Specifically, studies that emphasize the positive effects of workplace friendships (e.g., knowledge sharing, Wang et al. 2024; emotional support, Murphy & Bedford 2024) tend to ignore the tensions revealed by studies on their negative effects (e.g., role conflict, Fasbender et al. 2023; compulsory citizenship behavior, Wang et al. 2023). Conversely, studies focusing on negative effects rarely integrate evidence from the communal relationship framework, leading to fragmentation of the theoretical framework. For example, workplace friendships can lead to employees' perception of unfairness due to friendship favoritism, and it is proposed that improving the transparency of decision-making is more effective than formal norms to curb friendship favoritism (Pearce & Wang 2024). Unfortunately, whether such a difference in effectiveness is due to a contradiction between communal norms and formal norms has not been explored.

The fragmented theoretical framework is particularly evident in the exploration of boundary conditions. Existing research has systematically explored the downside of workplace friendships through the lens of role conflict (Fasbender et al. 2023; Methot et al. 2016) and elucidated their double-edged sword impacts by constructing psychological mechanism frameworks (Wang et al.

2023; Fasbender & Drury 2022). A significant theoretical void remains, however, in explaining how communal and exchange norms coexist dynamically within these relationships, particularly regarding the situational contingencies that drive their divergent manifestations. For example, although Wang et al. (2023) proposed a dual-path model of workplace friendship's effects on organizational citizenship behavior, it did not distinguish how norm types (communal vs. exchange) drive distinct behavioral outcomes. Similarly, while Pillemer and Rothbard (2018) theorized norm conflicts arising from mixed organizational and friendship characteristics, their framework lacked empirical validation of moderators that determine which norm prevails. Accordingly, this raises a critical question: could distinct relationship norms cultivated through workplace friendships subsequently drive variations in employee organizational behavior? If validated, what underlying mechanisms and contextual factors drive such outcomes? Our study addresses these gaps by introducing perceived relationship motivation as a key boundary condition. This approach not only reconciles seemingly contradictory findings (e.g., prosocial outcomes (Wang et al. 2024) with decreased productivity (Fasbender & Drury 2022)), but advances the theoretical framework (Pillemer & Rothbard 2018) by empirically examining how perceptions of motivation shape norm choices in workplace friendships.

Addressing the critical theoretical gap in workplace relationship dynamics, our research employs Relationship Motivation Theory (RMT) to elaborate on nuanced theoretical mechanisms underlying workplace friendship's divergent behavioral manifestations (Ryan & Deci 2017; Deci & Ryan 2014). RMT proposes that individuals are sensitive to whether others' interests in them are volitional and autonomous (i.e., perceived autonomous relationship motivation) or instrumentally controlled (i.e., perceived controlled relationship motivation). Critically, these perceptions shape relatedness satisfaction (Ryan & Deci 2017; Rodriguez et al. 2018) and interaction norms. Perceived autonomous motivation in workplace friendship fosters communal norms through fulfilling psychological needs (e.g., relatedness); whereas controlled motivation in workplace friendship activates exchange norms (e.g., obligatory reciprocity) by inducing resource-protection mechanisms (Hobfoll 1989; Ryan & Deci 2017). Existing theories provide partial explanations but fail to integrate these motivation-driven dynamics. Social Exchange Theory (SET; Blau, 1964) emphasizes reciprocal obligations but does not distinguish between "autonomous reciprocity" (e.g., helping out of care) and "instrumental reciprocity" (e.g., helping to repay debts) (Ingram & Choi 2025). Conservation of Resources Theory (COR; Hobfoll 1989) emphasizes that individuals cope with stress by acquiring and retaining resources, but mainly focuses on the objective results of resource gain and loss (Methot et al. 2016), overlooking how perceived relationship motivation (autonomous vs. controlled) determines whether individuals adopt communal or exchange norms. Affective events theory (AET; Weiss & Cropanzano 1996) advocates that the reciprocal relationship between individuals and their circumstances significantly influences their responses to events. But it focuses primarily on interpersonal dynamics and the processes by which work-related events may lead to workplace behavior (Khan et al. 2025; Shoukat et al. 2024). It is difficult to explain why communal norms or exchange norms are generated during the occurrence of behavior. In contrast, RMT bridges this gap by positioning perceived relationship motivation as the key moderator that explains when communal or exchange norms dominate.

Building on RMT and attribution theory (Heider 1958), we posit that individuals predict and control social environments by interpreting others' behavior—when employees perceive

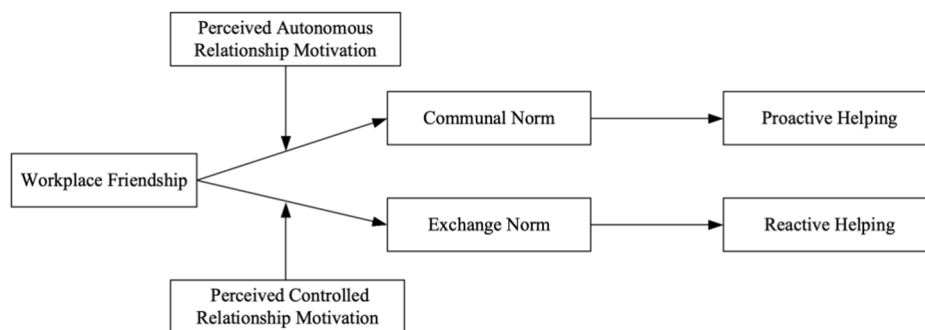


Fig. 1 The conceptual model.

workplace friends as autonomously motivated, communal norms foster proactive helping; conversely, employees perceive workplace friends as being controlled motivated, exchange norms trigger reactive helping. Our RMT-based framework consequently elaborates the discrepant impacts of workplace friendships through a systematic mechanism that connects individuals' motivational perceptions to their relationship norm decision-making processes, ultimately shaping workplace behavioral outcomes. Rather than proposing new causal pathways, this analytical approach specifically demonstrates how differential interpretations of relational intentions serve as cognitive triggers that activate distinct social norms, which subsequently govern behavioral patterns. The structural reformulation maintains the original theoretical proposition while redistributing informational weight across interconnected clauses, employing parallel construction ("connects...to" / "activate...govern") and cause-effect transitions ("consequently"/"subsequently") to enhance textual flow without altering conceptual boundaries.

By empirically testing this theoretical framework, we not only resolve the theoretical fragmentation (e.g., Wang et al. 2024 vs. Fasbender & Drury 2022) but also advance Pillemer and Rothbard's (2018) framework through validating perceived relationship motivation as the critical moderator determining norm dominance. This contributes actionable insights for promoting proactive helping in organizations. To empirically validate the theoretical model delineating the normative differentiation mechanisms of workplace friendship (Fig. 1), we implemented a dual-methodological approach comprising an experiment and a multi-wave survey study. This investigation advances workplace relationship literature through three critical advancements: (a) revealing the norm divergence black box mechanism; (b) identifying motivational contingency factors, and (c) resolving theoretical complexity regarding workplace friendship.

Theoretical development and research hypotheses

Interpreting workplace friendship from the relationship motivation approach. Previous research on workplace relationships has been dominated by two competing relationship paradigms, communal relationship and exchange relationship (Clark & Mills 1979; 1993). The distinction separating communal versus exchange relationships stems from the rules or norms regulating benefit reciprocity dynamics (i.e., exchange norms and common norms; Clark & Mills 1993). Specifically, in an exchange relationship, a benefit is given in the expectation of receiving a corresponding benefit in return, or as a reward for a previously obtained benefit (Clark & Mills 1993). Exchange relationship management emphasizes instrumental reciprocity dominated by exchange norms, where interactions follow the explicit or implicit principle of "exchange of equivalence" (Blau, 1964; Russell, 2005). From the perspective of an exchange relationship, workplace friendship is

defined as a transactional exchange relationship based on reciprocal norms, and the support in the relationship depends on the expected return (Methot et al. 2017), which is consistent with the exploitative and instrumental nature of workplace friendship (Ingram & Choi 2025; Bridge & Baxter 1992).

In communal relationships, giving benefits is a response to a need or a general concern for others (Jarim et al. 2016). Communal relationship management advocated the realization of emotional connection through communal norms, where interactions follow the principle of "need satisfaction" (Clark & Mills 1993; Clark & Aragón 2013). From the perspective of communal relationship, workplace friendship is defined as an unconditional caring relationship based on affective interaction, and the support in the relationship is based on the needs of the other party rather than immediate returns, which is consistent with the voluntary and social-emotional nature of workplace friendship (Ginka et al. 2013; Pillemer & Rothbard 2018). However, under this theoretical framework, the choice of norms is determined by the type of relationship (exchange or communal), which does not explain which norms dominate workplace friendships that blend exchange and communal relationships, and under what circumstances. This may lead to different normative responses to workplace friendships, and Relationship Motivation Theory may provide an important theoretical perspective in this regard.

Workplace friendship describes the informal bonds formed between current colleagues within organizational settings (Bridge & Baxter 1992; Ingram & Zou 2008; Pillemer & Rothbard 2018). Unlike familial connections or geographically based neighborhood ties, these relationships arise from volitional choice (Adams & Blieszner 1994; Morrison & Cooper-Thomas 2016). Sustaining such connections depends on individual drivers, including shared characteristics, physical proximity, economic benefits, safety assurance, role complementarity, and recognition needs (Ingram & Choi 2025; Morrison & Cooper-Thomas 2016). However, because workplace friendships are rooted in complex organizational environments, such as performance pressures and role conflicts, may force employees to weigh instrumental and social-emotional goals (Pillemer & Rothbard 2018; Ingram & Choi 2025). Offering to help as a friend, for example, could be interpreted as stemming from two very different motivations: genuine concern and economic transaction. In this case, employees tend to solve the complexity and contradiction of role goals in workplace friendships by interpreting others' relationship motivations, and then generating subsequent cognition and behavior corresponding to the motivations (Ryan & Deci 2017; Wang et al. 2023).

Within the framework of Self-Determination Theory, Relationship Motivation Theory (RMT) proposes that relationship motivation refers to the reasons that people select and maintain close relationships (Ryan & Deci 2017; Deci & Ryan 2014). These motivations critically determine relationship satisfaction and individual subsequent attitudinal and behavioral responses,

categorized as autonomous relationship motivation and controlled relationship motivation. Specifically, controlled relationship motivation arises when individuals develop close relationships in order to obtain instrumental benefits (such as access to resources and social approval) or avoid negative outcomes (such as guilt) (Rodríguez et al. 2018). Autonomous relationship motivation occurs when individuals voluntarily invest in relationships based on sincere care and emotional interaction, without external contingencies (Ryan & Deci 2017). Consequently, perceived autonomous relationship motivation reflects an individual's attribution that others engage in relationships driven by intrinsic volition, spontaneous social-emotional fulfillment, and inherent relatedness needs (Ryan & Deci 2017). Conversely, perceived controlled relationship motivation denotes the perception that others' relational involvement originates from obligation-based forces, whether externally enforced demands or internalized pressures (Ryan & Deci 2017). Collectively, these constructs delineate whether individuals interpret relationship participation as authentically self-determined or externally coerced, rooted in the autonomous-versus-controlled continuum of human motivation (Ryan & Deci 2017).

