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## Work engagement as a key for unlocking performance

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2018

### **document version**

Publisher's PDF, also known as Version of record

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### **citation for published version (APA)**

Gutermann, D. (2018). *Work engagement as a key for unlocking performance: An investigation across different organizational levels.*

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## **CHAPTER 3**

### **HOW LEADERS AFFECT FOLLOWERS' WORK ENGAGEMENT AND PERFORMANCE: INTEGRATING LEADER-MEMBER EXCHANGE AND CROSSOVER THEORY<sup>2</sup>**

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<sup>2</sup> This chapter has been published as Gutermann, D., Lehmann-Willenbrock, N., Boer, D., Born, M.Ph. & Voelpel, S. C. (2017). How leaders affect followers' work engagement and performance: Integrating leader-member exchange and crossover theory. *British Journal of Management*, 28, 299-314. doi: 10.1111/1467-8551.12214

## ABSTRACT

Drawing on leader-member exchange and crossover theory, this study examines how leaders' work engagement can spread to followers, highlighting the role of leader-member exchange (LMX) as an underlying explanatory process. Specifically, we investigate if leaders who are highly engaged in their work have better relationships with their followers, which in turn can explain elevated employee engagement. For this purpose, we surveyed 511 employees nested in 88 teams and their team leaders in a large service organization. Employees and supervisors provided data in this multi-source design. Furthermore, we asked the employees to report their annual performance assessment. We tested our model using multilevel path analyses in Mplus. As hypothesized, leaders' work engagement enhanced LMX quality, which in turn boosted employee engagement (mediation model). Moreover, employee engagement was positively linked to performance and negatively linked to turnover intentions. As such, our multilevel field study connects the dots between work engagement research and the leadership literature. We identify leaders' work engagement as a key to positive leader-follower relationships and a means for promoting employee engagement and performance. Promoting work engagement at the managerial level may be a fruitful starting point for fostering an organizational culture of engagement.

### **Keywords:**

Work engagement; Leader-follower crossover; LMX; Employee performance.

Engaged employees are involved in and energized by their work (e.g., Salanova & Schaufeli, 2008; Schaufeli & Bakker, 2010). Work engagement means that employees are willing to go the extra mile while feeling well, being able to detach from their work, and maintaining a healthy work-life balance (Sonnentag, Binnewies, & Mojza, 2010). These positive attributes make work engagement a desirable quality for individual employees and organizations.

In terms of antecedents of work engagement, previous research has predominantly focused on job resources (e.g., Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Hakanen, Schaufeli, & Ahola, 2008; Mauno, Kinnunen, & Ruokolainen, 2007; Simbula, 2010). Some previous studies have also examined the role of leadership for promoting engagement, primarily with a focus on transformational leadership (Breevaart, Bakker, Hetland, Demerouti, Olsen, & Espevik, 2014; Hoon Song, Kolb, Hee Lee, & Kyoung Kim, 2012; Salanova, Lorente, Chambel, & Martínez, 2011; Tims, Bakker, & Xanthopoulou, 2011).

However, the link between leaders' own engagement and their followers' engagement is less clear, which is an important oversight. One of the main tasks for most leaders is interacting with their followers. During these interactions, employees likely notice and observe the motivational and affective states of their leader. As such, leaders' engagement could provide a salient example and role model which shapes employee engagement. To explore this idea of leader-follower engagement linkages, we draw from crossover theory (e.g., Westman, 2001), which posits that psychological states can transfer from one person to another, and from social learning theory (Bandura, 1977), which explains these processes in terms of learning by observing a salient role model. In the context of work engagement, previous research suggests that the extent to which the colleagues in one leader's team are engaged affects the level of individual work engagement in that team (e.g., Bakker, Van Emmerik, & Euwema, 2006; Bakker, LeBlanc, & Schaufeli, 2005; Bakker, Schaufeli, Sixma,

& Bosveld, 2001; Westman & Etzion, 1999). Building on the idea that leaders can function as role models for their followers (Bandura, 1977; Yukl, 2013), and drawing from previous research on mood crossover between leaders and followers (Gooty, Connelly, Griffith, & Gupta, 2010; Sy, Côté, & Saavedra, 2005), we argue that a similar transference of work engagement can occur from supervisors to subordinates, or from leaders to followers.

Moreover, to understand the underlying processes that can explain engagement crossover between leaders and followers, we focus on the role of leader-member exchange (LMX). Although there might be other possible mediating variables, the quality of the dyadic relationship between leaders and followers is one important reason why work engagement may transfer from leaders to followers. Earlier findings by Westman and Vinokur (1998) highlight interpersonal exchange as a mediator of crossover processes.

LMX theory remains one of the most popular streams in the leadership literature (Epitropaki & Martin, 2015). Several studies and meta-analyses have highlighted the importance of LMX for several positive follower outcomes such as job performance, commitment, and job satisfaction (Dulebohn, Bommer, Liden, Brouer, & Ferris, 2012; Gerstner & Day, 1997; Ilies, Nahrgang, & Morgeson, 2007; Martin, Guillaume, Thomas, Lee, Epitropaki 2015; Restubog, Bordia, Tang, & Krebs 2010). However, to the best of our knowledge, there are only a limited number of studies on LMX and work engagement to date (e.g. Breevaart, Bakker, Demerouti, & van den Heuvel, 2015). In a sample of police officers in the Netherlands, Breevaart and colleagues (2015) found that LMX was positively related to job resources, which in turn facilitated employees' work engagement and performance. Building and expanding on these earlier findings, we aim to examine how LMX may serve as an underlying mechanism that can explain engagement crossover between leaders and followers. Specifically, we argue that highly engaged leaders have better relationships with

their followers, which in turn benefits followers' work engagement. In other words, we investigate LMX as a mediator in the leader engagement-follower engagement link.

