



# Family supportive supervisor behaviors and work engagement: A social information processing perspective

Yanwei Shi<sup>1,2,3</sup> · Julan Xie<sup>4</sup> · Zhiqing E. Zhou<sup>5</sup> · Hanying Tang<sup>1,2</sup> · Hongyu Ma<sup>1,2</sup>

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## Abstract

Based on the social information processing theory and attribution theory, the present study examined the relationship between family-supportive supervisor behaviors (FSSB) and employee work engagement, as well as the mediating role of loyalty to supervisor and the moderating role of attribution of intentions for FSSB. We collected two waves of data with a 6-month lag from 310 Chinese employees (age range 20–56,  $M = 33.32$ ,  $SD = 7.11$ ). We tested a moderated mediation model for our hypotheses and found that FSSB positively predicted employee work engagement through loyalty to supervisor. Moreover, the positive relationship between FSSB and loyalty to supervisor and the indirect effect of FSSB on work engagement through loyalty to supervisor were stronger for employees with low external attribution of intentions for FSSB (i.e., believing that supervisors' FSSB is driven by their internal motivation instead of organizational expectations). The present study contributes to understanding potential emotional mechanisms in the relationship between FSSB and work engagement and how attribution might serve as an important boundary condition. Moreover, our findings have practical implications for fostering employee engagement in the workplace.

**Keywords** Attribution of intentions for FSSB · Attribution theory · Family supportive supervisor behaviors · Loyalty to supervisor · Social information processing theory · Work engagement

## Introduction

With the increase of dual-earner couples and changing work-life expectations, more organizations are introducing work-life initiatives and policies to promote employee work-life

balance (Hammer et al. 2009) and attract and retain qualified staff (Wong and Ko 2009). These initiatives are related to positive work-related outcomes such as increased job satisfaction (Kong 2013), job performance (Beauregard and Henry 2009), and job involvement (Kong 2013). However, formal work-life practices might not be enough to meet employees' needs to balance their work and personal lives (Kossek and Distelberg 2009), and informal supervisor behaviors might be a meaningful supplement to these practices.

Yanwei Shi and Julan Xie contributed equally to the study. They should be regarded as joint first authors.

✉ Hanying Tang  
thy@mail.ccnu.edu.cn

✉ Hongyu Ma  
mahy@mail.ccnu.edu.cn

Family supportive supervisor behaviors (FSSB) as a type of informal supervisor support has attracted increasing attention because of their positive influence on employees' work-nonwork balance and work-related outcomes (Hammer et al. 2009, 2013; Odle-Dusseau et al. 2012). FSSB refers to supervisor behaviors that are supportive of employees' families and employees' efforts to balance work and non-work demands (Hammer et al. 2009). These supervisor behaviors have been found to positively predict work-family enrichment (Odle-Dusseau et al. 2012) and work-family positive spillover (Hammer et al. 2013); in addition, they are positively related various work-related attitudes and behaviors such as job satisfaction (e.g., Bagger and Li 2014; Hammer et al. 2013), turnover intention (e.g., Bagger and Li 2014; Odle-Dusseau

<sup>1</sup> School of Psychology, Central China Normal University, Wuhan 430079, China

<sup>2</sup> Key Laboratory of Adolescent Cyberpsychology and Behavior(CCNU), Ministry of Education, Wuhan 430079, China

<sup>3</sup> Department of Human Resource Management, Shanghai Normal University, Shanghai 200234, China

<sup>4</sup> School of Business, Central South University, Changsha 410083, China

<sup>5</sup> Department of Psychology Baruch College and The Graduate Center, City University of New York, New York, NY, USA

et al. 2012) and job performance (e.g., Rofcanin et al. 2017; Wang et al. 2013).

Another potential positive attitudinal outcome of FSSB is work engagement (Straub 2012). Work engagement is defined as “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” (Schaufeli et al. 2002, p. 74). Work engagement has important implications because it has been linked with employee motivation and performance (Breevaart et al. 2015), job satisfaction (Alarcon and Lyons 2011), and organizational citizenship behavior (Babcock-Roberson and Strickland 2010). While a few studies have established the potential positive effect of FSSB on work engagement in Western contexts (i.e., Matthews et al. 2014; Rofcanin et al. 2017), only Qing and Zhou (2017) examined this relationship in the Chinese context. Further, Qing and Zhou (2017) for the first time examined potential underlying mechanisms of this relationship by testing the mediating effect of work-family enrichment. Thus, much remains unclear about the relationship between FSSB and work engagement, as well as potential underlying mechanisms of this relationship in the Chinese context. The current study aims to address some of the remaining gaps in this line of research.

First, the relationship between FSSB and employee work engagement has been largely understudied in China. Although the direct relationship between FSSB and work engagement has received empirical support in Western cultures (Matthews et al. 2014; Rofcanin et al. 2017), so far only one study (Qing and Zhou 2017) has examined this relationship in China. As part of a collectivistic culture, employees in China tend to have blurred boundaries between work and non-work domains (Aryee et al. 1999), and they want to have personal and close relationships with their supervisors (Hofstede 2001). Hence, employees in China are more likely to allow their supervisors to support their personal lives (Hampden-Turner and Trompenaars 2011) and expect more FSSB from supervisors. As a result, in the Chinese context, FSSB might be more appreciated by employees and be more likely to enhance work engagement. The current study will add to the limited literature by examining this relationship with Chinese employees.

