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A multilevel investigation of predictors and outcomes of shared leadership

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Summary

For modern organizations, shared leadership becomes increasingly important. Knowledge on shared leadership may be limited, as past research often relies on cross-sectional data or student samples, and most studies neglect the multilevel nature of shared leadership. Our research model includes transformational leadership, trust, and organizational support as predictors of shared leadership. Furthermore, we analyze the influence of shared leadership on team performance and team creativity. In total, 160 teams with 697 employees participated in our field study. Data collection took place at three time points. To test our hypotheses, we used multilevel modeling with a Bayesian estimator. We found relationships of transformational leadership and trust with shared leadership at the team level and of transformational leadership, trust, and organizational support with shared leadership at the individual level. Furthermore, shared leadership fully mediated the effect of the three input factors on team performance and team creativity. This study contributes to the understanding of the antecedents and outcomes of shared leadership. Furthermore, the dynamic development of team processes based on an input–mediator–output model is explored. On the basis of the results, organizations can increase shared leadership behavior by focusing on transformational leadership and trust building.

KEYWORDS
Bayes, multilevel, shared leadership, team creativity, team performance

1 | INTRODUCTION

The understanding of leadership in organizations has changed. Hierarchical and top-down influence processes that require a formal position are supplemented by more lateral and informal forms of leadership (DeRue & Ashford, 2010). Likewise, research on team processes and leadership focused on collective or shared forms of team leadership (Contractor, DeChurch, Carson, Carter, & Keegan, 2012; Morgeson, DeRue, & Karam, 2010). Scholars understand shared leadership in teams as an emergent, dynamic, and mutual influence process (Contractor et al., 2012). Recent studies found beneficial consequences of shared leadership for teams and organizations (e.g., Wang, Waldman, & Zhang, 2014; Zhu, Liao, Yam, & Johnson, 2018). Although the consequences of shared leadership (e.g., team performance) have been studied previously, less is known about the antecedents of shared leadership (Zhu et al., 2018). Summarized in a recent review by Zhu et al. (2018), the "research on the antecedents of shared leadership is still in its infancy" (p. 847). Additionally, Wu, Cormican, and Chen (2018) called for further studies in their meta-analysis to examine multiple antecedents of shared leadership simultaneously. On the basis of past theory building, a shared purpose, reciprocity, and a trustful team environment can be synthetized as necessary conditions for shared leadership (Bligh, Pearce, & Kohles, 2006; DeRue & Ashford, 2010; Hoch & Dulebohn, 2013; Zhu

et al., 2018). In particular, we focus on perceived organizational support (POS), transformational leadership, and team trust. POS is likely to evoke shared leadership, as teams behave reciprocally towards organizational support and develop a stronger obligation to organizational goals (Cropanzano, Anthony, Daniels, & Hall, 2017). Likewise, transformational leadership can foster a shared purpose and collective identification and helps to build leadership capacity among team members (Kearney & Gebert, 2009; Kozlowski, Mak, & Chao, 2016). Finally, team trust fosters risk-taking behaviors and thus may be a necessary condition to share leadership influence among team members (Bligh et al., 2006; DeRue & Ashford, 2010). However, it is still unclear whether shared leadership antecedents stem from outside the team (i.e., POS), from the team leader (i.e., transformational leadership), or from the team itself (i.e., team trust). To gain a more comprehensive understanding about shared leadership antecedents, this study provides knowledge about which of these factors are of particular importance for establishing shared leadership in teams.

Next, our study aims to identify the individual- and team-level mechanisms that contribute to shared leadership in teams. Specifically, we answer recent calls to investigate shared leadership from a multilevel perspective (Chiu, Owens, & Tesluk, 2016; Zhu et al., 2018). As teams are made out of individuals, the individual team members' perception of shared leadership antecedents is important for the process of sharing leadership within a team beyond a collective perspective (DeRue, Nahrgang, & Ashford, 2015; Humphrey & Aime, 2014). In particular, the individual reaction to the leadership influence of another team member may depend on the individual's perception of team trust, transformational leadership, or organizational support. Therefore, by examining a model of multilevel homology (Chen, Bliese, & Mathieu, 2005), this study may answer the questions: Which antecedents motivate an individual team member to contribute to the shared leadership process and which factors promote shared leadership in the whole team. This model of multilevel homology may help to integrate individual- and team-level mechanisms to a more general and parsimonious theory of shared leadership antecedents (Klein & Kozlowski, 2000a).

Summarized, the current study provides several contributions to the research on shared leadership. First, our study considers different antecedents of shared leadership. By focusing on POS, transformational leadership, and intrateam trust, this study provides new insights about which factors are particularly important for establishing shared leadership in teams. Second, we recognize the multilevel nature of shared leadership and consider shared leadership antecedents across the individual and team levels to identify factors that are related to individual team member response to leadership influence and to the distribution of leadership influence across the whole team. Finally, this study contributes to the understanding about the development of this team state and resulting outcomes by testing the following input–mediator–output model (IMO model; Ilgen, Hollenbeck, Johnson, & Jundt, 2005). In addition to examining three possible antecedents of shared leadership, we analyze whether shared leadership mediates the relationship between these antecedents and team performance and team creativity.

2 | SHARED LEADERSHIP

A common definition of shared leadership has been provided by Pearce and Conger (2003). They define shared leadership "as a dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both" (Pearce & Conger, 2003, p. 1). Building on the functional leadership framework of Morgeson et al. (2010), shared leadership is an internal and informal source of leadership, whereby leadership influence is distributed among the team members. Leadership influence of the team members can occur along with leadership influence of the formal team leader and affects the cooperation and effectiveness of a team in a positive manner (D'Innocenzo, Mathieu, & Kukenberger, 2016; Morgeson et al., 2010; Wang et al., 2014). From this functional leadership perspective, team members perform different types of team leadership functions. By practicing shared leadership, the team members jointly structure and plan their tasks and mutually provide feedback. Furthermore, they perform team tasks, engage in problem solving, and support the social climate within the team (Morgeson et al., 2010).

Newer leadership theories change the point of view from a top-down orientation of leadership influence (e.g., a formal hierarchical leader) to a more mutual and interactive conceptualization of leadership relations within organizations (e.g., Kozlowski et al., 2016). Concerning shared leadership, DeRue and Ashford (2010) developed the adaptive leadership theory, which focuses on the dynamic nature of leadership as a mutual social influence process. Leadership and followership are based on social interactions, in which individuals claim influence over others or grant the received influence by their team members. In these reciprocal interactions, identities as leader or follower emerge, if the team members accept their peer's claim as leader or follower. The identity as leader or follower can change across situations and over time, and it is affected by the history of claims/grants, as well as by the image reward or risk that is associated with claiming/granting the leader/follower identity (DeRue & Ashford, 2010). Accordingly, we understand shared leadership as a team state of mutual leadership influence among peers (i.e., on the same hierarchical level).

