

## RESEARCH ARTICLE

# Does homesickness undermine the potential of job resources? A perspective from the work-home resources model

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### Summary

Rapid economic development in recent decades has resulted in a considerable increase in the number of people working far away from their home locations. Homesickness is a common reaction to the separation from home. Our research uses the work-home resources model to explain how the experience of homesickness can undermine the positive effect of job resources on job performance (i.e., task performance and safety behavior). In addition, we hypothesize that emotional stability and openness are key resources that can buffer the negative interference of homesickness with the job resources-performance relationship. We conducted two studies to test our hypotheses. Study 1 was a two-wave longitudinal study using a migrant manufacturing worker sample. In this study, homesickness was measured at the between-person level, and performance was measured three months later. Study 2 was a daily diary study conducted in a military trainee sample. In this study, homesickness was measured at the within-person level to capture its fluctuations over 20 days, and daily job performance was assessed using supervisor ratings. Both studies showed evidence of the hypothesized moderating effect of homesickness and three-way interaction effects of job resources, homesickness, and key resources (i.e., emotional stability and openness) on task performance and safety behavior.

### KEYWORDS

homesickness, safety behavior, task performance, work-home resources model

## 1 | INTRODUCTION

The changing economic conditions of the past few decades have created an enormous growth in the number of people working far away from their home locations, whether in their own countries or abroad. According to the United Nations (2013), more than 232 million people, or 3.2% of the world population, live outside their country of origin to pursue career developments (Greenhaus & Kossek, 2014). Organizations use high-performance work practices, such as training, participation in decision making, and optimized working conditions (Combs, Liu, Hall, & Ketchen, 2006), to improve the work experiences and performance of those who work far away from home. Most studies of migrants or expatriates have focused on factors in the external environment, such as job characteristics, social support networks, spouse or family adjustment, and confrontation with new cultures that may interfere with work processes (see Kraimer, Bolino, & Mead, 2016, for review). However, little attention has been paid to the internal processes that may hinder employees' job performance,

such as their psychological well-being and personal needs (Kraimer et al., 2016).

Homesickness is a frequently occurring phenomenon associated with relocation, which is an indicator of the psychological well-being of people who make geographic moves (Van Tilburg, 2007). When people leave their home environments, they commonly generate ruminative thoughts about home, accompanied by negative emotions and even somatic symptoms (Eurelings-Bontekoe, Vingerhoets, & Fontijn, 1994). According to the work-home resources model (ten Brummelhuis & Bakker, 2012), the use of personal resources (e.g., concentration, mood, and energy) for issues in one domain depletes these resources, making them unavailable for people to function optimally in the other domain. Ruminating about home and experiencing negative feelings during work may consume employees' attentional, emotional, and energetic resources, thereby preventing these resources from being fully allocated to effortful tasks. This, in turn, may attenuate the effective use of available contextual resources and ultimately undermine job performance (Beal, Weiss,

Barros, & MacDermid, 2005). In this research, we examine whether homesickness may undermine the relationship between job resources and performance. We adopt both between- and within-person perspectives to examine the long-term time-lagged effect and the short-term daily effect, respectively, of the interference of homesickness with the work domain. By conducting one study with a longitudinal design among migrant workers and another with a daily diary design among military trainees who work far away from their homes, we strengthen the generalizability and the robustness of our research.

The work-home resources model also proposes that key resources are conditional factors that prevent and attenuate the negative impact of the home domain on the work domain (ten Brummelhuis & Bakker, 2012). Key resources are stable management resources that facilitate the selection, alteration, and implementation of other resources (Hobfoll, 2002; Thoits, 1994). They represent stable personality traits that enable individuals to cope effectively with stressful situations (e.g., leaving home and adapting to new conditions) and to optimally use their contextual resources (e.g., feedback and help from others; Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014). Empirical evidence suggests that emotional stability and openness play a vital role in expatriates' ability to tolerate stress and deal effectively with their relocation to a new environment (Lazarova, Westman, & Shaffer, 2010; Shaffer, Harrison, Gregersen, Black, & Ferzandi, 2006). Therefore, in line with the work-home resources model, we explore the buffering role of key resources (i.e., trait emotional stability and trait openness) when individuals have to deal with the interference of homesickness with their work processes.

Our research aims to contribute to the literature in the following ways. First, our research investigates the interference of homesickness with the work domain. Instead of simply using work outcomes to represent the work domain and investigating the direct effect of homesickness on these work outcomes, we investigate how homesickness may influence the job resources-job performance relationship. That is, we use the moderating effect of homesickness on the job resources-performance relationship to operationalize the interference of the home domain with the work domain. Moreover, we use the work-home resources model to provide insight into how homesickness may undermine the relationship between job resources and performance, which contributes to the literatures on homesickness and the home-work interface more generally. Second, our research takes both between-person and dynamic within-person perspectives to examine the interference of homesickness with the job resources-performance relationship. In addition, we collected multisource data and used supervisor-rated task performance and safety behavior as outcome variables to provide a more complete picture of work outcomes that may be affected by homesickness. Third, our research provides empirical support for the functions of key resources in the recently proposed work-home resources model (ten Brummelhuis & Bakker, 2012). By examining the three-way interaction effects of emotional stability and openness with job resources and homesickness on job performance, our research reveals the role of key resources in how people deal with the interference of homesickness with the work process.

## 2 | THEORETICAL BACKGROUND

### 2.1 | The impact of homesickness

Homesickness is a reaction to leaving one's home, characterized by ruminative thoughts about home, including missing family and friends, accompanied by negative emotions and even somatic symptoms such as feeling lonely and uncomfortable in the new environment (Eurelings-Bontekoe et al., 1994). Studies have shown that employees who work far away from home are more likely to develop loneliness and strain induced by the separation from home. Leaving a familiar environment and resettling somewhere else can be a stressful event, and coping with stressful circumstances requires both resource allocation and investment (Hobfoll, 2002). For example, for individuals who work away from home, it is difficult to maintain friendships with those at home, which consumes considerable physiological and/or psychological resources (Shaffer, Kraimer, Chen, & Bolino, 2012). Homesickness is an indicator of the psychological well-being of people who leave home and is known to be associated with a variety of both psychological and physical complaints that can lead to a reduced capacity of using resources effectively (Greenberg, Stiglin, Finkelstein, & Berndt, 1993). The work-home resources model (ten Brummelhuis & Bakker, 2012) suggests that once an individual's personal resources are allocated to or have been used for one domain (home), they will not be available for the individual to fully use contextual resources or to deal with situations in the other domain (work). This model explains the underlying process of how homesickness can interfere with the work domain.

Instead of simply using work outcomes to represent the work domain, we try to capture the process of work, which is represented by the well-established relationship between job resources and performance (Bakker, Demerouti, & Sanz-Vergel, 2014). We examine specific contextual resources in the workplace (feedback and social support) and specific indicators of performance (task performance and safety behavior) to investigate how homesickness may interfere with the resources-performance relationship. As Saks and Ashforth (1997) noted, information is critical for newcomers—in particular, information provided by superiors and peers can help newcomers better adapt to a new environment. Moreover, feedback fosters learning, thereby increasing job competence and improving performance. Social support satisfies the need to belong, and receiving help from others during task accomplishment can also improve one's performance (Schaufeli & Bakker, 2004). In addition to task performance, safety is always a major concern for organizations, as it is a source of substantial direct and indirect costs (Neal & Griffin, 2006). Our samples consist of manufacturing workers (Study 1) and military driving trainees (Study 2). In these contexts, safety behavior is salient and essential, even on a daily basis. Compared with employees in various other occupations, it is more important for these employees to obey safety procedures because the consequences of safety problems can be severe. To capture the particularity of the settings, we examine both task performance and safety behavior as indicators of performance.