Second, so far only one study has examined potential mediators of the relationship between FSSB and work engagement (Qing and Zhou 2017), and much remains unclear about other potential underlying mechanisms of the relationship. Qing and Zhou (2017) examined work-family enrichment as the mediator, a spillover mechanism that addresses the process of how work has a positive impact on employees’ family life. Beyond work-family enrichment, FSSB might predict employee engagement through other mechanisms. For example, FSSB was found to positively predict employee organization-based self-esteem (Aryee et al. 2013), relational identification with supervisor (Wang et al. 2013) and affective

organizational commitment (Mills et al. 2014), suggesting that FSSB can potentially fulfill employees’ emotional needs. Based on these findings, we propose that FSSB may promote employees’ work engagement through emotional mechanisms. Yet, research has not investigated the emotional mechanisms through which FSSB might promote employee work engagement. This is an important gap given that the emotional meaning of social support is more effective than the instrumental meanings, and that non-emotional support such as instrumental support and informational support also has emotional meaning (Semmer et al. 2008). Thus, as a unique type of social support, FSSB might meet employees’ emotional needs and influence work engagement via an “emotional mechanism”. Thus, our study contributes to this line of research by proposing and testing loyalty to supervisor as an emotional bond that might mediate the relationship between FSSB and work engagement.

Third, boundary conditions of the relationship between FSSB and work engagement have been rarely examined thus far (Rofcanin et al. 2017). From the attribution theory perspective, previous studies have found that employees’ attributions of leaders’ behavior play an important moderating role in the relationship between leadership and employee attitudes and behaviors (e.g., Dasborough and Ashkanasy 2002; Mao et al. 2017). Thus, based on the attribution theory, the present study will examine the role of employees’ attribution of intentions for FSSB in the relationship between FSSB and work engagement.

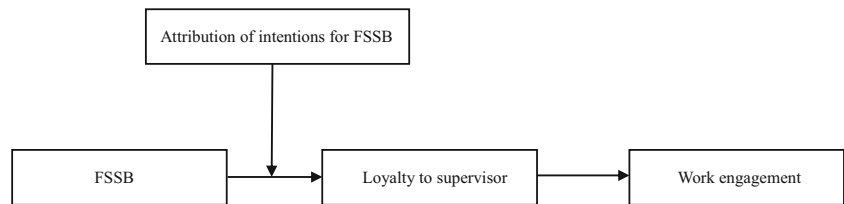
In summary, the current study aims to extend our understanding of the relationship between FSSB and work engagement and we hypothesize that FSSB will positively predict work engagement through loyalty to supervisor, and this mediating effect will be moderated by employees’ attribution of intentions for FSSB. Figure 1 summarizes the relationships tested in the current study.

## Theoretical Background

### Social Information Processing Theory

The present study used the social information processing theory (SIP; Salancik and Pfeffer 1978) as a theoretical foundation to explain how FSSB affects work engagement. Social information processing theory (SIP) proposes that social information in employees’ work environments has an effect on their attitudes, perceptions, and behaviors (Salancik and Pfeffer 1978). The sources of social information in the work context can be disentangled into information from people such as supervisors and coworkers, and information from the environment such as special events or organizational culture (Bhave et al. 2010).

**Fig. 1** Overview of the hypothesized mediated moderation model. *Note.* FSSB, Family supportive supervisor behaviors, similarly hereinafter



Supervisors are a key source of social information to indicate whether employees' family lives are supported (Kossek et al. 2011a, b). This is because supervisors act as gatekeepers for the availability and the effective implementation of informal work-family support and have considerable discretion over the level of informal work-family support that employees can receive (McCarthy, Darcy, & Grady, 2010). According to SIP (Salancik and Pfeffer 1978), FSSB as supervisor behaviors (Hammer et al. 2009) could convey social information to employees that their supervisors care for and support their work-family balance. Influenced by this information, employees tend to interpret supervisors' behaviors as supportive and form positive perceptions of FSSB, which in turn will enhance their loyalty to supervisors and increase work engagement.

## Hypotheses

### Loyalty to Supervisor as a Mediator

FSSB includes instrumental and emotional support, creative work-family management, and role modeling behaviors (Hammer et al. 2009). Researchers have found that FSSB is associated with work-related outcomes such as increased organizational citizenship behavior (Wang et al. 2013) and decreased work withdrawal (Kim et al. 2013), and family-related outcomes including more family satisfaction (Lu et al. 2015) and marital satisfaction (Xie et al. 2017). In addition to work-related and family-related outcomes, FSSB can also satisfy employees' affiliation-based and esteem-based needs and was found to positively predict organization-based self-esteem (Aryee et al. 2013), relational identification with supervisor (Wang et al. 2013), and affective organizational commitment (Mills et al. 2014). Building on these findings, it is likely that FSSB as informal supervisor behaviors may also satisfy employees' emotional needs and positively predict loyalty to supervisor.

Loyalty to supervisor refers to the relative degree of subordinates' identification with, attachment and dedication to their supervisor (Chen et al. 2002). It encompasses five dimensions: dedication to the supervisor, extra efforts for the supervisor, attachment to the supervisor, identification with the supervisor, and internalization of the supervisor's values (Chen et al. 2002).

Loyalty to supervisor results from an emotional bond with the supervisor (Cheng et al. 2003; Stinglhamber and Vandenberghe 2003), and it has a strong affective component (Jiang and Cheng 2008). Employees' loyalty to their supervisors represents an emotional attachment to their supervisor (Jiang and Cheng 2008). Therefore, like organizational commitment and relational identification with supervisor, loyalty to the supervisor is likely to be part of an emotional mechanism by which FSSB influences employee work engagement.