2.1 | Shared leadership from a multilevel perspective

Shared leadership is a phenomenon that emerges from the distribution of leadership influence within a team (e.g., Carson, Tesluk, & Marrone, 2007). According to Humphrey and Aime (2014), "teams are made out of individuals" (p. 481), and therefore, the current research on shared leadership may benefit from the inclusion of other levels of analysis (i.e., the individual level). Additionally, as a team phenomenon, shared leadership develops from individual cognition, affect, and behavior of the team members (Kozlowski, 2015), so a consideration of factors that influence these individual characteristics would provide meaningful insights for promoting shared leadership.

On the individual level, the measurement of shared leadership is the extent to which an individual team member perceives and accepts (i.e., grants) the leadership influence of his/her peers (DeRue & Ashford, 2010). These individual perceptions and acceptances of team members' influence behaviors form the team-level construct of shared leadership (as a compositional measure, see Kozlowski, Chao, Grand, Braun, & Kuljanin, 2013; Kozlowski et al., 2016). Accordingly, and in line with Carson et al. (2007), team-level shared leadership is an emergent team property that results from the distribution of leadership influence across multiple team members (p. 1218). Although the team level is the prior unit of analysis, and a sole consideration of individual perceptions of team phenomena can lead to problematic inferences (Kozlowski et al., 2016), from a multilevel perspective, both—the individual and team level—have to be considered (Humphrey & Aime, 2014; Mathieu & Chen, 2011).

2.2 | Predictors of shared leadership at the individual and team level

In this study, we will focus on POS, transformational leadership, and intrateam trust as antecedents of shared leadership. The selection of these three antecedents is based on theory development and past research on shared leadership (e.g., Denis, Langley, & Sergi, 2012; DeRue, 2011; DeRue & Ashford, 2010; Hoch & Dulebohn, 2013; Sweeney, Clarke, & Higgs, 2018; Wegge et al., 2010; Zhu et al., 2018). However, until now, these three antecedents have not been examined together. Examining these factors separately can lead to false inferences (Antonakis, Bendahan, Jacquart, & Lalive, 2010), as an isolated consideration may not explain which of these antecedents are particularly relevant to foster shared leadership. Thus, it is important to consider their incremental influence on shared leadership.

To consider the predictors of shared leadership from a multilevel perspective, we test the proposed relationships on the individual and team level. Theoretically, as described above, team-level shared leadership patterns emerge from the individual perceptions and behaviors of the team members (DeRue, 2011). To put it differently, team members individually perceive and accept (i.e., grant) the leadership influence of their peers (DeRue & Ashford, 2010), and these frequent interactions form team-level shared leadership. Until now, it has not been tested whether the underlying processes that shape these mutual influence behaviors may be similar across levels (Chen et al., 2005). As prior research was mainly focused on team-level relationships and mostly used compositional (i.e., shared perceptions of focal constructs in terms of aggregated individual-level measures; Bliese, 2000; Kozlowski et al., 2013) measures of shared leadership antecedents (e.g., Chiu et al., 2016; Hoch, 2013), we assume that the antecedents are similarly related to shared leadership on the individual and team level. Chen et al. (2005) described this expected pattern of parallel relationships as homologous model. This multilevel model of homology may contribute to a parsimonious theory of shared leadership antecedents, which integrates different levels (Klein & Kozlowski, 2000a). In the following, we theoretically discuss how the three antecedents may influence shared leadership at both levels.

2.2.1 | Perceived organizational support

POS is the general perception of employees "[...] concerning the extent to which the organization values their contributions and cares about their well-being" (Kurtessis et al., 2017, p. 1855). POS is generally based on a social exchange process: Employees expect to be valued, cared for, and rewarded by their organization for their effort to reach organizational goals (Rhoades & Eisenberger, 2002). As a result, the employees develop a greater organizational identification, higher commitment to the organization, and an increased willingness to engage in organizational matters (Kurtessis et al., 2017). Thus, employees show a higher obligation to the organization's goals and behave reciprocally (resulting, for instance, in shared leadership; Cropanzano et al., 2017; Cropanzano & Mitchell, 2005; Rhoades & Eisenberger, 2002). More precisely, felt obligation towards the organizational goals should result in a higher willingness to grant perceived leadership influence to another team member. In order to contribute to the organization's interests, a constructive leadership claim of a fellow team member would be valued as instrumental and therefore would be granted (DeRue & Ashford, 2010). Additionally, reciprocity is also suitable to underline the linkage between individual-level POS and granting leadership influence to others. In case of high POS, a focal team member may expect that the initial granting of leadership influence towards other team members would be considered in future leading–following interactions, where this individual is willing to claim leadership influence. In sum, the belief that risks (i.e., granting leadership to others) can be taken to achieve organization's goals should result in higher individual-level shared leadership (DeRue & Ashford, 2010; Kurtessis et al., 2017).

For teams that collectively experience high POS, the team members may feel a stronger obligation to commit themselves to the concerns and objectives of the organization. While practicing shared leadership, teams set goals, structure and plan their work, and perform team tasks to directly contribute to the organizational goals (Morgeson et al., 2010; Pearce & Sims, 2002; Wegge et al., 2010). Furthermore, POS can lead to a reciprocity norm within the team (Cropanzano & Mitchell, 2005; Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001), which generally should facilitate leading–following interactions. In case of a collective POS-based reciprocity norm, the team members may collectively calculate a lower risk for claiming and granting leadership influence as they expect that their peers would behave reciprocally in future leading–following interactions (DeRue & Ashford, 2010).

Empirical results, however, have so far supported these assumptions only indirectly. POS is associated with coworker trust, organizational commitment, coworker supportiveness, and extra-role performance (Kurtessis et al., 2017). These constructs are likewise related to shared leadership (Carson et al., 2007; Ensley, Pearson, & Pearce, 2003; Small & Rentsch, 2010; Wang, Jiang, Liu, & Ma, 2017).

Accordingly, we anticipate a positive relationship of individual perceptions of POS (individual level) and shared perceptions of POS (team level) with shared leadership within teams:

Hypothesis 1a. Individual perceptions of POS are positively related to individual-level shared leadership.

Hypothesis 1b. Shared perceptions of POS are positively related to team-level shared leadership.

2.2.2 | Vertical and shared leadership: The influence of transformational leadership

Vertical leadership is a formally appointed and internal source of team leadership (Morgeson et al., 2010). Some studies have shown that the behavior of the formal leader is linked to shared leadership behaviors of the team members (e.g., Grille, Schulte, & Kauffeld, 2015; Hoch, 2013; Pearce & Sims, 2002) and emphasized a social–cognitive perspective (Bandura, 2001) on the relationship between vertical and shared leadership. Furthermore, vertical leadership (especially transformational leadership) affects follower's self-efficacy and team potency (Conger & Kanungo, 1987; Schaubroeck, Lam, & Peng, 2011), which in turn can foster shared leadership behaviors (Bligh et al., 2006; Hoch, 2013). More specifically, we focus on transformational leadership, as a fundamental aspect of this leadership style is the development of the leadership capacity among followers (Kozlowski et al., 2016).