Accordingly, perceived others' autonomous relationship motivation refers to the individual's perception that others participate in a relationship because of their real volition and willingness of social-emotions and relatedness need, whereas perceived others' controlled relationship motivation refers to the individual's perception that others engage in the relationship result of external or internal pressure (Ryan & Deci 2017). In sum, perceived others' autonomous relationship motivation captures the notion that individuals recognize others' participation in relationships stems from authentic volition and genuine fulfillment of social-emotional and relatedness needs (Ryan & Deci 2017). Conversely, perceived others' controlled relationship motivation reflects the perception that such relational engagement arises from external compulsion drivers (Ryan & Deci 2017).

RMT emphasizes that relatedness, as a fundamental psychological need, is shaped by both environmental factors and individuals' interpretations of others' relationship motivations (Ryan & Deci 2017). Specifically, people discern whether others' engagement in relationships originates from volitional willingness (autonomous motivation) or externally imposed expectations (controlled motivation) (Ryan & Deci 2017). This distinction carries critical implications for interpersonal outcomes. Empirical evidence shows that when individuals perceive partners' autonomous motivation, they experience higher need satisfaction and reciprocate with sustained prosocial behaviors (Hadden et al. 2015; Gore et al. 2009; Gaine & La Guardia 2009). Conversely, Perceived controlled relationship motivation correlates with calculative reciprocity and undermines relationship satisfaction by implying transactional intent (Wang et al. 2023; Ryan & Deci 2017). This is because autonomous attributions foster unconditional relational safety ("They care for who I am"), whereas controlled attributions evoke transactional uncertainty ("They care for what I can provide") (Ryan & Deci 2017; Ryan & Deci 2019). Integrating RMT into relationship management strategy, we propose that employees' perceptions of coworkers' relationship motivations (autonomous vs. controlled) serve as a critical boundary condition activating distinct relationship norms (communal vs. exchange) in workplace friendships. This theoretical framework elaborates on the nuanced impacts of workplace friendship on helping behaviors through distinct mediating pathways.

Perceived relationship motivation serves as a key condition for connecting workplace friendships with relationship norms. Workplace friendship embodies dual dynamics where task-focused transactional connections interweave with emotionally

anchored relational ties, operating under diverging reciprocity expectations (Pillemer & Rothbard 2018). Specifically, communal norms emphasize unconditional concern for the needs and well-being of others, and their supportive behavior is derived from intrinsic concern (Clark & Mills 1993) rather than reciprocal expectation (Aggarwal 2004; Bolton & Mattila 2015). Exchange norms are based on the principle of reciprocity, requiring individuals to exchange benefits for equal returns (Clark & Mills 1979). According to RMT, the difference between communal norms and exchange norms stems from individuals' perception of others' relationship motivation. Further, from the lens of affective events theory (AET; Weiss & Cropanzano 1996), autonomous and controlled motivation-driven workplace friendships represent distinct affective events in workplace interactions, shaping employees' emotional responses and subsequent norm adoption (Khan et al. 2025). Autonomous relationship motivation tends to reinforce community-oriented norms, and its essence is to obtain intrinsic rewards (such as the satisfaction of helping others, Clark & Aragón 2013) by satisfying psychological needs such as belonging and relatedness (Tasdoven & Kapucu 2013). As a positive workplace event, workplace friendship interactions driven by autonomous motivation can stimulate internal satisfaction such as empathy and gratitude, which is consistent with the communal norm that emphasizes "prioritization of the well-being of others over instrumental reciprocity" (Clark & Aragón 2013; Deci & Ryan 2000). Controlled relationship motivation more readily promotes exchange-oriented norms, the core of which is to avoid resource loss or gain external benefits (Lee & Chon 2021; Miller et al. 2014). Similarly, as a negative workplace event, workplace friendship interactions driven by controlled motivation can trigger anxiety or obligation that directs attention to transactional equity, which is consistent with the exchange norm (Vansteenkiste et al. 2020).

When employees perceive a colleague's autonomous relationship motivation (e.g., value alignment, genuine caring), they interpret this workplace friendship as a positive event (Weiss & Cropanzano 1996; Wang et al. 2020). These interactions satisfy employees' basic psychological needs for autonomy and relevance (Deci & Ryan 2014; Ryan & Deci 2017), generating intrinsic rewards such as empathy and gratitude. This positive emotion further expands the individual's cognitive flexibility (Barbara 2001), enhancing employees' perception of relationship value (i.e., viewing a relationship as an end in itself; Clark & Mills 2012). This relationship value identification creates a self-reinforcing cycle: employees internalize communal norms as part of their self-concept (Tasdoven & Kapucu 2013), prioritizing the welfare of others (Macnamara 2025) over instrumental reciprocity (Alvin, 1960). For example, when employees perceive that a colleague's help stems from a sincere concern for their well-being (rather than a workplace obligation), they are more motivated to follow communal norms and continue to provide support even when there is a lack of immediate reward (Lee & Kim 2017) because the interaction itself provides intrinsic satisfaction. Consequently, individuals embedded in workplace friendships who experience self-determined relational drives demonstrate stronger inclinations to adhere to communal norms (Ryan & Deci 2017).

In contrast, when employees perceive a colleague's controlled relationship motivation (e.g., seeking resources for advancement), they interpret this workplace friendship as a negative event with instrumental purposes (Weiss & Cropanzano 1996; Shoukat et al. 2024). These interactions make employees experience regarded as a tool (Weinstein et al. 2010; Seyfarth & Cheney 2012), hindering the satisfaction of their basic psychological needs, and producing negative emotional experiences such as anger, anxiety, and sadness. This negative emotion further narrows the individual's cognitive focus (Barbara 2001), leading them to view the

relationship as an instrumental investment, prioritize personal resource consumption, and seek equivalent returns (Dyne et al. 2003). Acquiring material or socioemotional resources through coworker interactions activates amplified obligation perceptions, driving immediate adherence to mutual reciprocity norms in organizational exchanges without delay (Wang et al. 2023; Shalom 1982; Russell, 2005). They engage in utilitarian resource calculus (Jonathon et al. 2014), quantifying benefits to ensure a balance of interests (Wang et al. 2023), thereby maintaining friendships to pay off human debts. This instrumentalization of relationships (Dyne et al. 2003; Ingram & Choi 2025) sustains exchange norms, as interactions are reduced to economic transactions. Consequently, individuals embedded in workplace friendships who experience compulsory social incentives demonstrate heightened compliance with exchange norms. Based on the above, we propose the following:

Hypothesis 1: Employees' perception of colleagues' autonomous motivation in friendship enhances the positive linkage between workplace friendship and communal norms.

Hypothesis 2: Employees' perception of colleagues' controlled motivation in friendship reinforces the positive linkage between workplace friendship and exchange norms.

Helping behaviors driven by different relationship norms. This study investigates how workplace relationships shape organizational citizenship behaviors, particularly focusing on helping actions. Prior research indicates that interpersonal dynamics significantly influence prosocial actions such as assistance (Spitzmuller et al. 2008). Our analysis centers on distinguishing proactive and reactive helping behaviors, which stem from distinct relationship norms and motivational frameworks. Proactive helping, characterized by anticipatory support, arises from autonomous relationship motivation—a self-determined drive to fulfill others' psychological needs (Spitzmuller & Van Dyne 2013). This aligns with RMT's concept of intrinsic motivation, where helpers prioritize genuine care over external rewards (Chou & Stauffer 2016). In contrast, reactive helping, triggered by situational demands, is guided by controlled relationship motivation. In this case, help behavior serves as an instrumental strategy to secure future benefits, reflecting compliance with external obligations (Qian et al. 2022).

Clark and Mills (1993) delineate two divergent motivational frameworks underlying prosocial behavior: A transactional mindset prioritizes calculated reciprocity for self-interest maximization, whereas a relational ethos emphasizes affective bonds and collective welfare without contingent rewards. Empirical evidence further reveals that organizational members perceiving communal affiliations demonstrate spontaneously helping tendencies rooted in shared value internalization, where organizational success itself becomes the reward (Miller et al. 2014; Johnson & Grimm 2010). Conversely, exchange-based perceptions trigger conditional cooperation governed by cost-benefit calculus, requiring explicit reciprocal guarantees. The difference in helping behavior fundamentally originates from distinct cognitive architectures – one driven by affiliative emotional integration versus another anchored in instrumental reciprocity mechanisms (Johnson & Grimm 2010).

Accordingly, we posit that relationship norms establish divergent mechanisms explaining different helping actions in the workplace. Specifically, employees adhering to communal norms are proposed to exhibit proactive helping behaviors. When such norms are present, individuals display intrinsic motivation (Johnson & Grimm 2010) to respond to peers' welfare without reciprocal expectations, as a result of prioritizing needs-driven support (Miller et al. 2014). This intrinsic alignment subsequently

drives anticipatory support interventions aimed at enhancing others' developmental outcomes (Qian et al. 2022). Conversely, employees adhering to exchange norms are proposed to exhibit reactive helping behaviors. In cases adopting exchange norms, individuals display extrinsic motivation (Johnson & Grimm, 2010) to reciprocate prior support, aiming to fulfill anticipated future needs (Miller et al. 2014; Clark & Mills 2012), as a result of prioritizing obligation-based. This obligation compels them to offer assistance in reaction to colleague appeals, thereby fulfilling reciprocal exchange requirements (Bicchieri & Xiao 2009).

On the basis of the above arguments, the theoretical framework proposes that workplace friendship, synergizing with perceived autonomous relationship motivation, gives rise to communal norms, subsequently fostering employees' proactive assistance initiatives. Conversely, workplace friendship interacting with perceived controlled relationship motivation stimulates exchange norms, thereby driving reactive support behaviors among staff. Based on this analysis, we advance the following hypotheses:

Hypothesis 3: Workplace friendship and perceived autonomous motivation in such friendship jointly enhance employees' proactive helping behaviors through the mediating role of communal norms.

Hypothesis 4: Workplace friendship and perceived controlled motivation in such friendship jointly enhance employees' reactive helping behaviors through the mediating role of exchange norms.

Current research mapping. This study employed a dual-methodological framework to enhance the internal and external validity of the conclusion (Qin et al. 2020). Specifically, the survey design (Study 1) systematically tested the theoretical model across three measurement phases, effectively controlling common method variance while improving ecological validity through real-world field observations. However, despite the established reliability of workplace friendship scales in Chinese organizational contexts (Rachel, 2009), their limitations in capturing qualitative relationship dimensions (e.g., friendship quality vs. prevalence) and dyadic interaction nuances necessitated a complementary experimental approach. Study 2 conducted a scenario experimental method to: (1) manipulate relationship motivation dimensions (autonomous/controlled) with precision, (2) visualize dyadic friendship interaction through scenario-based measurements, and (3) derive causal chains for helping behavior predictions. This design benefits from strengthening causal inference through experimental control, thereby addressing both methodological and theoretical gaps in prior research.

