ORIGINAL RESEARCH

Linkages Between Transformational Leadership, Work Meaningfulness and Work Engagement: A Multilevel Cross-Sectional Study

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Purpose: The issue of employee engagement has increasingly become a focus of concern in public management practice. Based on the theory of purposeful work behavior, integrative theory of employee engagement and Pratt and Ashforth's typology of work meaningfulness, this study proposes and examines the mediating effects of two types of meaningfulness between transformational leadership and work engagement and the moderating effects of transformational leadership on the relationship between two types of meaningfulness and work engagement.

Patients and Methods: By adopting a multilevel cross-sectional design, this study examines assumed mediation and moderation effects. The data collection was conducted anonymously by means of an online survey. A total of 261 local police officers from 32 police stations were recruited in professional training programs as a sample.

Results: The analysis reveals that both meaningfulness in work and meaningfulness at work positively mediate the relationship between transformational leadership and work engagement. Transformational leadership moderates the relationship between meaningfulness at work and work engagement rather than the relationship between meaningfulness in work and work engagement. There are no other significant effects of sex, age or length of service.

Conclusion: Work meaningfulness transmits and combines the effect of transformational leadership to impact work engagement. These findings not only confirm the critical role of work meaningfulness proposed by the theoretical frameworks of the theory of purposeful work behavior, integrative theory of employee engagement and Pratt and Ashforth's typology of work meaningfulness, but also further extend and clarify the role of and difference in two substructures of work meaningfulness (ie, work meaningfulness in work and at work) in the context of the linkage between transformational leadership and work engagement.

Keywords: transformational leadership, meaningfulness in work, meaningfulness at work, work engagement

Introduction

Effective work engagement among employees in the public sector has increasingly become a topic of great concern. The work engagement of employees is a vital concept within the field of positive psychology and plays a critical and fundamental role in the sustainable process of organizational development and change[1–3] because it concerns the focused energy aimed at organizational goals.[4,5] Compared with variables such as job satisfaction and organizational commitment, work engagement is a more robust predictor of positive work outcomes.[6,7] For more than two decades, work engagement has gradually become a forefront area of management research and practice.[8,9] For employees in the public sector, a high degree of engagement could be highly conducive to fostering the quality of public services.[10] However, employees in the public sector are inclined to engage less than those in the private sector.[5,11] Recently, to increase the

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efficiency and effectiveness of performance, management, decisions and reform, research on employee engagement in the public sector has drawn much interest from researchers.[11–13]

Experiencing meaningfulness in the workplace as an important aspect of positive psychology reflects the association between the external context of the workplace and the inner world of the individual,[14,15] and provides intrinsic motivational energy to facilitate employees' choices, performances and developments.[16] On the basis of their typology of work meaningfulness, Pratt and Ashforth (2003) attempted to detect and illustrate relational premises and salient features of experiencing meaningfulness by conceptually distinguishing meaningfulness in work and meaningfulness at work.[17] The theory of purposeful work behavior holds that purposeful strivings can be translated by external social job characteristics (eg, transformational leadership) into inner meaningfulness of work that plays a key role in affecting subsequent work outcomes.[18] The integrative theory of employee engagement proposes that transformational leadership, as a representative social job characteristic, links to both meaningfulness in work and meaningfulness at work, which further influences engagement in the workplace.[19] Based on the above theoretical pathway, previous research detected and confirmed a mediating role in the relationship between transformational leadership and engagement by using the general concept of work meaningfulness[20] or a single substructure of work meaningfulness.[21,22]

Due to its potential to foster positive outcomes in the workplace,[23] transformational leadership is expected to adjust the relationship between meaningfulness and engagement. Consistent with the job demand-resource model,[24] transformational leadership is considered an important job resource to facilitate followers to transcend their own self-interests to achieve team and organization goals.[25,26] In the dual process, on one hand, transformational leaders show individual-focused behavior to develop followers' capabilities for task completion by communicating high expectations and providing intellectual stimulation, personal development and recognition; on the other hand, they show group-focused behavior to strengthen team effectiveness by underlining team identity and communicating a collective vision and team-building strategies.[27] Likewise, previous research has adopted the general meaningfulness of work[28] or a single substructure of meaningfulness on engagement[29] to study the combined effect of transformational leadership and work meaningfulness.