According to adaptive leadership theory, we assume that a team leader's transformational leadership style enhances shared leadership. By providing a strong vision and emphasizing collective goals, transformational leaders can foster the collective identification with the team (Kark, Shamir, & Chen, 2003; Kearney & Gebert, 2009). On the individual level, team members may go beyond their self-interests and accept the team goals as their own. In teams with clear collective goals—which are a core element of shared leadership (e.g., Bligh et al., 2006; Pearce & Conger, 2003)—and a strong identification of the members, it is thus more likely that a team member contributes to the shared leadership process and accepts the influence of other team members (DeRue & Ashford, 2010). Considering the team level, the team members may be collectively more motivated to involve themselves in leadership behaviors (Hoch & Dulebohn, 2013), as a transformational team leader may encourage a climate of participation and autonomy, which are critical antecedents of shared leadership (Pearce & Sims, 2000). In conclusion, transformational leadership may establish a social context that facilitates shared leadership on the team level (Hoch & Dulebohn, 2013; Kozlowski et al., 2016).

Empirical results give some preliminary evidence regarding the influence of transformational leadership on shared leadership. Hoch (2013) found this relationship in a sample of 43 teams using a cross-sectional design. Following these arguments, we expect an association between transformational leadership and shared leadership at the individual and team level:

Hypothesis 2a. Individual perceptions of transformational leadership are positively related to individual-level shared leadership.

Hypothesis 2b. Shared perceptions of transformational leadership are positively related to team-level shared leadership.

2.2.3 | Team trust

Trust is defined as "the willingness to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control the other party" (Mayer, Davis, & Schoorman, 1995, p. 712). Several forms of trust (trust in the organization, in the leader, and in the team colleagues) are related to individual performance and extra-role behavior (Colquitt, Scott, & LePine, 2007; De Jong, Dirks, & Gillespie, 2016), team processes, and team performance (Bormann, Poethke, Cohrs, & Rowold, 2018; Breuer, Hüffmeier, & Hertel, 2016; Fulmer & Gelfand, 2012). Trust is a team state that is established by individual perceptions and expectations about collective sense-making and shared experience (Breuer et al., 2016; De Jong & Dirks, 2012; De Jong & Elfring, 2010; Fulmer & Dirks, 2018). According to this theoretical basis, team trust can be defined

> ... as the shared willingness of the team members to be vulnerable to the actions of the other team members based on the shared expectation that the other team members will perform particular actions that are important to the team, irrespective of the ability to monitor or control the other team members. (Breuer et al., 2016, p. 1152)

The integrative model of organizational trust assumes that trust leads to risk-taking behavior (Mayer et al., 1995; Schoorman, Mayer, & Davis, 2007). In teams—as Breuer et al. (2016) stated—these risk-taking behaviors include mutual feedback, peer monitoring, acceptance of mutual influence, personal involvement, cooperation, and social exchange (p. 1152). These behaviors are also inherent to leadership functions that are fulfilled by the team (Mathieu, Kukenberger, D'Innocenzo, & Reilly, 2015; Morgeson et al., 2010), so high team trust may facilitate shared leadership.

Regarding individual-level shared leadership, a team member who experiences high team trust seeks more contact to the team and thus may perceive and accept more leadership claims of his/her peers (Breuer, Hüffmeier, Hibben, & Hertel, 2020). Furthermore, as high trust is related to more risk-taking behavior, a team member may have a higher willingness to give up control and grant the perceived leadership influence from his/her team colleagues (DeRue & Ashford, 2010).

In their adaptive leadership theory, DeRue and Ashford (2010) pointed out that sharing leadership influence depends on the perceived risk. At the team level, perceptions and expectations of the team members about collective sense-making and shared experience

that result in team trust (e.g., Breuer et al., 2016) would reduce the perceived risk of claiming and granting leadership influence. Summarized by Bligh et al. (2006), trust is a necessary condition to share leadership influence in the team. Due to the shared expectation that the team members would not misuse their influence but collectively allocate their effort in striving for the team goals, shared leadership should emerge (De Jong et al., 2016; Korsgaard, Kautz, Bliese, Samson, & Kostyszyn, 2018).

Adaptive leadership theory and social exchange theory can be utilized to further corroborate these lines of argumentation. The reciprocal influence of trust—an implication of social exchange theory is the mutual relationship of trust and cooperation—enhances claiming/granting leadership influence and in turn enhances shared leadership (Korsgaard et al., 2018; for the dynamic relation between shared leadership and trust, see also Drescher, Korsgaard, Welpe, Picot, & Wigand, 2014). Empirical studies have supported these assumptions. For example, in their longitudinal study, Small and Rentsch (2010) found that trust at Time 1 had a positive effect on shared leadership at Time 2. Therefore, we assume a positive relationship of intrateam trust with shared leadership.

Hypothesis 3a. Individual perceptions of intrateam trust are positively related to individual-level shared leadership.

Hypothesis 3b. Shared perceptions of intrateam trust are positively related to team-level shared leadership.

2.3 | Shared leadership and team outcomes—Testing an IMO model

Organizational support, transformational leadership, and trust are input factors that affect team behavior and team effectiveness (see, e.g., the meta-analyses of De Jong et al., 2016; Kurtessis et al., 2017; and Wang, Oh, Courtright, & Colbert, 2011). Likewise, shared leadership as an informal and internal leadership source may have an impact on the effective functioning of teams (Morgeson et al., 2010). Especially for complex tasks that require coordination and creative problem-solving, shared leadership is a promising team phenomenon (Morgeson et al., 2010; Wang et al., 2014). Following the definition of Pearce and Conger (2003), the achievement of a collective (group or organizational) goal is crucial for shared leadership. Several studies examined the effect of shared leadership on team performance (e.g., Carson et al., 2007; Pearce & Sims, 2002), and recent meta-analyses suggest a solid relationship (e.g., D'Innocenzo et al., 2016).

Concerning creativity and innovation, shared leadership enhances, for example, team cohesion (Mathieu et al., 2015) and an open communication climate (Park & Zhu, 2017), which are important antecedents of team creativity and innovation (Hülsheger, Anderson, & Salgado, 2009). On the basis of mutual influence processes and information sharing (DeRue, 2011; Hoch, 2014), teams engaging in shared leadership may foster the exchange of ideas and knowledge. Prior

studies examined the relationship of shared leadership with team creativity and innovation. Hoch (2013) revealed the positive association of shared leadership and team's innovative behavior in a cross-sectional study. Shared leadership (partially) mediated the effect of vertical leadership and team member integrity on innovative behavior.

Summarized, we predict that shared leadership is related to team performance and team creativity. Furthermore, we expect that shared leadership, as an important process mechanism, mediates the team-level relationships of the three input factors (organizational support, transformational leadership, and trust) with team performance and team creativity.

Hypothesis 4. Team-level shared leadership is positively related to (a) team performance and (b) team creativity.

Hypothesis 5. Team-level shared leadership mediates the team-level relationship of the three input factors (POS, transformational leadership, and trust) with (a) team performance and (b) team creativity.

3 | METHOD

3.1 | Sample and research design

We used an online survey for data collection. Research assistants supported the data collection, as they recruited teams from their personal and professional environment. Participants were informed about the purpose of data collection and then invited via a personalized link by e-mail. In total, we invited 697 team members and 160 team leaders from different organizations in Germany to our survey. We chose a time-lagged design to reduce common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) and to examine the temporal relationships of shared leadership antecedents and outcomes (Kozlowski & Chao, 2012). The survey was administered at three time points separated by 1 month each. If participants did not fill in the online survey within 1 week, they were reminded by a second e-mail.