Method in Study 1

Participants and procedure. Data collection commenced on January 31, 2024, involving eight enterprises in Northern China, comprising three IT firms, three banking institutions, and two small-scale manufacturing units. A team of ten executive MBA students from a northern university assisted in recruitment, facilitating participation from 740 employees. The study utilized web-based questionnaires distributed at three intervals spaced three weeks apart. Such design benefits effectively mitigate common method bias (Podsakoff et al. 2003) while maintaining practical feasibility through research assistant coordination (Wang et al. 2023). To preserve anonymity and minimize response sensitivity, participant identification employed the last four digits of mobile phone numbers (refer to Wang et al. 2023) to link responses across all three survey waves. Prior to survey engagement, respondents were presented with standardized disclosures affirming the research tool's exclusive academic purpose, with the completion of the instrument constituting documented agreement to ethical participation protocols. This survey study

employed a three-wave data collection protocol to capture workplace friendship and behavioral outcomes.

During the initial assessment (Wave 1), participants from eight Northern Chinese enterprises provided demographic profiles, the report of workplace friendship, autonomous/controlled relationship motivation perception, and marker variables. The second wave (Wave 2) focused on the assessments of common norms and exchange norms, while the final wave (Wave 3) evaluated two types of (proactive/reactive) helping behaviors. The attrition of participants in different survey stages is caused by occupational demands and time constraints. Wave 1 initiated data collection through web-based assessments among 698 employees, while Wave 2 maintained 670 participants (81.7% retention rate), and Wave 3 concluded with 620 completions (92.5% of the prior wave). After excluding incomplete records and outliers through listwise deletion, the final analytical cohort comprised 615 employees ($M_{age} = 32.72$, $SD = 7.61$; 49.9% female). This progressive attrition pattern maintained an 88.11% net response rate across all phases, aligning with longitudinal study benchmarks for organizational behavior research. To examine the non-response bias, we conducted a comparative analysis of the differences in key variables (workplace friendship, perceived relationship motivation) and demographic characteristics (gender, age, tenure, education) between the responding group ($n = 615$) and the non-responding group ($n = 83$ for participants in T1 but not completed T3). The result of Independent t -tests showed no significant differences between the two groups in workplace friendship ($t = 1.01$, $p = 0.31$), perceived autonomous relationship motivation ($t = 1.64$, $p = 0.10$), perceived controlled relationship motivation ($t = 0.43$, $p = 0.67$), and demographics (age: $t = -0.50$, $p = 0.62$; gender: $t = -1.17$, $p = 0.24$; tenure: $t = 0.96$, $p = 0.34$; education: $t = 0.84$, $p = 0.40$). Thus, there is no risk of non-response bias in this study.

Measures. Existing validated scales were initially developed in English. To ensure conceptual equivalence and measurement validity, we developed Chinese adaptations using Brislin's (1980) standardized translation-back-translation framework, involving independent bilingual translations followed by blind back-translations and expert reconciliation. All measurement items utilized a 7-point Likert response format (1 = strongly disagree; 7 = strongly agree), maintaining consistency with established psychometric practices for cross-cultural research.

Workplace friendship: The assessment of workplace friendship employed a two-dimensional measurement originally developed by Nielsen et al. (2000). This measurement operationalized the construct through six items per dimension, friendship opportunity ("The organizational culture encourages spontaneous dialog and informal peer engagement") and friendship prevalence ("I believe colleagues keeping promises"). Furthermore, this validated measurement approach has demonstrated cross-cultural robustness through replication studies, establishing its applicability to organizational research in Chinese contexts (Wang et al. 2023). (Cronbach's $\alpha = 0.93$).

Perceived relationship motivation: Perceived relationship motivation was assessed through a modified version of the Relative Autonomy Index (20 items), validated by Sheldon et al. (2017). This adaptation maintained cross-cultural validity in Chinese organizational contexts, as evidenced by prior applications (Zhou et al. 2019; Wang et al. 2023). The measurement was slightly rephrased to align with the research focus, exemplified by the core question: "Why do you think your coworkers maintain friendships with you?" Autonomous relationship motivation perception

encompassed three dimensions: Intrinsic motivation ("Colleagues find genuine pleasure in our interactions"), Identified motivation ("My colleagues proactively build connections with me because it reflects their core values"), and Positive introjection ("Through their relationship with me, coworkers gain a stronger sense of professional identity") (Cronbach's $\alpha = 0.89$). Controlled relationship motivation perception included two components: negative introjection ("Coworkers maintain friendships with me partly to avoid potential guilt") and external motivation ("Maintaining bonds with me serves as a safeguard against workplace conflicts") (Cronbach's $\alpha = 0.87$).

Relationship norms: These variables were evaluated using the scale (10-item) originally developed by Lee and Chon (2021), which includes two dimensions: exchange norms (items 1–5) and communal norms (items 6–10). The measurement was linguistically adapted to align with employee-coworker interactions, exemplified by items such as "I help coworkers complete tasks mainly when they've helped me before" ($\alpha = 0.83$) for exchange norms and "I enjoy being friends with colleagues even if they cannot help my work" ($\alpha = 0.87$) for communal norms.

Helping behavior: This set of variables was evaluated through the measurement adapted from Lee et al. (2019), distinguishing proactive helping ("I noticed coworkers' unspoken needs and helped improve their work processes", $\alpha = 0.85$) from reactive helping ("When coworkers formally requested assistance, I would provided step-by-step guidance", $\alpha = 0.87$), each assessed via three items.

Marker variable: Common method variance (CMV) mitigation employed the CFA marker technique, adhering to Lindell and Whitney's (2001) theoretical independence criterion. The marker variable "Tendency toward use online repositories for gaining financial information", validated in consumer behavior research (Hansen 2012), demonstrated adequate construct validity ($\alpha = 0.81$) through three items, including "When making major financial decisions, I systematically compare data from at least three credible sources like central bank reports and audited corporate filings".

Control variables: Control variables, including gender, age, tenure, and education level, were incorporated into the analytical model due to their demonstrated influence on workplace friendship formation and perceived relationship motivation (Morrison 2009). Previous research suggested that females are more discreet than men about viewing relationships with others as friendships. They are more likely to form and maintain friendships under controlled motivation (Wang et al. 2023), which may overestimate the perceived controlled motivation of colleagues. Employees with long tenure may default to friendship as an exchange relationship (Mitchell et al. 2001), thus weakening the boundary effect of motivation. Older workers accumulate more social capital through long-term workplace interactions, making it easier to establish and maintain workplace friendships (Ng & Feldman 2010). They may be more sensitive to controlled motivation (such as benefit exchange) due to strong emotional goals. Prior empirical studies on organizational citizenship behavior (Wang et al. 2023) have commonly employed demographic variables—including gender, age, tenure, and education—as control factors due to their demonstrated influence on workplace relational dynamics. Given their established relevance to both individual social interactions and organizational outcomes, these variables were selected as control factors in the current investigation to mitigate confounding effects.

Table 1 Descriptive statistics and correlations.

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11
1. Gender	1.50	0.50											
2. Age	32.72	7.61	−0.04										
3. Tenure	5.69	8.04	−0.15**	0.71**									
4. Education	3.03	0.69	0.08	−0.17**	−0.14**								
5. Workplace Friendship	4.67	1.03	−0.00	0.12**	0.01	−0.03	(0.93)						
6. Perceived Autonomous Relationship Motivation	4.05	0.94	−0.05	−0.05	−0.07	0.06	0.35**	(0.89)					
7. Perceived Controlled Relationship Motivation	3.27	1.14	−0.01	−0.07	−0.02	−0.03	−0.06	0.03	(0.87)				
8. Communal Norms	4.48	1.07	−0.01	−0.03	−0.07	0.05	0.20**	0.35**	0.02	(0.83)			
9. Exchange Norms	4.09	1.04	−0.13**	−0.01	−0.01	0.00	0.19**	0.36**	0.11**	0.07	(0.87)		
10. Proactive Helping	4.51	1.08	−0.03	−0.05	−0.08	0.02	0.23**	0.29**	0.03	0.68**	0.12**	(0.85)	
11. Reactive Helping	4.21	1.14	−0.09*	−0.01	0.02	0.04	0.16**	0.19**	0.01	0.01	0.24**	0.06	(0.87)

N = 615. For gender, 1 = male; 2 = female. Age and tenure were measured in years. Education was coded as: 1 = high school or below; 2 = practical degree; 3 = bachelor; 4 = master; 5 = PhD. Alpha reliability estimates are reported along the diagonal in parentheses. The Pearson double-tailed test was used for the correlation coefficient matrix.

* $p < 0.05$, ** $p < 0.01$.

Table 2 Model fit results for confirmatory factor analyses.

Model	χ^2	df	χ^2/df	RMSEA	CFI	TLI	SRMR
Baseline model	1953.737	1204	1.623	0.032	0.946	0.942	0.042
Model-C	1918.714	1156	1.660	0.033	0.945	0.940	0.043
Seven-factor model	1760.058	1059	1.662	0.033	0.947	0.944	0.037
Six-factor model	3839.906	1065	3.606	0.065	0.790	0.778	0.091
Five-factor model	5679.496	1070	5.308	0.084	0.652	0.633	0.116
Four-factor model	6847.359	1074	6.376	0.093	0.564	0.542	0.128
Three-factor model	8213.933	1077	7.627	0.104	0.461	0.435	0.135
Two-factor model	8920.223	1079	8.267	0.109	0.407	0.380	0.136
One-factor model	9794.017	1080	9.069	0.115	0.341	0.312	0.140

WF Workplace Friendship, PARM Perceived Autonomous Relationship Motivation, PCRM Perceived Controlled Relationship Motivation, CN Communal Norms, EN Exchange Norms, PH Proactive Helping, RH Reactive Helping.

N = 615. Baseline model (contains marker variable): each of the eight variables was loaded on an independent factor. Model-C: This model was identical to the baseline model but with the addition of factor loadings from the marker construct to each construct item. Seven-factor model: each of the seven variables was loaded on an independent factor. Six-factor model: PARM and PCRM were loaded on the same factor. Five-factor model: WF, PARM, and PCRM were loaded on the same factor. Four-factor model: WF, PARM, PCRM, and CN were loaded on the same factor. Three-factor model: WF, PARM, PCRM, CN, and EN were loaded on the same factor. Two-factor model: WF, PARM, PCRM, CN, EN, and PH were loaded on the same factor. Single-factor model: all seven variables were loaded on the same factor. Best fit model in bold (Baseline model).

Results in Study 1

Table 1 synthesizes the results of Study 1, including descriptive statistics, scale reliabilities, and correlations.

Common method variance. To address common method variance (CMV) concerns, this study implemented a dual-methodological framework combining Harman's single-factor test and confirmatory factor analysis (CFA) marker techniques (Podsakoff et al. 2003; Richardson et al. 2009). As an initial screening, exploratory factor analysis (EFA, Exploratory factor analysis is conducted to check if there is a single factor that explains most of the variance) without rotation revealed a single factor explaining 20.85% of total variance, falling below the 40% threshold commonly linked to significant CMV issues.