Employees' performance depends on not only the amount of available contextual resources in the workplace but also whether the employees are able to allocate those resources to the task at hand

(Beal et al., 2005). In line with the work-home resources model (ten Brummelhuis & Bakker, 2012), homesickness may consume physical or mental energy, leaving insufficient personal resources to effectively use the available contextual resources in the work domain and thus threatening job performance. People who work far away from home without being accompanied by family members commonly generate ruminative thoughts about home and have a strong desire to return home (Eurelings-Bontekoe et al., 1994). These persisting thoughts may consume their attention and cognitive resources, attenuating the use of contextual resources in the workplace, such as dealing with supervisor feedback, which may result in diminished performance at work (Demerouti, Taris, & Bakker, 2007; Nohe, Michel, & Sonntag, 2014). In addition, homesick employees are more likely to experience negative feelings and even physical illness (Van Tilburg, 2007). Therefore, they tend to see the negative aspects of their work and interpret supervisor feedback as problematic rather than helpful (Waston & Pennebaker, 1989), as well as lack the physical energy to fully participate in the work activities (Popleton, Briner, & Kiefer, 2008). Norris and Kaniasty (1996) also found that people who experience homesickness are more likely to use social support for purposes other than work—namely, to offset their (home-related) strain. This finding suggests that homesickness undermines the effective use of social resources for the work domain, which may prevent employees from benefiting from social support and impair their performance. Thus, we make the following hypotheses:

**Hypothesis 1a.** *Homesickness moderates the job resources–task performance relationship. The positive relationship between job resources and task performance is weaker for people with high (vs. low) levels of homesickness.*

**Hypothesis 1b.** *Homesickness moderates the job resources–safety behavior relationship. The positive relationship between job resources and safety behavior is weaker for people with high (vs. low) levels of homesickness.*

## 2.2 | The role of emotional stability and openness

According to the work-home resources model, key resources are stable management resources that facilitate the selection, alteration, and implementation of other resources (Thoits, 1994). Therefore, key resources may prevent and attenuate interference between the home and work domains (ten Brummelhuis & Bakker, 2012). Conceptually, key resources are more stable and more inherent to a person than other transferrable personal resources. They represent stable personality traits that enable individuals to cope with stressful situations and use other resources more effectively (Halbesleben et al., 2014). The role of key resources provides an explanation for why some people are better than others in coping with homesickness and in using their job resources. We focus on emotional stability and openness as key resources, as they are particularly relevant to new-environment adaptation. Shaffer et al. (2006) found that emotional stability and openness are the only two significant predictors of expatriates' work adjustment. For employees who are separated from their family and

work away from home, emotional stability and openness to experience may be crucial to adjusting to the new environment.

Emotional stability reflects the tendency to be confident, secure, and steady (Judge & Bono, 2001). Research has found that individuals who are emotionally stable are less vulnerable to the negative impact of homesickness (Eurelings-Bontekoe, Tolsma, Verschuur, & Vingerhoets, 1996). In addition, emotional stability is negatively related to home-work interference (Bruck & Allen, 2003) and buffers the negative effects of home-work interference on the work domain (Kinnunen, Vermulst, Gerris, & Mäkikangas, 2003). Therefore, emotionally stable employees may be less likely to be affected by homesickness during work. Furthermore, emotional stability is positively related to proactive behavior and personal initiative (Thomas, Whitman, & Viswesvaran, 2010), suggesting that individuals who are high in emotional stability are more likely to better use their job resources. Thus, people with high (vs. low) emotional stability are better able to manage their resources and to cope with the interference of homesickness with the work domain.

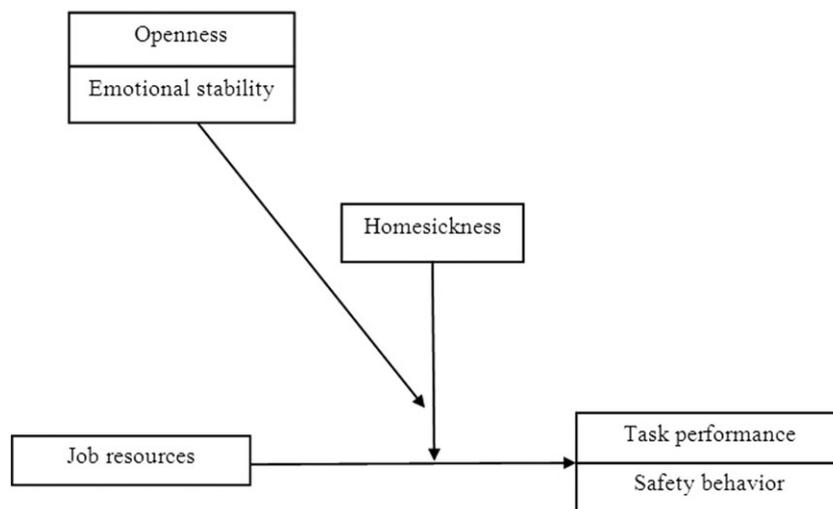
Openness reflects the tendency to be imaginative, sensitive to art and beauty, emotionally differentiated, behaviorally flexible, intellectually curious, and liberal in values (McCrae & Sutin, 2009). Open individuals are verbally fluent, humorous, and expressive in interpersonal interactions (Sneed, McCrae, & Funder, 1998), and this may help them build relationships with others and adapt to a new environment easily (LePine, Colquitt, & Erez, 2000). Empirical evidence has shown that openness to experience attenuates the negative impact of homesickness (Van Heck et al., 2007). Moreover, open individuals have a positive attitude toward learning experiences, which can be particularly useful in a resourceful environment that provides constructive feedback (Bakker, Sanz-Vergel, & Kuntze, 2015). Individuals high in openness are more proactive (Thomas et al., 2010) and more responsive to performance feedback from their supervisors and peers (Krasman, 2010). Therefore, people with high openness are able to make full use of available resources and are less likely to be influenced by homesickness.

With the work-home resources model and previous findings, emotional stability and openness can be conceptualized as key resources that can buffer the negative interference of homesickness with resources–performance process, as people who are emotionally stable and open to new experiences are able to fully use the available resources in their work environments to prevent decreases in performance. Thus, we formulate the following hypotheses:

**Hypothesis 2.** *Job resources have stronger positive relationships with (a) task performance and (b) safety behavior for individuals who are high (vs. low) in emotional stability and low (vs. high) in homesickness.*

**Hypothesis 3.** *Job resources have stronger positive relationships with (a) task performance and (b) safety behavior for individuals who are high (vs. low) in openness and low (vs. high) in homesickness.*

The proposed model is shown in Figure 1. To test our hypotheses, we conducted two studies. In Study 1, we used a between-person perspective with a two-wave longitudinal design to examine whether



**FIGURE 1** Proposed research model

homesickness would interfere with the work process and the moderating role of emotional stability and openness in a manufacturing migrant worker sample. In Study 2, we tried to capture the potential day-to-day fluctuations of homesickness and attempted to replicate our results using a four-week daily diary study design with supervisor ratings of performance in a military trainee sample. Our research answered the recent calls for more replication studies with diverse research designs in organizational research (e.g., Wright & Sweeney, 2016). We used two samples with different research designs and multisource data, which enabled a robust test of the hypothesized model and allowed us to cross-validate our findings.

### 3 | STUDY 1

#### 3.1 | Method

##### 3.1.1 | Participants and procedure

We conducted a two-wave survey in a Chinese manufacturing company in a southern coastal city. Our sample consisted of blue-collar workers who were mostly migrant peasant workers. They had left their parents and even their wives and children in their hometowns and come to work in the city to financially support their families. Before the participants registered for the survey, the researcher explained the purpose of the project and asked them for their consent to participate. All of the participants were assured that their responses would remain confidential and that they had the right to withdraw from the study at any time. With the help of research assistants, we distributed 700 questionnaires at Time 1 (T1) and collected 581 valid responses (response rate of 83%). In this survey, we assessed the participants' job resources, homesickness, key resources (openness and emotional stability), and demographic variables. Three months later at Time 2 (T2), we conducted the second survey study. In this survey, the participants reported their task performance and safety behavior. The participants received a gift of RMB10 (about \$1.50) after completing both surveys. In the end, the final matched sample size consisted of 422 employees with a match rate of 72.6%. The average age of the

participants was 35.19 years ( $SD = 7.46$ ), the average tenure was 39.71 months ( $SD = 38.39$ ), and the average weekly work hours were 59.36 ( $SD = 7.69$ ); 76.5% of the participants were male, 79.8% were married, and 72.7% were nonmanagement workers.