At Time 1, the team members rated transformational leadership behavior of their team leader, intrateam trust, and POS. Furthermore, demographic variables were collected. After 1 month (Time 2), team members rated their shared leadership behavior. Team leaders assessed team performance and team creativity during the last survey (Time 3). As an incentive for participation, the teams could receive a feedback report on request.

From the initial sample, one team was excluded due to the team's own request. Due to nonresponse, some teams contained only the ratings of one team member. Those 11 teams were excluded from subsequent analyses. The final sample consisted of 149 teams, with ratings of 601 team members at Time 1 (response rate = 91%), 576 team members at Time 2 (response rate = 88%), and 140 team leaders at Time 3 (response rate = 93%). Teams consisted of an average of 4.42 members (SD = 2.65, range = 3–21).

Most team members were female (60%), and they were on average 35 years old (SD = 11.56). About 39% of the team members held a university degree, and 75% worked full time. Mean team tenure was 6 years (SD = 3.03 years). The team leaders were mostly male (58%), and they were on average 43 years old (SD = 11.46 years). Of these, 54% held a university degree as the highest education level and had worked for 7 years with their current team (SD = 2.97 years). The most frequently mentioned sectors were the trading sector (10%), the health-care and social sector (9%), the finance and insurance sector (8%), and the service sector (8%). About 34% of the teams worked in small companies with 100 employees or fewer, 43% worked in companies with 101 to 1,000 employees, 11% worked in companies with 1,001 to 10,000 employees, and 12% in companies with more than 10,000 employees.

3.2 | Measures

3.2.1 | Perceived organizational support

We measured organizational support with the 6-item scale developed by Eisenberger et al. (2001). Team members rated POS on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A sample item was "My organization takes pride in my accomplishments." As recommended by Geldhof, Preacher, and Zyphur (2014), we calculated composite reliability for within (individual) and between (team) levels instead of Cronbach's alpha. Composite reliability was $\omega = .88$ for within and $\omega = .96$ for between. In addition, we calculated intraclass correlation coefficients (ICCs) to assess the degree of agreement across team members' ratings (Bliese, 2000). ICC1 was .22, and ICC2 was .56 for POS.

3.2.2 | Transformational leadership

We used a 28-item scale to assess the team leader's transformational leadership behavior (Rowold & Poethke, 2017). These authors further developed earlier conceptualizations of transformational leadership (Bass, 1985; Carless, Wearing, & Mann, 2000; Podsakoff, MacKenzie, Moorman, & Fetter, 1990) and included the leadership behaviors of vision, individualized consideration, role modeling, intellectual stimulation, team spirit, and followers' performance development. This scale has been utilized in prior empirical research, where it has demonstrated adequate levels of construct and criterion-oriented validity as well as adequate reliability (Rowold & Poethke, 2017). For example, a sample item for vision was "My supervisor communicates his/her vision of long-term opportunities, tasks and goals in an enthusiastic way." Team members assessed the items on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The composite reliability for this scale was $\omega = .97$ for within and $\omega = .98$ for between. Agreement within the team was ICC1 = .30 and ICC2 = .65.

3.2.3 | Trust

Team members rated intrateam trust with nine items on a 6-point Likert scale ranging from 1 (*completely disagree*) to 6 (*completely agree*; Lehmann-Willenbrock & Kauffeld, 2010). A sample item was "I can rely on my colleagues." Composite reliability for the nine items was $\omega = .92$ for within and $\omega = .99$ for between. Values for ICCs were ICC1 = .20 and ICC2 = .52.

3.2.4 | Shared leadership

Shared leadership was measured using the procedure described by Carson et al. (2007): Every team member rated all of her/his colleagues on the item "To what degree does your team rely on this individual for leadership?" on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*to a very great extent*). To calculate the shared leadership score, we divided the sum of each team member's ratings by the number of ratings—with higher scores indicating a higher level of shared leadership (Carson et al., 2007). This approach has proven to be an adequate operationalization for shared leadership (e.g., Chiu et al., 2016; Mathieu et al., 2015) and has shown sufficient validity (D'Innocenzo et al., 2016). The degree of agreement across the ratings within the team was ICC1 = .10 and ICC2 = .34.

3.2.5 | Team performance

Team supervisors judged team performance using a 26-item questionnaire developed by Pearce and Sims (2002). Ratings were based on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item was "The team performs duties accurately and consistently." As team performance and team creativity were rated by team leaders, the reliability was only calculated for the team level. The reliability for this scale was $\omega = .95$.

3.2.6 | Team creativity

Team supervisors rated team creativity with 13 items (e.g., "My team comes up with creative solutions to problems") from George and Zhou (2001) on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Reliability for this scale was $\omega = .94$.

3.2.7 | Control variables

To address possible alternative explanations, we considered several control variables in this study. In line with previous studies (Carson et al., 2007; Chiu et al., 2016; Grille et al., 2015), we controlled for team size. Nicolaides et al. (2014) found in their meta-analysis that effectiveness of shared leadership was affected by team tenure.

Therefore, we included team members' tenure as well as the supervisor's team tenure as covariates. In the analytical model, direct effects of these variables on shared leadership, team performance, and team creativity were examined. The influence of team members' tenure on shared leadership was modeled at the individual (Level 1) and the team levels (Level 2).

3.3 | Construct validity

To ensure construct validity and distinctness of our study variables, we tested the measurement models for Time 1 and Time 3 separately. The first model comprised the constructs from the first measurement occasion. To consider the hierarchical data structure, we used multilevel confirmatory factor analysis and modeled the three latent factors (i.e., transformational leadership, intrateam trust, and POS) at the individual and team level simultaneously. Due to sample size requirements at the team level, we used the proposed six facets (Podsakoff et al., 1990; Rowold & Poethke, 2017) as indicators for transformational leadership. For trust and POS, we used all items of each measure as indicators. The measurement model had an acceptable fit to the data (χ^2 = 683.82, df = 354, p < .001, comparative fit index [CFI] = .96, root mean square error approximation [RMSEA] = .04, standardized root mean square residual [SRMR]$_{within}$ = .04, and SRMR$_{between}$ = .11). We compared our proposed model with a two-factor model, in which the indicators of transformational leadership and POS were loaded on one latent factor on the individual level and the team level, respectively. In comparison with our proposed three-factor model, this alternative model had a worse fit (χ^2 = 1801.33, df = 358, p < .001, CFI = .83, RMSEA = .08, SRMR$_{within}$ = .10, and SRMR$_{between}$ = .55).

For team performance and team creativity, we conducted a single-level confirmatory factor analysis, as the measures were located at the team level. We used 7-item parcels for team performance based on the seven facets provided by Pearce and Sims (2002). The data fitted well to our proposed measurement model (χ^2 = 291.24, df = 169, p < .001, CFI = .93, RMSEA = .07, and SRMR = .05). Again, we compared our proposed model to a single-factor model. This alternative model had a poorer fit to the data (χ^2 = 445.73, df = 170, p < .001, CFI = .84, RMSEA = .11, and SRMR = .07). Following these results, the confirmatory factor analyses suggest the distinctness of the study variables and therefore indicate construct validity for the measures in our survey.