To further validate this, a theoretically unrelated marker variable was integrated into structural models to isolate methodological variance (Richardson et al. 2009), and the model comparison shows that CMV is not significant. Consistent with methodological guidelines, correlation analyses demonstrated negligible associations between the marker variable and all latent constructs (all $|r| < 0.3$), effectively ruling out systematic bias (Lindell & Whitney 2001). Comparative model analyses then compared a baseline model ($\chi^2 = 1953.737$, $df = 1204$; $RMSEA = 0.032$; $CFI = 0.946$; $TLI = 0.942$; $SRMR = 0.042$) with an augmented Model-C incorporating method factor loadings ($\chi^2 = 1918.714$, $df = 1156$; $RMSEA = 0.033$; $CFI = 0.945$;

$TLI = 0.940$; $SRMR = 0.043$). Chi-square difference testing ($\Delta\chi^2 = 35.023$, $df = 48$, $p > 0.05$) confirmed nonsignificant variance explained by the latent method factor, reinforcing theoretical model robustness. These converging validations, spanning variance decomposition, correlation thresholds, and model fit comparisons, collectively demonstrate that CMV does not substantively threaten the study's validity.

Validation of measurements. Construct validity verification preceded hypothesis testing through confirmatory factor analyses (CFAs) applied to seven core constructs in our theoretical model. The hypothesized seven-factor model demonstrated excellent model fit ($\chi^2 = 1760.058$, $df = 1059$; $RMSEA = 0.033$; $CFI = 0.947$; $TLI = 0.944$; $SRMR = 0.037$), exhibiting superior fit compared to alternative factor structures (see Table 2). This validation process ensured measurement precision by confirming discriminant validity across all constructs, thereby establishing robust empirical foundations for subsequent hypothesis evaluation.

Test of the conceptual model. We examine Hypotheses 1 and 2 using hierarchical regression analysis in SPSS. Following Cohen et al. (2014), we employed hierarchical multiple regression to examine the interaction effect. Prior to model construction, workplace friendship and two types of perception of relationship motivation were grand-mean-centered. The procedure then

Table 3 Results of hierarchical regression analysis of Communal Norms.

Variables	Communal Norms			
	Model 1		Model 2	
	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>
Workplace Friendship	0.09 (0.04)	2.22*	0.13 (0.04)	3.24**
Perceived Autonomous Relationship Motivation	0.36 (0.05)	7.92**	0.30 (0.05)	6.48**
Workplace Friendship × Perceived Autonomous Relationship Motivation			0.15 (0.02)	6.16**
<i>R</i> ²	0.129		0.180	
ΔR^2	0.13**		0.18**	
<i>F</i>	45.51**		44.81**	

N = 615. The values in the parentheses are standard errors. All continuous variables are centralized before the interaction term is calculated.
***p* < 0.01.

Table 4 Results of hierarchical regression analysis of Exchange Norms.

Variables	Exchange Norms			
	Model 3		Model 4	
	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>
Workplace Friendship	0.20 (0.04)	5.00**	0.19 (0.04)	4.80**
Perceived Controlled Relationship Motivation	0.11 (0.04)	3.14**	0.12 (0.04)	3.31**
Workplace Friendship × Perceived Controlled Relationship Motivation			0.15 (0.03)	4.52**
<i>R</i> ²	0.05		0.08	
ΔR^2	0.05**		0.08**	
<i>F</i>	16.60**		18.23**	

N = 615. The values in the parentheses are standard errors. All continuous variables are centralized before the interaction term is calculated.
***p* < 0.01.

preceded the inclusion of predictor and control variables. Results are presented in Tables 3 and 4, with Beta values representing unstandardized coefficients.

The hierarchical multiple regression manifested in Table 3 (Model 2) demonstrates a pronounced interplay between workplace friendship and perception of autonomous relationship motivation in shaping communal norms ($\beta = 0.15$, $p < 0.01$). Simple slopes analysis further clarified this effect. When colleagues were interpreted as having high autonomous motivation in friendship, workplace friendship had a strong positive effect on communal norms ($\beta = 0.270$, $t = 5.418$, $p < 0.01$). However, this relationship became nonsignificant under low perceived autonomous relationship motivation ($\beta = -0.004$, $t = -0.094$, $p = 0.925$). Thus, Hypothesis 1 was supported. As shown in Fig. 2, when employees perceive that others are motivated by highly autonomous motivation to participate in friendship, such relationships will significantly positively influence community norms.

Model 4 in Table 4 shows a significant positive interaction between workplace friendship and perceived controlled relationship motivation in predicting exchange norms ($\beta = 0.15$, $p < 0.01$). Simple slopes analysis further clarified this effect. When perceived controlled relationship motivation was high, workplace friendship had a strong positive influence on exchange norms ($\beta = 0.360$, $t = 6.797$, $p < 0.01$). However, this relationship became nonsignificant under low perceived controlled relationship motivation ($\beta = 0.019$, $t = 0.344$, $p = 0.731$). Thus, Hypothesis 2 was supported. As schematically illustrated in Fig. 3, when employees perceive others are driven by highly controlled relationship motivation, workplace friendship significantly positively influences exchange norms.

Further, to examine the moderated mediation hypotheses, we conducted the latent structural equation modeling using Mplus. The structural equation model demonstrated acceptable fit indices: RMSEA = 0.099, CFI = 0.871, TLI = 0.776, SRMR = 0.051. While the RMSEA (0.099) and TLI (0.776) fall slightly below conventional thresholds, these values are interpretable given the complexity of our moderated mediation model and the large sample size ($N = 615$), which increases RMSEA's sensitivity to minor misspecifications (Browne & Browne, 1993). Notably, our SRMR meets strict standards (Li-tze, 1999), and the CFI approaches the 0.90 threshold, indicating an acceptable approximate fit.

To further refine the theoretical accuracy of our moderated mediation model, we incorporated an interaction effect between workplace friendship (WF) and perceived autonomous relationship motivation (AMA) on exchange norms (EN), guided by self-determination theory (Ryan & Deci 2017). While the initial model showed a marginally acceptable fit (RMSEA = 0.099, TLI = 0.776), the revised model with the WF × AMA → EN pathway demonstrated substantially improved indices: RMSEA = 0.047 (90% CI: 0.023–0.072), TLI = 0.948, CFI = 0.980, and SRMR = 0.018, all aligning with stringent thresholds (Li-tze, 1999). This adjustment aligns with Clark and Mills' (1993) assertion that communal and exchange norms can coexist dynamically in organizational relationships.

The results of testing the moderated mediation model are shown in Table 5. Bootstrapping results revealed two key indirect effects. Workplace friendship indirectly influenced proactive helping through communal norms under high perceived autonomous relationship motivation ($\beta = 0.146$, $SE = 0.05$, 95% CI = [0.056, 0.306]). Thus, Hypothesis 3 was supported. The indirect effect of workplace friendship on reactive helping via employees' exchange norms was

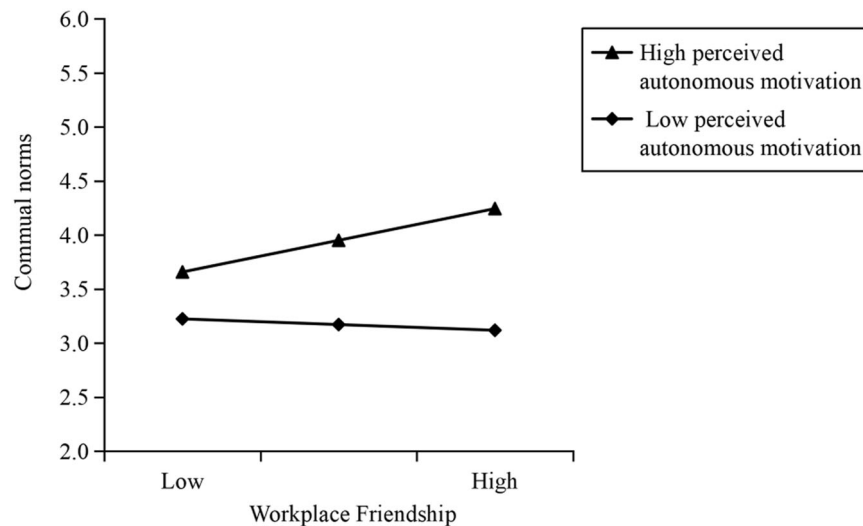


Fig. 2 The moderating role of perceived autonomous relationship motivation on the relationship between workplace friendship and communal norms.

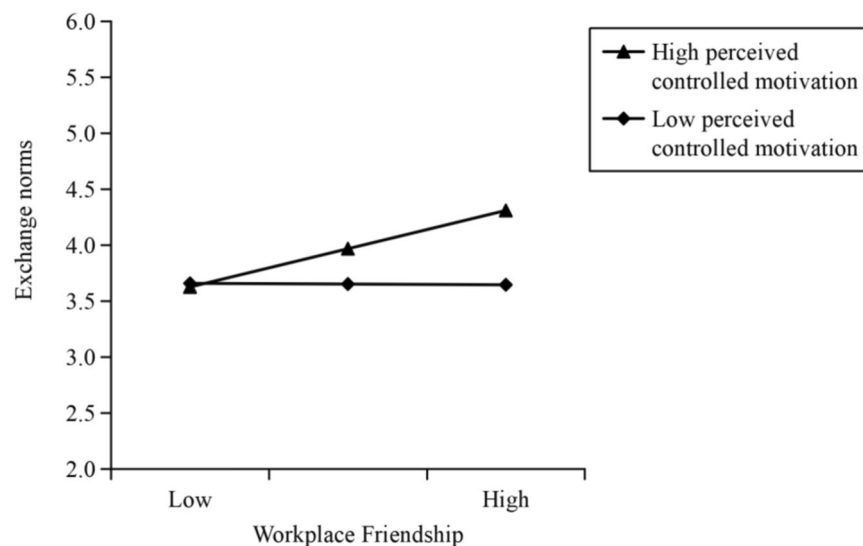


Fig. 3 The moderating role of perceived controlled relationship motivation on the relationship between workplace friendship and exchange norms.

Table 5 Results of moderating mediation effect (Study 1).

Dependent Variable	Mediator	Moderator	Conditional indirect effects			
			B	SE	95% LLCI	95% ULCI
Proactive Helping	Communal Norms	Perceived Autonomous Relationship Motivation	0.146**	0.05	0.056	0.306
Reactive Helping	Exchange Norms	Perceived Controlled Relationship Motivation	0.126**	0.04	0.021	0.128
Reactive Helping	Exchange Norms	Perceived Autonomous Relationship Motivation	0.061**	0.01	0.011	0.042

N = 615. The Bootstrap confidence interval is based on 5000 samples.
 ***p* < 0.01.

significant under high perceived controlled relationship motivation ($\beta = 0.126$, $SE = 0.04$, 95% $CI = [0.021, 0.128]$). Thus, Hypothesis 4 was supported. Additionally, in the revised model, there is another significant indirect effect of workplace friendship on reactive helping via employees' exchange norms when perceived autonomous relationship motivation is high ($\beta = 0.061$, $SE = 0.01$, 95% $CI = [0.011, 0.042]$).