Generally speaking, high-quality interpersonal relationships are based on mutual obligations, trust, and reciprocity, therefore on a longer-term social relationship instead of a simple economic exchange (Dulebohn et al., 2012; Liden & Graen, 1980). We argue that engaged leaders are likely to aim for positive social relationships with their followers; positive LMX indicates such high-quality relationships, which, in turn, have important implications for employee engagement. Because humans are social in nature, good leader-follower relationships should a) build on leaders' engagement and b) facilitate followers' willingness to put energy and effort into their work. In other words, high-quality LMX acts as a mediating variable between the positive crossover from leaders' work engagement to followers' engagement.

In sum, this study offers the following contributions. First, our investigation of the linkages between leaders' and followers' work engagement applies crossover theory to the context of workplace engagement. Research to date has focused on engagement crossover between team members or within couples (e.g., Bakker et al., 2006; Demerouti, Bakker, & Schaufeli, 2005; Lehmann-Willenbrock, Meyers, Kauffeld, Neining, & Henschel, 2011), whereas the possibility of leader-to-follower crossover remains to be explored. Second, we aim to answer the question *why* work engagement crosses over from leader to follower. We begin to pinpoint the underlying social processes that drive leader-follower engagement crossover by highlighting the role of LMX as a mediating variable. Finally, by establishing links to desirable outcomes of individual work engagement (i.e., objective performance and reduced turnover intentions), our study underscores the relevance of LMX and leader-follower engagement crossover for organizational effectiveness.

## THEORETICAL BACKGROUND

Schaufeli, Salanova, Gonzalez-Roma, and Bakker (2002, p. 74) define work engagement as “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption.” *Vigor* entails a high level of energy and mental resilience during work, the intention to invest effort in one’s work and endure, even if one faces difficulties (Schaufeli et al., 2002). *Dedication* means having a sense of significance, enthusiasm, inspiration, pride, and challenge at work (Schaufeli et al., 2002). Finally, *absorption* is characterized by employees being fully concentrated and engrossed in their work (Schaufeli et al., 2002). Our conceptualization of work engagement follows the prominent definition by Schaufeli and colleagues (2002). A different definition by Kahn (1990), which was developed further by Rich, Lepine, and Crawford (2010), describes job engagement in terms of employees being physically, cognitively, and emotionally connected with their work roles (Kahn, 1990). In our study however, we focus on the engagement definition by Schaufeli and colleagues because we are interested in the work activity and the work itself, rather than focusing on employees’ work roles (see also Schaufeli & Bakker, 2010, for a differentiation between these two definitional approaches). Moreover, Macey and Schneider (2008) distinguish trait, state and behavioral engagement in the broader engagement literature. They conceptualize psychological state engagement as an antecedent of behavioral engagement, which is defined as a specific form of extra effort. We focus on the emotional component of state engagement (Macey & Schneider, 2008) for investigating leader-follower transference of engagement. To do so, we draw from the core tenets of crossover theory (Westman, 2001) regarding the transference of psychological states.

Antecedents of work engagement have typically been examined through the theoretical lens of the job demands-resources model (JDR model; e.g., Bakker, Demerouti, & Sanz-Vergel, 2014). This prominent model is based on the assumption that every work

environment entails both job demands (e.g., time pressure, or a high work load) and job resources (e.g., social support, or a good person-job fit). In order to foster work engagement, these job demands and job resources should be balanced (e.g., Bakker et al., 2014; Demerouti et al., 2001).

Previous research shows that job resources, such as one's autonomy and enjoying social support from one's co-workers, can prevent negative attitudes and buffer the effect of job demands, such as time pressure, work overload, and role conflicts (Bakker et al., 2014; Bakker, Demerouti, Taris, Schaufeli, & Schreurs, 2003; Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). Moreover, Bakker, Demerouti, and Euwema (2005) show that a high-quality relationship between leaders and followers, which can be regarded as a job resource, can help reduce job demands and thus prevent burnout. Although these previous findings relate to burnout prevention rather than engagement promotion, they provide a first indication that leaders might have an impact on their followers' work engagement.

#### *Leaders' influence on individual work engagement*

Consistent with the definition of work engagement as an affective motivational state of mind (Schaufeli et al., 2002), we expect that leaders' and followers' work engagement are connected. Previous research suggests linkages between leadership and follower motivation (Judge & Piccolo, 2004), and that leadership has an impact on followers' affect and mood (Gooty et al., 2010). In a meta-analysis, Halbesleben (2010) identifies constructive feedback as an important predictor of vigor and dedication. Similarly, Bakker Albrecht, and Leiter (2011) find that in a resourceful work environment, in which employees receive performance feedback and support from their supervisor, there is a high likelihood of achieving work goals. These previous findings suggest that engaged leaders may contribute to employees' engagement.

Generally speaking, research on the role of leadership for employee work engagement is still sparse. A few previous studies in this regard have considered transactional and transformational leadership (Breevaart et al., 2014), ethical leadership (Den Hartog & Belschak, 2012), and authentic leadership (Hsieh & Wang, 2015). Here, we focus on social learning (Bandura, 1977), crossover theory (Westman, 2001), and LMX (Liden & Graen, 1980) as theoretical background for our hypotheses. We chose LMX as a leadership theory because we aim to investigate possible explanatory processes of leader-follower crossover processes. We argue that a good relationship between leaders and followers is an important characteristic underlying such a crossover process.

Two theoretical angles suggest a link between leader and follower engagement. First, social learning theory by Bandura (1977) and the notion of leading by example (e.g., Yukl, 2013) imply that leaders can function as role models for their followers. The core tenet of social learning theory is the idea that people learn by observing the behavior of role models and by reproducing these behaviors (Bandura, 1977). Especially persons with social influence may function as role models, which goes in line with our research focus on leader-follower-engagement transference (Bandura, 1977). In line with this idea, Sy and colleagues (2005) found linkages between leaders' and followers' mood. Relatedly, a recent study shows behavioral linkages between leaders' and followers' communicative conduct during team interactions (Lehmann-Willenbrock, Meinecke, Rowold, & Kauffeld, 2015).

