Current Psychology (2022) 41:7957–7967
https://doi.org/10.1007/s12144-020-01227-9

Leading against gender stereotypes: the positively deviant effect of female leaders' personal need for structure on average team member performance

Zheng Wang[1] · Jih-Yu Mao[2] · Ye Zhang[3] · Shengming Liu[4]

Accepted: 26 November 2020 / Published online: 6 January 2021

Abstract

This paper investigates the positively deviant effect of female leaders' personal need for structure (PNS) on average team member performance. Drawing on Kelley's attribution principles, we propose that female leaders can more effectively stimulate team performance when they are high in PNS than when male leaders are. Using a multi-source, multi-wave survey study of 100 leaders and 439 subordinates across 24 real estate firms, we examine the interactive effect of leader PNS and leader gender on average team member performance via activated team faultlines. Our results suggest that female leaders who are high in PNS exhibit a stronger, negative effect on activated team faultlines when compared to their male counterparts. In addition, female leaders who are high in PNS elicit a stronger positive indirect effect on average team member performance through decreased activated team faultlines than male leaders. Our findings are consistent with, and therefore enhance, the prediction of Kelley's attribution principles. Implications for theory, practice, and future research are addressed.

Keywords Female leadership · Attribution principles · Personal need for structure · Activated team faultlines · Team performance

The underrepresentation of women in major leadership roles (for a review, see Eagly and Karau 2002) has spurred two puzzling questions: *Why are females perceived as less effective leaders than their male counterparts? And, is this perception valid?* To answer the first question, Eagly and Karau (2002) proposed role congruity theory to explain prejudice toward female leaders. The main argument is that female leaders are likely to receive unfavorable evaluations from their subordinates when they demonstrate masculine or agentic characteristics (e.g., bold, decisive, and dominant) that deviate from their gender stereotype rather than feminine or communal qualities (e.g., agreeable, warm, and caring; Eagly et al. 2000) that conform to their gender stereotype (Heilman et al. 2004; Lyness and Heilman 2006). However, more recent findings seem to shed light on the possibility that female leaders can also be perceived positively when they display attributes that are against and deviate from their gender-role expectations (Anderson et al. 2006; Johnson et al. 2008). Therefore, role congruity theory alone may not be sufficient to explain such contrasting results.

In an attempt to provide theoretical explanation to this inconsistency, Wang et al. (2013) adopted Kelley's attribution principles (Kelley 1972) to supplement role congruity theory to explain the consequences of leader-role and gender-role comparisons. According to Kelley and associates' augmentation principle (Kelley 1972; Kelley and Michela 1980), more attribution of a behavior-correspondent disposition would be given for an unexpected, rather than expected, behavior. In other words, the unexpected behavior is perceived as revealing a stronger correspondent disposition than an expected behavior. From this, Wang et al. (2013) postulated that when leaders demonstrate behaviors that negatively deviate from

✉ Jih-Yu Mao
jim.jy.mao@swufe.edu.cn

Zheng Wang
wangzheng@sdu.edu.cn

Ye Zhang
zhang_ye@pku.edu.cn

Shengming Liu
shengmingliu@fudan.edu.cn

[1] School of Management, Shandong University, Jinan, China

[2] School of Business Administration, Southwestern University of Finance and Economics, Chengdu, China

[3] Guanghua School of Management, Peking University, Beijing, China

[4] School of Management, Fudan University, Shanghai, China

their gender stereotypical roles (e.g., female leaders being authoritarian), both the role congruity theory and the augmentation principle can be used to explain the resulting influence. However, when leaders demonstrate behaviors that positively deviate from their gender stereotypical roles (e.g., male leaders being benevolent), only the augmentation principle can be used to explain why leaders receive more favorable evaluations. Based on Wang et al.'s (2013) conceptualization of positive deviance, we conceptualize *positively deviant effect* as individuals displaying favorable attributes that deviate from their gender-role expectations.

While these theories have progressed understanding of attribution of leader behavior to the gender role, research has not examined the positively deviant effect among female leaders who usually receive prejudice and biased evaluations from others. Wang et al. (2013) found that there exists a positively deviant effect when male leaders demonstrate female stereotypical benevolent leadership behaviors. We are interested in whether the positively deviant effect may also exist for female leaders. Specifically, we propose that compared to their male counterparts, when female leaders have a high personal need for structure (PNS), they are likely to enhance their team members' average performance by reducing activated team faultlines, which is team members' perceptions of actual divisions or formations of subgroups based on the alignment of team members' characteristics within the team (Jehn and Bezrukova 2010; Lau and Murnighan 1998).

PNS presents a person's cognitive structure to reduce or simplify information processing in order to form and use abstract mental representations (Neuberg and Newsom 1993). Moreover, "a person high in desire for simple structure might be conceptualized as one leading a simple, tightly organized life, both cognitively and behaviorally" (Neuberg and Newsom 1993, p. 114). We investigate leader PNS because leaders who initiate structure emphasize clear roles, goals, and performance expectations, which are critical to enhanced team performance and leadership effectiveness (DeRue et al. 2011). Research has suggested that men are generally expected to be intuitive and adept at processing information in a simpler way than women (Eagly and Johnson 1990; Hyde et al. 2008), and that men's PNS and authoritarianism and ethnocentrism beliefs are closely related (Kemmelmeier 2010). Hence, we suggest that PNS is more likely to be considered as an agentic characteristic than a communal characteristic and speculate that female leaders who are high in PNS can exhibit a positively deviant effect on their team members.

Our paper is organized in the following ways. First, we postulate that team members are likely to perceive fewer faultlines when their leaders are high in PNS because individuals high in PNS prefer orderly and predictable situations over complicated and unstable ones (Gordon 1997; Schaller et al. 1995). Second, we propose that leader gender moderates the relationship between leader PNS and activated team faultlines. Based on Kelley's augmentation principle (Kelley 1972), we contend that the negative relationship between leader PNS and activated team faultlines is more salient for female leaders than for male leaders. Finally, we contend that leader PNS interacts with leader gender to influence team performance via activated team faultlines because activated faultlines within teams may negatively influence team dynamics, thus jeopardizing team performance (e.g., Brewer 1995; Jehn and Bezrukova 2010; Lau and Murnighan 1998; Williams and O'Reilly 1998). We examine average team member performance, conceptualizing it as the typical level of task performance for team members (Koopmann et al. 2016). Altogether, we suggest that female leaders who are high in PNS are likely to be perceived as more effective in reducing faultlines within teams, thus leading to enhanced average team member performance.