Although the effect of FSSB on loyalty to supervisor has not been examined, there is a theoretical reason to expect such an effect. According to SIP (Salancik and Pfeffer 1978), social context influences employees' understanding of what is desirable and their emotion towards the people working in it (e.g., supervisors). Based on this reasoning, we believe that FSSB can affect employees' emotional bonds to their supervisors (loyalty to supervisor). FSSB signals employees that their supervisor recognizes and understands their family demands and supports their efforts to balance their work and family lives (Hammer et al. 2005, 2009). Influenced by this information, employees feel cared for and supported (Hammer et al. 2009) and may form positive perceptions and emotions towards supervisors. In turn, employees are likely to demonstrate gratitude in personal ways, such as showing dedication, extra effort, and attachment to the supervisor (namely, loyalty to supervisor; Chen et al. 2002).

In support of our argument, researchers have found that similar constructs such as perceived supervisor support (Cheng et al. 2015), leadership (Wang et al. 2017; Wu and Wang 2012), and trust in the supervisor (Wong et al. 2002) were positively related to loyalty to supervisor. Thus, we hypothesized the following:

**Hypothesis 1:** FSSB will positively predict loyalty to supervisor.

We also predict that loyalty to supervisor can positively predict employee work engagement. SIP theory proposes that employees' perceptions of affective components of the work environment might influence their attitudes (Salancik and Pfeffer 1978). Loyalty to supervisor indicates a positive perception of the affective components of the supervisor's

behavior. Drawing on SIP theory (Salancik and Pfeffer 1978), when employees are loyal to their supervisor, they are likely to develop positive job attitudes, such as work engagement.

Researchers have demonstrated that employees with a higher level of loyalty to supervisor may be more motivated to perform well because they believe that the supervisor will observe and reward their good performance (Chen et al. 2002). In a similar vein, employees with a higher level of loyalty to their supervisor are more likely to identify with and internalize the goals and interests of the supervisor, and form values consistent with those of their supervisors. The internal motivation for reciprocity with their supervisor and extra efforts will ultimately result in a higher level of work engagement (Chughtai 2013). Although the relationship between loyalty to supervisor and work engagement has not been examined, previous studies have shown that loyalty to a supervisor is related to higher job satisfaction (Chen 2001; Okan and Akyüz 2015) and lower turnover intention (Chen 2001). Thus, we propose that loyalty to supervisor is likely to be positively associated with work engagement. We hypothesized the following:

Hypothesis 2: Loyalty to supervisor will positively predict work engagement.

According to SIP (Salancik and Pfeffer 1978), social information influences employee attitudes through influencing employees' perceptions of the affective components of the work environment. FSSB as social information signals that the supervisor cares about subordinates' family demands, which makes employees feel that they are valued and supported by the supervisor (Hammer et al. 2009). Thus, employees are likely to develop stronger employee-supervisor emotional bonds (a stronger sense of loyalty), and subsequent corresponding job attitudes, such as work engagement. Combining the aforementioned arguments on the relationships between FSSB and loyalty to supervisor, and between loyalty to supervisor and work engagement, as well as the previously established relationship between FSSB and work engagement (Matthews et al. 2014; Qing and Zhou 2017; Rofcanin et al. 2017), we predict that loyalty to supervisor will mediate the relationship between FSSB and work engagement.

This rationale is consistent with research examining loyalty to supervisor as a mediator of the relationship between leadership and employee job attitudes and behaviors. For example, loyalty to supervisor was found to mediate the relationship between charismatic leadership and work performance and turnover intention (Wu and Wang 2012). Additionally, research has demonstrated that loyalty to supervisor plays an important mediating role in the relationship between ethical leadership and job satisfaction (Okan and Akyüz 2015). Taken together, the research in this area suggests that loyalty to

supervisor may act as a mediator in the relationship between FSSB and employee work engagement. Thus, we hypothesized the following:

Hypothesis 3: Loyalty to supervisor will mediate the relationship between FSSB and employee work engagement.

### Attribution of Intentions for FSSB as a Moderator

According to attribution theory, when people observe others' behaviors, they tend to determine whether the behaviors were externally caused or internally caused (Ferris et al. 1995; Heider 1958; Kelley 1971). Further, people understand others' motivations through an attribution process (Ferris et al. 1995) and the attributions for the behaviors influence people's emotional and behavioral responses (Weiner 1985). From the attribution theory perspective, previous studies have found that employees' attributions of leaders' behavior play an important role in the relationship between leadership and employee attitudes and behaviors (Dasborough and Ashkanasy 2002; Mao et al. 2017).

Since FSSB is an informal type of family-supportive behaviors (Hammer et al. 2009), it can be considered as extra-role behavior (Straub 2012). However, FSSB might sometimes be expected by employees because FSSB is exhibited by supervisors (Hammer et al. 2009). Based on the attribution theory, employees may have different attribution about their supervisor's intentions for exhibiting family-supportive behaviors such as whether the supervisor should provide FSSB as part of their job responsibilities. We define this attribution as attribution of intentions for FSSB. Specifically, when employees believe that their supervisors do not have the responsibility to provide FSSB to meet their family needs, FSSB will be attributed to a willingness to go beyond supervisors' prescribed job duties (low external attribution of intentions for FSSB); when employees believe that supervisors have the responsibility to provide FSSB as part of their job duties, FSSB will be attributed to the demands of the supervisor's standard job activities (high external attribution of intentions for FSSB). This attribution can be made based on situational cues. For example, employees working in an organization with a stronger family-supportive organizational culture might feel that the organization supports the integration of their work and family lives. Thus, these employees are likely to expect their supervisors, who act as the agent for the organization, to engage in family-supportive behaviors and regard FSSB as an in-role behavior (high external attribution of intentions for FSSB). On the other hand, employees working in an organization with a weaker family-supportive organizational culture might interpret FSSB as an extra-role behavior (low external attribution of intentions for FSSB) because they won't expect

their supervisors to engage in such family supportive behaviors.