To explore and address the employees' engagement issue in the public sector (eg, police department) in the work course of serving people, the primary interest of this study is on the process and condition mechanism of individual work engagement of police officers. Following the research pathway of positive organizational behavior, the present study aims to simultaneously detect and contrast the mediating effects of two types of meaningfulness between transformational leadership and work engagement and the adjusting effects of transformational leadership on the relationships between the two types of meaningfulness and work engagement in the public sector. Our study makes an important theoretical contribution, where the findings help articulate the underlying mechanism by which transformational leadership and experienced meaningfulness influence the individual work engagement, and it provides a better understanding of how and when police officers become engaged in their work in the context of police management. In addition, this study contributes to increasing the meaningfulness experiences of local police officers and to fostering the transformational leadership ability of their leaders to further improve the personal engagement of local police officers in the policing practice through management.

Theoretical Background and Hypotheses
Work Engagement and Work Meaningfulness

Work engagement is a positive psychological state that is reflected in work roles. Engaged employees tend to cognitively, emotionally and physically project themselves into their work roles[30,31] and to express high levels of willingness, enthusiasm and energy in the process of work to promote positive personal performance and relationships with work and others.[32] In contrast, personal disengagement involves the uncoupling of oneself from work roles through behaviors that tend to result in physical, cognitive, and emotional absence.[30,33] Previous studies have found that work engagement is positively related to crucial organizational factors, such as creativity,[34] low turnover intention,[35] in-role performance,[36,37] and team performance.[38]

The psychological meaning of experience is closely related to work engagement.[39] The work engagement of employees in the public sector can be positively predicted by experienced meaningfulness.[13] Work meaningfulness is the perception of significance and value attached to work.[17,40] Individuals have an intrinsic need to intensify their sense of self-value and personal agency toward work through work meaningfulness.[41,42] A high sense of work meaningfulness is more likely to satisfy the high-level needs of belonging, esteem and self-actualization in Maslow's needs hierarchy.[21] When experiencing meaningfulness, an employee is self-driven to act in ways to find a personally fulfilling and motivating purpose in keeping with his or her values for self-enhancement and belonging.[43] Accordingly, the more meaningful experiences a job provides the better because it fulfills fundamental needs of human being.[44]

Based on insights from the identity theory[45] and the social identity theory,[46] work meaningfulness can be seen as deriving from an employee's job role as well as an employee's membership in an organization.[17,47] Correspondingly, it is theoretically recognized that work meaningfulness can be divided into two categories, namely, meaningfulness in work and meaningfulness at work. Regarding the first category, meaningfulness in work focuses on enriching the work role and task goal and reflects the subjective sense and estimation of "what am I doing?" In Kahn's theory of engagement, meaningfulness is an important psychological condition for the occurrence of engagement. Employees can vary their individual engagement according to their perceptions of meaningfulness.[30] Actually, the psychological condition of meaningfulness proposed by Khan (1990) is akin to the concept of meaningfulness in work.[19] When employees have a high sense of meaning in work, they are more prone to be intrinsically motivated by in-depth feelings to complete their work.

With regard to the second category, meaningfulness at work, indicating perceived organizational membership, reflects the subjective sense and estimation of "where do I belong?" Meaningfulness at work is apt to be facilitated by strengthening the identities of team members through the dynamic social context (eg, transformational leadership).[17] When employees perceive a high sense of meaning at work, they tend to actively participate in work-related activities of the team or organization to which they belong.

Transformational Leadership on Meaningfulness and Engagement

Transformational leadership has gradually become one of the most compelling and influential research concepts in leadership since it was proposed by Burns in 1978.[48] Transformational leaders actively interact with their followers to challenge the status quo and create transformative changes by means of idealized influence, inspirational motivation, intellectual stimulation and individualized consideration.[49,50] In terms of the nature of transformational leadership, it reflects both a behavioral style of a leader who inspires the followers to challenge their own capability and a work context that encourages the followers to go beyond their own self-interest for the goal.[51] As a behavioral style, transformational leadership exhibits a pervasive and enduring set of interpersonal behaviors to influence and motivate the followers to build a vision and confidence and make transformative changes.[52] Moreover, the work context attribute of transformational leadership can be considered a potential boundary condition on the influence of transformational leaders on the followers.[53] In other words, transformational leaders take actions to influence the psychological process and behaviors of followers, which can be promote by the work context of team that they shape.