##### 3.1.2 | Measures

All of the items were formulated in Chinese. A back-to-back translation procedure (Brislin, 1980) was performed to translate the scales from English to Chinese.

##### Job resources

We measured job resources using six items ( $\alpha = .71$ ) with three items assessing feedback and three items assessing social support. The participants provided their responses on 5-point Likert scales; the response format for all of the items was 1 = *Never*, 2 = *Sometimes*, 3 = *Regularly*, 4 = *Often*, and 5 = *Very often*. The feedback scale was developed by Karasek (1985). An example item is "I receive sufficient information about the results of my work." The social support scale was developed by Van Veldhoven, de Jonge, Broersen, Kompier, and Meijman (2002). An example item is "If necessary, I can ask my colleagues for help." To test whether feedback and social support acted as indicators of one latent "job resources" factor, we compared a first-order model, in which feedback and social support were represented as independent constructs, with a second-order model. The results showed that the second-order model fit the data well ( $\chi^2(7) = 22.32, p < .01, CFI = .96, SRMR = .04, RMSEA = .07$ ) and better than the first-order model ( $\Delta\chi^2(1) = 8.08, p < .01$ ), supporting the representation of feedback and social support as one general latent factor.

##### Homesickness

We measured homesickness using 20 items ( $\alpha = .88$ ) from the Utrecht Homesickness Scale (Stroebe, van Vliet, Hewstone, & Willis, 2002) and assessed the extent to which the employees experienced homesickness in the current month (1 = *Never*, 5 = *Very often*). The items reflected five underlying dimensions assessed with four items each: missing family (e.g., "Missing home"), loneliness (e.g., "Feeling lonely"),

missing friends (e.g., “Missing my friends”), adjustment difficulties (e.g., “Feeling uncomfortable here”), and ruminations about home (e.g., “Continuously having thoughts about home”).

### Emotional stability

Trait emotional stability was measured with six items ( $\alpha = .79$ ) from Judge, Rodell, Klinger, Simon, and Crawford (2013). Example items are “I am anxious” (reverse scored) and “I am impulsive” (reverse scored). These items were rated from 1 (*I fully disagree*) to 7 (*I fully agree*).

### Openness

The scale used to measure the trait openness to experience also consisted of six items ( $\alpha = .72$ ) from Judge et al. (2013). Example items are “I am interested in many different things” and “I have an active imagination” (1 = *I fully disagree*, 7 = *I fully agree*).

### Task performance

We measured task performance using three items ( $\alpha = .76$ ) from the scale developed by Goodman and Svyantek (1999). An example item is “I meet all the requirements of my position” (1 = *I fully disagree*, 5 = *I fully agree*).

### Safety behavior

Employees reported their safety behavior using a six-item scale ( $\alpha = .75$ ) developed by Griffin and Neal (2000). There were two dimensions: safety compliance (e.g., “I use the correct safety procedures for carrying out my job”) and safety participation (e.g., “I voluntarily carry out tasks or activities that help to improve workplace safety”). These items were rated from 1 (*I fully disagree*) to 5 (*I fully agree*).

### Job demands

We used job demands as a control variable when predicting performance, because job demands are, besides job resources, another important category of work characteristics (Bakker et al., 2014). By controlling for job demands, we could isolate the unique effects of job resources. We used the three-item workload scale ( $\alpha = .79$ ) developed by Peterson et al. (1995) that focused on the quantitative demands of the job. An example item is “I have too much work to do” (1 = *Never*, 5 = *Very often*).

Finally, we included age, gender, marriage, hometown distance (1 = *Within same province*, 2 = *In nearby provinces*, 3 = *In middle region of China*, 4 = *In Northern China*), and the frequency of contact with the family (1 = *Very rarely*, 5 = *Very frequently*) as control variables, as they have been shown to be associated with the perception of homesickness (Stroebe et al., 2002). We used the frequency of contact with the family to represent the attachment to the family. The more frequently individuals have contact with their families, the more psychological distance they experience from their present work situation. Therefore, they may have more difficulties adapting to a new environment (Hendrickson, Rosen, & Aune, 2011). We also included tenure (month), position, and weekly work hours as control variables, as they affect perceived job demands, job resources, and job performance (Lu, Du, Xu, & Zhang, 2017).

## 3.2 | Results

Table 1 presents the means, standard deviations, and correlations of all of the variables. The results of a confirmatory factor analysis using Mplus 7 (Muthén & Muthén, 2010) showed that the hypothesized six-factor model (job resources, homesickness, emotional stability, openness, task performance, and safety behavior) provided a good fit for the data ( $\chi^2(213) = 380.13, p < .01, CFI = .94, SRMR = .05, RMSEA = .04$ ). This indicates the factorial validity of the measures. An alternative five-factor model was specified by allowing the items of task performance and safety behavior to load on the same latent “general job performance” factor. This model fit significantly worse to the data than the six-factor model ( $\Delta\chi^2(3) = 144.13, p < .001$ ), which supports the empirical distinction between task performance and safety behavior.

A series of hierarchical regression analyses were conducted to test our hypotheses. To avoid multicollinearity between the predictors and interaction terms, we first centered the predictor variables and then multiplied them to form the interaction terms (Cohen, Cohen, West, & Aiken, 2003). We first entered the control variables and then T1 job resources, T1 homesickness, and the T1 job resources  $\times$  T1 homesickness interaction term. Next, we entered the key resources (i.e., emotional stability and openness) and the two-way interaction terms of T1 job resources  $\times$  key resources and T1 homesickness  $\times$  Key resources. Finally, we entered the three-way interaction terms of T1 job resources  $\times$  T1 homesickness  $\times$  emotional stability and T1 job resources  $\times$  T1 homesickness  $\times$  openness.

To test Hypothesis 1, we examined the interaction effect of T1 job resources and T1 homesickness on (a) T2 task performance and (b) T2 safety behavior. As indicated by Step 3 in Table 2, the interactions effect of T1 job resources and T1 homesickness was only marginally significant for T2 task performance ( $\beta = -.09, p < .10$ ) and significant for T2 safety behavior ( $\beta = -.10, p < .05$ ). Thus, Hypothesis 1a was partially supported, and Hypothesis 1b was supported. Following Aiken and West (1991), we conducted simple slope tests and plotted moderation effects. The relationship between T1 job resources and T2 task performance was attenuated when T1 homesickness was high (1 *SD* above the mean; this plot is available upon request from the first author; the pattern is similar to Figure 2). The slope difference test shows significant difference ( $t = 2.88, p < .01$ ) between the slopes of the T1 job resources–T2 task performance relationship under high ( $b = .11, p < .05$ ) versus low ( $b = .24, p < .001$ ) levels of T1 homesickness. In addition, Figure 2 shows that for employees who were high in T1 homesickness, the T1 job resources–T2 safety behavior relationship was not significant ( $b = .08, ns$ ). In contrast, for employees who were low in T1 homesickness, T1 job resources were positively related to T2 safety behavior ( $b = .20, p < .01$ ). These results indicate that homesickness weakened the positive relationships between job resources and (a) task performance and (b) safety behavior.