According to the attribution theory, employees' attributions about the supervisor's intentions can impact how supervisors' behaviors are interpreted and their subsequent effects on employee attitudes and behaviors (Ashkanasy and Tse 2000). Based on this theory, employees' attribution of intentions for FSSB might affect their emotional response to experiences of FSSB. Specifically, when employees think their supervisors do not have the responsibility to provide FSSB and FSSB is purely driven by supervisors' internal motivation to meet their family demands (low external attribution of intentions for FSSB), they are more likely to consider FSSB as individualized support and extra care from their supervisors and more likely to be grateful and loyal to their supervisor (Chen et al. 2002). In contrast, employees with high external attribution of intentions for FSSB tend to think supervisors should provide FSSB as part of their formal job responsibilities, and they will not think of FSSB as extra care from supervisors. Even when supervisors show family supportive behaviors, employees with high external attribution are less likely to respond with a sense of loyalty because they believe FSSB is part of a supervisor's responsibilities.

Previous studies have found a similar role of employees' attributions of leaders' behaviors in the association between other leadership behaviors and employee attitudes and behaviors (Dasborough and Ashkanasy 2002; Mao et al. 2017). For example, Mao et al. (2017) found that employees' inferences about a leader's motivation for managing the impression of humility moderated the effect of leader humility on relational closeness. Specifically, when followers inferred that the leader had a strong personal motivation for humility-related impression management, the positive relationship between leader humility and relational closeness was weaker. Similarly, Dasborough and Ashkanasy (2002) found that employees' attributions of leader intentionality influenced their affection for the leader and the leader-member relationship; when members labeled the leader as truly transformational, there was increased affection for the leader and a higher quality leader-member relationship.

To summarize, we believe attribution of intentions for FSSB may moderate the relationship between FSSB and loyalty to supervisor, such that the effect of FSSB on loyalty to supervisor is stronger for employees with a low external attribution of intentions for FSSB. Thus, we hypothesized the following:

Hypothesis 4: Attribution of intentions for FSSB will moderate the relationship between FSSB and employee loyalty to supervisor, such that the relationship is stronger

for employees with a low external attribution of intentions for FSSB.

Taken together, our assumptions constitute a moderated mediation model (e.g., Hayes 2013; Muller et al. 2005) where the mediating effect of loyalty to supervisor in the relationship between FSSB and work engagement is moderated by the attribution of intentions for FSSB. Specifically, when employees consider FSSB as individualized support and extra care from their supervisors (low external attribution of intentions for FSSB), they are likely to be more loyal to their supervisors and hence experience high work engagement. In contrast, when employees think supervisors should provide FSSB as part of their formal job responsibilities (high external attribution of intentions for FSSB), they are less likely to respond with a sense of loyalty and hence less likely to experience increased work engagement. Building on the above hypotheses, we propose the following hypothesis:

Hypothesis 5: Attribution of intentions for FSSB will moderate the indirect effect of FSSB on work engagement through loyalty to supervisor, such that the indirect effect will be stronger for employees with low external attribution of intentions for FSSB.

## Method

### Participants

Our sample consisted of 310 employees from a supermarket chain in northeast China who voluntarily participated in two surveys. Among the sample of 310 employees, 77 (24.84%) were men and 233 (75.16%) were women. Their ages ranged from 20 to 56 ( $M = 33.32$ ,  $SD = 7.11$ ) years; a total of 243 (78.39%) participants were married and 67 (21.61%) were not married; 192 (61.94%) participants had at least one child under the age of 18; 182 (58.71%) participants had elderly people to take care of. Their average tenure at their current job was  $3.10 \pm 2.12$  years.

### Measures

#### Family Supportive Supervisor Behaviors

FSSB was assessed using the 14-item Family Supportive Supervisor Behaviors Scale developed by Hammer et al. (2009). The measure includes four subscales: emotional support (4 items; e.g., "My supervisor is willing to listen to my problems in juggling work and non-work life"), instrumental support (3 items; e.g., "My supervisor works effectively with workers to creatively solve conflicts between work and non-work"), role model (3 items; e.g., "My supervisor

demonstrates how a person can jointly be successful on and off the job”), and creative work-family management (4 items; e.g., “My supervisor asks for suggestions to make it easier for employees to balance work and non-work demands”). Participants scored each item on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), with higher scores indicating higher FSSB. This scale has shown good reliability and validity in previous research conducted in Chinese samples (Jiang et al. 2016; Xie et al. 2017). In the current study, the Cronbach’s alpha of the scale was .91. Further, the Cronbach’s alpha of the four FSSB subscales (emotional support, instrumental support, creative work-family management, and role modeling behaviors) were .75, .77, .86 and .85 respectively.

### Loyalty to Supervisor

Loyalty to supervisor was assessed using the 17-item Loyalty to Supervisor Scale developed by Chen et al. (2002). Each item was scored on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree), with higher scores indicating a higher level of loyalty to supervisor. An example item is “I would support my supervisor under all circumstances.” This scale has shown good reliability and validity in previous research conducted in Chinese samples (Wong et al. 2002). In the current study, the Cronbach’s alpha of the scale was .92.