Substantial evidence shows that transformational leadership plays an important role in a wide range of organizational processes.[55,56] In accordance with the job demands-resources model,[24] transformational leadership, as one of the most important job resources at the interpersonal level, plays an extrinsic motivational role to facilitate achieving work goals.[57] The underlying motivational nature of transformational leadership can lead to high work engagement.[58] When encouraged by transformational leaders, police officers show a high level of personal engagement.[59,60]

Moreover, transformational leadership can foster the experience of meaningfulness in work and meaningfulness at work in an interpersonal environment of work.[21,37] For meaningfulness in work, based on self-determination theory,[61] police officers' experiences of meaningfulness in work aroused by transformational leaders meet their basic psychological needs (ie, competence, autonomy and relatedness),[57,58] which makes them engage to overcome difficulties and challenges and maintain positive interactions in the process of goal execution and task completion. Proper change or success guided by intellectual inspiration and authorization from transformational leaders fosters self-reflection toward specific tasks and further self-directed learning of followers to better perform tasks.[62] For meaningfulness at work, transformational leadership, as an important social resource in the work context, can shift the orientation of followers from self-interest to collective interest[63] and influence the way that employees assign meaning to their jobs.[64] According

to the effort-recovery model,[65] social resources in the work context can facilitate recovery and then dedicate one's capabilities and efforts to work.[58,66] The job demands-control model proposes that social support at work is highly likely to buffer the adverse impact of stress.[67] That is, positive interpersonal relationships between transformational leaders and their followers can lead to a high sense of meaningfulness by means of intensifying followers' valued identity.[68]

Accordingly, to entirely explore and explain the effect of transformational leadership and work meaningfulness on work engagement, both attributes of behavioral style and work context of transformational leadership must be considered. Transformational leadership can play two roles to bolster the relationship between experienced meaningfulness and work engagement by examining the mediating and moderating processes.

Mediating Effect of Work Meaningfulness

Transformational leaders are good at stimulating followers' self-progress in learning, growth, and development during task performance,[50,58] and making them liable to have intense feelings of self-worth and spontaneously become engaged in their work. Moreover, transformational leaders are adept at individual coaching and mentoring to reduce job strain by means of fostering individual consideration and intensifying social identification within a team as a catalyst for high engagement among followers.[69–71] Thus, based on the research pathway above, it can be speculated that work meaningfulness mediates the relationship between transformational leadership and work engagement (see Figure 1).

Hypothesis 1a: Meaningfulness in work positively mediates the relationship between transformational leadership and work engagement.

Hypothesis 1b: Meaningfulness at work positively mediates the relationship between transformational leadership and work engagement.

Moderating Effect of Transformational Leadership

As a typical social resource, transformational leadership is expected to strengthen or weaken the predictive effect of meaningfulness on engagement. Previous studies have shown that social resource plays an active role in the organization process as a moderator.[57,72] Transformational leaders are adept at creating a climate to reframe and share the value and purpose of both tasks and membership,[73] and thus defining and shaping their followers' immediate work environment to enable them to achieve work goals in the team.[74] Specifically, transformational leadership could influence and inspire police officers to perform beyond their perceived capabilities in the process of dealing with numerous and varied cases. In the work context of transformational leadership, employees tend to experience a high sense of value derived from thinking about changes and making progress to engage in and complete a variety of tasks. Moreover, transformational leaders are likely to foster the establishment of a dominant social identification based on common values and
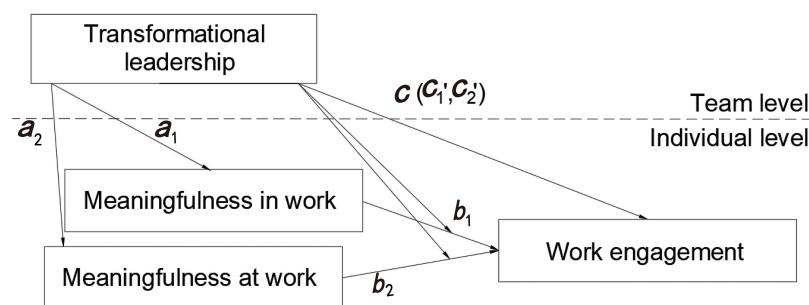