Theory and Hypotheses

PNS and Gender Difference

PNS is a personality trait that chronically motivates one to seek clarity and certainty and avoid ambiguity (Heponiemi et al. 2008; Neuberg and Newsom 1993). Although PNS may vary according to state, function, and situation, it is strongly rooted in stable individual differences (Moskowitz 1993; Neuberg and Newsom 1993). Individuals high in PNS tend to prefer simple, structured, and tightly organized environments that operate and function with stable and clear rules (Moskowitz 1993). Neuberg and Newsom (1993) found that people high in PNS are more likely to enjoy routine and predictable social situations as opposed to less formal and unstructured social encounters and may even structure their social world in a way that allows them to avoid unpredictable situations.

Several organizational studies suggest that PNS is more likely to be regarded as an agentic, rather than communal, characteristic. For example, Kemmelmeier (2010) found that the associations between PNS and authoritarianism and ethnocentrism, respectively, are stronger for men than for women. Thompson et al. (2001) and Hodson and Esses (2005) also discovered a significant correlation between PNS and authoritarianism. In addition, women are diagnosed with depression more often than men as women process information in a more effortful and deliberate manner, which is atypical for high PNS individuals (Hyde et al. 2008; Nolen-Hoeksema et al. 1999). Existing research has shown that PNS can be regarded as an epistemic motive that describes how individuals structure their knowledge and information (Pundt and Venz 2017; Van Kleef et al. 2009). Since men and women have different styles of processing information and making decisions, it is greatly held that PNS is a

masculine characteristic as it is associated with a strong desire to organize information in a simple and unambiguous way (Neuberg and Newsom 1993) and follow more rigid and dogmatic guidelines (Pundt and Venz 2017).

Leader PNS and Activated Team Faultlines

When applying to the leadership context, PNS can affect one's leadership style. Specifically, leader PNS is associated with the extent to which the leader seeks a predictable, highly structured, and well-defined environment in order to lead effectively (Heine et al. 2006). Friesen et al. (2014) also suggested that structured and organized matters are psychologically appealing to people high in PNS. In fact, since high PNS leaders have a strong desire for a clear, ordered, and stable environment (Kruglanski and Webster 1996; Webster and Kruglanski 1994) and workplace hierarchy (Friesen et al. 2014), their leadership is likely to reflect one of a clear and rigid style (DeRue et al. 2011). In the work context, these leaders tend to create rules, develop routines, and plan for structured and ordered processes. Therefore, they may institute task boundaries and task contexts for subordinates and set rules for work interactions (Carton and Cummings 2012; Thatcher and Patel 2012).

According to social information processing theory, leader behaviors convey messages and informational cues to the subordinates and help shape their understanding of the workplace environment (Yam et al. 2018). Thus, subordinates tend to see leaders high in PNS as those who prefer routine and predictable, as opposed to informal and unstructured, social situations (Moskowitz 1993; Thatcher and Patel 2012), which help subordinates make sense of how work is done, how rewards are divided, and how authority is regulated in the workplace. In this vein, under this leadership influence, employees are likely to perceive less inconsistencies, variances, and ambiguity within team functioning and more workgroup unity, thereby decreasing their perceptions of faultlines within the team.

Organizational literature has outlined two forms of team faultlines, which are dormant and activated faultlines. Dormant faultlines are potential faultlines based on individual attributes (Lau and Murnighan 1998), such as gender (Lau and Murnighan 1998), nationality (Jiang et al. 2012), race (Sawyer et al. 2006), or even geographic location (Polzer et al. 2006). Activated faultlines are faultlines that effectively divide members within into subgroups (Jehn and Bezrukova 2010). Employees can perceive faultlines when a situational stress pushes the individuals within to certain side of the alignment (Jehn and Bezrukova 2010). For instance, leaders' allocation of differential resources can allow subordinates to perceive faultlines and split them into subgroups (Pearsall et al. 2008; Spoelma and Ellis 2017). Thus, activation of faultlines requires a contextual stimulus that triggers differences among subgroups (Jehn and Bezrukova 2010; Lau and Murnighan 1998). In line with its operationalization, we refer to activated team faultlines as the faultlines that are actually perceived by group members (Jehn and Bezrukova 2010). As high PNS leaders prefer a structured and ordered work context and set clear roles, goals, and transparent metrics (DeRue et al. 2011), we anticipate that there exist fewer divisive contextual stimuli within the team, which may lead team members to perceive fewer faultlines. In addition, due to the different gender-role expectations that team members have for their leaders, we contend that the strength of the relationship between leader PNS and activated team faultlines is likely to vary between female and male leaders.

The Positively Deviant Effect of Female Leaders High in PNS

In organizational literature, several studies and articles have addressed the different thinking styles of male and female leaders. For instance, Loden (1985) characterized a masculine management style to be analytical and emotionally neutral, and a feminine management style to be interpersonally empathetic and sensitive. Eagly and Johnson (1990) suggested that the society establishes and expects gender differences in leaders' information-processing patterns. Previous studies have shown that men are expected to be associated with agentic, bold, and sensation-seeking behaviors, whereas women are expected to show more concerns for others' feelings, welfare, and group harmony (Eagly and Karau 2002). In a group context, men are more likely to be viewed as independent and deviant from the group consensus while women are more likely to cohere and conform to group decisions (Doherty 1998).

There is an emerging shift in gender-role expectations that encourages new research. For instance, role congruity theory (Eagly and Karau 2002) suggests that female leaders who demonstrate agentic characteristics can receive unfavorable evaluations from their subordinates because of the incompatibility with their gender stereotype. However, empirical findings are inconsistent with the tenets of role congruity theory. For example, Anderson et al. (2006) found that women received higher evaluations when they demonstrate characteristics that violate their gender-role expectations. To explain these divergent findings, Wang et al. (2013) contended that Kelley's attribution principles (Kelley 1972) can supplement role congruity theory to better understand comparisons between gender roles and leader roles. When leaders demonstrate behaviors that negatively deviate from their gender stereotypical roles, both the role congruity theory and augmentation principle have the same prediction. In contrast, when leaders demonstrate behaviors that positively deviate from their gender stereotypical roles, only the augmentation principle can explain why leaders receive more favorable evaluations.