### Attribution of Intention for FSSB

The Attribution of Intentions for FSSB Scale was adapted from the Blame Attribution Scale developed by Green et al. (2011). We created four items to assess attributions related to each of the four dimensions (instrumental support, emotional support, creative work-family management, and role modeling behaviors) of the FSSB scale (e.g., “I believe that supervisors have the responsibility to listen to my problems in juggling work and non-work life”). Participants scored items on a 6-point Likert scale (1 = strongly disagree, 6 = strongly agree), with higher scores indicating higher external attribution of intentions for FSSB (i.e., believing that supervisors have the responsibility to provide FSSB). In the current study, the Cronbach’s alpha of the scale was .75, and the confirmatory factor analysis (CFA) fit indices showed a good fit of the scale model:  $\chi^2 = 3.56$ ,  $df = 2$ , RMSEA = .05, IFI = .99, TLI = .99, CFI = .99.

### Work Engagement

Work engagement was assessed using the 17-item Work Engagement Scale developed by Schaufeli et al. (2002). Participants scored each item on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree), with higher scores indicating higher engagement. An example item is “When I am working, I forget everything else around me.” This scale has

shown good reliability and validity in previous research conducted in a Chinese sample (Liu et al. 2015). In the current study, the Cronbach’s alpha of the scale was .94.

### Work-Family Facilitation

We measured work-family facilitation and family-work facilitation with their own four-item scale developed by Wayne et al. (2004). Participants scored each item on a 5-point Likert scale (1 = never, 5 = always), with higher scores indicating higher levels of work-family facilitation or family-work facilitation. An example work-family facilitation item is “Having a good day on your job makes you a better companion when you get home.” An example work-family facilitation item is “Your home life helps you relax and feel ready for the next day’s work.” These scales have shown good reliability and validity in previous research in a Chinese sample (Jiang et al. 2016). In the current study, the Cronbach’s alpha of the work-family facilitation scale was .77, and the Cronbach’s alpha of the family-work facilitation scale was .73.

### Control Variables

Work-family facilitation and family-work facilitation were controlled for because this construct has already been documented to be a mediator of the link between FSSB and work engagement (Qing and Zhou 2017). In addition, according to previous research, we chose gender (male = 1; female = 0), marital status (married = 1; unmarried = 0), children under the age of 18 (yes = 1; no = 0), whether there is need for elder care (yes = 1; no = 0) and job tenure as control variables that correlate simultaneously with FSSB and work engagement.

### Procedure

We first obtained approval from the owner of the supermarket to conduct the study. Then, the human resources manager of the supermarket announced this research opportunity to the employees in all the departments and invited those interested in participating in the study to complete the questionnaires as a group in the store’s meeting room. We trained nine undergraduate psychology majors to assist with the distribution and collection of questionnaires. Specifically, they read the instructions to participants, clarified the purpose of the scales, and emphasized that the participants’ answers were anonymous. Then, the participants completed the paper-and-pencil questionnaires according to their current work situations. Each participant received a gift worth 35 Chinese Yuan (approximately 5 US dollars) at the end of the data collection. The present study received the university’s research ethics committee’s approval.

Similar to previous studies (Rodríguez-Muñoz et al. 2009), we collected data twice, with a 6-month interval between the

two waves. At Time 1 (T1), we measured FSSB and attribution of intentions for FSSB; we distributed 400 questionnaires and received back 371 usable questionnaires (92.75% response rate). At Time 2 (T2), we measured loyalty to supervisor, work engagement and control variables. Only those 371 participants who participated at T1 filled out the questionnaire for the second survey (T2). At T2, 23 of those employees were unable to participate because they were taking a long vacation or had resigned. We received 320 usable questionnaires (91.95% response rate). Of the 320, we eliminated 10 unusable questionnaires because at least a third of the variables were missing or more than 90% of the items had the same answers, leaving us with a total of 310 usable questionnaires.

Both questionnaires were anonymous. In order to match the first and second questionnaires, we created an anonymous code for each employee based on a name list provided by the human resource manager and wrote the anonymous code at the top right-hand corner of the first page of the questionnaires. Thus, the questionnaires were all anonymous.

We used the translation and back-translation method to translate the scales that were originally in English into Chinese. Specifically, scales in English (FSSB, loyalty to supervisor, work engagement and work-family facilitation) were first translated into Chinese by a PhD student who was fluent in both English and Chinese. The Chinese versions of the scales were then back-translated into English by another PhD student who was also fluent in Chinese and English. Discrepancies were resolved through discussion.

## Statistical Analysis

We tested the hypotheses using the SPSS macro PROCESS (Hayes 2013), which was developed for testing complex models, including the effects of both mediator and moderator variables. Specifically, we used PROCESS Model 4 to test the effect of FSSB on loyalty to supervisor (Hypothesis 1), the effect of loyalty to supervisor on work engagement (Hypothesis 2), and the mediation effect of loyalty to supervisor on the relationship between FSSB and employee work engagement (Hypothesis 3). Additionally, we used PROCESS Model 7 to test for moderated mediation effects (Hypotheses 4 and 5). In all analyses involving the moderation effect, the predictor variable and moderator variable were mean-centered prior to creating the interaction term. Finally, we used PROCESS Model 1 to produce the output used to probe and graph the interactions illustrating moderation effects. In the present study, bootstrapped bias-corrected confidence intervals (95%) for the indirect effects were generated using 5000 iterations of bootstrapping.