Second, crossover theory contends that psychological states can transfer from one person to another (Bakker, Westman, & Van Emmerik, 2009; Westman, 2001). People have a tendency to automatically synchronize their facial expressions, vocalizations, postures and movements to those of the persons with whom they spend time, and tend to converge emotionally (Hatfield, Cacioppo, & Rapson, 1993). In the workplace, employees can influence one another by transferring positive or negative states, such as work engagement

and burnout (e.g., Bakker et al., 2006). Bakker and Xanthopoulou (2009) found that work engagement can cross over among colleagues, and that this process is moderated by the frequency of interaction. Given the influential role of leaders in terms of follower attitudes and experiences in the workplace, engagement could also cross over from leaders to followers. We focus on this specific direction (from leaders to followers) because leaders often function as role models for their subordinates and thus shape employee attitudes (e.g., Yukl, 2013). Accordingly, we hypothesize the following:

*H1: Leaders' work engagement is positively related to followers' work engagement.*

#### *The mediating role of LMX*

Westman and Vinokur (1998) identified social interaction styles as a possible mediator of crossover mechanisms. Building on this work, we focus on LMX as an explanatory process for leader-follower engagement linkages for two reasons. First, engaged leaders have specific social relationships with their followers. LMX describes these relationships, which can vary in quality from one leader-follower dyad to another (Gerstner & Day, 1997; Graen & Uhl-Bien, 1995). If a leader is vigorous and enthusiastic, this will positively influence the exchange the leader has with his or her followers, which in turn may have benefits for followers' engagement. Hence, we argue that LMX is a mediator in the leader-follower engagement link. We consider LMX as a mediator rather than a moderator in this regard, since a moderator role would imply that LMX is stable and independent from the leaders' work engagement. In our opinion, LMX is not independent from leaders' engagement. Rather, we argue that LMX will increase as leaders' engagement increases, and that follower engagement will benefit in return.

Meta-analytic findings by Dulebohn and colleagues (2012) showed that LMX functions as a mediator when considering linkages between leader, follower, or interpersonal relationship characteristics on the one hand and organizational citizenship behavior and job

satisfaction outcomes on the other hand. Moreover, leader variables explained the most variance in LMX. Furthermore, followers are more strongly influenced by their leader than vice versa (Dulebohn et al. 2012). Hence, if employees perceive that their leader is highly engaged him- or herself and willing to contribute extra effort and time in order to develop trust and respect, they may feel encouraged to reciprocate by engaging in their own work tasks more.

When a leader-follower relationship is characterized as low-quality LMX, this means that the relationship can be described as a form of formally agreed upon economic exchange, or payment for performance, as noted in the employment contract (Blau, 1964). However, when a leader-follower relationship is characterized as high-quality LMX, this implies a social rather than an economic exchange (e.g., Dulebohn et al., 2012). As such, high-quality LMX entails feelings of reciprocity, mutual obligations, loyalty, support, trust, and commitment (Gouldner, 1960; Liden & Graen, 1980; Liden, Sparrowe, & Wayne, 1997; Cropanzano & Mitchell, 2005; Uhl-Bien & Maslyn, 2003). Engaged leaders may be more likely to create and maintain high-quality LMX with their followers. One of the main tasks of most leaders is to interact with his or her followers (e.g., Uhl-Bien & Ospina, 2012). We argue that a leader who is highly engaged should also invest more effort in these interactions, which will be reflected in the relationships with his followers. These in turn may explain followers' elevated work engagement. Furthermore, communicating and exchanging information with subordinates in a positive relational atmosphere are part of an engaged leaders' responsibility and task.

Second, our focus on LMX as a mediating process builds on earlier work referring to the JDR model, which showed that a high-quality relationship between leaders and followers can be regarded as a job resource (Bakker et al., 2005). Moreover, Schaufeli and Bakker (2004) found that supervisory coaching is positively related to work engagement, which hints

at the role of leader-follower relationships, or LMX, in promoting individual work engagement. Again, in following the tenets of the JDR model, LMX can be seen as a resource that fosters employee engagement. Indeed, a previous meta-analysis indicates a relationship between LMX and individual work engagement (Christian, Garza & Slaughter, 2011). Similarly, Agarwal, Datta, Blake-Beard, and Bhargava (2012) identified a positive relationship between LMX and work engagement. Moreover, in a sample of Dutch police officers, Breevaart and colleagues (2015) found that LMX was positively related to job resources, which in turn facilitated employees' work engagement and performance. These previous findings suggest that LMX plays an important part for follower engagement. Hence, we postulate that LMX may help explain why and how leader engagement can cross over and promote follower engagement. In other words, we build on and integrate earlier work on LMX, the JDR model, and employee engagement (Agarwal et al., 2012; Bakker et al., 2005; Christian et al., 2011) by examining the role of LMX as an explanatory process in the context of leader-to-follower engagement crossover. Accordingly, we anticipate that LMX mediates the crossover of leaders' work engagement to that of their followers. Put formally:

*H2: The positive relationship between leaders' and followers' work engagement is mediated by LMX.*

#### *Outcomes of individual work engagement*

Highly engaged employees are enthusiastic about their jobs, they work full of energy, and are willing to go the extra mile (e.g., Schaufeli & Bakker, 2010). Simultaneously, they can detach from their work and build a good work-life balance (Sonnentag et al., 2010). It is therefore not surprising that the relationship with employees' performance is a core characteristic of work engagement, which can be explained as follows (Bakker, 2009): Highly engaged employees tend to experience positive emotions at work, such as being

happy, joyful, and enthusiastic. Happy employees are open-minded, helpful, optimistic, and are open to opportunities (Cropanzano & Wright, 2001), all of which enable them to perform well. Further, previous research shows that highly engaged employees tend to enjoy good health (Bakker, 2009; Hakanen, Bakker, & Schaufeli, 2006). Research also supports a relationship between individual work engagement and performance (e.g. Halbesleben & Wheeler, 2008; Bakker & Bal, 2010). However, because no research has examined the potential leader-to-follower crossover of engagement and the subsequent effects on individual performance, we aim to replicate the performance benefits of individual engagement in this new setting.