Figure 1 Proposed model of mediation and moderation.
Notes: For the analysis of the mediating effect, the path from leadership to engagement is labeled c. The path from leadership to meaningfulness in work is labeled a_1. The path from meaningfulness in work to engagement is labeled b_1. The path from leadership to engagement via meaningfulness in work is labeled $c_1{}'$. The path from leadership to meaningfulness at work is labeled a_2. The path from meaningfulness at work to engagement is labeled b_2. The path from leadership to engagement via meaningfulness at work is labeled $c_2{}'$.

objectives.[75] When transformational leadership is high, meaningfulness at work affirms one's membership in the organization,[47] which could foster recovery and engagement at work, such as through vigor.[76] Accordingly, transformational leadership is expected to moderate the relationship between work meaningfulness and engagement.

Hypothesis 2a: Transformational leadership moderates the relationship between meaningfulness in work and work engagement such that the relationship is stronger (weaker) when transformational leadership is higher (lower).

Hypothesis 2b: Transformational leadership moderates the relationship between meaningfulness at work and work engagement such that the relationship is stronger (weaker) when transformational leadership is higher (lower).

Materials and Methods
Sample
Police officers in China carry out their work under both strict work regulations and a heavy workload.[77] It is common for them to work overtime to deal with a large amount of routine work, potential social risks and various emergencies and contingencies,[78] such as ensuring the implementation of the home quarantine order during the COVID-19 outbreak period from December 2019 to June 2020 in China and assisting medical workers to prevent the spread of the pandemic.

In the present study, data were gathered from a police college in southeast China. The college currently offers bachelor's degrees in two majors and furnishes in-service, short-term training programs or courses to the police officers. Survey data were collected from police officers who were attending mandatory job training courses in the police college. Following Maas and Hox's suggestion of a minimum acceptable group size of 5 for multilevel modeling,[79] the online survey was distributed to at least 5 police officers from each police station by an instructor of the college. The instructor introduced the purpose of this research project and the method to access the online survey before the participants responded to the questions in various courses of training. In total, 283 police officers voluntarily and anonymously completed the survey items. Eighteen surveys were excluded from the analysis because the participants responded to all items with no variation. Four surveys were dropped because one respondent from one police station finished the survey, probably because of curiosity on this research or misunderstanding of its requirements, so the surveys were not suitable for the multilevel analysis. The final sample contained 261 local police officers (92.2%) from 32 police stations. The number of participants included from each police station was 5–10.

Measurement
Before conducting the formal survey, all measure items were translated into Chinese and back-translated into English repeatedly to express the meaning of the words used. Each item was answered on a 5-point Likert scale ranged from 1 (strongly disagree) to 5 (strongly agree).

Transformational leadership: The style of transformational leadership was assessed by a 7-item short scale of transformational leadership.[82] The internal consistency reliability score was 0.862 (see Table 1). A sample item is "Fosters trust, involvement and cooperation among team members."

Meaningfulness in work: Perceived meaningfulness in work was assessed with 4 items ($\alpha = 0.739$, see Table 1) taken from the scale of psychological meaningfulness.[83] A sample item is "The work I do in this job is worthwhile."

Table 1 Means, Standard Deviations and Correlations

	M	SD	MIW	MAW	ENG	TL
MIW	3.788	0.724	(0.739)			
MAW	4.044	0.676	0.322**	(0.787)		
ENG	3.814	0.691	0.388**	0.424**	(0.719)	
TFL	3.552	0.723	0.474**	0.349**	0.415**	(0.862)

Notes: Internal consistency reliabilities are reported in parentheses along the diagonal. **$p < 0.01$.
Abbreviations: MIW, meaningfulness in work; MAW, meaningfulness at work; ENG, work engagement; TFL, transformational leadership.

Meaningfulness at work: Perceived meaningfulness at work was operationalized with 4 items (α = 0.787). Two items were adopted in a revised form from the comprehensive meaningful work scale.[84] The other two items were adopted in a revised form from the survey of meaningfulness at work.[47] A sample item is "Working in this job gives me a sense of belonging."

Work engagement: Work engagement was assessed using the ultrashort measure for work engagement.[85] The internal consistency reliability score was 0.726. A sample item is "I am enthusiastic about my job."