## Results

### Preliminary Analyses

Means, standard deviations, and correlations among the variables are presented in Table 1. The results showed that FSSB was positively correlated with both work engagement ( $r = .30$ ,  $p < .001$ ) and loyalty to supervisor ( $r = .38$ ,  $p < .001$ ). Additionally, loyalty to supervisor was positively correlated with work engagement ( $r = .56$ ,  $p < .001$ ). These results provided preliminary evidence in support of Hypotheses 1 and 2.

Before testing the hypotheses, we detected common method bias using confirmatory factor analysis (CFA). For the Harman's single-factor test at T1, we examined the one-factor model in which all items of all variables were loaded on a common factor. The results showed that this model had poor goodness of fit ( $\chi^2 = 908$ ,  $df = 135$ , CFI = 0.690, TLI = 0.649, RMSEA = 0.136). We then examined a five-factor model that included FSSB (four dimensions) and attribution of intentions for FSSB. The results of the five-factor model suggested that it had acceptable goodness of fit ( $\chi^2 = 227$ ,  $df = 125$ , CFI = 0.959, TLI = 0.950, RMSEA = 0.052). These results demonstrated that there was no serious common method bias in the T1 surveys.

Similarly, for the Harman's single-factor test at T2, the one-factor model had poor goodness of fit ( $\chi^2 = 4468$ ,  $df = 819$ , CFI = 0.538, TLI = 0.514, RMSEA = 0.120). We then examined the ten-factor model that included loyalty to supervisor (five dimensions), work engagement (three dimensions), work-family facilitation and family-work facilitation. The results of the five-factor model suggested that it had acceptable goodness of fit ( $\chi^2 = 1538$ ,  $df = 774$ , CFI = 0.903, TLI = 0.892, RMSEA = 0.056). These results demonstrated that there was no serious common method bias in the T2 surveys.

### Hypothesis Testing

Table 2 summarizes results from all hypothesis testing. As Eq. 2 shows, FSSB positively predicted loyalty to supervisor ( $B = .49$ ,  $p < .001$ ), supporting Hypothesis 1. As Eq. 3 shows, loyalty to supervisor positively predicted work engagement ( $B = .53$ ,  $p < .001$ ), supporting Hypothesis 2. Additionally, the indirect effect of FSSB on work engagement was significant (indirect effect = .26, 95% CI [.18, .36]), suggesting that loyalty to supervisor mediates the relationship between FSSB and work engagement, supporting Hypothesis 3.

Hypothesis 4 predicted that attribution of intentions for FSSB would moderate the relationship between FSSB and loyalty to supervisor, such that the relationship would be stronger for employees with low external attribution of intentions for FSSB. As shown in Table 2 (Eq. 2), the interaction between FSSB and attribution of intentions for FSSB predicted loyalty to supervisor ( $B = -.25$ ,  $p < .01$ ). Simple slope

**Table 1** Means, standard deviations, and correlations among study variables

Variables	1	2	3	4	5	6	7	8	9	10	11	
1.Gender	–											
2. Marriage	.01	–										
3.Children	.01	.64***	–									
4.Tenure	.05	.29***	.26***	–								
5.Elder care	-.01	-.16**	-.18**	-.15**	–							
6.Work-family facilitation (T <sub>2</sub> )	.05	.23***	.13*	.03	.05	(.77)						
7.Family-work facilitation (T <sub>2</sub> )	-.05	.14**	.10*	-.03	.10	.44***	(.73)					
8.FSSB (T <sub>1</sub> )	-.02	-.01	-.04	-.07	-.01	.33***	.33***	(.91)				
9.Attribution of intentions for FSSB (T <sub>1</sub> )	-.03	-.02	-.09*	-.08	-.05	.18**	.26***	.13**	(.75)			
10.Loyalty to supervisor (T <sub>2</sub> )	-.06	.15**	.08	-.03	-.05	.26***	.38***	.23***	.38***	.14**	(.92)	
11.Work engagement (T <sub>2</sub> )	-.02	.19***	.18***	-.06	-.06	.42***	.30***	.25***	.30***	.11*	.56***	(.94)
<i>M</i>	–	–	–	3.10	–	3.05	3.98	3.77	4.63	4.99	4.63	
<i>SD</i>	–	–	–	2.12	–	0.82	0.64	0.63	0.79	0.81	0.94	

*N* = 310; T1 = Time 1, T2 = Time 2; FSSB = family-supportive supervisor behaviors, Children = children under 18 years of age; Elder care = whether there are Elder man to take care; \* *p* < .05, \*\* *p* < .01, \*\*\* *p* < .001, similarly hereinafter

analyses showed that the effect of FSSB on loyalty to supervisor was stronger for employees with low external attribution of intentions for FSSB ( $B_{simple} = .67, p < .001$ ) than those with high external attribution of intentions for FSSB ( $B_{simple} = .27, p < .01$ ; see Fig. 2). Therefore, Hypothesis 4 was supported.