Following the findings of Wang et al. (2013), we also adopt Kelley's attribution principles as the theoretical foundation for the moderating role of leader gender on the relationship between leader PNS and activated team faultlines. According to Kelley's augmentation principle (Kelley 1972; Kelley and Michela 1980), when female leaders are rigid, dogmatic, and systematic in their information processing and decision making (i.e., high levels of PNS), team members are more likely to attribute female leaders' cognitive patterns to their dispositional intent. The reason for this attribution is that since PNS is an agentic characteristic that is more associated with male leaders, female leaders would have to overcome the situational constraint in order to act agentically. Consequently, team members are likely to perceive stronger stabilization within the team when female leaders demonstrate high PNS qualities, thus reducing the likelihood of perceiving faultlines within the team.

In contrast, we expect the effect of leader PNS on activated team faultlines to be less salient when leaders are male, which can be explained by Kelley's discounting principle (Kelley 1972; Kelley and Michela 1980). According to the discounting principle, behavior-correspondent disposition would be attributed less to the performer when his or her behavior is expected than when it is unexpected. Essentially, when male leaders demonstrate high levels of PNS, team members are inclined to interpret such acts as simply complying with the gender expectation rather than their correspondent disposition. This is largely because the stereotypical expectation is that high PNS is more in line with the male characteristic. Integrating the theoretical arguments based on the augmentation and discounting principles, we propose the following hypothesis:

Hypothesis 1 Leader gender moderates the negative relationship between leader PNS and activated team faultlines, such that the negative relationship is stronger when the leader is female rather than male.

Implications for Average Team Member Performance

Activated team faultlines reveal intragroup dynamics that influence group functioning by dividing group members into subgroups (Lau and Murnighan 1998). The existence of subgroups is highly correlated with intragroup conflicts (Lau and Murnighan 1998; Williams and O'Reilly 1998) and competitions between coalitions (Jehn and Bezrukova 2010), which negatively influence team performance. These negative influences include lack of coordination, faulty cooperation, and poor cohesion, all of which hinder teamwork (Brewer 1995; Jehn and Bezrukova 2010; Lau and Murnighan 1998). Research has indicated that all types of team conflicts are detrimental to performance (De Dreu and Weingart 2003). For instance, conflicts increase cognitive workload and interfere with complex thinking and information processing. Threat and anxiety associated with conflicts can also inhibit employee cognitive processing of complex information (Roseman et al. 1994). Conflicts also deplete energy and effort that could be expended toward task completion and attainment of mutual goals (Northcraft et al. 1995).

Activated faultlines also prevent the entire team from pursuing team goals. When perceiving faultlines, members are likely to seek and form coalitions (Jehn and Bezrukova 2010). Hence, members in a subgroup may only cooperate with members within and fulfill the subgroup's needs at the expense of outsiders (Polzer et al. 2006), leading to decreased intergroup trust and increased competitions (Insko and Schopler 1998). Moreover, activated faultlines are likely to decrease team learning (Jehn and Rupert 2008) and team members' willingness to make decisions that can possibly benefit the entire team (Brewer 1995).

By linking leader PNS to activated team faultlines and then to team performance, we propose that the positively deviant effect of female leaders' high PNS is likely to influence average team member performance by decreasing team members' perceptions of faultlines within the team. Based on the augmentation principle, when female leaders demonstrate high levels of PNS, team members are inclined to attribute this rigid and agentic leading style to the female leaders' dispositional intent, thus decreasing their perceptions of faultlines and subsequently resulting in higher levels of work performance. In contrast, based on the discounting principle, team members are less likely to attribute demonstration of the PNS characteristic to male leaders' dispositional intent. Therefore, the indirect influence of leader PNS on average team member performance via decreased activated team faultlines is likely to be less salient when the leader is male. Altogether, we propose the following hypothesis:

Hypothesis 2 Leader PNS and leader gender interact to affect average team member performance via activated team faultlines, such that the indirect effect of leader PNS on average team member performance via decreased activated team faultlines is stronger when the leader is female rather than male.

Method

Participants and Procedures

The two hypotheses were examined via a multi-time (i.e., time 1, time 2), multi-source (i.e., team leader, team members) survey study conducted in 24 real estate firms in northeastern China. Each real estate firm had approximately 100 employees and similar business models of focusing on property sales and management. The human resource department of

each of the 24 firms collaborated with the authors to conduct the study. Specifically, administrative staff randomly selected work teams to participate in our study. We explained the research purpose to our participants and told them that their participation was voluntary and that their responses would only be used for research purpose.

One hundred and fifty-three team leaders and 724 team members participated in the time 1 survey. Team leaders rated their PNS and provided their demographics. Team members provided responses to their perceptions of faultlines within the team and their demographics. One hundred and thirty-one team leaders and 622 team members returned their respective questionnaire. In total, 586 team member questionnaires were successfully matched to that of their leader. We conducted the time 2 survey two weeks later. In the second survey, 131 leaders who had participated in the time 1 survey were asked to rate the performance of each sampled team member.

After excluding incomplete and unidentifiable questionnaires, the final sample consisted of 100 team leaders and 439 team members. Each team had an average of 4.39 team members (standard deviation [SD] = 2.43). Among the 100 leaders, 31% were female. Leaders had an average age of 38.05 years old (SD = 7.14) and received an average of 14.96 years of education (SD = 2.58). In addition, among the 439 team members, 50% were female. Their average age was 32.18 years old (SD = 7.56).

Measures

A Chinese version of measures was administered, following Brislin's (1980) recommended translation and back-translation procedures.

Leader PNS PNS was measured by the 11-item scale suggested by Neuberg and Newsom (1993). Previous research has validated that this scale can distinguish individuals with different levels of information-processing motivation (Moskowitz 1993; Thompson et al. 2001; Van Kleef et al. 2009) and provides evidence that the scale is a reliable measure of PNS (Neuberg and Newsom 1993). A sample item was "I become uncomfortable when the rules in a situation are not clear" (1 = *strongly disagree* to 7 = *strongly agree*; Cronbach's alpha = .70).