To test Hypothesis 2, we examined the three-way interaction effect of trait emotional stability, T1 job resources, and T1 homesickness on (a) T2 task performance and (b) T2 safety behavior. As indicated by Step 6 of Table 2, the three-way interaction between T1 job resources, T1 homesickness, and trait emotional stability was significant for both T2 task performance ( $\beta = -.12, p < .05$ ) and T2 safety behavior ( $\beta = -.15, p < .05$ ). We conducted simple slope tests and

**TABLE 1** Descriptive statistics and correlations among variables (N = 422), Study 1

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Age	35.19	7.46	—														
2 Gender	1.23	.42	.02	—													
3 Marriage	1.20	.40	-.19**	-.09	—												
4 Family contact	2.04	1.43	-.06	-.08	.14**	—											
5 Hometown distance	1.85	.81	-.03	.06	.09	.05	—										
6 Position	1.32	.61	-.06	-.06	-.07	.01	.13*	—									
7 Tenure (month)	39.71	38.39	.32**	-.07	-.07	.01	.11*	.23**	—								
8 Weekly work hours	59.36	7.69	-.01	.07	-.03	-.03	.07	-.07	.04	—							
9 Job demands T1	2.94	.97	.05	-.08	.02	.03	-.02	.05	.06	.03	(.79)						
10 Job resources T1	3.35	.67	.05	-.10*	-.05	-.04	.03	.16**	.16**	.02	.15**	(.71)					
11 Homesickness T1	2.71	.57	-.04	.01	.11*	-.04	-.05	-.20**	.02	.09	.34**	.08	(.88)				
12 Emotional stability	4.18	1.11	.02	.06	.07	.06	.09	-.08	.05	.07	-.19**	.04	-.36**	(.79)			
13 Openness	4.32	1.05	.07	-.14**	-.03	-.10*	-.03	.14**	.11*	-.08	.16**	.19**	.07	.08	(.72)		
14 Task performance T2	3.99	.65	-.01	-.01	.02	-.11*	-.06	-.06	.06	-.05	.06	.25**	.05	.18**	.14**	(.76)	
15 Safety behavior T2	4.17	.57	.10*	-.06	-.03	-.08	-.04	.05	.18**	.04	.05	.26**	-.01	.15**	.23**	.57**	(.75)

Note. Cronbach's  $\alpha$  reliabilities are in parentheses on the diagonal.

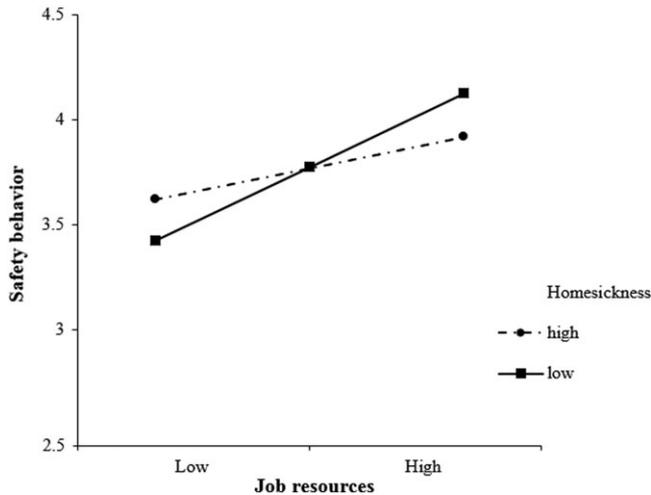
T1 = Time 1; T2 = Time 2. Gender: 1 = male, 2 = female. Marriage: 1 = married, 2 = not married. Family contact: 1 = very rarely, 2 = rarely, 3 = occasionally, 4 = frequently, 5 = very frequently. Hometown distance: 1 = within same province, 2 = in nearby provinces, 3 = in middle region of China, 4 = in Northern China. Position: 1 = nonmanagement, 2 = management.

\* $p < .05$ ; \*\* $p < .01$ .

**TABLE 2** Interaction effects of job resources, homesickness, and key resources on task performance and safety behavior, Study 1

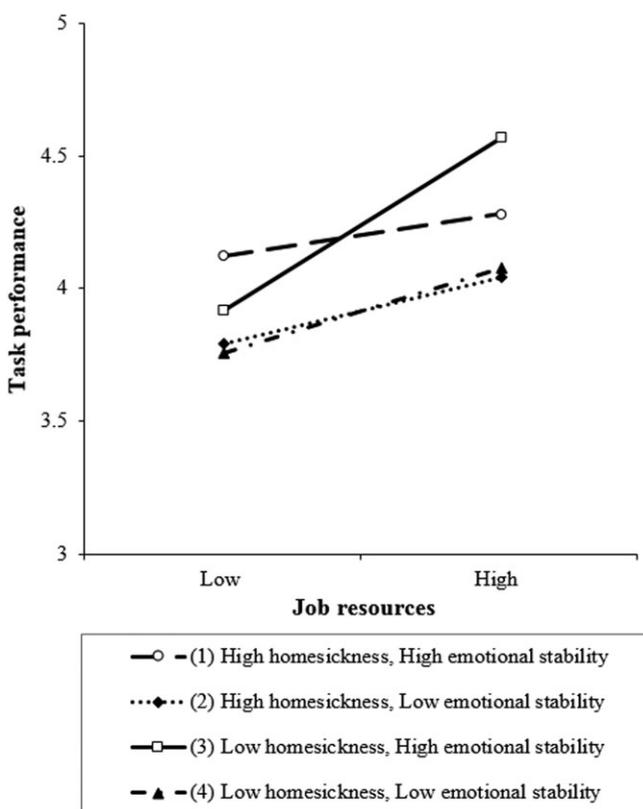
	Task performance T2												Safety behavior T2					
	Standardized coefficients						Standardized coefficients						Standardized coefficients					
	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
Step 1																		
Age	-.04	-.05	-.05	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	.09 <sup>†</sup>	.08	.09 <sup>†</sup>	.08	.07	.07
Gender	.01	.03	.02	.05	.04	.05	.05	.05	.04	.05	.05	.05	-.02	-.01	-.01	.02	.03	.02
Marriage	.03	.04	.04	.05	.05	.04	.05	.05	.05	.04	.05	.05	.03	.04	.03	.04	.04	.03
Family contact	-.12*	-.11*	-.12*	-.09 <sup>†</sup>	-.09 <sup>†</sup>	-.09 <sup>†</sup>	-.09 <sup>†</sup>	-.09 <sup>†</sup>	-.09 <sup>†</sup>	-.09 <sup>†</sup>	-.09 <sup>†</sup>	-.09 <sup>†</sup>	-.09 <sup>†</sup>	-.08	-.09 <sup>†</sup>	-.07	-.07	-.07
Hometown distance	-.03	-.04	-.04	-.02	-.02	-.02	-.02	-.02	-.02	-.02	-.02	-.02	-.05	-.05	-.06	-.04	-.04	-.03
Position	-.03	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	-.06	.07	.04	.03	-.01	.01	-.01
Tenure (month)	.07	.05	.06	.06	.07	.07	.07	.07	.07	.07	.07	.07	.14	.12	.15	.15	.18 <sup>†</sup>	.15
Weekly work hours	.07	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.05	.05	.06	.06	.06
Job demands T1	.09 <sup>†</sup>	.06	.06	.08	.08	.07	.08	.08	.07	.08	.08	.08	.04	-.01	.01	.01	.01	.01
Step 2																		
Job resources T1	.26**	.26**	.26**	.22**	.22**	.22**	.22**	.22**	.22**	.22**	.22**	.22**	.25**	.21**	.25**	.21**	.25**	.21**
Homesickness T1	-.02	-.02	-.02	.04	.04	.04	.04	.04	.04	.04	.04	.04	-.01	-.01	-.01	.03	.03	.04
Step 3																		
Job resources T1 × Homesickness T1			-.09 <sup>†</sup>	-.08	-.09 <sup>†</sup>	-.05	-.07	-.07	-.07	-.07	-.07	-.07	-.10*	-.09 <sup>†</sup>	-.10*	-.12*	-.07	-.10*
Step 4																		
Emotional stability			.23**	.23**	.23**	.23**	.23**	.23**	.23**	.23**	.23**	.23**	.16**	.17**	.16**	.17**	.17**	.17**
Openness			.13*	.13*	.13*	.13*	.13*	.13*	.13*	.13*	.13*	.13*	.17**	.16**	.17**	.16**	.16**	.17**
Step 5																		
Job resources T1 × Emotional stability				.03	.05	.05	.05	.05	.05	.05	.05	.05	.09 <sup>†</sup>	.12*	.09 <sup>†</sup>	.12*	.09 <sup>†</sup>	.12*
Homesickness T1 × Emotional stability				-.01	-.02	-.02	-.02	-.02	-.02	-.02	-.02	-.02	-.01	-.02	-.01	-.02	-.01	-.02
Job resources T1 × Openness																		
Homesickness T1 × Openness																		
Step 6																		
Job resources T1 × Homesickness T1 × Emotional stability					-.12*	-.12*	-.12*	-.12*	-.12*	-.12*	-.12*	-.12*						
Job resources T1 × Homesickness T1 × Openness																		
ΔR <sup>2</sup>	.04	.06**	.01 <sup>†</sup>	.06**	.00	.01*	.00	.01*	.00	.00	.00	.00	.06*	.06**	.01*	.04**	.01	.02*

<sup>†</sup>p < .10; \*p < .05; \*\*p < .01.