3.4 | Statistical analysis strategy

Prior research often relies on analyzing the team level by aggregating individual perceptions of team behavior. This approach has several disadvantages (Kozlowski et al., 2013). First, aggregating data always leads to a loss of statistical power because of the reduced sample size. Second, within-team variability is constrained to zero, as all observations within one team are reduced to a single score. Third and most

importantly, the observed group mean might be highly unreliable, as the reliability of a compositional measure depends on group size and ICC (see Lüdtke et al., 2008; Preacher, Zyphur, & Zhang, 2010). To account for these issues and to recognize the hierarchical structure of the data with team members nested within teams, we used a multilevel structural equation modeling (MSEM) approach (Preacher et al., 2010) and tested our mediational model with Mplus 7.3 (Muthén & Muthén, 1998-2015).

This procedure allowed us to estimate the hypothesized relationships at the individual level (Level 1) and at the team level (Level 2) simultaneously. In addition to the direct relationships, we included covariances between the three antecedents. Likewise, we included a residual covariance between team performance and team creativity. The advantage of this approach in comparison with multilevel modeling is that the variance of a Level 1 variable is partitioned into its within and between components, so no centering is needed (Preacher et al., 2010, p. 215). Furthermore, the group means (i.e., team means representing the emergence of a Level 1 construct on a higher level) are treated as latent. This implies that they are corrected for the unreliability (especially in cases of low ICC1 and small group sizes) to yield unbiased estimates at Level 2 (Lüdtke et al., 2008; Zitzmann, Lüdtke, & Robitzsch, 2015).

For model estimation, we chose a Bayesian estimator. Simulation studies showed that a Bayesian approach provides more accurate estimates compared with maximum likelihood estimation (Depaoli & Clifton, 2015; Zitzmann et al., 2015; Zitzmann, Lüdtke, Robitzsch, & Marsh, 2016). Bayesian model estimation uses a Markov Chain Monte Carlo (MCMC) algorithm. Missing data are treated similar to the *full information maximum likelihood* estimator in Mplus. Thus, with a Bayesian estimator, all available data are used for model estimation (for more details, please see Asparouhov & Muthén, 2010).

Following the recommendations of Depaoli and van de Schoot (2017), as well as Kaplan and Depaoli (2012), we checked Bayesian model fit and MCMC convergence with the following criteria: posterior predictive checking (PPC), potential scale reduction (PSR), trace plot, and degree of autocorrelation. PPC refers to a comparison of the fit statistics (based on a likelihood-ratio χ^2 test of model-implied data against observed data) between observed and simulated data (see part [a] of Figure 1). A deviation in the fit statistics can be attributed to model misspecification (Muthén & Asparouhov, 2012). The ratio of the model fit of the simulated data that exceeds the model fit of the observed data is measured in a posterior predictive p value (PPP). Values of about .5 indicate an excellent model fit; values under .05 indicate an ill-defined model. Furthermore, a 95% confidence interval (CI) of the discrepancy statistic should include zero (Muthén & Asparouhov, 2012; for a more detailed description of PPC and PPP, see Asparouhov & Muthén, 2010).

PSR assesses convergence by the ratio of between-chain variation to within-chain variation for each parameter of the two independent Markov chains. Values close to 1 indicate that the independent Markov chains come to similar results and thus can be interpreted as an evidence of convergence (Muthén & Asparouhov, 2012). Along with PSR, it is recommended to inspect trace plots of every estimated
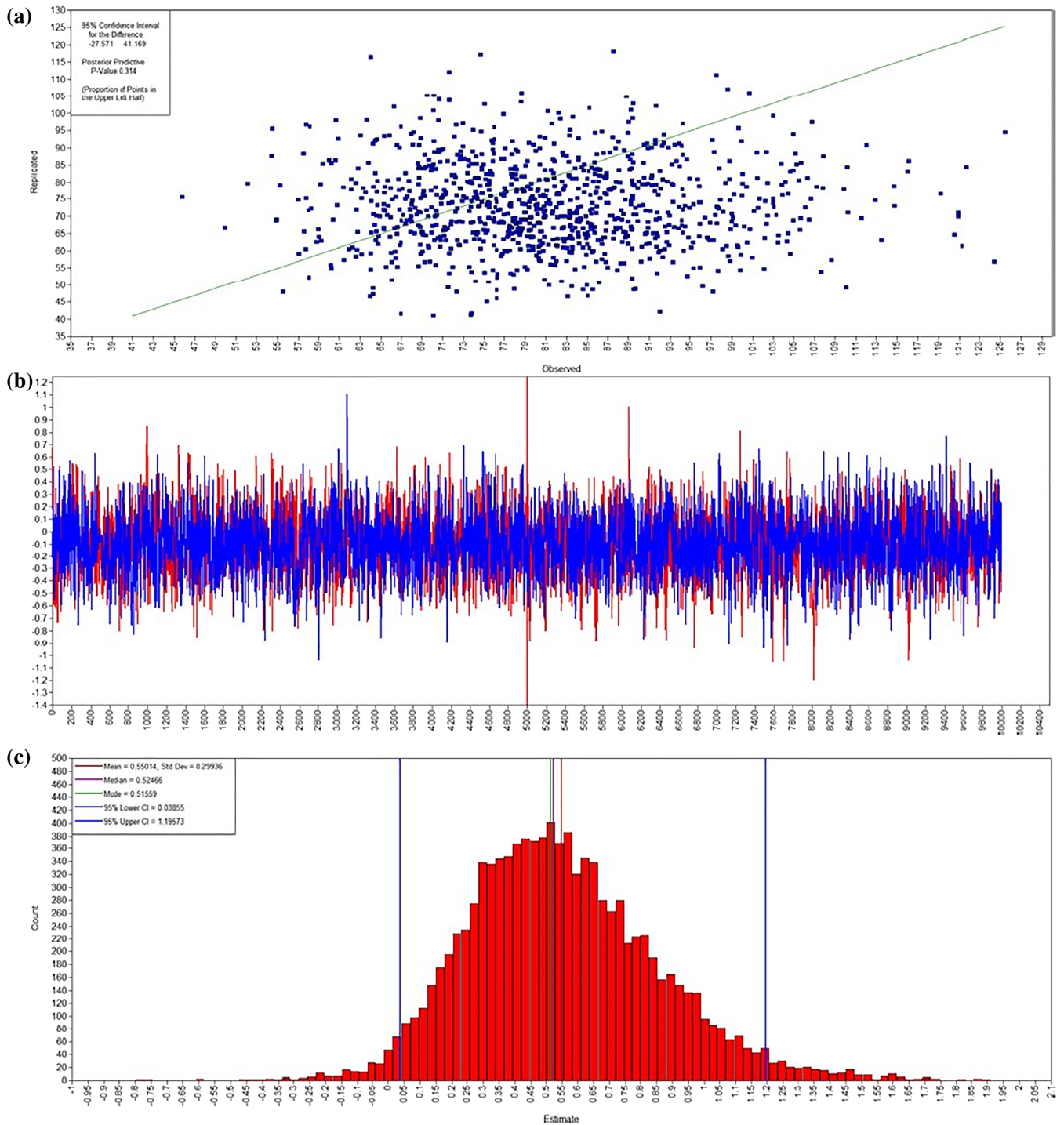
FIGURE 1 Model characteristics and Markov Chain Monte Carlo convergence. Part (a) presents the posterior predictive checking; part (b) presents trace plot for the standardized effect of perceived organizational support on shared leadership; and part (c) presents density plot of the indirect effect of trust on creativity [Colour figure can be viewed at wileyonlinelibrary.com]

parameter (e.g., slopes, latent means, or residual variances). Trace plots show the history of estimations for the Markov chains (see part [b] of Figure 1 for an example). Fluctuations around the central tendency of the posterior distribution and lack of long-term trends display convergence (Depaoli & van de Schoot, 2017). Autocorrelation plots exhibit the degree of dependence of consecutive draws from the posterior distribution, which should be independent from each

other. High levels of autocorrelation can be an indicator of convergence problems (Depaoli & van de Schoot, 2017).