Moreover, we investigate whether individual work engagement, enhanced by leader engagement via LMX, can diminish turnover intentions. Turnover intentions constitute an important challenge for organizations, as turnover can be costly, due to the new recruitment, required training, and knowledge loss. Moreover, previous research shows that turnover intentions have a direct effect on actual turnover (Bedeian, Kemery, & Pizzolatto, 1991; Griffeth, Hom, & Gaertner, 2000). Employees who are highly engaged not only tend to perform better, but also tend to identify with and feel highly committed to their work (Halbesleben & Wheeler, 2008). Committed employees are thus less likely to harbor turnover intentions (Neininger, Lehmann-Willenbrock, Kauffeld, & Henschel, 2010; Stanley, Vandenberg, Vandenberg, & Bentein, 2013). Taken together, this suggests a negative link between individual work engagement and turnover intentions.

Our final set of hypotheses aligns with previous findings (e.g., Halbesleben & Wheeler, 2008; Bakker & Bal, 2010), but also extends these findings by examining the outcomes of individual engagement in the context of leader-to-follower engagement crossover. We endeavor to emphasize leader engagement's important role by establishing its effects on individual performance and turnover intentions. In sum, we expect that followers'

work engagement is positively related to performance and negatively related to turnover intentions.

*H3*: Followers' work engagement is (a) positively related to individual job performance and (b) negatively related to turnover intentions.

## METHODS

### *Sample and procedure*

We collected our data by means of a workplace survey in a large service organization in Germany. The organization provides labor market services for the promotion of employment opportunities, the placement of potential candidates for job interview procedures, and services regarding unemployment benefits. At the beginning of this study, the organization aimed to make the fostering of work engagement a key value for personal and organizational development, and to develop an annual work engagement measure. All employees participating in this study worked in teams, with one supervisor responsible for each team. Hence, a defining structural characteristic of these teams was that team members shared the same supervisor and that they worked in the same department. Members interacted quite regularly with their respective team leader, which aligns with our research focus on possible crossover effects of leader and follower work engagement. Moreover, many of the teams' tasks required members to work interdependently (i.e., definition of a team; e.g., Hollenbeck, Beersma, & Schouten, 2012), although there were also some tasks during which team members worked independently from each other.

We sampled teams from different organizational units, such as labor recruitment services, application processing, and internal services, such as human resources and the information technology department. The organization is hierarchically structured. Employees report to the next higher management level, which means that supervisors and subordinates

have regular and consistent contact with one another. Team leaders have several responsibilities, such as making sure that each team reaches its goals (e.g., helping unemployed persons find a job), promoting a good team climate, and fostering individual employees in keeping with their knowledge, skills, and abilities.

Participation was voluntary and data confidentiality was guaranteed. All participants were informed that the data would be used for research purposes only. A central department, responsible for the conducting of anonymous employee surveys within the organization, distributed our survey by e-mail. The survey included an anonymous team number, which allowed us to match individuals to their respective teams and supervisor. In order to investigate leaders' effect on their teams, we excluded teams with fewer than three respondents (cf. Klein, Conn, Smith, & Sorra, 2001). Furthermore, we excluded teams whose supervisors did not participate in the survey, as this was a basic requirement for testing our hypotheses. Following this procedure, our final subordinate sample consisted of 511 employees belonging to 88 teams led by 88 team leaders. The average team size (excluding the supervisor) was 5.8 members ( $SD = 2.30$  ranging from 3-14). In the subordinate sample, 70% were female, 12% were younger than 30, 21% were between 30 and 39, 32% were between 40 and 49, and 35% were older than 50; 28% worked part-time. The supervisor sample consisted of 88 team leaders, of whom 43% were female. The majority of the team leaders were older than 50 years (49%), and only 8% of them worked part-time.

### *Measures*

*Followers' work engagement* was measured with the nine-item version of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006; translated version taken from Hering, 2008) ( $\alpha = .92$ ). The scale measures three sub-dimensions of employee engagement (vigor, dedication, absorption) with three items each. Sample items of the three sub-dimensions were: Vigor ( $\alpha = .87$ ): "At my work, I feel bursting with energy"; dedication ( $\alpha =$

.87): “I am enthusiastic about my job”; absorption ( $\alpha = .79$ ): “I feel happy when I am working intensely”. The response format was a 6-point Likert scale ranging from 1 (very often) to 6 (never).

*Leaders' work engagement* was assessed by the same nine-item version of the Utrecht Work Engagement Scale (Schaufeli et al., 2006; translated version by Hering, 2008), which the team leaders completed. The internal consistency of this scale was comparable to the engagement scale that the followers completed, indicated by an overall  $\alpha = .90$ . Sample items of the three sub-dimensions were: Vigor ( $\alpha = .89$ ): “At my work, I feel bursting with energy”; dedication ( $\alpha = .79$ ): “I am enthusiastic about my job”; absorption ( $\alpha = .74$ ): “I feel happy when I am working intensely”. The response format was a 6-point Likert scale ranging from 1 (very often) to 6 (never).

*LMX* was measured by asking the followers to rate three items originally developed by Scandura and Graen (1984) and adapted by Bauer and Green (1996) on a six-point Likert scale ranging from 1 (fully agree) to 6 (fully disagree). Due to feasibility issues, we were not able to include the full scale. Instead, we selected three items of the original scale, focusing on those items that showed high factor loadings in previous research (Joseph, Newman, & Sin, 2011). The items were translated into German by two bilingual translators, following a back translation procedure (Brislin, 1970). A sample item was, “My direct supervisor understands my problems and needs.” The internal consistency of this scale was  $\alpha = .93$ .