Activated Team Faultlines We adopted Jehn and Bezrukova's (2010) 4-item scale to measure activated team faultlines. The scale was originally focused on race diversity. We modified the items to refer to a general perception of whether subgroups are salient within a team. A sample item featured "My team cracked into smaller cliques based on divergence of how to see the world" (1 = *strongly disagree* to 7 = *strongly agree*; Cronbach's alpha = .92). Each member's response was then aggregated to the team level. The inter-rater agreement value (R_{wg}) and intraclass correlation coefficients, ICC(1) and ICC(2), are .88, .09, and .29, respectively. These aggregation statistics suggest that overall there is a moderate level of agreement among team members (Bliese 2000; LeBreton and Senter 2008).

Average Team Member Performance Leaders provided individual performance ratings for each sampled team member by using a 5-item general performance scale (Janssen and Van Yperen 2004). A sample item was "This team member fulfills all responsibilities required by his/her job" (1 = *strongly disagree* to 7 = *strongly agree*; Cronbach's alpha = .71). Likewise, individual performances were averaged and then aggregated to the team level. The R_{wg}, ICC(1), and ICC(2) values are .95, .18, and .50, respectively. These results provide sufficient support for the appropriateness of the aggregation (Bliese 2000; LeBreton and Senter 2008).

Control Variables Several variables were included as control variables. We controlled for leader age, leader education, team size, team gender composition, as well as team average age because studies have theorized and found empirical evidence that these demographic variables and team variables can significantly affect faultline formations and performance ratings (Jehn and Bezrukova 2010; Lau and Murnighan 2005; Ng and Feldman 2009).

Analytical Strategy

All variables in the research model were operationalized at the team level. We tested our hypotheses using the SPSS PROCESS macro developed by Hayes (2013), which employs a bootstrapping procedure (with 5000 iterations) to determine the 95% bias-corrected confidence intervals (CIs) for the conditional indirect effect (Preacher and Hayes 2008; Shrout and Bolger 2002). Multicollinearity among predictors was minimized by grand-mean centering the independent variable (except for leader gender) prior to creating the interaction term (Aiken and West 1991). Gender was dummy-coded as 0 for "female" and 1 for "male". To estimate meaningful intercept values for the simple slope plots, all control variables were grand-mean centered in the analysis.

Results

Confirmatory Factor Analysis

To ensure that the main constructs involved in the present study except leader gender are distinct from one another, we used Mplus 7.0 (Muthén and Muthén 2012) to conduct a series of confirmatory factor analysis (CFA). We reported each model's chi-square value (χ^2), degrees of

freedom (*df*), root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker-Lewis index (TLI), and standardized root mean square residual (SRMR). The CFA results are presented in Table 1. As shown, the three-factor model, where all variables are independent, demonstrates good fit ($\chi^2 = 271.96$, $df = 167$, RMSEA = .04, CFI = .93, TLI = .92, SRMR = .07). These fit indices are statistically superior to those of alternative models ($\Delta\chi^2 = 182.41$ and 654.78, respectively, $p < .01$), thus supporting construct distinctiveness of these variables.

Hypothesis Testing

The means, SDs, intercorrelations, and internal consistencies of study variables are presented in Table 2. Hypothesis 1 posits that leader gender moderates the negative effect of leader PNS on activated team faultlines, such that the negative effect is stronger when the leader is a woman rather than a man. To test this hypothesis, leader PNS, leader gender, the interaction term, and all aforementioned control variables were entered into the model. As shown in Model 3 (see Table 3), the interaction term is significant in predicting activated team faultlines ($B = .77$, $p < .01$). We plotted the interactive effect in Fig. 1. A simple slope test (see Table 4) reveals that leader PNS is negatively related to activated team faultlines when the leader is a woman (*simple slope* = −.62, *95% bootstrapped CI* = [−1.09, −.15]) but not when the leader is a man (*simple slope* = .14, *95% bootstrapped CI* = [−.17, .46]). Thus, Hypotheses 1 is supported.

Hypothesis 2 predicts that leader PNS and leader gender interact to affect average team member performance via activated team faultlines, such that the indirect effect of leader PNS on average team member performance via decreased activated team faultlines is stronger for female leaders than for male leaders. All predictors and control variables were entered in the analysis. In addition to the significant interactive effect between leader PNS and leader gender on activated team faultlines which was reported above, there exists a negative relationship between activated team faultlines and average team member performance ($B = -.22$, $p < .01$; see Model 7 in Table 3). We then adopted the SPSS PROCESS macro (Hayes 2013) to test the conditional indirect effect. Results from bootstrapping analysis (with 5000 iterations; see Table 4) reveal a significant conditional indirect effect (*index of moderated mediation* = −.16, *95% bootstrapped CI* = [−.45, −.03]). Specifically, leader PNS has a positive indirect effect on average team member performance via decreased activated team faultlines when the leader is a woman (*indirect effect* = .13, *95% bootstrapped CI* = [.02, .35]). In contrast, the indirect effect is non-significant when the leader is a man (*indirect effect* = −.03, *95% bootstrapped CI* = [−.14, .02]). Altogether, these results provide support for Hypothesis 2.

Discussion

The purpose of the current study is to investigate the augmentation effect of female leaders who are high in PNS on team performance. Based on role congruity theory, previous literature contends that female leaders are generally viewed unfavorably in leadership positions and suggests that female leaders should act in congruence with their gender stereotypical role in order to avoid unpleasant evaluations from their subordinates. However, recent research has also provided evidence that women can be evaluated more favorably than men in certain situations by acting in a counter-stereotypical way (e.g., Anderson et al. 2006). To reconcile the inconsistency in literature, our study examines the positively deviant effect of female leaders on team performance when they demonstrate an agentic characteristic, PNS. In the following sections, we discuss the implications, limitations, and future research avenues associated with our current findings.