Analysis Strategy

The data acquired in the present study showed the nested feature that police officers in a given police station shared the same direct leader. A multilevel modeling approach (MLM) was adopted to analyze the mediation (2-1-1) and moderation effects. As shown in Figure 1, transformational leadership at level 2 was expected to predict engagement at level 1 via meaningfulness in work and meaningfulness at work at level 1. Meanwhile, transformational leadership was assumed to adjust the relationship between meaningfulness in work and engagement and the relationship between meaningfulness at work and engagement. The dependence magnitude within a given police station was estimated by calculating the values of intraclass correlation (ICC). Data processing and analyses were conducted using SPSS 22.0 and Mplus 7.4.

Results

Descriptive Statistics and Preliminary Analysis

Descriptive statistics were used for the demographic characteristics, transformational leadership, meaningfulness in work, meaningfulness at work and engagement (see Tables 1 and 2). Specifically, 97.3% were male and 2.7% were female in the sample (see Table 2). The age ranges were 20–30 years (3.1%), 30–40 years (35.6%), 40–50 years (43.3%), and above 50 years (18%). Their lengths of service were 1–5 years (7.7%), 6–10 years (16.5%), 11–20 years (31%), 21–30 years (34.5%), and more than 30 years (10.3%).

The results showed that transformational leadership was positively and significantly correlated with meaningfulness in work (r = 0.474, p < 0.01), meaningfulness at work (r = 0.349, p < 0.01) and engagement (r = 0.415, p < 0.01). Meaningfulness in work was positively and significantly correlated with meaningfulness at work (r = 0.322, p < 0.01) and engagement (r = 0.388, p < 0.01). Meaningfulness at work was positively and significantly correlated with engagement (r = 0.424, p < 0.01).

Before the mediation and moderation analyses, the intraclass correlation was examined. The results showed acceptable convergence within a given police station on meaningfulness in work (ICC = 0.063 > 0.05), meaningfulness at work (ICC = 0.169 > 0.05) and work engagement (ICC = 0.151 > 0.05) (see Table 3). The result of Harman's single

Table 2 Sample Distribution

	Category	Frequency	Percent (%)
Sex	Male	254	97.3
	Female	7	2.7
Age	20–30	8	3.1
	30–40	93	35.6
	40–50	113	43.3
	≥ 50 years	47	18.0
Length of service	1–5	20	7.7
	6–10	43	16.5
	11–20	81	31.0
	21–30	90	34.5
	≥ 30 years	27	10.3
Total		261	100

Table 3 Percentage of Within-Individual Variance and ICC of the Dependent Variables

	Within-Individual Variance	Between-Individual Variance	Percentage of Within-Individual Variance	ICC
Meaningfulness in work	0.489	0.032	93.9%	0.061
Meaningfulness at work	0.379	0.077	83.1%	0.169
Work engagement	0.405	0.072	84.9%	0.151

factor test showed that the first factor accounted for 33.134% (<40%) of the total variance and that the degree of common method variance was acceptable. The confirmatory factor analysis (CFA) with all 4 correlated constructs had an acceptable fit to the data, χ^2/df = 2.336 (≤5), CFI = 0.894 (≥0.9), TLI = 0.869 (≥0.9) and RMSEA = 0.072 (≤0.08).

As shown in Table 4, the composite reliability values of all 4 factors exceeded 0.7. The convergent validity values was very close to 0.5. The square root of each factor's AVE was greater than the correlations with other latent constructs. The results indicate that the construct validity was acceptable.

Analysis of Mediating Effect

The results indicated that meaningfulness in work mediated the relationship between transformational leadership and engagement. As shown in Table 5, transformational leadership was positively associated with engagement (c = 0.86, SE = 0.118, 95% CI [0.628, 1.091], $p < 0.01$). Transformational leadership was positively associated with meaningfulness in work (a_1 = 0.757, SE = 0.092, 95% CI [0.576, 0.938], $p < 0.01$) and engagement (b_1 = 0.206, SE = 0.068, 95% CI [0.073, 0.339], $p < 0.01$). The indirect effect of meaningfulness in work was significant (c_1' = 0.156, SE = 0.055, 95% CI [0.048, 0.264], $p < 0.01$). Meanwhile, meaningfulness at work played a mediating role in the relationship between transformational leadership and engagement. Transformational leadership was positively linked to meaningfulness at work (a_2 = 0.576, SE = 0.159, 95% CI [0.263, 0.888], $p < 0.01$) and positively linked to engagement (b_2 = 0.278, SE = 0.073, 95% CI [0.134, 0.421], $p < 0.01$). The indirect effect of