*Turnover Intention* was measured using a single item adapted from Spector, Dwyer, and Jex (1988): “During the last six months, how often did you think about quitting your job?” We used a six-point Likert scale ranging from 1 (very often) to 6 (never). The item was translated into German by two translators following a back translation procedure (Brislin, 1970).

*Performance* was measured by asking the respondents to indicate their annual performance assessment. The organization's performance appraisal system ensures that the appraisals are normally distributed. Grades from A to E indicate the performance: A represents the highest and E the lowest possible rating. Only 5% of the respondents receive an A, and no more than 25% a B. In order to compare the ratings with other survey scales, we converted the performance assessment letters into numbers from 1 (best performance) to 5 (worst performance). Due to confidentiality agreements with the workers council, we could not obtain the official performance records. Instead, we asked the participants to report their annual performance assessment. In support of this approach, Levy and Williams (1998) showed that there is substantial convergence between employees' self-reports of their performance appraisal and official performance appraisal records in organizations ( $r = .86$ ).

*Control variables.* We controlled for gender (0 = male, 1 = female), age, work hours, and team size in all the analyses. Owing to data confidentiality agreements with the workers council, we did not assess the exact individual age, but instead measured age in four clusters: 1 (under 30 years), 2 (30-39 years), 3 (40-49 years), and 4 (over 50 years). The workers council preferred this procedure to measuring employees' exact age in order to ensure the confidentiality of the individual followers' data. Finally, we also asked whether the respondents worked full-time or part-time and converted this information into a binary dummy variable.

*Data aggregation.* To substantiate the aggregation of our constructs and to show interrater agreement within the teams, we calculated rwg(J) values which indicate the extent of agreement within the teams. Furthermore, we calculated intraclass correlation coefficients to examine the ratio of between-group to total variance (ICC[1]), the respective F-tests, and the reliability of team members' average ratings (ICC[2]; Biemann, Cole, & Voelpel, 2012). The values were .82 (rwg(J)), .12 (ICC[1]),  $F = 1.78$ ,  $p = 0.00$ , and .44 (ICC[2]) for

subordinates' work engagement and .65 (rwg(J)), .16 (ICC[1]),  $F = 2.11$ ,  $p = 0.00$ , and .53 (ICC[2]) for LMX. Together, these values justify applying multilevel analyses (Geiser, 2011).

### *Analysis*

We conducted confirmatory factor analyses in MPlus 6.0 to check whether an overall one-factor or a three-factor model of work engagement (i.e., differentiating the three subscales) would provide a better fit to our data. Using the entire sample (leaders and followers;  $n = 599$ ), we compared a one-factor model of work engagement with a second-order confirmatory factor analysis with the three sub-facets load. The second-order confirmatory factor analysis showed a better model fit ( $\chi^2 = 160.49$ ,  $df = 23$ ,  $\chi^2/df = 7.00$ , RMSEA = .10, CFI = .96, TLI = .94, SRMR = .04) than the one-factor model ( $\chi^2 = 268.58$ ,  $df = 26$ ,  $\chi^2/df = 10.33$ , RMSEA = .13, CFI = .93, TLI = .91, SRMR = .05). The superiority of the second-order solution, including the three sub-facets (vigor, dedication, and absorption) was supported by a chi-square difference test ( $\Delta\chi^2/\Delta df = 36.03$ ). We therefore specified the model including the sub-facets of work engagement instead of a unidimensional construct. The residuals of two vigor items were correlated due to their semantic similarity (“At my work I feel bursting with energy” and “At my job I feel strong and vigorous”).

### *Multilevel model specification*

As employees were nested within teams led by one supervisor, the single observations were not independent from one another, thus requiring multilevel modeling (Nezlek, 2011). We tested the hypothesized relationships between the supervisors' work engagement, LMX, individual work engagement, performance, and turnover intentions by using multilevel path modeling in MPlus 6.0. Model fit indices ( $\chi^2$ , RMSEA, CFI, TLI, and SRMR) were evaluated according to recommendations by Vandenberg and Lance (2000). Because our

hypotheses were theory-driven and directional, we calculated one-tailed p-values (cf. Bolino, Hsiung, Harvey, & LePine, 2015; Perry-Smith, 2014).

## RESULTS

Tables 3.1 and 3.2 show the means, standard deviations, and zero-order correlations of all variables included in our analyses.

Table 3.1

*Means, standard deviations, and zero-order correlations of the study variables at the individual level*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
Individual level										
1. Gender										
2. Age			-.10*							
3. Working hours			.32**	.08						
4. Work engagement	2.57	0.95	-.08	-.20**	-.04					
5. LMX	2.48	1.30	-.04	-.05	-.04	.45**				
6. Performance	2.78	0.58	-.01	.03	.09*	.19**	.19**			
7. Turnover intention	5.20	1.38	.06	.16**	.09*	-.41**	-.38**	-.12**		
8. Team size	5.80	2.30	-.06	-.05	.03	-.02	.01	.01	.03	

*Note.* All variables refer to the followers in our sample. \* $p < .05$ ; \*\* $p < .01$ . Age is coded as follows: 1 = younger than 30 years, 2 = 30-39 years, 3 = 40-49 years, 4 = older than 50 years

Table 3.2

*Means, standard deviations, and zero-order correlations of the study variables at the team level*

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
Team level									
1. Leaders' gender									
2. Leaders' age			-.19						
3. Leaders' working hours			.17	-.06					
4. Leaders' work engagement	2.49	0.81	-.34**	-.08	.08				
5. Leaders' vigor	2.49	0.90	-.18	-.05	.02	.89**			
6. Leaders' dedication	2.47	0.90	-.28**	-.06	.06	.88**	.68**		
7. Leaders' absorption	2.49	0.96	-.42**	-.11	.14	.88**	.67**	.65**	

*Note.* Leaders' work engagement calculated as a composite score containing the three subscales (mean score of vigor, dedication, absorption). \* $p < .05$ ; \*\* $p < .01$ . Age is coded as follows: 1 = younger than 30 years, 2 = 30-39 years, 3 = 40-49 years, 4 = older than 50 years

In our multilevel path model, we controlled for the potential influence of leaders' and followers' age, gender, and work hours (working full-time or part-time), respectively, as well as for team size. In terms of followers' work engagement, we found a significant effect of gender (women reported higher work engagement on average;  $\beta = -.09, p = .01$ ) and age (such that older employees reported higher engagement than younger employees). Full- or part-time employment showed no meaningful relationship to followers' work engagement. In terms of supervisors' work engagement, we identified a significant effect of gender, such that women reported higher work engagement than men ( $\beta = -.37, p = .00$ ). Team size was not related to work engagement ( $r = -.02, p = .60$ ).