Theoretical Implications

Our paper offers several theoretical contributions. First, our paper contributes to the leadership and gender research by suggesting that Kelley's attribution principles (Kelley 1972) can be used to explain the positively deviant effect of female leaders on team performance. Similar to Wang et al.'s (2013) findings, our results show that the positively deviant effect indeed occurs when leaders show favorable characteristics that are incongruent with their gender stereotypes. In particular, we found that the positively deviant effect can also exist for female leaders, which differs from Wang et al.'s (2013) findings as they only found this effect for male leaders. Our findings are particularly meaningful because compared to male leaders, female leaders are prone to receiving more unfavorable evaluations when they demonstrate behaviors against their gender stereotype (Eagly and Karau 2002). However, our results show that work teams can also benefit from having female leaders who demonstrate non-gender-stereotypical behaviors. Specifically, our study is the first of its kind to examine the positively deviant effect for female leaders who are high in PNS and demonstrates that this effect can positively influence team performance.

Second, we explicitly investigate the underlying mechanism to which female leaders who are high in PNS enhance team performance. We contend that team members are likely to perceive fewer faultlines when the PNS characteristic is embodied by female leaders than by male leaders. Jehn and

Table 1 Comparison of Measurement Models

Models	χ^2 (*df*)	$\Delta\chi^2$ (*df*)[a]	RMSEA	CFI	TLI	SRMR
Three-factor model (leader PNS, activated team faultlines, and average team member performance are independent)	271.96 (167)	–	.04	.93	.92	.07
Alternative 2-factor model (leader PNS and activated team faultlines combined)	454.37 (169)	182.41** (2)	.06	.80	.78	.12
Alternative 2-factor model (activated team faultlines and average team member performance combined)	926.74 (169)	654.78** (2)	.09	.47	.41	.15

Note. PNS = personal need for structure; χ^2 = chi-square; *df* = degrees of freedom; RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI = Tucker-Lewis index; SRMR = standardized root mean square residual

[a] All models are compared with the 3-factor model. Due to poor fit, the alternative 2-factor model in which leader PNS and average team member performance are combined and the alternative 1-factor model in which leader PNS, activated team faultlines, and average team member performance are combined did not converge

* $p < .05$, ** $p < .01$

Bezrukova (2010) suggested that faultlines are perception-based. We concur with them and advance the existing faultlines literature by proposing that leader gender is a critical contingent factor that affects team members' perceptions of faultlines within their team. Specifically, when female leaders exhibit PNS qualities that are against the female stereotype, team members are likely to give more credits to their efforts of creating a structured and ordered environment. Hence, they are likely to perceive fewer faultlines within the team and achieve higher performances.

Third, our paper contributes to gender-stereotype and organizational research by integrating leader- and gender-role comparisons with team research. Team functioning is largely dependent on team members collaborating with one another to achieve common goals (Grijalva et al. 2020). Perceptions of faultlines within the team engender subgroups and hinder collaboration among team members. By adopting an interactionist perspective to reveal how female leaders who are high in PNS stimulate team performance, we uncover the team process to which the positively deviant effect translates into enhanced team outcome. Also, while research on gender- and leader-role comparisons has generally been conducted in laboratory settings from a social-psychological perspective (e.g., Akinola et al. 2018), we extend the literature by examining the consequences of leader- and gender-role comparisons in a team setting by using field data.

Practical Implications

Findings of our study have some takeaways for practitioners. Traditional views of female leadership posit that women are disadvantaged in leadership positions because they are oftentimes seen as less competent (Eagly and Karau 2002). One way to rectify this bias, as suggested by role congruity theory, is for female leaders to engage in communal behaviors that meet others' expectations of female leadership. While this conclusion may be true to some extent, recent findings have found that female leaders' non-stereotypical behaviors may elicit more favorable evaluations. Our study indicates that the positively deviant effect may also exist for female leaders.

Table 2 Means, Standard Deviations, Intercorrelations, and Internal Consistencies

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
1. Leader PNS	4.74	0.72	(.70)								
2. Activated team faultlines	3.45	0.92	−.04	(.92)							
3. Average team member performance	5.34	0.69	.06	−.32**	(.71)						
4. Leader gender	0.69	0.46	−.22*	.02	−.12	–					
5. Leader age	38.05	7.14	.20*	.12	−.16	.06	–				
6. Leader years of education	14.96	2.58	−.06	.03	−.09	.13	−.21*	–			
7. Team size	4.39	2.43	.03	.09	−.00	−.01	−.01	.00	–		
8. Team gender composition	0.50	0.34	.06	.05	−.16	.32**	.01	.01	−.13	–	
9. Team average age	32.18	7.56	.06	−.02	.06	.09	.30**	−.07	.12	−.02	–

Note. $N = 100$ teams. SD = standard deviation. PNS = personal need for structure. Gender: 0 = "female"; 1 = "male". Cronbach's alphas are presented along the diagonal

* $p < .05$, ** $p < .01$

Table 3 Estimated Coefficients of the Mediated Moderation Model

Variables	Activated team faultlines			Average team member performance			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Step 1							
Leader age	.02 (.01)	.02 (.01)	.02 (.01)	−.02 (.01)	−.02 (.01)	−.02* (.01)	−.02 (.01)
Leader years of education	.02 (.04)	.02 (.04)	.01 (.04)	−.03 (.03)	−.03 (.03)	−.03 (.03)	−.03 (.03)
Team size	.04 (.04)	.04 (.04)	.05 (.04)	−.02 (.03)	−.02 (.03)	−.03 (.03)	−.02 (.03)
Team gender composition	.16 (.27)	.19 (.30)	.27 (.29)	−.31 (.20)	−.27 (.22)	−.29 (.22)	−.23 (.21)
Team average age	.00 (.01)	.00 (.01)	.00 (.01)	.01 (.00)	.01 (.00)	.01 (.01)	.01 (.00)
Step 2							
Leader PNS		−.09 (.14)	−.09 (.13)		.10 (.10)	.10 (.10)	.08 (.10)
Leader gender		−.05 (.22)	−.16 (.22)		−.10 (.16)	−.08 (.17)	−.11(.16)
Step 3							
Leader PNS × Leader gender			.77** (.28)			−.20 (.21)	−.03 (.21)
Step 4							
Activated team faultlines							−.22** (.08)
R^2	.03	.04	.11	.08	.09	.10	.18
$\triangle R^2$	–	.01	.07**	–	.01	.01	.08**

Note. $N = 100$ teams. PNS = personal need for structure. Gender: 0 = "female"; 1 = "male". Unstandardized coefficient estimates with standard errors are reported

* $p < .05$, ** $p < .01$

Consequently, female leaders can focus on engendering a structured and ordered environment in order to effectively reduce members' perceptions of faultlines within the team and enhance team performance. Our findings demonstrate that female leaders can take advantage of, rather than suffer from, gender-role expectations.