In total, 100,000 iterations were run. The burn-in phase comprised the first 50,000 iterations. According to high levels of autocorrelation for between-level (i.e., team-level) parameters, only every 10th iteration was included in the posterior distribution (a technique called *thinning*; Depaoli & van de Schoot, 2017; Muthén &

Asparouhov, 2012). We used Mplus default priors (i.e., uninformative prior distributions) for our model estimation. For the results, we reported the median and the 95% CI of the posterior distribution for each parameter (see part [c] of Figure 1 for an example).

4 | RESULTS

The means, standard deviations, and intercorrelations are presented in Table 1. Most of the main variables were correlated, which provided preliminary support for our hypotheses. The characteristics of the Bayesian model fit and MCMC convergence are shown in Figure 1. The model fit was good. The PSR decreased quickly over the iterations and reached a value of 1.00. The trace plots for all parameters showed a typical pattern for MCMC convergence and did not reveal any trends. The PPP was .31, and the 95% CI for the replicated values included zero (PPC = [−27.57, 41.17]).

The results of the Bayesian MSEM are presented in Figure 2. Hypotheses 1a and 1b proposed a relationship of POS with shared

leadership on the individual and team level. The analysis revealed that POS predicted shared leadership only at the individual level (β = .16, 95% CI = [0.06, 0.26]) but not at the team level (β = −.11, 95% CI = [−0.57, 0.35]). For Hypotheses 2a and 2b, the results indicated a small positive relationship of transformational leadership with individual perceptions of shared leadership (β = .12, 95% CI = [0.02, 0.22]) and a moderate relationship with team-level shared leadership (β = .41, 95% CI = [0.01, 0.85]), as the 95% CIs excluded zero. Thus, Hypotheses 2a and 2b were supported. The posterior distribution of the relationship of trust at the individual level excluded zero as a plausible value (β = .13, 95% CI = [0.03, 0.22]). Likewise, at the team level, trust moderately predicted shared leadership (β = .39, 95% CI = [0.04, 0.70]), offering support for Hypotheses 3a and 3b. In total, 11% of the variance of shared leadership was explained by the three input factors at the individual level and 81% at the team level.

For Hypotheses 4a and 4b, the data supported our assumptions. Shared leadership was positively related to team performance (β = .42, 95% CI = [0.08, 0.87]) and team creativity (β = .62, 95% CI = [0.29, 1.19]). The model explained about 17% of the variance of

TABLE 1 Descriptive statistics and intercorrelations

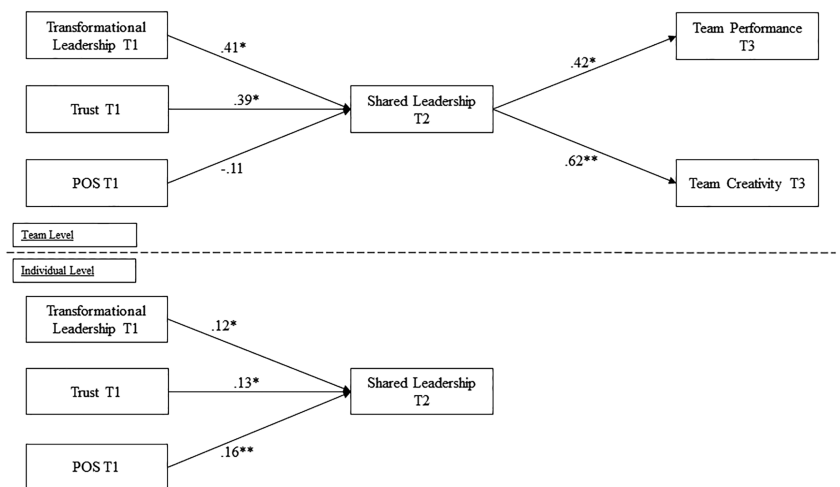|	M	SD	1.	2.	3.	4.	5.	6.	7.	8.
1. Team tenure	5.79	3.03		—	—	−.08	−.07	−.01	−.08	—
2. Leader tenure	7.18	2.97	.42**		—	—	—	—	—	—
3. Team size	4.42	2.65	.05	−.09		—	—	—	—	—
4. Transformational leadership	3.63	0.80	−.16	−.02	−.14		.32**	.45**	.21**	—
5. Trust	4.86	0.90	−.18*	−.06	−.09	.44**		.39**	.21**	—
6. POS	4.68	1.27	−.07	.09	−.20*	.57**	.37**		.23**	—
7. Shared leadership	3.47	0.89	.06	.10	−.16	.33**	.35**	.33**		—
8. Team performance	3.79	0.57	.05	.12	−.17*	.20*	.19*	.16	.15	
9. Team creativity	3.43	0.74	.06	.10	−.21*	.27**	.26**	.11	.20*	.75**

Note: Team-level correlations are presented below the diagonal (N = 139–149); individual-level correlations are presented above the diagonal (N = 554–609).
Abbreviation: POS, perceived organizational support.
*p < .05.
**p < .01.

FIGURE 2 Results from Bayesian multilevel model. Presented are standardized model coefficients. Control variables and covariances between predictor variables as well as team performance and creativity are not shown. *95% confidence interval of posterior distribution excludes zero. **99% confidence interval of posterior distribution excludes zero.
Abbreviations: POS, perceived organizational support; T1, Time 1; T2, Time 2; T3, Time 3

team performance and 33% of the variance of team creativity. None of the covariates had an effect on shared leadership, team performance, or team creativity, as all CIs included zero as a plausible value.

4.1 | Test of indirect effects

For Hypotheses 5a and 5b, posterior distributions of the unstandardized indirect effects were calculated. As POS was not associated with shared leadership, zero was a plausible value for the indirect effects on team performance and team creativity. For transformational leadership, only the indirect effect on team creativity was different from zero (B_{ind} = .46, 95% CI = [0.00, 1.01]), whereas for team performance, the posterior distribution slightly included zero as a plausible value (B_{ind} = .30, 95% CI = [−0.01, 0.77]). Shared leadership mediated the effect of trust on team performance (B_{ind} = .36, 95% CI = [0.00, 0.94]). In addition, the effect of intrateam trust on team creativity was mediated by shared leadership (B_{ind} = .53, 95% CI = [0.04, 1.20]).