The specified multilevel model provided a good fit to the data ( $\chi^2 = 39.30, df = 25, \chi^2/df = 1.57, RMSEA = .03, CFI = .95, TLI = .92, SRMR_{within} = .02, SRMR_{between} = .06$ ). In

order to test H1 and H2, we regressed LMX on leaders' work engagement, as well as subordinates' work engagement on LMX, by applying the MLR estimator in Mplus (maximum likelihood estimation with robust standard errors), and tested for indirect effects using Bayesian confidence intervals (Falk & Biesanz, 2016). At the between level, leaders' work engagement showed a significant positive relationship to LMX ( $\beta = .26, p = .04$ ). At the within level, LMX was positively related to followers' work engagement ( $\beta = .46, p = .00$ ). Furthermore, there was a significant indirect effect between leaders' work engagement and follower engagement at the 90% confidence interval [.01, .23].

Since our confirmatory factor analysis revealed that it is possible to interpret the sub-facets of work engagement (absorption, vigor, and dedication) as distinct constructs, we also investigated the effects of the sub-facets of leaders' work engagement. Leaders' absorption had a significant indirect effect on followers' work engagement via LMX with a 90% confidence interval [.02, .17], whereas supervisors' vigor [-.01, .21] and supervisors' dedication [-.04, .20] had no significant effect. These findings lend support to H1 and H2 by showing that leaders' absorption can be specifically transferred from supervisors to their subordinates via LMX.

In order to test H3a and H3b, we regressed followers' work engagement on performance and turnover intentions. The results showed that the followers' work engagement was positively related to their performance ( $\beta = .12, p = .01$ ), which supports H3a. Moreover, the followers' work engagement was negatively related to their turnover intentions ( $\beta = -.31, p < .001$ ), which supports H3b. Figure 3.1 illustrates the results of our multilevel path analysis.

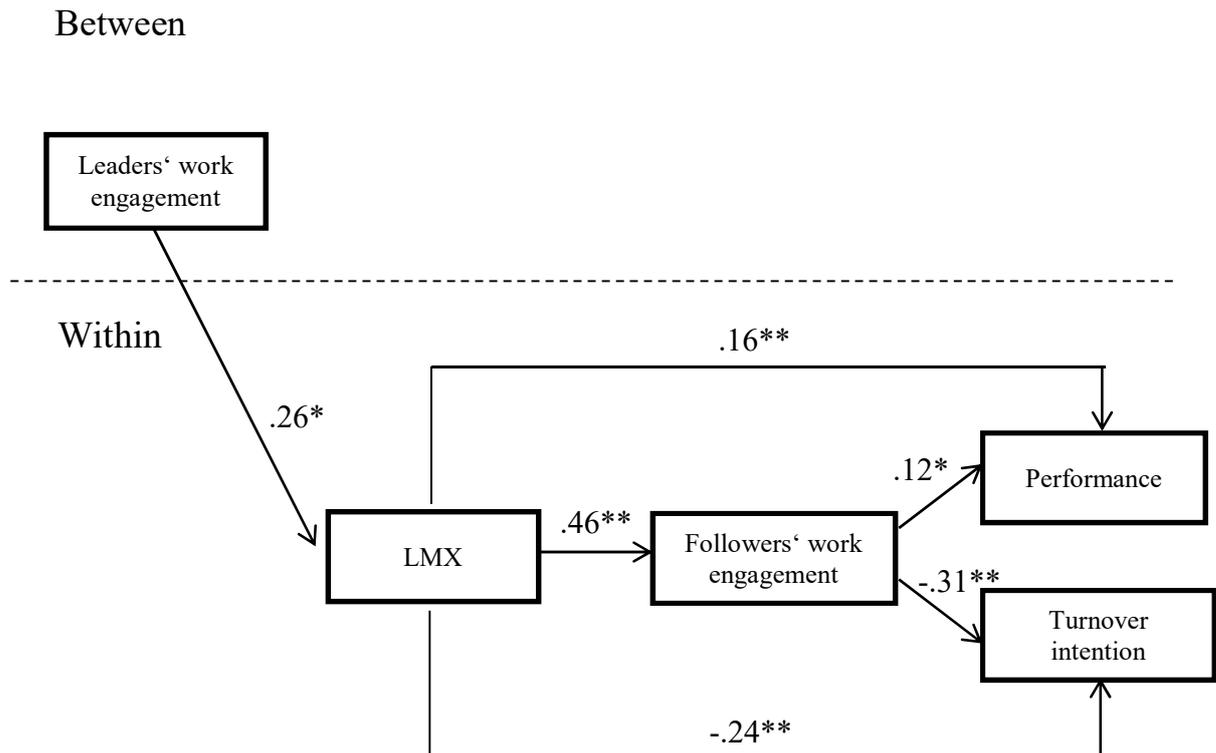


Figure 3.1. Path model showing the standardized effects of leaders' work engagement on LMX, followers' work engagement, and performance outcomes.