Our research also has several implications for organizations. We encourage organizations to incorporate PNS into their personality assessment for leadership, especially for female candidates. As shown in our results, female leaders who are high in PNS can elevate their members' performance, suggesting that PNS is an effective leadership characteristic for female leaders. Because PNS is relatively stable, assessing female candidates' PNS levels during leadership recruitment and promotion can supplement subsequent leadership trainings which tend to materialize over a longer period. In addition, our findings suggest that organizations can consider appointing female leaders who are high in PNS to more diversified teams to allow team members to perceive fewer faultlines within the team. As such, the positively deviant effect of female leadership would be maximized. Furthermore, organizations should educate and inform female leaders of their potential positive leadership influences. Organizations can encourage female leaders to show positive agentic characteristics (e.g., PNS, charisma, intelligence, and confidence) as they can help female leaders establish a stronger leadership presence, and more importantly, engender a positively deviant effect of facilitating effective team functioning.

Limitations and Recommendations for Future Research

Although our study adopted a rigorous multi-source, time-lagged study, our paper still has some limitations. The first limitation is related to our measurement of average team member performance, which was rated by team leaders and aggregated from each team member's job performance. Although this method has been adopted in previous studies (e.g., Aryee

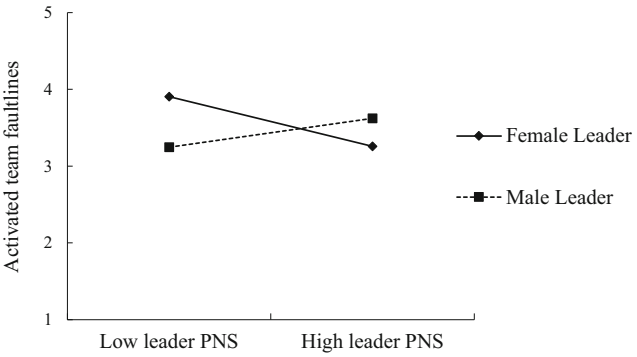

Fig. 1 The interactive effect of leader personal need for structure (PNS) and leader gender on activated team faultlines

Table 4 Bootstrapping Results

Simple slope test	*Estimate*	*p value*	*BootLLCI*	*BootULCI*
Leader gender = 0 (female)	−.62	.01	−1.09	−.15
Leader gender = 1 (male)	.14	.37	−.17	.46
Conditional indirect effect	*Effect*	*SE (boot)*	*BootLLCI*	*BootULCI*
Leader gender = 0 (female)	.13	.08	.02	.35
Leader gender = 1 (male)	−.03	.04	−.14	.02
Index of moderated mediation	*Index*	*SE (boot)*	*BootLLCI*	*BootULCI*
Difference index	−.16	.10	−.45	−.03

Note. 95% bias-corrected confidence intervals are obtained from the bootstrapping (boot) analysis (with 5000 iterations). SE = standard error; LLCI = lower level confidence interval; ULCI = upper level confidence interval

et al. 2012), it nevertheless does not measure team performance directly. We recommend future research to measure team performance by asking team leaders to directly assess how well the team accomplishes its goals (Zellmer-Bruhn and Gibson 2006) or obtain an objective measurement of team performance (Owens and Hekman 2016).

In addition, our study was conducted in real estate companies in which there seems to be no gender favorability or dominance related to occupations within this industry. However, certain occupations are more likely to be male-dominant (e.g., software programmers) or female-dominant (e.g., nurses). These work settings may make Kelley's attribution principles (i.e., augmentation and discounting) more salient and exacerbate the effects of leader- and gender-role comparisons. Therefore, we recommend interested researchers to interrogate our theoretical rationales in other work settings to gain wider knowledge about the generalizability of our findings.

Furthermore, more efforts should be invested in gender-bias and gender-stereotype research. We only examined the positively deviant effect of female leaders with specific reference to one agentic characteristic (i.e., PNS). Other agentic characteristics such as charisma, intelligence, and confidence are generally regarded as effective leadership characteristics (e.g., Conger et al. 2000). Hence, we speculate that a positively deviant effect may also exist for female leaders when they demonstrate these characteristics. On the other hand, we encourage future studies to examine the negatively deviant effect that may be present when female leaders demonstrate unfavorable agentic characteristics. For instance, following the tenets of role congruity theory, team members may dislike and oppose female leaders even more when they are bold and short-tempered as compared to when male leaders show these characteristics. Altogether, we advise future research to examine both the positively and negatively deviant effects of female leaders on their team's outcomes in order to gain more comprehensive understanding of their leadership influences with respect to gender stereotypes and leader- and gender-role comparisons.

Conclusion

Our study provides empirical evidence for the positively deviant effect of female leaders who have high levels of PNS on team performance. Specifically, we found that female leaders who are high in PNS exerts a stronger, positive influence on average team member performance via decreased activated team faultlines than male leaders who are high in PNS. Our findings support the notion that Kelley's attribution principles (Kelley 1972) can supplement role congruity theory (Eagly and Karau 2002) to explain the consequences of gender- and leader-role comparisons, especially when female leaders demonstrate characteristics that are not congruent with their gender stereotype. Our findings advise women to take advantage of the gender stereotype that team members may hold toward them by demonstrating positive agentic characteristics such as PNS.

Data Availability The data used in this study can be obtained upon request to the corresponding author.

Compliance with Ethical Standards

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA: Sage.

Akinola, M., Martin, A. E., & Phillips, K. W. (2018). To delegate or not to delegate: Gender differences in affective associations and behavioral responses to delegation. *Academy of Management Journal, 61*(4), 1467–1491.

Anderson, N., Lievens, F., van Dam, K., & Born, M. (2006). A construct-driven investigation of gender differences in a leadership-role assessment center. *Journal of Applied Psychology, 91*(3), 555–566.