In sum, this study reveals the unique role of autonomous motivation in the evolution of relationship norms. Perceived autonomous relationship motivation not only enhances the generation of common norms by satisfying basic psychological needs (e.g., "Friends should care for each other"), but also redefines the function of exchange norms through cognitive-emotional integration. Specifically, Individual with high

autonomous motivation perception redefines exchange norms not as a “utilitarian reciprocity tool” but as a safeguard mechanism for relationship resilience (e.g., “I reciprocate fairly to sustain mutual respect”) to ensure relational equity. In the case of a good relationship between a team leader and his subordinates, just because they are friends with each other, they must clarify their job responsibilities to avoid a vague division of labor that makes the friendship a burden. In this context, exchange norms are not for the benefit calculation, but to avoid the imbalance of the relationship caused by unilateral payment. This finding echoes the core of RMT that autonomous motivation enables individuals to internalize extrinsic norms as volitional strategies (Ryan & Deci 2017).

Method in Study 2

Participants and design. The experimental design utilized a 2 (Low workplace friendships vs. High workplace friendships) $\times$ 2 (perceived autonomous relationship motivation vs. perceived controlled relationship motivation) factorial between-subjects framework across two studies. Adopting a standardized scenario-based methodology (Greenberg & Eskew 1993), participants were tasked with role-playing within scripted organizational contexts to elicit differential responses toward independent variables while measuring mediator and outcome variables. Guided by theoretical frameworks from prior studies on workplace friendship definitions (Willard & Burger, 2018) and relationship motivation typologies (Dibble et al. 2012; Roberts & Dunbar 2011), we developed context-specific scenario materials to operationalize variable manipulations, with supplementary details provided in Appendices A and B. To enhance ecological validity, the experimental narrative centered on a fictional corporate setting (“ShenCai Fashion Company”), leveraging protagonist “I” and peer “Zhou” relational dynamics to systematically manipulate workplace friendship intensity and relationship motivation orientations.

Prior to experimental implementation, a priori-hoc power analysis was performed to establish methodological parameters, determining a target sample size of 162 participants (effect size = 0.4, statistical power = 0.95). In execution, 214 Chinese workers (62.1% female; Mage = 32.4 years) were systematically recruited via WeChat platforms. To optimize manipulation fidelity, participants were randomly assigned to one of four experimental conditions across two studies. To enhance procedural integrity, we implemented controlled access protocols during participant recruitment, restricting laboratory entry permissions until baseline eligibility criteria were verified. Mandatory self-reporting instruments required candidates to disclose current employment status and prior workplace tenure, systematically excluding student populations and confirming occupational status through documented verification processes.

Procedure. At the beginning of the experimental phase, participants were asked to immerse themselves in the protagonist’s perspective while engaging in a situational narrative that facilitated experiential absorption of workplace friendship and perceived relationship motivational orientations. After role immersion, subjects systematically recorded their views on relationship norms and helping behaviors by recalling their experiences acting as protagonists, effectively operationalizing behavioral outcomes based on narrative engagement. Quality assurance measures include post-experimental operational validation procedures to verify intervention effects, supported by standardized reporting protocols to address ethical concerns and resolve cognitive dissonance. Subsequent to data collection, we

conducted a manipulation check to validate the intervention’s efficacy.

Measures. Communal norms ($\alpha = 0.91$), exchange norms ($\alpha = 0.92$), proactive helping ($\alpha = 0.93$), and reactive helping ($\alpha = 0.86$) were measured through established scales previously employed in Study 1, ensuring procedural continuity. To address methodological limitations identified in the original workplace friendship measurement (Nielsen et al. 2000), we implemented a revised 12-item scale by Dibble et al. (2012) to evaluate relational closeness in workplace settings. This adaptation better operationalized the emotional intimacy dimension of workplace friendships, exemplified by the item “My colleagues and I disclose important personal things to each other” ($\alpha = 0.95$). For perceived relationship motivation assessment, a modified version of Study 1 measurement was utilized, with adjustments to reflect third-party perspectives. The perceived autonomous relationship motivation subscale included items such as “My colleagues initiate friendships with me to experience mutual enjoyment” ($\alpha = 0.96$), while the perceived controlled relationship motivation subscale featured rephrased statements like “My colleagues associate with me due to my capacity to fulfill their social needs” ($\alpha = 0.92$).

Results in Study 2. Descriptive statistics, scale reliabilities, and correlations in Study 2 are presented in Table 6.

Manipulation check. The *t*-test results are as follows: participants in the high workplace friendship condition ($M = 5.19$, $SD = 0.84$) exhibited pronounced differences in the low workplace friendship condition ($M = 3.34$, $SD = 0.56$), $t(212) = 18.53$, $p < 0.001$, *Cohen’s d* = 2.59, indicating successful manipulation of workplace friendship. Similarly, perceived autonomous relationship motivation showed significant variation between perceived controlled relationship motivation condition ($M = 4.99$, $SD = 0.89$) and perceived autonomous relationship motivation condition ($M = 3.06$, $SD = 0.53$), $t(212) = 18.81$, $p < 0.001$, *Cohen’s d* = 2.63, confirming successful manipulation of perceived relationship motivation.

Hypothesis testing. We employed a 2 (workplace friendship) $\times$ 2 (perceived relationship motivation) ANOVA analysis to examine how perceived relationship motivation influences the linkage between workplace friendship and relationship norms. Consistent with theoretical predictions, the moderator effect was significant, $F(1, 210) = 102.497$, $p < 0.001$, $\eta^2 = 0.328$. Simple effects analyses further revealed compared with perceived controlled relationship motivation ($M = 3.40$; $SD = 0.74$), $F(1, 210) = 135.168$, $p < 0.001$, $\eta^2 = 0.392$, the communal norm under perceived autonomous relationship motivation was significantly enhanced ($M = 5.36$; $SD = 0.98$), $F(1, 210) = 135.168$, $p < 0.001$, $\eta^2 = 0.392$, as depicted in Fig. 4. Consequently, Hypothesis 1 was validated.

Furthermore, the analysis confirmed a statistically significant interaction effect between workplace friendship and perceived relationship motivation in predicting exchange norms, $F(1, 210) = 89.353$, $p < 0.001$, $\eta^2 = 0.298$. Subsequent simple slope analysis revealed distinct patterns across motivation types. Employees with perceived controlled relationship motivation exhibited stronger exchange norm ($M = 4.47$, $SD = 1.14$) compared to those with autonomous motivation ($M = 3.34$, $SD = 0.73$), as evidenced by a significant slope difference, $F(1, 204) = 210.530$, $p < 0.001$, $\eta^2 = 0.501$ (visualized in Fig. 5). These systematically demonstrated effects provide empirical validation for Hypothesis 2.

To assess the comprehensive theoretical framework, we conducted a structural equation modeling (SEM) analysis using Mplus software (Muthén & Muthén, 1998). As demonstrated in

Table 6 Descriptive statistics and correlations (Study 2).

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Workplace Friendship	4.35	1.18	(0.95)						
2. Perceived Autonomous Relationship Motivation	4.18	1.29	0.38**	(0.96)					
3. Perceived Controlled Relationship Motivation	4.13	1.20	−0.09	−0.60**	(0.92)				
4. Communal Norms	4.27	1.06	0.35**	0.40**	−0.28**	(0.88)			
5. Exchange Norms	3.98	1.14	0.34**	−0.18**	0.43**	−0.16*	(0.90)		
6. Proactive Helping	4.51	1.46	0.50**	0.69**	−0.52**	0.51**	−0.13	(0.93)	
7. Reactive Helping	4.30	1.09	0.52**	0.02	0.22**	0.02	0.62**	0.07	(0.86)

N = 214; *N* = 99 in the low workplace friendship group; *N* = 115 in the high workplace friendship group. *N* = 95 in the perceived autonomous relationship motivation condition; *N* = 119 in the perceived controlled relationship motivation condition. For the high workplace friendship manipulation, low workplace friendship group = 1; high workplace friendship group = 2; For the perceived relationship motivation manipulation, perceived autonomous relationship motivation condition = 1; perceived controlled relationship motivation condition = 2. Alpha reliability estimates are reported along the diagonal in parentheses.

p* < 0.05, *p* < 0.01.

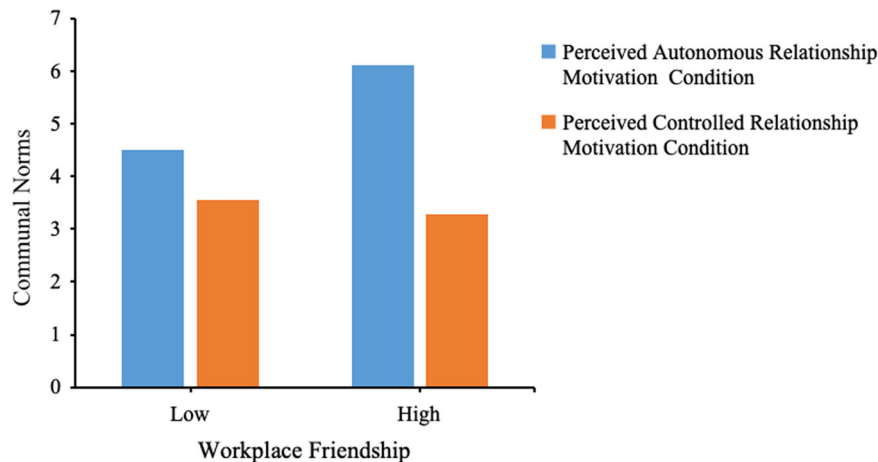
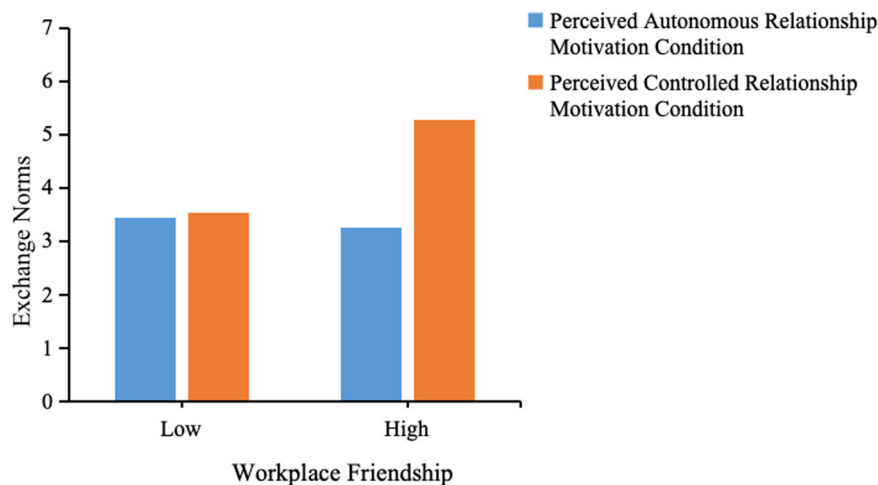
**Fig. 4** Interaction effect of workplace friendship and relationship motivation attribution on communal norms (Study 2).**Fig. 5** Interaction effect of workplace friendship and relationship motivation attribution on exchange norms (Study 2).