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

**Alternative models.** We tested alternative models in order to compare our model to other possible models and to further enhance confidence in our results (see Table 3.3). First we specified a direct link from leaders' work engagement to performance (Alternative 1). This model showed a worse fit to the data ( $\chi^2 = 360.39$ ,  $df = 48$ ,  $\chi^2/df = 7.51$ ,  $RMSEA = .03$ ,  $CFI = .94$ ,  $TLI = .91$ ,  $SRMR_{within} = .02$ ,  $SRMR_{between} = .11$ ). As the correlations already depicted, leaders' work engagement and followers' performance are not related ( $r = -.05$ ,  $p = .24$ ). Moreover, we tested whether LMX was not directly related to performance and turnover intentions (Alternative 2) and found a worse fit here, too ( $\chi^2 = 346.56$ ,  $df = 41$ ,  $\chi^2/df = 8.45$ ,  $RMSEA = .06$ ,  $CFI = .85$ ,  $TLI = .77$ ,  $SRMR_{within} = .03$ ,  $SRMR_{between} = .06$ ). Accordingly, we rejected these alternative models in favor of our proposed model.

Table 3.3

*Overview over Model Fit Indices for Proposed Model and Alternative Models*

	$\chi^2$	<i>df</i>	RMSEA	SRMR <sub>within</sub>	SRMR <sub>between</sub>	CFI	TLI
Proposed Model	39.30	25	.03	.02	.06	.95	.92
Alternative 1	360.39	48	.03	.02	.11	.94	.91
Alternative 2	346.56	41	.06	.03	.06	.85	.77

## DISCUSSION

This study followed recent calls to investigate the role of leadership in order to understand employees' work engagement (Bakker et al., 2011). Drawing from crossover theory, we hypothesized, and found, that leaders' work engagement can have a meaningful impact on that of their followers. In terms of the underlying process behind this link, we identified that LMX plays a mediating role. Our multilevel field study thus contributes an important step toward connecting the dots between work engagement research and the leadership literature.

Three main findings accrued from this study. First, we identified leader-follower crossover effects, such that the leaders' work engagement was positively linked to that of their followers. Second, when considering the sub-facets of work engagement, we found that the leaders' absorption was specifically positively related to LMX. Moreover, we found a significant indirect effect between the leaders' absorption and their followers' work engagement via LMX (i.e., mediation model). These findings indicate that leaders' own state of mind concerning their work plays an important role in shaping their relationships with their follower and their state of mind when working. Third, our study revealed that work engagement is related to performance and reduced turnover intentions, both of which are important outcomes for an organization.

*Theoretical implications*

Our findings contribute to the existing research on work engagement and leadership, thus heeding calls to study the relationship between leadership and work engagement (Bakker et al., 2011). First, our finding that leaders' engagement is positively linked to that of their followers extends previous research on crossover effects, which has mainly focused on crossover between spouses (e.g., Demerouti et al., 2005) or among team members (e.g., Bakker et al., 2006; Lehmann-Willenbrock et al., 2011). Our findings align with recent work on the relevance of leaders' affective states for the follower states (Sy et al., 2005; Visser, Van Knippenberg, Van Kleef, & Wisse, 2013).

Second, whereas most previous work on crossover effects has investigated negative states and strain, our study is among the few that indicate the possibility of a positive crossover in terms of the spread of positive attitudes, such as work engagement (Bakker et al., 2006). Our finding that work engagement can be transferred from leaders to followers underscores the importance of leaders' affective states and attitudes for their followers' attitudes in general and engagement in particular. Similar to recent findings on the influence of daily leadership behavior (Breevaart et al., 2014), our study suggests that organizations aiming to reap the benefits of employee engagement should focus on their leaders. Research on work engagement has primarily focused on employee work engagement, possibly due to its theoretical basis in the JDR model (e.g., Bakker et al., 2014). However, this focus has left the role of leaders' engagement under-researched and its positive effects on employee outcomes under-explored.

Third, our study deepens our understanding of the crossover process between leaders and followers by identifying LMX as a mediator in the context of engagement crossover. Our findings suggest that a good relationship between leaders and followers can explain the transmission of work engagement from leaders to followers. Our analysis of alternative

models further supported the important role of LMX in our model. This finding corresponds to previous research on the mediating role of interpersonal exchange in the context of crossover effects (Westman & Vinokur, 1998). Moreover, our findings indicate that leader's engagement can be an important behavioral indicator and a relationship signal for followers. Among the different sub-facets of leader engagement, our finding that leaders' absorption in particular was linked to follower work engagement via LMX is somewhat intriguing. One might speculate that absorption is the facet of leaders' engagement that subordinates can most easily observe and experience. For instance, an in-depth interview study by Schaufeli and colleagues (2001) described absorption an important facet of engagement, and as the sub-facet of engagement that cannot be considered as an opposite of burnout, as opposed to vigor and dedication. Furthermore, absorption as a particular component of work engagement is closely related to 'flow', in terms of a state of optimal experience, focused attention, and intrinsic enjoyment (Nakamura & Csikszentmihalyi (2014); Schaufeli et al., 2001). Especially the last point may be an explanation why leaders' absorption may be most strongly related to followers' engagement. To explore this idea, we interviewed two of the surveyed supervisors. They maintained that one of their main tasks is to guide and to interact with their followers. This implies that a leader who is highly absorbed in his or her job is highly involved in interacting with followers and may intrinsically enjoy this, which in turn may increase the crossover of work engagement via a good leader-follower relationship. However, future research needs to establish whether this particular finding can be replicated in different organizational settings.

Finally, by linking individual work engagement to positive outcomes that are highly relevant for organizations (i.e., individual employee performance and turnover intentions), our findings underscore the value of focusing on leader-follower engagement crossover for the organization at large. Our finding that individual engagement is linked to beneficial

individual performance outcomes is aligned with previous research on engagement outcomes (e.g., Bakker & Bal, 2010), but also extends previous work to a multilevel perspective of engagement and its effects. By simultaneously considering leaders' work engagement at the team level and followers' work engagement and performance outcomes at the individual level, our study provides a nuanced perspective of engagement antecedents and outcomes in the context of leader-follower relationships.