Aryee, S., Walumbwa, F. O., Seidu, E. Y. M., & Otaye, L. E. (2012). Impact of high-performance work systems on individual- and branch-level performance: Test of a multilevel model of intermediate linkages. *Journal of Applied Psychology, 97*(2), 287–300.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 349–381). San Francisco, CA: Jossey-Bass.

Brewer, M. B. (1995). Managing diversity: The role of social identities. In S. E. Jackson & M. N. Ruderman (Eds.), *Diversity in work teams: Research paradigms for a changing workplace* (pp. 47–68). Washington, DC: American Psychological Association.

Brislin, R. W. (1980). Translation and content analysis of oral and written materials. In H. C. Triandis & J. W. Berry (Eds.), *Handbook of cross-cultural psychology*, Vol. 2 (pp. 389–444). Boston, MA: Allyn and Bacon.

Carton, A. M., & Cummings, J. N. (2012). A theory of subgroups in work teams. *Academy of Management Review, 37*(3), 441–470.

Conger, J. A., Kanungo, R. N., & Menon, S. T. (2000). Charismatic leadership and follower effects. *Journal of Organizational Behavior, 21*(7), 747–767.

DeRue, D. S., Nahrgang, J. D., Wellman, N., & Humphrey, S. E. (2011). Trait and behavioral theories of leadership: An integration and meta-analytic test of their relative validity. *Personnel Psychology, 64*(1), 7–52.

De Dreu, C. K. W., & Weingart, L. R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: A meta-analysis. *Journal of Applied Psychology, 88*(4), 741–749.

Doherty, K. T. (1998). A mind of her own: Effects of need for closure and gender on reactions to nonconformity. *Sex Roles, 38*(9–10), 801–819.

Eagly, A. H., & Karau, S. J. (2002). Role congruity theory of prejudice toward female leaders. *Psychological Review, 109*(3), 573–598.

Eagly, A. H., Wood, W., & Diekman, A. B. (2000). Social role theory of sex differences and similarities: A current appraisal. In T. Eckes & H. M. Trautner (Eds.), *The developmental social psychology of gender* (pp. 123–174). Mahwah, NJ: Lawrence Erlbaum.

Eagly, A. H., & Johnson, B. T. (1990). Gender and leadership style: A meta-analysis. *Psychological Bulletin, 108*(2), 233–256.

Friesen, J. P., Kay, A. C., Eibach, R. P., & Galinsky, A. D. (2014). Seeking structure in social organization: Compensatory control and the psychological advantages of hierarchy. *Journal of Personality and Social Psychology, 106*(4), 590–609.

Gordon, R. A. (1997). The moderation of distinctiveness-based illusory correlation: The impact of circadian variations and personal need for structure. *The Journal of Social Psychology, 137*(4), 514–526.

Grijalva, E., Maynes, T. D., Badura, K. L., & Whiting, S. W. (2020). Examining the "I" in team: A longitudinal investigation of the influence of team narcissism composition on team outcomes in the NBA. *Academy of Management Journal, 63*(1), 7–33.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.

Heilman, M. E., Wallen, A. S., Fuchs, D., & Tamkins, M. M. (2004). Penalties for success: Reactions to women who succeed at male gender-typed tasks. *Journal of Applied Psychology, 89*(3), 416–427.

Heine, S. J., Proulx, T., & Vohs, K. D. (2006). The meaning maintenance model: On the coherence of social motivations. *Personality and Social Psychology Review, 10*(2), 88–110.

Heponiemi, T., Elovainio, M., Kouvonen, A., Pekkarinen, L., Noro, A., Finne-Soveri, H., & Sinervo, T. (2008). Effects of the interaction between reaction component of personal need for structure and role perceptions on employee attitudes in long-term care for elderly people. *Journal of Applied Social Psychology, 38*(12), 2924–2953.

Hodson, G., & Esses, V. M. (2005). Lay perceptions of ethnic prejudice: Causes, solutions, and individual differences. *European Journal of Social Psychology, 35*(3), 329–344.

Hyde, J. S., Mezulis, A. H., & Abramson, L. Y. (2008). The ABCs of depression: Integrating affective, biological, and cognitive models to explain the emergence of the gender difference in depression. *Psychological Review, 115*(2), 291–313.

Insko, C. A., & Schopler, J. (1998). Differential distrust of groups and individuals. In C. Sedikides, J. Schopler, & C. A. Insko (Eds.), *Intergroup cognition and intergroup behavior* (pp. 75–107). Mahwah, NJ: Erlbaum.

Janssen, O., & Van Yperen, N. W. (2004). Employees' goal orientations, the quality of leader-member exchange, and the outcomes of job performance and job satisfaction. *Academy of Management Journal, 47*(3), 368–384.

Jehn, K. A., & Bezrukova, K. (2010). The faultline activation process and the effects of activated faultlines on coalition formation, conflict, and group outcomes. *Organizational Behavior and Human Decision Processes, 112*(1), 24–42.

Jehn, K. A., & Rupert, J. (2008). Group faultlines and team learning: How to benefit from different perspectives. In V. Sessa & M. London (Eds.), *Work group learning: Understanding, improving and assessing how groups learn in organizations* (pp. 119–147). New York, NY: Taylor & Francis.

Jiang, Y., Jackson, S. E., Shaw, J. B., & Chung, Y. (2012). The consequences of educational specialty and nationality faultlines for project teams. *Small Group Research, 43*(5), 613–644.

Johnson, S. K., Murphy, S. E., Zewdie, S., & Reichard, R. J. (2008). The strong, sensitive type: Effects of gender stereotypes and leadership prototypes on the evaluation of male and female leaders. *Organizational Behavior and Human Decision Processes, 106*(1), 39–60.

Kelley, H. H. (1972). Attribution in social interaction. In E. E. Jones, D. E. Kanouse, H. H. Kelley, R. E. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior* (pp. 1–26). Morristown, NJ: General Learning Press.

Kelley, H. H., & Michela, J. L. (1980). Attribution theory and research. *Annual Review of Psychology, 31*, 457–501.

Kemmelmeier, M. (2010). Gender moderates the impact of need for structure on social beliefs: Implications for ethnocentrism and authoritarianism. *International Journal of Psychology, 45*(3), 202–211.