**FIGURE 2** Moderating effect of T1 homesickness on the T1 job resources-T2 safety behavior relationship, Study 1

plotted the significant interaction effects. As Figure 3 reveals, the relationship between T1 job resources and T2 task performance was significantly positive for emotionally stable employees with low T1 homesickness ( $b = .33, p < .001$ ). The slopes were not significant in any other conditions (high emotional stability and high homesickness,  $b = .11, ns$ ; low emotional stability and high homesickness,  $b = .11, ns$ ; low emotional stability and low homesickness,  $b = .12, ns$ ). In a similar vein, the positive relationship between T1 job resources and T2 safety behavior was stronger for employees who were emotionally



**FIGURE 3** Three-way interaction effect of T1 job resources, T1 homesickness, and trait emotional stability on T2 task performance, Study 1

stable with low level of T1 homesickness ( $b = .31, p < .001$ ) than for emotionally stable employees with high level of T1 homesickness ( $b = .09, p < .05$ ). The slopes in the other conditions were not significant (low emotional stability and high homesickness,  $b = .07, ns$ ; low emotional stability and low homesickness,  $b = .08, ns$ ; the plot for this simple slope analysis is available upon request from the first author; the pattern is similar to Figure 3). Thus, Hypothesis 2 was supported. The results suggest that emotional stability can help employees to better deal with their homesickness and make them able to effectively use the available job resources for their job performance.

To test Hypothesis 3, we examined the three-way interaction effects of trait openness, T1 job resources, and T1 homesickness on (a) T2 task performance and (b) T2 safety behavior. As indicated by Step 6 in Table 2, the three-way interaction terms were not significant for both T2 task performance ( $\beta = -.02, p > .05$ ) and T2 safety behavior ( $\beta = .01, p > .05$ ). Therefore, Hypothesis 3 was not supported.

## 4 | STUDY 2

Research on homesickness has primarily focused on differences between individuals (Stroebe, Schut, & Nauta, 2015). Between-person variability provides insights into why one person experiences the interference of homesickness with work more strongly than other persons. In contrast, within-person variability highlights the fluctuations in homesickness, which provides insights into why the same person feels a higher level of homesickness at work on specific days, and not on other days.

Study 2 aims to examine the effect of homesickness on the job resources-performance relationship at the within-person level in a military newcomer sample that just left home for a one-month training period. The homesickness level experienced by such newcomers may change every day. On some days, they may have more repetitive thoughts about home, experience more negative feelings, and even show more physical complaints than on other days. However, taking an average across these situations by assessing a general level of homesickness (e.g., asking participants to provide retrospective reports over the whole month as in Study 1) ignores the dynamic part of the homesickness phenomenon.

The work-home resources model considers the temporal character of work-home interactions and proposes both long- and short-term processes of work-home interference (ten Brummelhuis & Bakker, 2012). In accordance with the short-term view of home-to-work interference, volatile demands from the home domain impact daily outcomes in the work domain through a loss in volatile personal resources. We used a daily diary design to test whether daily homesickness may deplete volatile personal resources and leave insufficient personal resources for individuals to fully use the available contextual resources in the work domain, ultimately attenuating their functioning at work.

### 4.1 | Method

#### 4.1.1 | Participants and procedure

We conducted a daily diary study with military trainees who lived on a campsite and attended a driving training in China. We first approached

the commander of the training program and informed him about the study. The commander helped us to contact the newcomers from the training group, and all 51 newcomers in the driving training center agreed to participate in the study. Before administering the survey, we explained to the participants the purpose of the project and we assured that they had the right to withdraw from the study at any time.

We collected two types of data: data from a one-time survey and from daily diary surveys. All of the data were collected using paper-and-pencil surveys. When the participants agreed to participate, they were first invited to fill out the one-time survey. This survey assessed the variables assumed to be stable over time—in our case, the key resources (openness and emotional stability) and demographic variables. Additionally, the participants were asked to complete a daily survey for 4 weeks (20 workdays). With the help of the commander we contacted, we distributed survey material every afternoon when the soldiers were gathered in the field after training. The participants reported day-specific job resources, homesickness, and job demands (included as control variable). Additionally, the trainers were asked to evaluate their trainees' task performance and safety behavior during the driving training of each day. All 51 participants completed the one-time survey and together filled out 846 daily questionnaires matched with their 18 trainers' performance evaluations (resulting in a daily response rate of 82.9%). The soldiers' names were used to match daily surveys to their one-time measure and supervisor-rated performance. The participants were assured of the confidentiality of the study and received a gift of RMB30 (about \$4.60) after completing both the one-time survey and daily diary surveys.

All of the participants were male, and their ages ranged from 17 to 25 years ( $M = 20.01$ ,  $SD = 1.64$ ). None of the participants were married, and 60.8% of the participants had a high school diploma. Their service time ranged from 1 to 7 months ( $M = 2.22$ ,  $SD = 1.62$ ).

#### 4.1.2 | Measures

We measured all of the studied variables (job resources, homesickness, emotional stability, openness, task performance, and safety behavior) using the same scales used in Study 1. All of the items representing the within-person level measures were rephrased to the day level. The participants provided their responses on 5-point Likert scales; the response format for the items ranged from 1 = *I fully disagree* to 5 = *I fully agree*.

##### Within-person level measures

**Job resources.** Similar to Study 1, we used feedback and social support to represent job resources. An example item of daily feedback is "Today, I received sufficient information about the results of my training." An example item of daily social support is "Today, I was able to ask my peers for help during the training." We conducted multilevel confirmatory factor analysis using Mplus 7 (Muthén & Muthén, 2010) to compare a first-order model, where feedback and social support were represented as independent constructs, with a second-order model, where feedback and social support were indicators of one latent "job resources" factor. The results showed that the second-order model fit the data well ( $\chi^2(22) = 83.14$ ,  $p < .01$ , CFI = .98, SRMR = .06, RMSEA = .06) and better than the first-order model

( $\Delta\chi^2(1) = 12.24$ ,  $p < .01$ ), which supported the representation of feedback and social support as one general latent factor. Cronbach's  $\alpha$  for the daily job resources scale ranged between .71 and .86 ( $M = .79$ ) across days.

**Homesickness.** We used the same 20-item homesickness scale as in Study 1. The example items of daily homesickness are "Today, I missed home," "Today, I missed my friends," and "Today, I continuously thought about home." Cronbach's  $\alpha$  coefficients ranged between .90 and .94 ( $M = .92$ ).

**Task performance.** We obtained ratings of soldiers' task performance from their trainers every day. Daily task performance was measured using the same scale as in Study 1. An example item is "In today's training, he met all the standards." Cronbach's  $\alpha$  coefficients had acceptable values and ranged between .68 and .86 ( $M = .77$ ).

**Safety behavior.** As an important criterion in driving, the trainers evaluated the soldiers' safety behavior every day. We measured daily safety behavior using the same scale as in Study 1. Example items of daily safety behavior are "In today's training, he used the correct safety procedures" and "In today's training, he voluntarily carried out tasks or activities that helped to improve driving safety." Cronbach's  $\alpha$  coefficients had acceptable values and ranged between .61 and .89 ( $M = .75$ ).

**Job demands.** To measure the day-level job demands of military driving trainees, we used the four-item cognitive demands scale developed by Van Veldhoven et al. (2002), which focused on the mental effort involved in carrying out training tasks. An example item is "Today's training required my constant attention." Cronbach's  $\alpha$  coefficients ranged between .81 and .93 ( $M = .89$ ).

##### Between-person level measures

**Emotional stability.** The trait emotional stability was measured using the same scale as in Study 1. Cronbach's  $\alpha$  in this study was .87.

**Openness.** The trait openness was measured using the same scale as in Study 1. Cronbach's  $\alpha$  in this study was .86.