4.2 | Supplementary analysis

In order to reinforce the results of our proposed multilevel mediation model, we tested an alternative model with direct effects of transformational leadership, trust, and POS on team performance and team creativity. To ensure MCMC convergence, we excluded covariates from model estimation. The model fit improved only to a small amount (PPP$_{direct}$ = .56 vs. PPP$_{indirect}$ = .53), and for all direct effects on team performance and team creativity of the three input factors, zero seemed to be a plausible value, as all CIs included zero. Taken together, the results indicated that shared leadership fully mediated the effects of the input factors and thus offered support for Hypotheses 5a and 5b.

For a comparison of the results, we also used maximum likelihood estimation for our model. The model fit was good (χ^2 = 33.84, df = 23, p = .07, CFI = .98, RMSEA = .03, SRMR$_{within}$ = .03, and SRMR$_{between}$ = .12). The pattern of results was in general comparable with Bayesian model estimation, whereas the standardized estimates were slightly higher for the maximum likelihood estimation.

Following the recommendation of an anonymous reviewer, we checked our results for endogeneity bias. Therefore, we applied an instrumental variable approach using the two-stage least squares technique (2SLS; as proposed by Antonakis et al., 2010). As 2SLS is not available for MSEM, we applied this procedure only at the individual level using the MIIVsem package (version 0.5.4; Fisher, Bollen, Gates, & Rönkkö, 2019) in R (version 3.6.1; R Core Team, 2019). As instruments, the team means of the three antecedents (a similar approach was used by Antonakis & House, 2014 and Kunze, Raes, & Bruch, 2015) and demographic variables (e.g., age, gender, education level, team tenure, and company size) were used. Prior to analysis, all variables have been standardized. The results were comparable with those of our Bayesian MSEM estimation (POS: β = .15, p < .01;

transformational leadership: β = .16, p < .01; trust: β = .16, p < .01), and the results of the Sargan test for overidentification indicated that the instruments were valid (χ^2 = 9.68, df = 10, p = .47). Summarized, this supplemental analysis indicated the absence of an endogeneity bias for individual-level results.

5 | DISCUSSION

The results of this study highlight team trust and transformational leadership as antecedents of shared leadership at the individual and team leve. In contrast, POS affected only the individual perceptions of shared leadership, whereas the results did not indicate a relationship at the team level. Regarding the consequences of shared leadership, we found that shared leadership was positively related to team performance and team creativity. Teams in which the members influence each other towards a common goal may be better able to accomplish their goals and meet performance expectations. Moreover, teams with high levels of shared leadership can develop more novel ideas and suitable solutions for complex problems. Furthermore, shared leadership fully mediated the team-level relationships of trust and transformational leadership with team performance and team creativity. This highlights shared leadership as an important team state.

5.1 | Theoretical contribution

This study contributes to the understanding of which factors promote shared leadership in teams and addresses recent calls for further research regarding antecedents (Zhu et al., 2018). To move beyond previous findings, we examined the incremental influence of multiple antecedents. The results indicated that formal leadership (i.e., transformational leadership) and team factors (i.e., intrateam trust) were both critical for promoting shared leadership on the individual and team level, as they showed incremental validity. Additionally, POS was not related to team-level shared leadership, when it was considered together with transformational leadership and intrateam trust. Here, our study extends previous research on antecedents of shared leadership, in which these antecedents have been treated in isolation. In conclusion, our results give evidence that theory building on shared leadership needs to take into account the simultaneous influence of multiple antecedents to provide a more parsimonious framework of shared leadership antecedents. Hereafter, we discuss the findings more deeply.

Following Morgeson et al. (2010), the examination of vertical leadership and shared leadership provides additional and more comprehensive insights about the development of team leadership and its outcomes. Transformational leadership (i.e., a formal source of team leadership) can enhance individual- and team-level shared leadership (i.e., an informal source of team leadership) above the influence of intrateam trust and POS. These results extend previous research by Chiu et al. (2016). As Chiu et al. found that shared leadership was established by a humble leader (especially under the condition of a

high proactive team personality), our findings underline the importance of a highly active leader, who articulates a shared vision for the team, emphasizes common goals, and may therefore enhance collective identification (e.g., Kark et al., 2003). This is also in line with the findings of Pieterse et al. (2019), who concluded that clearly aligned goals would support the emergence of shared leadership behaviors. Likewise, the results indicate that intrateam trust may be important for establishing shared leadership at both levels. Here, our results underline the assumptions of adaptive leadership theory about the psychological conditions for claiming and granting leadership influence. Without a notable level of trust towards the team members, claiming leadership influence—which involves the risk of being rejected—and especially granting leadership influence—which involves sharing power and influence with others (DeRue & Ashford, 2010)—would result in "an unacceptable level of risk" (Bligh et al., 2006, p. 307).

Next, our study contributes to the development of a multilevel theory of shared leadership (e.g., Kozlowski et al., 2016). The multi-level nature is inherent in a team phenomenon like shared leadership (e.g., Kozlowski, 2015), but prior research seldom took the multilevel structure of shared leadership into account and has not yet tested homology across different levels (Chen et al., 2005). The results of this study reveal two important insights. First, we found a homologous relationship only for transformational leadership and team trust. More precisely, the results indicated a scalar similarity (Chen et al., 2005) with a scaling factor of about 0.3. This means that the individual-level relationships (i.e., standardized coefficients; see Figure 2) are only about one third the size of the team-level relationships. An explanation for this might be that a team-level phenomenon (i.e., shared leadership) is more strongly related to shared or collective factors (i.e., a climate of trust or transformational leadership), as they are team properties by definition (see also Beus, Muñoz, & Arthur, 2015). Because the level of analysis should correspond to the level of theory (Klein & Kozlowski, 2000b), these results would also be expected for methodological reasons. Nevertheless, we found that individual perceptions of intrateam trust and transformational leadership affected the individual perception and acceptance of leadership influence within a team. Thus, for these relationships, the results underline that similar mechanisms seem to be at work at the individual and team level. Summarized, under the premise that team states are based on individual affect, behavior, and cognition (Kozlowski, 2015), our study contributes to the multilevel understanding of shared leadership.

Second, we did not, however, find a homologous relationship between POS and shared leadership across levels. POS was only associated with individual-level shared leadership, but shared perceptions of POS were not associated with team-level shared leadership. POS-based reciprocity may only affect individual perceptions and acceptance of leadership influence but may not be relevant for the overall shared leadership pattern at the team level. In comparison with team trust, a POS-based reciprocity norm might be too distal to influence team-level shared leadership, as it relates to the entire organization and not directly to the team. In contrast, shared expectations about the team's leading–following interactions that result from high team

trust may be a more proximal mechanism for promoting shared leadership in the whole team. Likewise, felt obligation (in terms of a shared purpose and identification with the organizational or team goals; Cropanzano & Mitchell, 2005) is also inherent in transformational leadership (see above). Thus, POS has no incremental validity over transformational leadership at the team level. Summarized, our results give first evidence that a shared purpose and a trustful team environment are antecedents of individual- and team-level shared leadership, whereas reciprocity may only be relevant for individual-level shared leadership and thus contribute to a multilevel theory of shared leadership.