Table 7, bootstrapping analysis revealed two significant moderated mediation effects. First, perceived autonomous relationship motivation significantly moderated the indirect relationship between workplace friendship and proactive helping behavior via communal norms, with a standardized coefficient $\beta = 0.137$ ($SE = 0.05$). The 95% confidence interval [0.041, 0.245] confirmed statistical significance by excluding zero. Second, a parallel

moderated mediation effect emerged for perceived controlled relationship motivation in the association between workplace friendship and reactive helping behavior through exchange norms, showing stronger standardized coefficients ($\beta = 0.309$, $SE = 0.05$) and a wider confidence interval [0.187, 0.508] that similarly excluded zero. These statistically robust findings provide empirical support for both Hypothesis 3 and Hypothesis 4.

Table 7 Results of moderating mediation effect (Study 2).

Dependent variable	Mediator	Moderator	Conditional indirect effects			
			B	SE	95% LLCI	95% ULCI
Proactive Helping	Communal Norms	Perceived Autonomous Relationship Motivation	0.137**	0.045	0.041	0.245
Reactive Helping	Exchange Norms	Perceived Controlled Relationship Motivation	0.309**	0.050	0.187	0.509

N = 214. The Bootstrap confidence interval is based on 5000 samples.
 ***p* < 0.01.

General discussion

Findings. Current research on workplace friendship has yet to systematically examine how distinct relationship norms create complexity in these relationships, while also overlooking contextual boundaries that explain their differential impacts. Our research addresses this gap by introducing perceived relationship motivation as a critical lens, demonstrating through empirical evidence that workplace friendships activate divergent relationship norms depending on employees' relationship motivation perceptions, subsequently shaping helping behavior patterns. Through multi-method investigations comprising field research and experimental design, we identified two distinct pathways. Employees perceiving autonomous relationship motivation in workplace friendships developed communal norms, ultimately fostering proactive helping behaviors. Meanwhile, perceiving autonomous relationship motivation in workplace friendships transforms exchange norms from a "benefit exchange tool" to a "relationship resilience safeguard mechanism" through cognitive restructuring, ultimately fostering reactive helping behaviors. This result suggests that autonomous relationship motivation perception gives individuals the ability to flexibly invoke exchange norms in a communal norms-dominated framework. Thereby, it helps to achieve a dynamic balance between emotional commitment and responsibility equity. As the saying goes: "True friends do not shy away from rules - rules go a long way." Conversely, when interpreting others' motivations as controlled, these workplace friendships engendered exchange norms that predominantly facilitated reactive helping responses.

Theoretical implications. Our study contributes to theoretical advancements in workplace friendships, relationship motivation, reciprocal norm frameworks, and helping behavior through four key insights. First, we extend current understandings of the divergent mechanisms through which workplace friendships influence organizational citizenship behaviors. Scholars have extensively examined the complexity of workplace friendships, notably their dual effects that can simultaneously benefit or harm individuals and organizations (Fasbender et al. 2023; Fasbender & Drury 2022; Methot et al. 2016; Wang et al. 2023). Nevertheless, critical limitations persist in clarifying the contextual constraints and underlying causal pathways responsible for these opposing outcomes. Notably, although scholars like Methot et al. (2016) have systematically examined distinct mediating pathways affecting job performance, their theoretical framework insufficiently addresses the situational contingencies governing friendship-driven organizational behaviors. Building upon these foundations, our research introduces a critical moderating factor by proposing that employees' perceptions of their colleagues' relationship motivation fundamentally shape the consequences of workplace friendships. Our findings specifically illuminate how this perceptual motivation filter functions as a pivotal contextual boundary condition, either enhancing or attenuating the differentiated impacts of workplace friendships.

Second, our research extends the application of RMT to workplace relationships. Existing studies mainly focus on exploring romantic partnerships and their consequences (Hadden et al. 2015). By conceptualizing workplace friendships as distinct workplace bonds, we develop a theoretical framework outlining how these relationships shape helping behaviors through RMT mechanisms, thereby broadening the theory's contextual boundaries. This theoretical extension aligns with established findings about how employees' interpretations of coworkers' behavioral motives influence interpersonal evaluations and subsequent actions (Cheung et al. 2014). Building on Ryan and Deci's (2017) evidence regarding human sensitivity to others' volitional versus controlled intentions, our investigation reveals how perceived colleague motivations mediate relationship satisfaction. Crucially, while existing empirical work emphasizes individual-level motivational factors (Wang et al. 2023), our findings advance the field by systematically examining how perceptions of others' relational drives create differential friendship effects.

Third, this study advances the understanding of relationship norms by introducing a novel analytical lens: how workplace friendships shape these norms through perceived relationship motivations. Building on established findings that motivational types influence individuals' prioritization of emotional versus instrumental friendship components, subsequently affecting psychological and behavioral patterns (Wang et al. 2023; Ryan & Deci 2017). Whereas existing scholarship has not systematically addressed how workplace relationships activate specific interpersonal norms under varying perceptions of others' motivations (Wang et al. 2023), we demonstrate the contingent nature of norm adoption based on colleagues' perceived motivational drivers, which addresses a critical gap in prior investigations. Importantly, we provide a dynamic symbiosis model of relationship norms, which reconciles the paradoxical coexistence of communal norms and exchange norms under perceived autonomous relationship motivation in friendship. By integrating RMT with AET, we demonstrate how autonomous relationship motivation cognitively re-positions exchange norms as an extension of communal norms—rather than its antithesis—thereby challenging the traditional communal norms/exchange norms dichotomy. Consequently, our framework yields critical insights into the fundamental characteristics, antecedents, and outcomes of relationship norms in organizational contexts.

Fourth, our research further contributes to helping behavior literature. We provide a novel framework for understanding the causes and mechanisms of different helping behaviors by paying attention to the relationship motivation perspective and then integrating two different social interaction paths (Spitzmuller & Van Dyne 2013). A better understanding of relational antecedents, such as workplace friendships, matters because even when workplace friendships come with benefits for employees, if their perceived relationship motivations for engaging in workplace friendship are different, it can lead to different types of helping behavior. Doing so provides an approach to identifying

different helping behaviors and taking targeted measures to promote proactive helping.

Fourth, our work extends the theoretical understanding of helping behaviors by proposing an integrative framework that links relationship motivations to distinct social interaction pathways (Spitzmuller & Van Dyne 2013). Whereas existing literature emphasizes relational antecedents like workplace friendships, our analysis uniquely demonstrates how variations in perceived motivational drivers underlying these relationships produce divergent assistance patterns. This distinction proves critical given empirical evidence showing that even mutually beneficial workplace friendships, when interpreted through different motivational lenses, systematically predict either proactive or reactive helping tendencies. By synthesizing relationship motivation theory with relationship norms mechanisms, our approach enables precise identification of helping types while offering practical strategies for cultivating targeted prosocial acts. Crucially, this framework moves beyond generic friendship benefits to reveal how motivational interpretations mediate the translation of workplace bonds into specific helping outcomes.

Practical implications. Our findings offer practical guidance across cultural, economic, social, and industrial dimensions by illuminating how perceived motivations in workplace friendships shape organizational outcomes. Specifically, we urge organizations to prioritize employees' relationship motivations when cultivating supportive organizational climates, as these drivers critically shape friendship maintenance patterns. When workplaces detect excessive focus on instrumental purposes in these relationships, they can implement cultural initiatives that emphasize mutual care over transactional exchanges. This shift reduces pressure to sustain friendships solely for utilitarian gains, allowing employees to derive authentic satisfaction from workplace relationships rather than feeling compelled to engage in reciprocal obligations. Consequently, organizations transition from managing surface-level interactions to cultivating environments where meaningful interpersonal connections naturally thrive.

Our findings demonstrate that communal norms driven by autonomous motivation foster proactive helping—a voluntary, anticipatory support behavior (e.g., sharing expertise before problems escalate). These behaviors enhance team efficiency by reducing workflow disruptions and accelerating collective learning through mentorship under communal norms. Critically, our research suggests that the dual role of autonomous relationship perception as both an emotional enhancer and a rule re-configurer enables organizations to transcend the traditional communal norms-exchange norms trade-off. Specifically, when employees internalize exchange norms not as transactional tools but as relational safeguards, teams sustain collaboration efficiency while mitigating risks of over-identification with communal norms (e.g., role overload from excessive helping).

Concurrently, such norms cultivate emotional indebtedness rather than transactional reciprocity, strengthening employees' affective commitment to the organization. This relational stability may reduce burnout-driven turnover. Thus, collectively, our findings suggest that nurturing autonomous motivation-driven workplace friendships can yield dual economic returns: performance promotion from proactive collaboration and cost savings from lowered attrition. More strategically, embedding CN-EN synergies driven by autonomous relationship motives into management practices (e.g., training leaders to develop policy through a relationship sustainability perspective) offers a scalable way to transform transient goodwill into systemic resilience, thereby converting episodic efficiency gains into long-term competitive advantage.

While our empirical focus lies within organizational boundaries, these findings offer a theoretical scaffold to examine how workplace relationships might permeate public attitudes toward work. For instance, organizations that cultivate communal norms through autonomous motivation-driven friendships could inadvertently promote a cultural shift where work is perceived not merely as an economic transaction but as a social ecosystem that values collective thriving. This aligns with emerging societal goals of “human-centered workplaces” that prioritize overall well-being over productivity metrics. While this is beyond the scope of our current empirical validation, we encourage future research to bridge micro-level interactions with macro-level social outcomes.

In the practice of team collaboration optimization in the healthcare industry, our findings will help to solve the problem of decision delay caused by reactive helping in the emergency department. For example, an AI speech analysis system can be used to capture motivational signals, and when a colleague's language is captured as an autonomous motivation signal, a communal norm mechanism will be established to promote cross-post active support. When the colleague's language is captured as the controlled motivation signal, it may trigger the exchange norm mechanism, and then implement the collaborative consensus plan to promote the help behavior. As a result, management can target and implement different response strategies by capturing colleagues' language, which generates differentiated motivational signals.

Limitations and future research directions. The current research has several limitations that offer opportunities for future investigations. Notably, while our survey design relied on employee self-reports to assess helping behaviors, this methodological approach may inadvertently introduce social desirability biases, as participants might overreport proactive assistance to project competence while underreporting reactive helping acts driven by external pressures. To address this constraint, future studies could strengthen validity by incorporating multi-source evaluations, such as peer or supervisory ratings, to triangulate behavioral data and reduce self-presentation distortions. Additionally, this study conducted a random sampling method to collect 615 subjects from eight companies in northern China, which is in line with the purpose of this study and representative in terms of age distribution, gender distribution, and industry distribution. However, although the sample size is sufficient, there are still some limitations. For example, the samples collected in this study are from companies in northern China. Future studies can collect samples from the whole country to further verify the results of this study. Furthermore, we adopted an approach by implementing three distinct temporal intervals for data acquisition. To examine potential common method bias, Harman's single method factor was conducted (Podsakoff et al. 2003). However, the complete elimination of CMB-related threats remains methodologically challenging. Therefore, we encourage future research to consider multi-source or other assessment methods to enhance the robustness of methodological frameworks.