We also included age, service time (month), and frequency of contact with the family (1 = *Very rarely*, 5 = *Very frequently*) as between-person level control variables, as younger individuals with lower durations of time since leaving home had a higher risk of experiencing homesickness (Stroebe et al., 2002).

#### 4.1.3 | Analysis strategy

Our repeated-measures data can be viewed as multilevel data, with repeated measurements nested within individuals. This leads to a two-level model with the repeated measures (daily variables) at the first level ( $N = 846$  occasions) and the individual participants at the second level ( $N = 51$  participants). We used the multilevel analysis with the HLM 6.08 software (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2004) to analyze our data. Predictor variables at the within-person level (Level 1, daily job resources and daily homesickness) were centered to the individual mean, and predictors at the between-person

level (Level 2, emotional stability and openness) were centered to the grand mean. Daily job demands as the control variable was centered to the individual mean.

Multilevel models can be conceptualized as a set of regression equations. First, we specified and tested a null model without independent variables. Second, we entered the control variables at Level 1 (job demands) and Level 2 (age, service time, and frequency of family contact). Third, we entered predictors at Level 1 (job resources and homesickness). Next, we estimated the Level 1 interaction between daily job resources and daily homesickness (Hypothesis 1). The interaction term was created by individual mean centering and subsequently multiplying the two predictor variables involved in the interaction (Aiken & West, 1991). Finally, we estimated the cross-level three-way interaction between the personality traits (emotional stability and openness), daily job resources, and daily homesickness (Hypotheses 2 and 3). All of the main and two-way interaction effects were included in the model to control for their effects when interpreting the three-way interaction effects.

## 4.2 | Results

Table 3 shows the means, standard deviations, reliabilities, intraclass correlations (ICC1), and correlations among the study variables at the within-person and between-person levels of analysis. ICC1 reflects the percentage of variance in each daily-measured variable that is explained by between-person differences. The low ICC1 value indicates the high within-person variance in the daily-measured variable. The results showed that 71% of the variance in daily task performance, 50% in daily safety behavior, 42% in daily job resources, and 22% of the variance in daily homesickness were explained by within-person differences, justifying our multilevel approach.

Multilevel confirmatory factor analysis was conducted using Mplus 7 (Muthén & Muthén, 2010) to examine the construct validity of all of the studied variables, including four within-person variables

(i.e., job resources, homesickness, task performance, and safety behavior) and two between-person variables (i.e., emotional stability and openness). The results showed that the six-factor model fit the data quite well ( $\chi^2(135) = 319.01, p < .01, CFI = .94, SRMR = .05, RMSEA = .04$ ). An alternative five-factor model was specified by allowing the items of task performance and safety behavior to load on the same latent "general job performance" factor. This model fit significantly worse than the six-factor model ( $\Delta\chi^2(3) = 441.60, p < .001$ ), which supports the empirical distinction between task performance and safety behavior.

To test Hypothesis 1, we examined the interaction effect of job resources and homesickness on (a) task performance and (b) safety behavior on a daily basis. As indicated by Model 3 in Table 4, the interactions between daily job resources and daily homesickness in relation to daily task performance ( $\gamma = -.30, p < .05$ ) and daily safety behavior ( $\gamma = -.24, p < .05$ ) were both significant. Following Aiken and West (1991), we conducted simple slope tests. When daily homesickness was high (1 SD above the mean), the relationship between daily job resources and daily task performance was not significant ( $b = .01, ns$ ), whereas when daily homesickness was low (1 SD below the mean), daily job resources were significantly positively related to task performance ( $b = .17, p < .01$ ). Similarly, for the soldiers who were high in daily homesickness, the daily job resources-daily safety behavior relationship was not significant ( $b = -.12, ns$ ). In contrast, for the soldiers who were low in daily homesickness, daily job resources were positively related to daily safety behavior ( $b = .16, p < .05$ ; the plots are available upon request from the first author; the patterns are similar to Figure 2). These results support Hypothesis 1 on a daily basis: Daily homesickness weakened the relationships between daily job resources and (a) daily task performance and (b) daily safety behavior.

To test Hypothesis 2, we tested the cross-level three-way interaction effects of trait emotional stability, daily job resources, and daily homesickness on (a) daily task performance and (b) daily safety

**TABLE 3** Descriptive statistics, within-person and between-person correlations among variables, Study 2

	M	SD	ICC1	1	2	3	4	5	6	7	8	9	10
Level 2 (between-person)													
1 Age	20.01	1.64	—	—									
2 Service time (month)	2.22	1.62	—	.64**	—								
3 Family contact	1.74	.93	—	-.30*	-.29*	—							
4 Emotional stability	4.76	1.05	—	.02	-.12	.10	(.87)						
5 Openness	4.07	1.18	—	-.01	.23	-.08	.19	(.86)					
Level 1 (within-person)													
6 Job demands	3.22	.86	.67	-.20	-.33*	.39**	-.27	.13	(.89)	.40**	.25**	-.04	-.06*
7 Job resources	3.54	.51	.58	.01	.01	-.12	-.19	.49**	.29*	(.79)	.16**	.03	-.02
8 Homesickness	2.41	.64	.78	-.06	-.18	.07	-.29*	.03	.45**	.33*	(.92)	-.04	-.05
9 Task performance	3.79	.38	.29	.01	-.19	-.26	.36**	.00	-.16	.10	-.15	(.77)	.35**
10 Safety behavior	3.67	.52	.50	.08	.04	-.45**	.02	.17	-.14	.29*	-.05	.54**	(.75)

Note. Cronbach's  $\alpha$  reliabilities are in parentheses on the diagonal. Correlations above the diagonal are based on nonaveraged data ( $N = 846$ ), whereas correlations below the diagonal are based on within-person averages ( $N = 51$ ).

Family contact: 1 = very rarely, 2 = rarely, 3 = occasionally, 4 = frequently, 5 = very frequently.

ICC1 = intraclass correlations.

\* $p < .05$ ; \*\* $p < .01$ .

**TABLE 4** Interaction effects of daily job resources, daily homesickness, and key resources on daily task performance and daily safety behavior, Study 2