Table 4 Composite Reliability, Convergent Validity and Discriminant Validity

	CR	AVE	1	2	3	4
1 Transformational leadership	0.865	0.479	0.692			
2 Meaningfulness in work	0.741	0.420	0.587	0.648		
3 Meaningfulness at work	0.789	0.484	0.400	0.437	0.696	
4 Work engagement	0.723	0.466	0.514	0.536	0.542	0.683

Note: The diagonal values are the square root of average variance extracted (AVE).

Table 5 Results of the Mediating Analysis

	MIW		MAW		ENG	
	B	**SE**	**B**	**SE**	**B**	**SE**
Sex	0.156	0.206	−0.194	0.296	0.209	0.176
Age	−0.018	0.106	−0.121	0.066	−0.109	0.073
LOS	−0.033	0.076	0.031	0.047	0.017	0.055
TFL	0.757**(a_1)	0.092	0.576**(a_2)	0.159	0.86**(c)	0.118
MIW					0.206**(b_1)	0.068
MAW					0.278**(b_2)	0.073
TL→MIW→ENG					0.156**(c_1')	0.055
TL→MAW→ENG					0.16** (c_2')	0.058

Note: **$p < 0.01$.
Abbreviations: LOS, length of service; MIW, meaningfulness in work; MAW, meaningfulness at work; ENG, work engagement; TFL, transformational leadership.

Table 6 Results of the Moderating Analysis

	ENG	
	B	**SE**
Sex	0.284	0.149
Age	−0.105	0.067
LOS	0.016	0.053
TL	0.537**	0.113
Effect of TFL on the relationship between MIW and ENG	−0.181	0.16
Effect of TFL on the relationship between MAW and ENG	0.4*	0.176

Note: *$p < 0.05$, **$p < 0.01$.
Abbreviations: LOS, length of service; MIW, meaningfulness in work; MAW, meaningfulness at work; ENG, work engagement; TFL, transformational leadership.

meaningfulness at work was significant ($c_2' = 0.16$, $SE = 0.058$, 95% CI [0.47, 0.273], $p < 0.01$). The predictive effects of sex, age and length of service on engagement were not significant. Hypotheses 1a and 1b were supported.

Analysis of Moderating Effect

As shown in Table 6, the results indicated that transformational leadership did not moderate the relationship between meaningfulness in work and engagement. The adjusted effect of transformational leadership on the relationship between meaningfulness in work and engagement was not confirmed ($B = −0.181$, $SE = 0.16$, 95% CI [−0.495, 0.133], $p > 0.05$). The association between meaningfulness at work and engagement was significantly moderated by transformational leadership ($B = 0.4$, $SE = 0.176$, 95% CI [0.055, 0.745], $p < 0.05$) (see Figure 2). When transformational leadership was high, the predictive effect of meaningfulness at work on engagement was strong. When transformational leadership was low, the predictive effect of meaningfulness at work on engagement was weak. Significant effects of sex, age and length of service were not found. Hypothesis 2b was supported.

Discussion

By adopting a sample of 261 police officers, this study concurrently examines the mediating effect of two types of meaningfulness on the relationship between transformational leadership and work engagement and the moderating effect of transformational leadership on the relationship between two types of meaningfulness and work engagement. The results show that both types of meaningfulness mediate the relationship between transformational leadership and work engagement. Additionally, the results confirm the moderating effect of transformational leadership on the relationship between meaningfulness at work and engagement but not on the relationship between meaningfulness in work and engagement. These findings provide strong support for the critical explanatory role of perceived meaningfulness that transmits and combines the effect of transformational leadership to further impact individual work engagement.