Second, the experimental design presents an additional constraint. Although relational motivations in work settings are inherently contingent upon hierarchical positioning (e.g., supervisor-subordinate vs. peer relationships), critical variables such as status asymmetries, collectivist cultural frameworks, and power distance orientations were not systematically operationalized. This omission may constrain the applicability of findings to contexts with pronounced authority gradients or differing cultural value systems. Because in relationship-oriented China, there are some subtle and ineffable norms in the social process,

which make workplace friendship more complicated, and its consequences become very subtle. Framing workplace friendship through guanxi theory (Chen et al. 2014) reflects both affective bonds and implicit reciprocity in Chinese collectivist contexts, aligning with the “differential mode of association” (Hwang 1987). Future experimental designs could advance this line of inquiry through three targeted manipulations: examining how employees perceive motivations underlying peer-to-peer, vertical (subordinate-supervisor), and cross-hierarchical workplace friendships. By experimentally varying these relationship dynamics, researchers may systematically investigate how status disparities and cultural contexts shape friendship outcomes. Building on this, scholars could further probe whether hierarchical positions within organizations systematically predict divergent relationship motivations. For instance, whether employees calibrate their friendship intentions differently based on colleagues’ relative authority. This dual approach would not only clarify how power differentials influence interpersonal strategies but also deepen understanding of culturally contingent patterns in workplace relationship formation.

In addition, external contextual factors, such as shifts in work arrangements (e.g., remote/hybrid work), may indeed alter the nature of workplace friendships and their behavioral outcomes. Thus, we encourage future research considering the impact of changing work conditions. For instance, when work conditions transition from in-person to remote settings, employees may rely more heavily on exchange norms (e.g., task-oriented reciprocity) due to reduced spontaneous interactions, potentially weakening communal bonds and proactive helping behaviors. Conversely, teams that intentionally foster trust and shared identity in hybrid environments may sustain communal norms, thereby preserving proactive helping. Future research could explicitly examine how such contextual changes moderate the relationship between friendship types (e.g., “task-focused friends” vs. “multiplex friends”) and citizenship behaviors.

A third limitation stems from our exclusive focus on unilateral perceptions of others’ relationship motivations as boundary conditions, without accounting for individuals’ own relationship motives as covariates. Although this approach aligns with our core objective of examining external perceptions rather than self-initiated drivers, the inherently dyadic nature of workplace friendships makes it impossible to provide a comprehensive understanding from a single-actor perspective. This critical oversight may distort inferences about colleagues’ intentions and reduce the accuracy of the findings. Consequently, future studies should adopt dyadic frameworks to investigate motivational congruence between relationship partners. For instance, researchers could examine how divergent motivational pairings (e.g., autonomous-versus-controlled orientations) trigger interpersonal tensions, thereby advancing the understanding of bidirectional processes in workplace friendship dynamics.

A critical limitation concerns the cultural generalizability of our findings. The study was conducted exclusively within Chinese organizational contexts characterized by relationship-oriented norms (e.g., guanxi dynamics rooted in renqing reciprocity and face preservation), high power distance, and collectivist values (Bozionelos & Wang 2007; Park & Luo 2001). These cultural features may fundamentally shape how participants interpret workplace friendships and attribute relational motivations. For instance, hierarchical norms could amplify perceptions of colleagues’ friendship motives as resource-driven (i.e., controlled motivations), while collectivist values might strengthen communal norm adherence. Consequently, the observed dual-path mechanism linking motivation perceptions to helping behaviors may reflect cultural particularities—potentially diverging in individualistic cultures with lower power distance—rather than universal dynamics. Future research must explicitly test cultural

boundary conditions by comparing this model in Western contexts, particularly examining how dimensions like individualism-collectivism moderate these relationships. Cross-cultural validation is essential to disentangle whether effects stem from localized relational logics or broader psychological mechanisms, thereby addressing methodological biases inherent in single-culture designs and strengthening theoretical transferability.

Data availability

No datasets were generated or analyzed during the current study.

Received: 13 November 2024; Accepted: 23 August 2025;

Published online: 29 September 2025

References

- Adams RG, Blieszner R (1994) An integrative conceptual framework for friendship research. *J Soc Pers Relatsh* 11(2):163–184
- Aggarwal P (2004) The effects of brand relationship norms on consumer attitudes and behavior. *J Consum Res* 31:87–101
- Ahmad R, Ishaq MI, Raza A (2023) The blessing or curse of workplace friendship: mediating role of organizational identification and moderating role of political skills. *Int J Hosp Manag* 108:103359
- Alvin W, Gouldner (1960) The Norm of Reciprocity: A Preliminary Statement. *Am Sociol Rev* 25(2):161. <https://doi.org/10.2307/2092623>
- Barbara L, Fredrickson (2001) The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *Am Psychol* 56(3):218–226. <https://doi.org/10.1037/0003-066X.56.3.218>
- Bicchieri C, Xiao E (2009) Do the right thing: but only if others do so. *J Behav Decis Mak* 22(2):191–208
- Blau PM (1964) Exchange and power in social life. New York: John Wiley
- Bolton LE, Mattila AS (2015) How does corporate social responsibility affect consumer response to service failure in buyer–seller relationships? *J Retail* 91(1):140–153
- Bozionelos N, Wang L (2007) An investigation on the attitudes of Chinese workers towards individually based performance-related reward systems. *Int J Hum Resour Manag* 18(2):284–302
- Bridge K, Baxter LA (1992) Blended relationships: friends as work associates. *West J Commun* 56(3):200–225
- Brislin RW (1980) Translation and content analysis of oral and written material. In: Triandis InHC, Berry JW (eds) *Handbook of cross-cultural psychology: methodology*. Allyn & Bacon, Vol. 2, pp 389–444
- Browne MW, Cudeck R (1993) Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models*, pp. 136–161. Newbury Park, CA: Sage
- Chen XP, Eberly MB, Chiang TJ, Farh JL, Cheng BS (2014) Affective trust in Chinese leaders: linking paternalistic leadership to employee performance. *J Manag* 40(3):796–819
- Cheung M, Peng KZ, Wong CS (2014) Supervisor attribution of subordinates’ organizational citizenship behavior motives. *J Manag Psychol* 29(8):922–937
- Chou SY, Stauffer JM (2016) A theoretical classification of helping behavior and helping motives. *Pers Rev* 45(5):871–888
- Clark MS, Mills J (1979) Interpersonal attraction in exchange and communal relationships. *J Pers Soc Psychol* 37(1):12–24
- Clark MS, Mills J (1993) The difference between communal and exchange relationships: what it is and is not. *Pers Soc Psychol Bull* 19(6):684–691
- Clark MS, Mills JR (2012) A theory of communal (and exchange) relationships. In: Van Lange PAM, Kruglanski AW, Higgins ET (eds) *Handbook of theories of social psychology*, Vol. 2. Sage, Thousand Oaks, CA, pp 232–250
- Clark MS, Aragón OR (2013) Communal (and other) relationships: history, theory development, recent findings, and future directions. In: Simpson J, Campbell L (eds) *The Oxford Handbook of close relationships*. Oxford University Press, Oxford, UK, pp 255–280
- Cohen P, West SG, Aiken LS (2014) *Applied multiple regression/correlation analysis for the behavioral sciences*. Psychology Press, New York
- Deci EL, Ryan RM (2000) The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychol Inq* 11(4):227–268
- Deci EL, Ryan RM (2014) Autonomy and need satisfaction in close relationships: relationships motivation theory. In: Weinstein N (eds.) *Human motivation and interpersonal relationships*: Springer, Dordrecht. 53–73
- Dibble JL, Levine TR, Park HS (2012) The Unidimensional Relationship Closeness Scale (URCS): reliability and validity evidence for a new measure of relationship closeness. *Psychol Assess* 24(3):565–572
- Dyne L, Ang S, Botero IC (2003) Conceptualizing employee silence and employee voice as multidimensional constructs. *J Manag Stud* 40(6):1359–1392