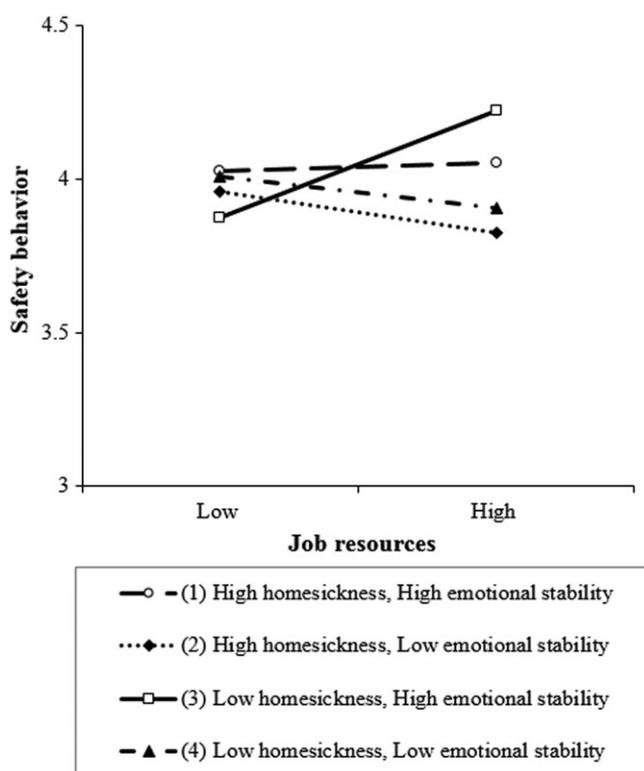
	Daily task performance										Daily safety behavior									
	Model 1 control variable		Model 2 main effect		Model 3 moderation effect		Model 4 cross-level effect		Model 5 cross-level effect		Model 1 control variable		Model 2 main effect		Model 3 moderation effect		Model 4 cross-level effect		Model 5 cross-level effect	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	3.32	.75	3.32	.75	3.32	.75	3.06	.78	3.05	.78	4.20	1.07	4.20	1.07	4.20	1.06	3.98	1.10	3.99	1.10
Level 2 variables																				
Age	.04	.04	.04	.04	.04	.04	.06	.04	.06	.04	-.01	.05	-.01	.05	-.01	.05	.02	.05	.01	.05
Service time	-.09*	.04	-.09*	.04	-.09*	.04	-.12*	.04	-.12*	.04	-.03	.05	-.03	.05	-.03	.05	-.05	.04	-.05	.04
Family contact	-.14*	.05	-.14*	.05	-.13*	.05	-.11*	.05	-.11*	.05	-.27**	.07	-.27**	.07	-.27**	.07	-.26**	.07	-.26**	.07
Emotional stability							.15**	.04	.15**	.08							.02	.07	.02	.07
Openness							.04	.04	.05	.04							.08	.06	.08	.06
Level 1 variables																				
Job demands	-.04	.03	-.06	.03	-.05	.03	-.04	.03	-.04	.03	-.06 <sup>†</sup>	.02	-.05	.03	-.05	.03	-.04	.03	-.04	.04
Job resources			.09 <sup>†</sup>	.05	.09 <sup>†</sup>	.05	.11*	.05	.11*	.05			.02	.04	.02	.04	.04	.04	.04	.04
Homesickness			-.07	.06	-.05	.06	-.06	.06	-.06	.06			-.06	.05	-.04	.05	-.06	.05	-.05	.08
Job resources × Homesickness			-.30*	.11	-.30*	.11	-.27*	.12	-.21	.14			-.24*	.10	-.24*	.10	-.33**	.11	-.33*	.13
Cross-level interaction																				
Emotional stability × Job resources							.14**	.04									.18**	.04		
Emotional stability × Homesickness							.11 <sup>†</sup>	.06									.04	.05		
Emotional stability × Job resources × Homesickness							-.02	.12									-.27*	.10		
Openness × Job resources									.03	.03									.08	.06
Openness × Homesickness									.13*	.05									.06	.08
Openness × Job resources × Homesickness									-.03	.07									-.13*	.05
Variance Level 1 (within-person)	.33		.33		.32		.32		.32		.25		.25		.25		.24		.24	
Variance Level 2 (between-person)	.11		.11		.12		.11		.11		.21		.21		.21		.21		.21	
Model deviance	318.85		319.70		322.38		271.75		269.13		728.58		728.10		715.56		714.19		703.13	
Δ Pseudo R <sub>1</sub> <sup>2</sup>	.04		.00		.01		.01		.01		.09		.00		.01		.01		.00	
Δ Pseudo R <sub>2</sub> <sup>2</sup>	.11		.00		.01		.02		.01		.16		.00		.02		.02		.01	

Note. Pseudo R<sub>1</sub><sup>2</sup> represented within-person variance explained and calculated on the basis of the formula 1 - ((Level 1 restricted error + Level 2 restricted error)/(Level 1 unrestricted error + Level 2 unrestricted error)). Pseudo R<sub>2</sub><sup>2</sup> represented between-person variance explained and calculated using formula 1 - ((Level 1 restricted error/n) + Level 2 restricted error)/(Level 1 unrestricted error/n) + Level 2 unrestricted error) from Snijders and Bosker (1999). n is the average number of daily points in each Level 2 unit.

<sup>†</sup>p < .10; \*p < .05; \*\*p < .01.

behavior. As indicated by Model 4 in Table 4, the cross-level three-way interaction between daily job resources, daily homesickness, and trait emotional stability was significant for daily safety behavior ( $\gamma = -.27$ ,  $p < .05$ ), but not significant for daily task performance ( $\gamma = -.02$ , ns). Thus, Hypothesis 2 was partially supported. We conducted simple slope tests and plotted the significant interaction effects. As Figure 4 reveals, the relationship between daily job resources and daily safety behavior was significantly positive for emotionally stable people with low homesickness ( $b = .43$ ,  $p < .001$ ), whereas the relationship between daily job resources and daily safety behavior was negatively related for emotionally unstable people with high homesickness ( $b = -.16$ ,  $p < .05$ ). In the other two conditions (high emotional stability and high homesickness/low emotional stability and low homesickness), the slopes were not significant ( $b = .03$ , ns/ $b = -.12$ , ns, respectively). These results indicate that emotional stability could attenuate the negative interference of high homesickness with the job resources–safety behavior process and prevent the detrimental consequences of homesickness.

To test Hypothesis 3, we examined the cross-level three-way interaction effects of trait openness, daily job resources, and daily homesickness on (a) daily task performance and (b) daily safety behavior. As indicated by Model 5 in Table 4, the cross-level three-way interaction between daily job resources, daily homesickness, and openness was significant for daily safety behavior ( $\gamma = -.13$ ,  $p < .05$ ), but not for daily task performance ( $\gamma = -.03$ , ns). Therefore, Hypothesis 3 was partially supported. The simple slope test shows that for individuals who were open to experience and low in homesickness, daily job resources were positively related to daily safety



**FIGURE 4** Cross-level interaction effect of daily job resources, daily homesickness, and trait emotional stability on daily safety behavior, Study 2

behavior ( $b = .29$ ,  $p < .01$ ), whereas the slopes under the other three conditions were not significant (high openness and high homesickness,  $b = -.02$ , ns; low openness and high homesickness,  $b = -.11$ , ns; low openness and low homesickness,  $b = -.01$ , ns; the plot is available upon request from the first author; the pattern is similar to Figure 4). The results indicate that individuals with high level of openness were less likely to be negatively influenced by homesickness. For the individuals with high openness and high homesickness, the interference of homesickness with the job resources–safety behavior work process was negligible.

## 5 | DISCUSSION

The purpose of this research was to investigate how homesickness may interfere with the work process of individuals who work far away from their homes. More specifically, we investigated whether homesickness may prevent the effective use of job resources for job performance. In addition, this research aimed to find out whether key resources, namely, trait emotional stability and trait openness, attenuate the interference of homesickness with the job resources–performance process. The findings from two studies using both between- and within-person approaches among samples of manufacturing migrant workers and military driving trainees provided largely consistent support for our hypotheses. Study 1 found that at the between-person level, the interaction of homesickness and job resources had a time-lagged effect on job performance. Employees who experienced higher levels of homesickness found it difficult to fully use their job resources, which ultimately undermined their task performance and safety behavior. Furthermore, emotional stability helped migrant workers to better deal with their homesickness, allowing them to make effective use of job resources for their task performance and safety behavior. Study 2 considered the day-to-day fluctuations of homesickness and largely replicated the results of Study 1 at the within-person level. Specifically, military trainees' daily homesickness undermined the relationships between their daily job resources and (a) daily task performance and (b) daily safety behavior. Furthermore, emotional stability and openness attenuated the negative impact of homesickness on the job resources–safety behavior relationship and helped individuals avoid the detrimental consequences of homesickness.

### 5.1 | Theoretical implications

Our findings have several theoretical implications. First, we explored the temporal character of homesickness by taking both between-person and within-person perspectives to examine the long-term time-lagged effect and short-term daily effect of the interference of homesickness with the work domain. In Study 2, 22% of the variance in daily homesickness was due to dynamic, within-person, situational fluctuations from day to day. Even though the majority of the variance in homesickness was shown to be due to between-person individual differences, intraindividual fluctuations in homesickness reflected the experiences in a given situation and period, which still played an important role in predicting the changes

of work behaviors over very short time intervals. Most studies of homesickness in the clinical psychology domain have treated homesickness as a chronic and pathological state leading to chronic depression and malfunctioning (Van Tilburg, Vingerhoets, & Van Heck, 1996). Although one study suggested that episodic homesickness could be differentiated from chronic homesickness by its influences on emotion expression (Eurelings-Bontekoe, Brouwers, Verschuur, & Duijsens, 1998), we are unaware of other studies that have focused on how episodic homesickness may affect people's work behaviors over short periods of time.

In addition, by using the work-home resources model as our theoretical framework, we tested the moderation effect of homesickness on the relationship between job resources and job performance. The work-home resources model proposes both long- and short-term processes of how experiences in one domain may interfere with the other domain (ten Brummelhuis & Bakker, 2012). Investigating the moderation effect of daily fluctuations of homesickness thus provides empirical evidence that the work-home resources model used to explain how homesickness operates at the between-person level is also applicable when adopting a within-person perspective. This also extends the homesickness literature by capturing the process of work represented by the job resources-job performance relationship, instead of only using work outcomes to represent the work domain (Stroebe et al., 2015).