Theoretical Implications

This study contributes to the relevant literature in various ways. First, this study advances our understanding of the dual roles of transformational leadership on work engagement. Previous research highlights and confirms the important effect of transformational leadership as an independent variable in a mediation model or a moderator in combining with work meaningfulness on work engagement,[37,80,81] but the concurrent attributes of transformational leadership were not explicitly mentioned and examined. The present study was designed and implemented to fill this knowledge void in the existing literature. This study has provided empirical evidence to support the dual roles of transformational leadership by drawing on an integrative model of mediation and moderation to better explain how and when police officers engage more in their work. The findings has provided valuable insights into the imperative role of transformational leadership within the research field of engagement behavior of police officers.
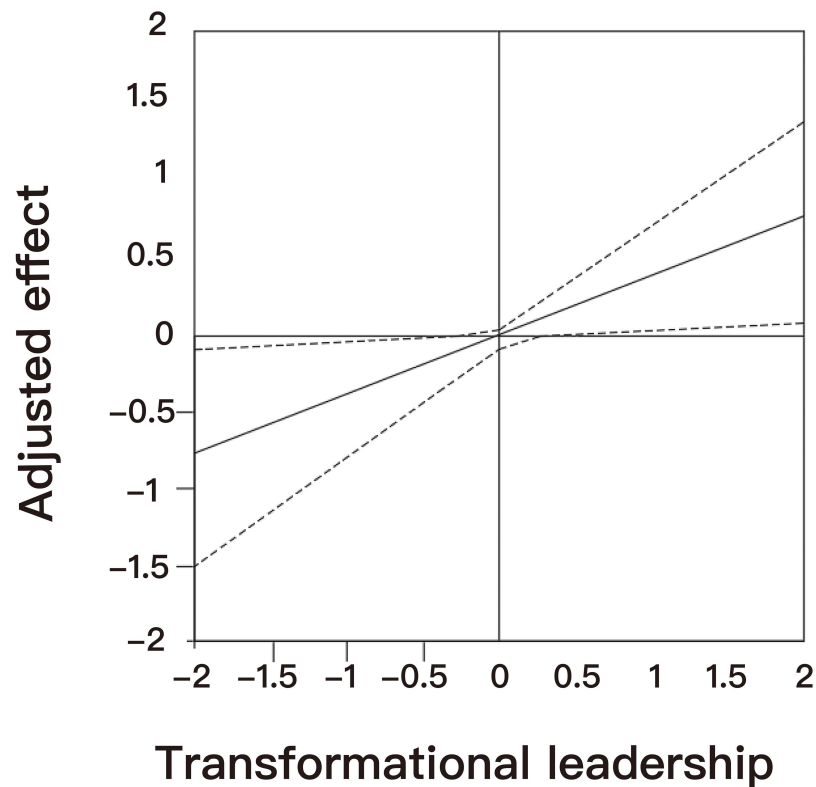
Figure 2 Adjusted effect of transformational leadership on the relationship between meaningfulness at work and work engagement.

Second, this study contributes to deepen the understanding of the dual pathways of two types of meaningfulness. Previous literature revealed the process and boundary mechanism in the linkage between transformational leadership and work engagement by drawing on a single substructure of meaningfulness concept or holistic and undifferentiated concept of meaningfulness.[37,80,81] Different effects of substructures of meaningfulness between transformational leadership and work engagement must be further contrasted and clarified. In the analysis of the mediation model of the present study, the result of approximately equivalent mediating effects of meaningfulness in work and at work has provided in-depth insights into the impact of transformational leadership on work engagement. Dual mediating results are consistent with findings of previous research that takes a single substructure or holistic and undifferentiated of meaningfulness concept as a mediator[21,22] and further refines and deepens the understanding of the almost simultaneous and equivalent effects of task-related and membership-related meaningfulness in one mediation model. That is, the effect of transformational leadership can be transmitted to work engagement from both task-related and membership-related pathways of meaningfulness. Based on the social exchange theory,[54] the behaviors of transformational leaders, such as idealized influence or inspirational motivation for individual growth and meaningfulness stimulation, represent favorable social exchanges in the leader–follower interaction. A high-quality dyadic relationship promotes the sense of self-actualization and team belonging. The transformational leaders who build strong relationships to develop and communicate both meaningfulness in work and at work particularly encourage their work engagement. Thus, it is necessary for police leaders to exert a transformational influence on and enhance the work engagement of followers via the pathways of meaningfulness in work and meaningfulness at work.