Finally, our study provides a test of theory about shared leadership by examining an IMO model with multisource and time-lagged data. We found evidence for the mediating mechanism of shared leadership. In particular, the relationships of transformational leadership and team trust with team creativity and team performance were fully mediated by shared leadership. From a functional leadership perspective (Morgeson et al., 2010), different sources of team leadership can satisfy team needs to enable effective teamwork. With regard to this, it is important to note that vertical (i.e., transformational) leadership facilitates the team's own leadership capacity (Kozlowski et al., 2016), which in turn leads to more creativity. Thus, this finding gives some insights into the relationships of shared and vertical leadership with team outcomes. Additionally, a trustful team environment unfolds its beneficial consequences through shared leadership. Trust-based risk-taking behavior (i.e., shared leadership) was associated with an increase in team performance and team creativity. Hence, the results underline that a trustful team environment is not only an important condition for shared leadership, but shared leadership is a mechanism through which team trust can unfold its potential to foster effective and creative teamwork.

5.2 | Practical implications

If the results of this study are replicated, there are several lessons learned for leaders and organizations. First, this study highlights the beneficial consequences of shared leadership for the effective functioning of teams. In particular, the results indicate a positive relationship of shared leadership with team performance and team creativity. Shared leadership can facilitate a team's efforts to accomplish its tasks and support the striving for organizational goals. Furthermore, teams show an enhanced capability to solve complex problems and generate innovative solutions (Morgeson et al., 2010; Pearce, 2004). This underlines the fact that organizations need to be aware of the positive consequences of shared leadership and need to promote shared leadership alongside vertical forms of leadership. Organizations can, for example, use reward systems to ensure an ongoing engagement of teams in shared leadership (Grille et al., 2015).

Second, this study provides some knowledge about which factors influence the emergence of shared leadership in teams. Team leaders can directly promote shared leadership behaviors, as they serve as role models for their team. When team leaders engage in

transformational leadership, they provide an inspiring vision, foster collective goals, and empower their followers by developing their leadership capacity (Kark et al., 2003; Kozlowski et al., 2016). Thus, team leaders' behavior plays a critical role in promoting shared leadership. Therefore, organizations can use leadership development programs to train leaders in transformational leadership. These leadership development programs may provide knowledge about specific behaviors of transformational leadership and practical exercises to apply these behaviors and provide leaders feedback on their leadership style (e.g., based on follower ratings; Barling, Weber, & Kelloway, 1996).

Lastly, intrateam trust was related to shared leadership behaviors in our study. A high level of team-based trust increased the likelihood to claim leadership influence or grant received influence and accept the follower identity (DeRue & Ashford, 2010). Organizations can use team development (i.e., trust-building programs) to enhance intrateam trust. Furthermore, team leaders can address emerging conflicts between team members and engage in trust-building activities when needed.

5.3 | Limitations and future directions

Several limitations of the present study have to be discussed. First, from a methodological view, we used online questionnaires to measure all constructs in this study, which can be a source of common method bias (Podsakoff et al., 2003). To address this issue, we used a time-lagged design and multisource data to reduce common method bias. Additionally, we tested for endogeneity of individual-level relationships, and the results indicated that endogeneity bias may not be a major problem (Antonakis et al., 2010). Nevertheless, further research could use a mixed methods design. For example, the additional use of a behavioral observation design may offer the opportunity to assess discrete behaviors, dynamic interaction patterns, and team processes in a high temporal resolution (e.g., Waller & Kaplan, 2018). Furthermore, as behavioral observation studies focus on actual behaviors and not on subjective perceptions of behavior (see Cook, Zill, & Meyer, 2019), they can provide additional insights to shared leadership literature. Another methodological concern refers to the relatively small ICC1 und ICC2 values. Nevertheless, the amount of shared variance is still sufficient for multilevel analysis (Bliese, 2000). Additionally, the analytical approach (i.e., MSEM) treats the team means as latent. This means that they are corrected for unreliability due to small ICC values (Lüdtke et al., 2008; Preacher et al., 2010).

Second, this study focused on the individual perception and acceptance (i.e., granting leadership influence) of shared leadership of each team member. To examine a more comprehensive multilevel perspective on shared leadership, further studies could investigate the conditions for the individual engagement of each team member (i.e., claiming leadership influence) in the leadership process.[1] In relation to the aforementioned point, this could be done with behavioral observation studies. Using behavioral observation data allows to study

the microprocesses that shape the individual engagement in shared leadership in a high temporal resolution. For example, claiming leadership influence may be more likely immediately after mentioning a team goal in a meeting. Empirical insights from such studies may provide a more comprehensive view on shared leadership.

Third, we focused on the influence of transformational leadership to predict shared leadership in teams, whereas previous studies (e.g., Chiu et al., 2016) examined the effect of other formal leadership styles on shared leadership. Thus, the following question remains: Which behaviors of the formal leader promote or limit the emergence of shared leadership in teams? Future studies may consider the relative impact (LeBreton & Tonidandel, 2008) of different leadership styles on shared leadership emergence. In addition, the reverse direction may also be possible: To what degree does shared leadership shape or influence the affect, behavior, and cognition of the formal leader? Further studies might investigate the consequences of shared leadership for the formal team leader and the conditions under which a formal leader perceives shared leadership as beneficial or not (Zhu et al., 2018).

Fourth, the differentiated relationship between POS and shared leadership at the individual and team level is still unclear. Further research could address these unexpected results. More generally, as Zhu et al. (2018) recognized, organization-level factors are mostly unstudied by current research, but they offer a large field of potential factors that promote or inhibit the emergence of shared leadership. For example, it might be possible that collective reward systems or team development programs may facilitate shared leadership emergence (Grille et al., 2015; Pearce, 2004). In addition, organization-level factors (e.g., organizational culture or hierarchy) are likely to shape the effectiveness of shared leadership and serve as moderators.

Finally, the relationship of trust and shared leadership needs to be interpreted with caution. Despite the time-lagged effect of trust on shared leadership, the reverse direction may also be possible. Drescher et al. (2014) highlighted the dynamic relationship of both constructs by using trace data from an online game. They showed that changes in shared leadership were associated with changes in trust. In addition, in their recent review, Zhu et al. (2018) pointed to intrateam trust as an antecedent as well as an outcome of shared leadership. Further research is needed to clarify this issue. More generally, Kozlowski and Chao (2012) and Kozlowski (2015) mentioned that team processes and emergent state are highly dynamic and change over time. Thus, team research needs more longitudinal studies with multiple measurement occasions to consider the temporal development of emergent states (see also Chen, Ployhart, Thomas, Anderson, & Bliese, 2011; McArdle, 2009).

6 | CONCLUSION

As teamwork becomes increasingly important and declining hierarchy leads to empowerment, the significance of shared leadership is growing. This study contributes to the understanding of which factors enhance shared leadership. Both intrateam trust and transformational

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[1] We would like to thank the editor for this valuable suggestion.

leadership promote shared leadership in teams. As a consequence, teams are empowered to reach organizational goals. Furthermore, they are able to solve complex problems and generate innovative ideas as team creativity increases.

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