- Fasbender U, Drury L (2022) One plus one equals one: age-diverse riendship and its complex relation to employees' job satisfaction and turnover intentions. *Eur J Work Organ Psychol* 31(4):510–523
- Fasbender U, Burmeister A, Wang M (2023) Managing the risks and side effects of workplace friendships: the moderating role of workplace friendship self-efficacy. *J Vocat Behav* 143:103875
- Ferreira N (2019) Enhancing Career Wellbeing: The Role of Workplace Friendship, Career Adaptability and Organisational Commitment. In: Potgieter I, Ferreira N, Coetzee M (eds) *Theory, Res Dynamics Career Wellbeing*. Springer, Cham. pp 197–216
- Gaine GS, La Guardia JG (2009) The unique contributions of motivations to maintain a relationship and motivations toward relational activities to relationship well-being. *Motiv Emot* 33(2):184–202
- Ginka, Martin T, Kilduff N., Anand (2013) Emotion Helping by Managers: An Emergent Understanding of Discrepant Role Expectations and Outcomes. *Acad Manag J* 56(2):334–357. <https://doi.org/10.5465/amj.2010.0512>
- Gore JS, Cross SE, Kanagawa C (2009) Acting in our interests: relational self-construal and goal motivation across cultures. *Motiv Emot* 33(1):75–87
- Greenberg J, Eskew DE (1993) The role of role playing in organizational research. *J Manag* 19(2):221–241
- Hadden BW, Rodriguez LM, Knee CR, Porter B (2015) Relationship autonomy and support provision in romantic relationships. *Motiv Emot* 39(3):359–373
- Hansen T (2012) The moderating influence of broad-scope trust on customer–seller relationships. *Psychol Mark* 29(5):350–364
- Heider F (1958) *The psychology of interpersonal relations*. Lawrence Erlbaum Associates, Hillsdale, NJ
- Helmy I, Adawiyah WR, Setyawati HA (2020) Fostering frontline employees' innovative service behavior: the role of workplace friendship and knowledge sharing process. *Organizacija* 53(3):185–197
- Hobfoll SE (1989) Conservation of resources: a new attempt at conceptualizing stress. *Am Psychol* 44(3):513–524
- Hwang KK (1987) Face and favor: the Chinese power game. *Am J Sociol* 92(4):944–974
- Ingram P, Zou X (2008) Business friendships. *Res Organ Behav* 28:167–184
- Ingram P, Choi Y (2025) How it starts is not how it ends: the role of value homophily in the dynamics of business friendships. *Acad Manag Discov* 11(1):39–60
- Jarim, Minjung K, Sung (2016) The value of public relations: Different impacts of communal and exchange relationships on perceptions and communicative behavior. *J Public Relations Res* 28(2):87–101. <https://doi.org/10.1080/1062726X.2016.1191014>
- Johnson JW, Grimm PE (2010) Communal and exchange relationship perceptions as separate constructs and their role in motivations to donate. *J Consum Psychol* 20(3):282–294
- Jonathon RB, Jean-Pierre H, Neveu Samantha C, Paustian-Underdahl M, Westman (2014) Getting to the “COR”. *J Manag* 40(5):1334–1364. <https://doi.org/10.1177/0149206314527130>
- Khaleel M, Chelliah S, Khalid J, Jamil M, Manzoor F (2016) Employee engagement as an outcome of friendship at workplace: moderating role of job embeddedness. *Int J Acad Res Bus Soc Sci* 6(6):1–6
- Khan MA, Selem KM, Zubair SS, Shoukat MH (2025) Linking coworker friendship with incivility: comparison between headwaiters and servers in family-style restaurants. *Kybernetes* 54(2):705–726
- Lee HW, Bradburn J, Johnson RE, Lin SJ, Chang CD (2019) The benefits of receiving gratitude for helpers: a daily investigation of proactive and reactive helping at work. *J Appl Psychol* 104(2):197–213
- Lee Y (2017) Exploring the impacts of relationship on employees' communicative behaviors during issue periods based on employee position. *Corp Commun* 22(4):542–555
- Lee Y, Chon MG (2021) Transformational leadership and employee communication behaviors: the role of communal and exchange relationship norms. *Leadersh Organ Dev J* 42(1):61–82
- Lindell MK, Whitney DJ (2001) Accounting for common method variance in cross sectional research designs. *J Appl Psychol* 86:114–121
- Li-tze, Hu Peter M, Bentler (1999) Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives *Structural Equation Modeling: A Multidisciplinary Journal* 6(1):1–55. <https://doi.org/10.1080/10705519909540118>
- Macnamara C (2025) The emotion of gratitude and communal relationships. *J Appl Philos* 42(1):96–114
- Methot JR, Melwani S, Rothman NB (2017) The space between us: a social-functional emotions view of ambivalent and indifferent workplace relationships. *J Manag* 43(6):1789–1819
- Methot JR, Lepine JA, Podsako NP, Christian JS (2016) Are workplace friendships a mixed blessing? Exploring tradeoffs of multiplex relationships and their associations with job performance. *Pers Psychol* 69:311–355
- Miller JG, Bland C, Källberg-Shroff M, Tseng CY, Montes-George J, Ryan K, Chakravarthy S (2014) Culture and the role of exchange vs. communal norms in friendship. *J Exp Soc Psychol* 53:79–93
- Mitchell TR, Holtom BC, Lee TW, Sablinski CJ, Erez M (2001) Why people stay: using job embeddedness to predict voluntary turnover. *Acad Manag J* 44(6):1102–1121
- Morrison RL (2009) Are women tending and befriending in the workplace? Gender differences in the relationship between workplace friendships and organizational outcomes. *Sex Roles* 60:1–13
- Morrison RL, Cooper-Thomas HD (2016) Friendship among coworkers. In: *The psychology of friendship*. pp 123–140
- MURPHY CIARAN, Bedford A (2024). What is the nature and impact of workplace friendships within child protection social work? Implications for emotional support, professional learning, job satisfaction and worker well-being. *British J Soc Work*, 1–20. <https://doi.org/10.1093/bjsw/bcae177>
- Muthén LK, Muthén BO (1998) *Mplus: the comprehensive modeling program for applied researchers: user's guide*. Muthén & Muthén. Los Angeles, CA
- Ng TW, Feldman DC (2010) The relationships of age with job attitudes: a meta-analysis. *Pers Psychol* 63(3):677–718
- Nielsen IK, Jex SM, Adams GA (2000) Development and validation of scores on a two-dimensional workplace friendship scale. *Educ Psychol Meas* 60(4):628–643
- Park SH, Luo Y (2001) Guanxi and organizational dynamics: organizational networking in Chinese firms. *Strateg Manag J* 22(5):455–477
- Pearce JL, Wang C (2024) Favoritism in the federal workplace: are rules the solution? *Rev Public Pers Adm* 44(3):516–543
- Pillemer J, Rothbard NP (2018) Friends without benefits: understanding the dark sides of workplace friendship. *Acad Manag Rev* 43(4):635–660
- Podsakoff PM, MacKenzie SB, Lee J-Y, Podsakoff NP (2003) Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J Appl Psychol* 88(5):879–903
- Qian S, Wang J, Shi W (2022) When helping can turn into unethical behavior: depending on helping is proactive or reactive. *Curr Psychol* 41:4860–4870
- Qin X, Chen C, Yam KC, Huang M, Ju D (2020) The double-edged sword of leader humility: investigating when and why leader humility promotes versus inhibits subordinate deviance. *J Appl Psychol* 105(7):693–712
- Rachel L, Sarah ML, (2009) *Wright Friends and Enemies in Organizations* Palgrave Macmillan UK London
- Richardson HA, Simmering MJ, Sturman MC (2009) A tale of three perspectives: examining post hoc statistical techniques for detection and correction of common method variance. *Organ Res Methods* 12(4):762–800
- Roberts SGB, Dunbar RIM (2011) The costs of family and friends: an 18-month longitudinal study of relationship maintenance and decay. *Evol Hum Behav* 32:186–197
- Rodriguez LM, DiBello AM, Wickham R, Hadden BW, Baker ZG, Overup CS (2018) A self-determination theory approach to problematic drinking and intimate partner violence. *Motiv Emot* 42(2):225–235
- Russell, Cropanzano Marie S, Mitchell (2005) Social Exchange Theory: An Interdisciplinary Review. *Journal of Management* 31(6):874–900. <https://doi.org/10.1177/0149206305279602>
- Ryan RM, Deci EL (2017) Relationships motivation theory: the self in close relationships. In: *Self-determination theory: basic psychological needs in motivation, development, and wellness*. Guilford Publications, New York. pp 293–316
- Ryan RM, Deci EL (2019) Brick by brick: the origins, development, and future of self-determination theory. In: *Advances in motivation science*, vol. 6. Elsevier, Amsterdam. pp 111–156
- Seyfarth RM, Cheney DL (2012) The evolutionary origins of friendship. *Annu Rev Psychol* 63(1):153–177
- Shalom H, Schwartz JA, Fleishman (1982) Effects of Negative Personal Norms on Helping Behavior. *Personality and Social Psychology Bulletin* 8(1):81–86. <https://doi.org/10.1177/014616728281013>
- Sheldon KM, Osin EN, Gordeeva TO, Suchkov DD, Sychev OA (2017) Evaluating the dimensionality of self-determination theory's relative autonomy continuum. *Personal Soc Psychol Bull* 43(9):1215–1238
- Shoukat MH, Selem KM, Khan M, Shehata AE (2024) The dark side of co-worker friendship in the restaurant context: roles of gender and promotion focus. *European J Manag Bus Eco*. <https://doi.org/10.1108/ejmb-05-2023-0149>
- Spitzmuller M, Van Dyne L (2013) Proactive and reactive helping: contrasting the positive consequences of different forms of helping. *J Organ Behav* 34(4):560–580
- Spitzmuller M, Van Dyne L, Ilies R (2008) Organizational citizenship behavior: a review and extension of its nomological network. *SAGE Handb Organ Behav* 1:106–123
- Tasdoen H, Kapucu N (2013) Personal perceptions and organizational factors influencing police discretion: evidence from the Turkish National Police. *Int Rev Adm Sci* 79(3):523–543
- Telecan MI, Curseu PL, Rus CL (2024) How many friends at work are too many? The nonlinear association between the number of friends, social support and mental well-being. *Cent Eur Manag J* 32(4):604–617
- Vansteenkiste M, Ryan RM, Soenens B (2020) Basic psychological need theory: advancements, critical themes, and future directions. *Motiv Emot* 44(1):1–31

- Wang N, Zhu J, Dormann C, Song Z, Bakker AB (2020) The daily motivators: positive work events, psychological needs satisfaction, and work engagement. *Appl Psychol* 69(2):508–537
- Wang S, Liu Y, Zhang J, Li S (2023) Why, how and when the double-edged sword of workplace friendship impacts differentiated organizational citizenship behavior: a relationship motivation theory approach. *Curr Psychol* 42:13838–13855
- Wang Y, Lin Q, Zhang S, Chen N (2024) Dynamic relationship between workplace friendship and knowledge-sharing behavior: formation, development and decline. *J Knowl Manag* 28(7):2038–2061
- Weinstein N, DeHaan CR, Ryan RM (2010) Attributing autonomous versus introjected motivation to helpers and the recipient experience: effects on gratitude, attitudes, and well-being. *Motiv Emot* 34(4):418–431
- Weiss HM, Cropanzano R (1996) Affective events theory: a theoretical discussion of the structure, causes, and consequences of affective experiences at work. *Res Organ Behav* 18:1–74
- Willard J, Burger C (2018) Willingness to falsely take blame among friends: closeness, reporting wrongdoing, and identity. *Deviant Behav* 39(8):981–991
- Zhou LH, Ntoumanis N, Thøgersen-Ntoumani C (2019) Effects of perceived autonomy support from social agents on motivation and engagement of Chinese primary school students: psychological need satisfaction as mediator. *Contemp Educ Psychol* 58:323–330

Acknowledgements

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: The research was supported by National Social Science Foundation of China (23BGL163), Social Science Foundation of Shandong Province (23CRKJ01), and the Research Project for High-level Talent Introduction of Shandong Women's University (2023RCYJ06).

Author contributions

Shuai Wang led the theoretical model development, designed the research methodology, secured funding, managed data collection, and drafted the initial manuscript. Guanzhe Jiao conducted statistical analyses, performed theoretical validation of the framework, and contributed to results interpretation. Yun Chen curated and analyzed datasets, created visualizations, and refined the manuscript through critical revisions. Yicheng Li contributed to manuscript editing and final approval.

Competing interests

The authors declare no competing interests.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. The study was approved by the Institutional Review Board of the Shandong Women's University (protocol code SDWUIRB20240011) on January 24, 2024.

Informed consent

In compliance with national regulations and institutional ethical standards, written informed consent was obtained from all participants prior to data collection, commencing on January 31, 2024. Participants received comprehensive written and verbal explanations regarding: (a) Study purpose: Investigation of workplace relationship dynamics and their impact on organizational behaviors; (b) Procedures: Multi-wave surveys or laboratory experiments involving cognitive-behavioral tasks; (c) Voluntary nature: Explicit right to withdraw at any stage without penalty or professional consequence. The process of obtaining informed consent involved the following steps: (a) researchers distributed informed consent forms to participants and explained the content of the forms to them; (b) explicit confirmation: Mandatory checkbox affirmation was required (see Supplement S1: Consent Form Template). The study employed a non-interventional research design using anonymous paper-based questionnaires. Therefore, the informed consent statement included the following elements: (a) anonymity and confidentiality were guaranteed, and no personally identifiable information was collected; (b) the purpose of the study was clearly explained. The study would be used for academic purposes and not for any commercial use; (c) participants were informed that there were no foreseeable risks associated with participation; and (d) all data collected were used for academic research and not employed for any commercial activities.

Additional information

Supplementary information The online version contains supplementary material available at <https://doi.org/10.1057/s41599-025-05836-2>.

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