Another surprising result from the difference examination of the moderating effect of transformational leadership on both relationships between meaningfulness in work or at work and work engagement is that the effect of meaningfulness at work on the work engagement is more pronounced when transformational leadership is higher. Meaningfulness at work represents an important psychological process that underpins social identification with the team and its members.[47] The transformational context with voluntary and volitional feature is mainly determined by "will-do" factors (eg,

emotion or motivation), which bolster a sense of group belongingness and work meaningfulness to sacrifice their own interests and engage in the work for the collective good.[86] The finding implies that creating a transformational context is a valuable and effectual method to promote the influence of membership-related meaningfulness on work engagement. The unexpected moderating effects are that the impact of meaningfulness at work on work engagement does not depend on transformational leadership. This result occurred possibly because task-related meaningfulness is mainly reflected from "can-do" factors (eg, knowledge, ability or skills),[86] which are less sensitive and more slowly improved and developed than "will-do" factors due to the influence of the transformational context. Moreover, the second possibility is related to the characteristic of the police sample, who is easily motivated by group identity oriented to organizational culture or climate (eg, loyalty) instead of the process of task execution. By contrast, the different performance of meaningfulness in mediation and moderation models is primarily determined by the behavioral and contextual nature of transformational leadership. The work engagement of police officers can be fostered by spiritual and behavioral encourage and actions of role model of transformational leaders through meaningfulness in work, instead of being adjusted in the transformational context. Additionally, this study is mainly developed by integrating three theoretical frameworks: the theory of purposeful work behavior, integrative theory of employee engagement, and Pratt and Ashforth's typology of work meaningfulness. Thus, it deepens and expands previous studies on the process and boundary mechanism of work meaningfulness to understand the link between transformational leadership and work engagement.

Third, the findings contribute to the research domain of work engagement in the context of Chinese police management. Although the linkage of transformational leadership and work engagement has been widely examined, there has been relatively scarce research on the association of the combining effect of dual roles of transformational leadership and dual pathways of work meaningfulness with the work engagement of police officers. Using survey data from a sample of Chinese police officers, this study examines the validity of mediating and moderating effects among these key concepts. This study will help researchers and practitioners focus on the important role and significance of work meaningfulness and conduct further research and exploration on the work engagement of police officers. This topic is particularly vital because the existing literature is almost silent on the comparison of meaningfulness in work and at work for the police sample.

Practical Implications

The current study has two practical implications for both police officers and their leaders. First, our findings inform the ways in which leaders in police stations can intervene in and enhance followers' sense of meaningfulness. Experiencing meaningfulness reflects the intrinsic motivational energy that facilitates the sustainable engagement of followers.[16] It should be seriously taken into account to improve the meaningfulness experiences of police officers via two pathways, namely, task-related meaningfulness in work through strategies such as high expectations communicating, intellectual stimulation and individual development and membership-related meaningfulness at work through strategies such as group vision communicating and team building. Second, the findings of the present study can be applied to update the course content and teaching methods of police leadership training programs. Previous studies have verified that transformational leadership behaviors are trainable.[87] Concerning the specific situations of local police stations, training the ability of police leaders to motivate followers' sense of meaningfulness, especially meaningfulness at work, should be given more attention to foster police officers' work engagement to offer efficient and effective public services.

Limitations and Implications for Future Research

From a theoretical view, this study shows that work meaningfulness is closely connected with transformational leadership and work engagement. Mechanistic research on meaningfulness as a mediator and moderator simultaneously deserves to be examined further in future research on the linkage between transformational leadership and work engagement. Moreover, according to Saks' Integrated Theory of Employee Engagement,[19,41] the original conceptual construct of employee engagement can be divided into two forms: work engagement and organization engagement. The primary interest of this study is the less engagement issue of public-sector employees in the process of serving the people, its mechanism and condition factors that influence the individual work engagement of police officers from the perspective of

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organizational process and positive psychology. It is worthwhile to further study and compare the effects of work engagement and organization engagement in the appropriate aim and context of research.

From a methodological point of view, future research is encouraged to break through the limitation of adopting a cross-sectional design to verify the theoretical model and findings of this study by collecting longitudinal data. From a practical perspective, it is worth further exploring new strategies to improve police officers' work meaningfulness to facilitate the degree of employees' engagement in the public sector.

Data Sharing Statement

The data supporting the findings of this article will be made available by the authors upon reasonable request.

Ethics Statement

This study was conducted in accordance with the Declaration of Helsinki and approved by the Institutional Review Board of Zhejiang Police College. All participants provided informed consent and their data was protected. All participants were anonymous and their data was protected. We declare that all participants in our research study allow us to use their data for academic research and publication.

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