Koopmann, J., Lanaj, K., Wang, M., Zhou, L., & Shi, J. (2016). Nonlinear effects of team tenure on team psychological safety climate and climate strength: Implications for average team member performance. *Journal of Applied Psychology, 101*(7), 940–957.

Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind: "Seizing" and "freezing". *Psychological Review, 103*(2), 263–283.

Lau, D. C., & Murnighan, J. K. (1998). Demographic diversity and faultlines: The compositional dynamics of organizational groups. *Academy of Management Review, 23*(2), 325–340.

Lau, D. C., & Murnighan, J. K. (2005). Interactions within groups and subgroups: The effects of demographic faultlines. *Academy of Management Journal, 48*(4), 645–659.

LeBreton, J. M., & Senter, J. L. (2008). Answers to 20 questions about interrater reliability and interrater agreement. *Organizational Research Methods, 11*(4), 815–852.

Loden, M. (1985). *Feminine leadership, or, how to succeed in business without being one of the boys*. New York, NY: Times Books.

Lyness, K. S., & Heilman, M. E. (2006). When fit is fundamental: Performance evaluations and promotions of upper-level female and male managers. *Journal of Applied Psychology, 91*(4), 777–785.

Moskowitz, G. B. (1993). Individual differences in social categorization: The influence of personal need for structure on spontaneous trait inferences. *Journal of Personality and Social Psychology, 65*(1), 132–142.

Muthén, L. K., & Muthén, B. O. (2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.

Neuberg, S. L., & Newsom, J. T. (1993). Personal need for structure: Individual differences in the desire for simpler structure. *Journal of Personality and Social Psychology, 65*(1), 113–131.

Ng, T. W. H., & Feldman, D. C. (2009). How broadly does education contribute to job performance? *Personnel Psychology, 62*(1), 89–134.

Nolen-Hoeksema, S., Larson, J., & Grayson, C. (1999). Explaining the gender difference in depressive symptoms. *Journal of Personality and Social Psychology, 77*(5), 1061–1072.

Northcraft, G. B., Polzer, J. T., Neale, M. A., & Kramer, R. M. (1995). Diversity, social identity, and performance: Emergent social dynamics in cross-functional teams. In S. E. Jackson & M. N. Ruderman (Eds.), *Diversity in work teams: Research paradigms for a changing workplace* (pp. 69–96). Washington, DC: American Psychological Association.

Owens, B. P., & Hekman, D. R. (2016). How does leader humility influence team performance? Exploring the mechanisms of contagion and collective promotion focus. *Academy of Management Journal, 59*(3), 1088–1111.

Pearsall, M. J., Ellis, A. P. J., & Evans, J. M. (2008). Unlocking the effects of gender faultlines on team creativity: Is activation the key? *Journal of Applied Psychology, 93*(1), 225–234.

Polzer, J. T., Crisp, C. B., Jarvenpaa, S. L., & Kim, J. W. (2006). Extending the faultline model to geographically dispersed teams: How colocated subgroups can impair group functioning. *Academy of Management Journal, 49*(4), 679–692.

Preacher, K. J., & Hayes, A. F. (2008). Contemporary approaches to assessing mediation in communication research. In A. F. Hayes, M. D. Slater, & L. B. Snyder (Eds.), *The Sage sourcebook of advanced data analysis methods for communication research* (pp. 13–54). Thousand Oaks, CA: Sage.

Pundt, A., & Venz, L. (2017). Personal need for structure as a boundary condition for humor in leadership. *Journal of Organizational Behavior, 38*(1), 87–107.

Roseman, I. J., Wiest, C., & Swartz, T. S. (1994). Phenomenology, behaviors, and goals differentiate discrete emotions. *Journal of Personality and Social Psychology, 67*(2), 206–221.

Sawyer, J. E., Houlette, M. A., & Yeagley, E. L. (2006). Decision performance and diversity structure: Comparing faultlines in convergent, crosscut, and racially homogeneous groups. *Organizational Behavior and Human Decision Processes, 99*(1), 1–15.

Schaller, M., Boyd, C., Yohannes, J., & O'Brien, M. (1995). The prejudiced personality revisited: Personal need for structure and formation of erroneous group stereotypes. *Journal of Personality and Social Psychology, 68*(3), 544–555.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods, 7*(4), 422–445.

Spoelma, T. M., & Ellis, A. P. J. (2017). Fuse or fracture? Threat as a moderator of the effects of diversity faultlines in teams. *Journal of Applied Psychology, 102*(9), 1344–1359.

Thatcher, S. M. B., & Patel, P. C. (2012). Group faultlines: A review, integration, and guide to future research. *Journal of Management, 38*(4), 969–1009.

Thompson, M. M., Naccarato, M. E., Parker, K. C. H., & Moskowitz, G. B. (2001). The personal need for structure and personal fear of invalidity measures: Historical perspectives, current applications, and future directions. In G. B. Moskowitz (Ed.), *Cognitive social psychology: The Princeton symposium on the legacy and future of social cognition* (pp. 19–39). Mahwah, NJ: Erlbaum.

Van Kleef, G. A., Homan, A. C., Beersma, B., Van Knippenberg, D., Van Knippenberg, B., & Damen, F. (2009). Searing sentiment or cold calculation? The effects of leader emotional displays on team performance depend on follower epistemic motivation. *Academy of Management Journal, 52*(3), 562–580.

Wang, A.-C., Chiang, J. T.-J., Tsai, C.-Y., Lin, T.-T., & Cheng, B.-S. (2013). Gender makes the difference: The moderating role of leader gender on the relationship between leadership styles and subordinate performance. *Organizational Behavior and Human Decision Processes, 122*(2), 101–113.

Webster, D. M., & Kruglanski, A. W. (1994). Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology, 67*(6), 1049–1062.

Williams, K. Y., & O'Reilly, C. A., III. (1998). Demography and diversity in organizations: A review of 40 years of research. *Research in Organizational Behavior, 20*, 77–140.

Yam, K. C., Christian, M. S., Wei, W., Liao, Z., & Nai, J. (2018). The mixed blessing of leader sense of humor: Examining costs and benefits. *Academy of Management Journal, 61*(1), 348–369.

Zellmer-Bruhn, M., & Gibson, C. (2006). Multinational organization context: Implications for team learning and performance. *Academy of Management Journal, 49*(3), 501–518.