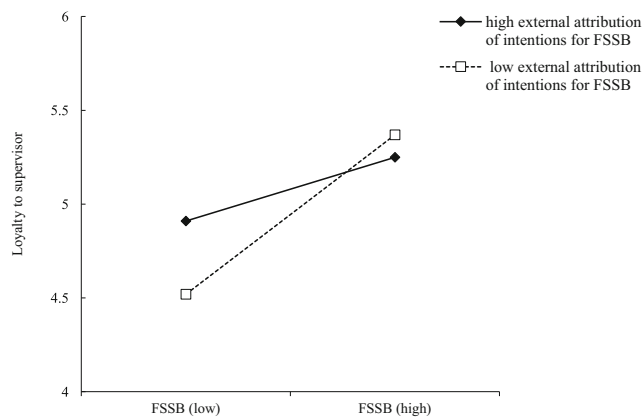
Hypothesis 5 predicted that attribution of intentions for FSSB would moderate the indirect effect of FSSB on work engagement through loyalty to supervisor, such that the indirect effect would be stronger for employees with low external attribution of intentions for FSSB. Results showed that the

index of moderated mediation was significant (effect =  $-.13$ , boot SE =  $.05$ , 95% CI [ $-.24, -.05$ ]). This result indicated that the two conditional indirect effects estimated for employees with low external attribution of intentions for FSSB and high external attribution of intentions for FSSB were significantly different from each other. Specifically, results showed that the indirect effect of FSSB on work engagement through loyalty to supervisor was stronger for employees with low external attribution of intentions for FSSB (effect =  $.36$ , boot SE =  $.07$ , 95% CI [ $.23, .50$ ]) than those with high external attribution of intentions for FSSB (effect =  $.14$ , boot SE =  $.05$ ,

**Table 2** Regression results for meditation effect and moderated meditation effect

Predictors	Equation 1		Equation 2		Equation 3	
	(Work engagement)		(Loyalty to supervisor)		(Work engagement)	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Gender	-.06	.11			-.01	.10
Children	.23	.13			.23	.12
Marriage	.15	.15			.01	.15
Tenure	-.05*	.02			-.04	.02
Elder care	-.11	.09			-.08	.08
Work-family facilitation (T <sub>2</sub> )	.38**	.07			.33***	.07
Family-work facilitation (T <sub>2</sub> )	.01	.09			-.03	.08
FSSB (T <sub>1</sub> )	.28***	.08	.49***	.07	.06	.08
Loyalty to supervisor (T <sub>2</sub> )					.53***	.07
Attribution of intentions for FSSB (T <sub>1</sub> )			.08	.06		
FSSB × Attribution of intentions for FSSB			-.25**	.09		
<i>R</i> <sup>2</sup>	.24		.18		.41	
<i>F</i>	10.75***		21.41***		21.02***	

*N* = 310; \* *p* < .05, \*\* *p* < .01, \*\*\* *p* < .001



**Fig. 2** Attribution of intentions for FSSB moderates the relation between family supportive supervisor support (FSSB) and loyalty to supervisor

95% CI [.06, .26]; see Table 3). These results supported Hypothesis 5.

**Additional Analyses**

Further, we tested the indirect effects of the four dimensions of FSSB (emotional support, instrumental support, creative work-family management, and role modeling behaviors) and work engagement through loyalty to supervisor. Results suggested that loyalty to supervisor mediated the relationships between each of the four dimensions of FSSB and work engagement. Specifically, the indirect effects of emotional support, instrumental support, creative work-family management, and role modeling behaviors on work engagement were .15, 95% CI [.08, .23], .17, 95% CI [.09, .25], .15, 95% CI [.09, .22], and .14, 95% CI [.07, .22], respectively. Results for the four dimensions of FSSB were all relatively consistent with the composite measure.

**Discussion**

Drawing from SIP and attribution theory, our study examined the indirect effect of FSSB on work engagement through loyalty to supervisor and the moderating effect of attribution of intentions for FSSB on this indirect effect. With two-wave lagged data collected from Chinese employees, our results showed that loyalty to supervisor mediated the effect of FSSB on employee work engagement after controlling for

the mediating role of work-family facilitation. Further, this indirect effect was stronger for employees with low external attribution of intentions for FSSB. In sum, our findings provide insights into how FSSB affects work engagement and how this link depends on whether or not the employee sees the FSSB as voluntary.

**Contributions to the Literature**

The findings of the present study make several contributions to the literature. First, the present study replicated earlier research showing a positive relationship between FSSB and work engagement (e.g., Qing and Zhou 2017). Notably, our research was conducted in China, providing important validation of these relationships in a non-Western context. Only a few studies have examined the effect of FSSB in the Chinese context. For example, Wang et al. (2013) examined the relationship between FSSB and job performance in a Chinese sample and found that supervisor emotional family support (one dimension of FSSB) positively predicted job performance. Given that there is a relative dearth of studies on FSSB in Chinese work settings, our use of a Chinese sample is important because people in different cultures may have different responses to FSSB (Wang et al. 2013). Our study showed that FSSB is positively associated with work engagement, consistent with previous research in Western settings (Matthews et al. 2014; Rofcanin et al. 2017) and in China (Qing and Zhou 2017).

Further, the majority of studies examining the relationship between FSSB and work engagement have used cross-sectional designs (Matthews et al. 2014; Rofcanin et al. 2017). The current study used a 6-month lagged design and replicated the positive effect of FSSB (T1) on work engagement (T2) in China, answering the call to extend the literature beyond using cross-sectional methodologies (Matthews et al. 2014).

Second, by establishing the mediating role of loyalty to supervisor the present study provides evidence for an “emotional path” through which FSSB affects work engagement. This “emotional mechanism” helps us better understand how FSSB affects employees given that the positive effect of the “emotional meaning” of non-emotional support is greater than that of “instrumental meaning” (Semmer et al. 2008). This finding joins the limited research (Qing and Zhou 2017) and

**Table 3** Conditional indirect effects of FSSB on work engagement at different values of Attribution of intentions for FSSB

	Attribution of intentions for FSSB	Effect	SE <sub>(boot)</sub>	95%CI
Loyalty to supervisor (T <sub>2</sub> )	3.84	.36	.07	[.23, .50]
	4.63	.25	.05	[.17, .34]
	5.42	.14	.05	[.06, .26]

contributes to a better understanding of the underlying mechanisms of the relationship between FSSB and work engagement. This finding is also in line with SIP theory (Salancik and Pfeffer 1978) and suggests that FSSB might provide cues that influence employee work engagement through employees' loyalty to supervisor, a reflection of positive emotional bond with their supervisors.