#### *Practical implications*

Promoting work engagement at the managerial level can be a fruitful starting point for fostering an organizational culture of engagement. For example, organizations could consider making engagement a focus of their leadership development efforts. Our findings suggest that such an enhancement of managerial engagement will subsequently cascade down the organizational ranks by promoting high-quality LMX and in turn fostering individual work engagement. Hence, in times of cost-efficient training developments, organizations could utilize the multiplication effects of manager trainings. Specifically, program combinations entailing work engagement, as well as relationship building and maintenance, might ensure the facilitation of leader-follower crossover effects. One particular workplace context in which leaders can foster employee engagement is during regular workplace meetings (Allen & Rogelberg, 2013).

Furthermore, given our finding that followers' work engagement is related to positive outcomes (i.e., performance and turnover intentions), organizations would be well advised to establish work engagement as a core organizational value. To initiate such development efforts, organizations could regularly (e.g., once a year) implement large-scale work engagement surveys. These survey findings could then provide starting points for development workshops in which employees and supervisors discuss the results and decide

which working conditions need to improve in order to foster a positive work engagement climate.

#### *Limitations and future research directions*

As with any empirical study, our study has several limitations. First, we collected our data from white-collar workers in a German service organization, which potentially limits the generalizability of our findings with regard to the sample's industry, culture, and ethnic composition. Future research should aim to replicate our findings in different organizational or cultural settings, and could also take a closer look at the effects of gender in the context of leader-to-follower engagement crossover. Especially female leaders tended to report higher engagement. Different organizational settings might also lead to gender differences in terms of followers' engagement. Moreover, future research could examine how gender matching between leaders and followers might moderate the strength of leader-to-follower crossover. In addition, future research could also explore leader and follower work engagement at the larger organizational level. Note that in our study the focus was on the middle management level, due to the fact that we aimed to investigate leader-follower transference of work engagement and that we assumed that direct interaction is a requirement for such a crossover effect. Future research could expand these findings to larger organizational units. Furthermore, future longitudinal studies could help address questions of causality and examine to what extent the leader-to-follower engagement crossover as investigated in this study could also take the opposite direction.

Second, we asked employees to report their annual performance appraisal. By definition, the company requires this performance measure to follow a normal distribution across organizational units, which is at odds with research on the distribution of individual performance (e.g., Aguinis & O'Boyle, 2014). Nevertheless, we did identify a positive relationship between individual work engagement and performance, although the relationship

between follower engagement and follower performance was notably weaker than the relationship between engagement and turnover intentions. This finding somewhat diverges from previous research (Halbesleben, 2010; Halbesleben & Wheeler, 2008), perhaps due to our performance measurement approach, in terms of asking the followers to indicate their annual performance evaluation. In comparison, previous findings on the engagement-performance link (Halbesleben & Wheeler, 2008), as well as our present findings regarding turnover intentions as an engagement outcome, are based on more subjective self-report measures, which may explain the relatively stronger link between engagement and turnover intentions identified here. Moreover, individual performance may depend on a number of factors besides engagement, and different follower outcomes can be intertwined. For instance, although not the focus of our current study and theoretical model, we identified a significant negative correlation between employees' turnover intentions and performance ( $r = -.12^{**}; p = .01$ ). Future research should examine such linkages in more detail.

Third, our study investigated LMX as a mediator of the crossover effect between leader and follower engagement. Arguably, the quality of LMX hinges not only on leader engagement, but also on other factors, such as the interaction frequency between leaders and followers. Although a high-quality LMX relationship implies some interpersonal exchange between the two parties (Dulebohn et al., 2012), future research should specifically account for the amount of actual contact between leaders and followers, which could also be a boundary condition for the effects identified here. Further potential boundary conditions that provide avenues for future research concern the extent to which a leader-follower setting is hierarchical, the specific type of occupation or industry, and particularly the extent to which the followers' work is interdependent and involves input from, or reliance on, a leader. Future research can also consider other possible mediators of leader-follower-crossover, such as positive feedback.

Fourth, we relied on self-reported data for some of our study variables. As such, common method bias could be an issue in our study. To alleviate this concern, we followed recommendations by Podsakoff, MacKenzie, Lee and Podsakoff (2003) and calculated a CFA letting all items load on one single factor. The CFA indicated that a single factor was not the best fitting solution for our measurement model ( $\chi^2 = 1708.29$ ,  $df = 77$ ,  $\chi^2/df = 22.19$ , RMSEA = .20, CFI = .66, TLI = .60, SRMR = .11). If common method bias was indeed a problem in our study, this factor solution would fit better or as well as our differentiated model, which was not the case ( $\Delta\chi^2/\Delta df = 908.55$ ). However, future research should aim to replicate our findings using data from multiple sources.

Fifth, we focused on engagement transferring from leaders to individual followers (by way of LMX), but we did not investigate potential team dynamics related to leader engagement and its effects. For example, when a team leader exhibits high engagement and this impacts an individual team member, other members may “catch” engagement from that team member rather than from the leader him-/herself. This might result in positive engagement spirals in the team (cf. positivity contagion; Lehmann-Willenbrock, Chiu, Lei, & Kauffeld, 2017), which may in turn affect the leader’s engagement. Such dynamic perspectives could be captured by future research using longitudinal measurements of entire teams and their leaders.

Finally, although engagement is an inherently positive construct (Bakker et al., 2008; Seligman & Csikszentmihalyi, 2000), and while our findings support this positive notion, future research should also consider possible curvilinear relationships. Engagement could become “too much of a good thing,” and there may even be a dark side to engagement (cf. Bakker et al., 2011; Maslach, 2011). When leaders' engagement reaches excessively high levels, the benefits of for follower engagement might fade, or engagement crossover may diminish. Future research can pursue this idea.

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