Second, with the work-home resources model (ten Brummelhuis & Bakker, 2012), our research investigated how homesickness may interfere with the work process, which provides insight into the internal aspects of home-work interference (Carlson & Frone, 2003). Previous studies have mostly investigated how externally generated demands at home interfere with participation at work, such as how taking care of home-related responsibilities reduces the amount of time spent on work-related activities (Michel, Kotrba, Mitchelson, Clark, & Baltes, 2011). We used the moderation effect of homesickness on the job resources-job performance relationship to represent the interference of homesickness with the work domain, instead of the more common explicit measurements of home-work interference (in which the effect is encapsulated in the measurement). More specifically, our research investigated the process of how homesickness undermines performance through the depletion of cognitive, emotional, and energetic resources, providing a closer look at the internal home-work interference process. Our approach also avoids possible biases in the reports of home-to-work interference, which is a problem in the work-family literature.

In addition, our research enriches the work-home interface literature by addressing safety behavior as an outcome, which has been largely neglected in previous studies (Amstad, Meier, Fasel, Elfering, & Semmer, 2011). In high-risk work environments involving cognitively challenging and physically demanding work such as driving and manufacturing, safety-related outcomes such as accidents and injuries can be serious (Nahrgang, Morgeson, & Hofmann, 2011). It is important to recognize potential factors that may interfere with workplace safety. Our research shows that in addition to important organizational factors such as job design and engineering systems (Mullen, 2004), interference from the home domain may also

undermine safety performance. Our results suggest that homesickness may distract an individual's attention away from work and consume his or her physical and mental energy, resulting in diminished safety behavior. This is in accordance with previous studies showing that home interference with work limits employees' cognitive resources and increases their cognitive failure (Lapierre, Hammer, Truxillo, & Murphy, 2012), leading to unintentional safety errors. The lack of energy and negative mood also impairs one's willingness to comply with safety rules and devote discretionary energy to safety activities (Cullen & Hammer, 2007).

Third, our research reveals that trait emotional stability and trait openness alleviate the negative interference of homesickness with the relationship between job resources and safety behavior. These findings can be interpreted through the lens of the work-home resources model (ten Brummelhuis & Bakker, 2012), which emphasizes the important roles of key resources in preventing and attenuating home-work interference. In our research, homesickness depletes personal resources and therefore attenuates the full use of job resources and ultimately diminishes performance, whereas trait emotional stability and trait openness can serve as key resources that buffer the negative influence of homesickness on these processes. This is in line with the findings of a meta-analytical study showing that neuroticism (the opposite of emotional stability) is positively associated with home-work interference and that openness to experience is negatively related to home-work interference (Allen et al., 2012). Our findings provide support for the work-home resources model (ten Brummelhuis & Bakker, 2012) and confirm that key resources enable people to better use their contextual resources and cope with stressful situations.

However, the hypothesized three-way interaction effect of job resources, homesickness, and openness on job performance was supported only in Study 2 with the military trainees and not in Study 1 with the manufacturing migrant workers. It is plausible that openness to new experiences is not as salient in a manufacturing environment as it is in a driving training program. Trait openness helps individuals to be more responsive to learning experiences, which may be very useful in a learning environment but less useful in a work environment where learning is not the primary goal (LePine et al., 2000). Additionally, we only found evidence for the cross-level interaction effects of key resources, daily homesickness, and daily job resources on daily safety behavior (and not task performance) in Study 2. A possible reason for this may have been the lack of between-person variance in daily task performance. According to Hoffman (2015), the statistical power to detect cross-level interactions is based on the between-person variance in the Level 1 random slope. In our study, between-person differences accounted for 50% of the variance in daily safety behavior, and for only 29% of the variance in daily task performance. This may have precluded us from finding significant cross-level three-way interaction effects on daily task performance.

## 5.2 | Limitations and future research

Some limitations of our research should be noted. First, although Study 1 tested the time-lagged effect of the interaction between job

resources and homesickness on job performance, our findings from Study 2 should be interpreted as synchronous effects. We did collect information about the participants' personalities before the start of the daily diary study; however, we collected all other data at the same time every day. Therefore, the temporal order of the studied variables could not be established in Study 2. Future diary studies could measure the model variables at different time points within the day to establish causality.

Second, common-method bias might have inflated the observed relationships (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). All of the studied variables in Study 1 were self-reported. We tried to minimize this concern by collecting data over a three-month time interval, which allowed for a more rigorous test of our research hypotheses. Furthermore, in light of Schmitt's (1994) study, the results of the interactions may not be particularly vulnerable to common-method issues because correlated errors cannot create spurious interactions but can only attenuate true interactions. In addition, we compensated this problem in Study 2 and collected daily diary data from two different sources—our task performance and safety behavior measures were obtained from the supervisors.

Third, the generalizability of the current findings may be limited. As is often the case, the studies were conducted within one country. We used migrant peasant workers and military trainees as our samples. Even though all of our participants worked far away from their hometowns, they all lived and worked in China. Therefore, they might not have been in the same position as employees working away from home in other countries (e.g., Western countries). As such, the observed impact of homesickness could be weaker than what would be observed in other groups working abroad. Future research should survey more diverse samples that work across cultures to provide even more valid and robust results.

Finally, future studies could investigate the mechanism underlying the moderation of homesickness and develop a more complex mediated moderation model to explain the interference process between the home and work domains. The work-home resources model (ten Brummelhuis & Bakker, 2012) proposes that contextual demands and resources from one domain affect outcomes in the other domain through a change in personal resources. Future research may investigate the mediational role of personal resources, such as physical or mental energy, to further explain the moderation effect of homesickness on job resources and job performance.

### 5.3 | Practical implications

Our findings show that homesickness undermines the full use of job resources and ultimately diminishes performance. What can organizations do to help employees who work far away from home to fully concentrate on their work and allocate all available job resources to the tasks at hand? One means for successfully concentrating at work may be mindfulness meditation, which has been shown to have unique effects on decreasing rumination (Chambers, Lo, & Allen, 2008). Organizations may consider implementing intervention programs such as mindfulness training to improve concentration skills. Situational-based methods such as family-supportive supervision may offer other ways to reduce ruminative thoughts about home and the experience of

negative feelings at work. Kossek, Pichler, Bodner, and Hammer (2011) suggest that work-family-specific support is likely to be a more psychologically and functionally useful resource for managing work-family situations. For example, supervisors could provide emotional support by listening and showing care for employees' work-family issues and inform them of supportive organizational policies, such as holiday arrangements or settlement plans for spouse and children. As for our sample of military newcomers, the use of a "buddy system" in which new soldiers are paired with experienced soldiers may also benefit newcomers by providing them with specific social support. The buddy system may help newcomers better adapt to a new environment and reduce their homesickness (Drummet, Coleman, & Cable, 2003).

In addition, the findings related to the cross-level interaction effect involving trait emotional stability and trait openness suggest that it would be beneficial for organizations to select individuals with high emotional stability and high openness. Under the current situation of increasing shortened expatriate or international assignments less than one year (Firth, Chen, Kirkman, & Kim, 2014), implying that most expatriates have to work far away from their home locations without accompanying family members, employers may assign emotionally stable and open employees to foreign subsidiaries, as people who are high in emotional stability and openness seem to be less vulnerable to the negative interference of homesickness in the work process (Fisher, 1989). Moreover, organizations may provide concentration interventions and work-family-specific support for emotionally stable and open employees who experience high homesickness to help them adapt to the new environment easier and make full use of the resources available in the organization.

## 6 | CONCLUSION

Drawing on the work-home resources model, our findings from two studies indicate that homesickness has both long- and short-term effects: it interferes with the job resources-performance process at work. In addition, the findings suggest that key resources, that is, emotional stability and openness, attenuate the interference of the home domain with the work domain. We hope our findings encourage organizations to provide work-family-specific support and interventions that help individuals who work far away from home make full use of their job resources and perform well.

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