The finding that FSSB positively predicts employees' loyalty to their supervisor is also consistent with previous findings that positive leadership style in the Chinese context promotes subordinates' loyalty to supervisor (Ding et al. 2012; Wang et al. 2017). In Chinese society, employees are grateful for individualized support provided by their supervisors (Chen et al. 2002). Hence, when employees receive FSSB, they are more likely to reciprocate in the form of greater loyalty to supervisor. In addition, because loyalty to supervisor represents an emotion, the mediator role of loyalty to supervisor in the relationship between FSSB and work engagement may also be explained by affective events theory (Weiss and Cropanzano 1996). Specifically, employees' positive experiences of FSSB as positive events are likely to promote positive emotions regarding their supervisor (Weiss and Cropanzano 1996), which might, in turn, enhance loyalty to supervisor.

Finally, the present study for the first time examined the boundary condition of the relationship between FSSB and work engagement by focusing on the moderating role of attribution of intentions for FSSB. While a previous study examined family-supportive organizational culture as a moderator of this relationship (Rofcanin et al. 2017), the role of subordinates' attributions can serve as a more proximal boundary condition. We found that the effect of FSSB on engagement through loyalty to supervisor was stronger for individuals with low external attribution of intentions for FSSB, suggesting that employees tend to appreciate FSSB more when they think it is driven by supervisors' individualized care. To our knowledge, this is the first study to examine subordinates' attributions as the boundary condition of the relationship between FSSB and work engagement, which extends our understanding of how the effects of FSSB might vary.

## Practical Implications

The current study has several practical implications. First, the results showed that FSSB was directly linked to employee work engagement and that it was also indirectly linked to work engagement through employee loyalty. This suggests that the organization can potentially train supervisors to provide more FSSB as a way of promoting employee loyalty to supervisor and work engagement. Given that previous studies have demonstrated that supervisors can be trained to show more family-supportive supervisor behaviors (Hammer et al.

2011), we suggest that FSSB training can also potentially promote employees' work engagement. STAR (Support. Transform. Achieve. Results; Hammer et al. 2016; Kelly et al. 2014) is a useful and well-developed method of FSSB training (<https://workfamilyhealthnetwork.org/toolkits-achieve-workplace-change>).

Secondly, the present study shows that employees with low external attribution of intentions for FSSB tend to appreciate FSSB more and have a higher level of loyalty to supervisor, which in turn promotes their work engagement. Therefore, supervisors should try to provide individualized support to meet the specific needs of different employees, rather than showing the same support behaviors to all workers; individualized support could make employees feel valued as individuals in the organization. For example, supervisors might provide more FSSB to employees with higher work-family conflict, whereas supervisors could provide other formal or informal support to employees with lower work-family conflict.

## Limitations and Future Research

There are several limitations to the present study. First, the data at both time points were collected using self-reports. Using the self-report method for more than one variable may result in inflated correlation estimates because of common method variance. Hence, future studies may attempt to collect data from different sources. For example, supervisors can evaluate their subordinates' loyalty to them and work engagement. Second, while Qing and Zhou (2017) examined work-family enrichment as a positive spillover process, we were only able to control for work-family facilitation as an alternative in our analyses. This is because we only had information about work-family facilitation as an approximate representation of work-family enrichment. In spite of the similarity between work-family enrichment and work-family facilitation, future research should control for work-family enrichment and loyalty to supervisor to examine additional unique mediators in the relationship between FSSB and work engagement.

Third, we only tested employees' attributions about the supervisor's intentions in providing FSSB as a moderator of the relationship between FSSB and work engagement. Future studies can further examine factors affecting employees' attributions. For example, according to SIP (Bhave et al. 2010), information from family-supportive organizational culture (work-family policies or related policies of the organization) may influence employees' attributions for the intentions of FSSB. When organizational culture is supportive of family-friendly policies, employees make sense of the informational cues coming from the family-supportive cultural context and seek for the consistency between leaders' FSSB and organizational culture (Hammer et al. 2007; Paustian-Underdahl and

Halbesleben 2014). Hence, when organizational culture is supportive of family-friendly policies, employees may expect supervisors to exhibit family-supportive behavior and believe that supervisors have the responsibility to provide FSSB as part of their job duties (i.e., high external attribution of intentions for FSSB). In contrast, when organizational culture is not supportive of family-friendly policies, employees are likely to believe that their supervisors do not have the responsibility to provide FSSB to meet their family needs, and FSSB will be attributed to a willingness to go beyond supervisors' prescribed job duties (i.e., low external attribution of intentions for FSSB). We recommend future research to empirically test this notion.

## Conclusion

We found that family supportive supervisor behaviors positively predicted employee work engagement through employees' loyalty to supervisor. This mediational relationship was stronger for employees who believed that their supervisor showed family supportive behaviors out of extra care and support rather than job duty. The current study is an important step forward in examining how emotional factors such as loyalty to supervisor explain the relationship between FSSB and work engagement. Moreover, this study provides insights to how employees' attributions might affect how they respond to family support provided by the supervisor.

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