

Joint Effects of Shared and Transformational Leadership on Performance in Street-Level Bureaucracies: Evidence from the Educational Sector

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Short Biographies

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Abstract

Recent theories of public administration emphasize the importance of leadership as a shared property. This research focuses on the role of the interaction between vertical and shared leadership in promoting agency performance. Specifically, it examines the joint effects of shared leadership and transformational leadership on team empowerment and performance in public settings. Based on field study data collected from 74 street-level bureaucracies and 423 public servants in Brazil, we find evidence that vertical transformational leadership strengthens the direct relationship between shared leadership and team empowerment as well as the indirect relationship between shared leadership and school performance through team empowerment (a moderated-mediation model). Findings of this study suggest that greater attention should be paid to the dynamics of shared and vertical leadership structures to better understand their consequences for team processes and outcomes in public settings.

Keywords: Shared leadership, transformational leadership, public leadership, moderated mediation, agency performance.

Evidence for Practice

Agencies with higher levels of shared leadership performed significantly better due to an increased sense of empowerment among employees.

Public managers enhanced the effects of shared leadership on agency performance by demonstrating transformational leadership.

To harness the potential of shared leadership in the public sector, organizations should introduce managerial training that develops transformational leaders who offer clear vision, motivate, and inspire employees.

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Scholars have questioned the premise that leadership in public contexts belongs to a single individual with an executive title (Ospina 2017; Denhardt and Denhardt 2007), suggesting instead that leadership can be enacted as a shared property that is distributed among multiple individuals regardless of their status (Gronn 2002). By relying on collective forms of leadership, agencies can effectively use employees' skills and resources to tackle complex issues bureaucrats face daily (Crosby, 't Hart, and Torfing 2017). Further, it is argued that shared leadership aligns better with western democratic values (Wegge, Jeppesen, and Weber 2012) and is especially suitable for street-level bureaucracies, where employees enjoy a significant level of discretion in their daily tasks (Vinzant and Crothers 1996).

However, the interaction between the bottom-up influence of the organizational members and the behaviors of public managers remains to be fully explored (Pearce and Sims 2002). Although some studies identify vertical leadership as an antecedent of shared leadership in commercial organizations (Carson, Tesluk, and Marrone 2007), public managers cannot fully control leadership processes in their agencies because their subordinates engage in leadership roles independently, by the very nature of their work (e.g., street-level bureaucracies; Vinzant and Crothers 1996). Furthermore, public leaders must often collaborate with existing team structures because they are appointed for a fixed mandate (Miller 2013). As such, public managers, who are still part of the traditional formal authority structure and are largely accountable for the organizational outcomes (Currie and Lockett 2011; Pearce, Wood, and Wassenaar 2018), have an incentive to help teams with shared leadership achieve better organizational outcomes (Wang, Waldman, and Zhang 2014) rather than simply delegate tasks to them. Therefore, we argue, more research is needed to understand what specific behaviors of *formal* leaders can enhance (moderate) the

effectiveness of *informal* shared leadership for organizational processes and outcomes (Morgeson, DeRue, and Karam 2010; Hoch 2013).

Shared leadership is described as a form of collective governance where multiple individuals influence one another to attain a common goal (Pearce and Sims 2000). Although the literature shows a positive impact of shared leadership on collective motivational states, such as team empowerment (e.g., Nicolaides et al. 2014), it also recognizes that the enactment of leadership roles by multiple individuals is not without its challenges, citing such processual difficulties as ineffective communication, increased complexity and uncertainty (Grissom 2012; Murphy et al. 2017). These limitations of shared leadership can undermine team-level motivation (Hu and Liden 2011), especially in public organizations, where goals are inherently more ambiguous (Chun and Rainey 2005). In this context, vertical leaders, who possess relatively higher organizational status, formal authority, ability to control resources, and outcome accountability (Currie and Lockett 2011), may play an important role in hindering or enhancing the effectiveness of informal shared leadership structures (Morgeson, DeRue, and Karam 2010; Zeier, Plimner, and Franken 2018; Ran and Qi 2018). In other words, informal shared leadership structures do not exist in vacuum and by exploring their co-dependency on vertical leadership forms, we respond to calls for more research on “relationship between hierarchical leadership and more plural forms” (Holm and Fairhurst, 2018, p. 694).

Transformational leadership seems particularly well-suited to secure followers’ support and engagement in pursuing organizational objectives due to its influence on information interpretation through goal clarification and commitment toward common goals (Moynihan, Pandey, and Wright 2011; Jong and Faerman 2020). As such, transformational leaders can help teams with multiple informal leaders to avoid process losses inherent to shared leadership structures and strengthen positive motivational states within teams.

Specifically, we draw on goal-setting and self-determination theories, (Locke and Latham 2013; Deci, Connell, and Ryan 1989) to propose that transformational leaders will enhance the relationship between shared leadership and team empowerment, referred to as a collective motivational state arising from team members' shared positive evaluation of their organizational tasks (Kirkman and Rosen 1999). Further, we predict that vertical transformational leadership will strengthen the indirect effect of shared leadership on team performance via team empowerment (a moderated-mediation model).

We tested our theoretical model in a field study with survey data from 74 street-level bureaucracies (public schools) located in Rio de Janeiro, Brazil, selected using a probabilistic stratified sampling procedure (Groves et al. 2011). Further, we use objective secondary data provided by the Local Board of Education as our dependent variable (school performance) and control variables. Overall, this article addresses recent calls for an empirical examination of the interplay between vertical and horizontal forms of leadership (Holm and Fairhurst 2018; Zhu et al. 2018) as well as its consequences in the context of education (Pearce, Wood, and Wassenaar 2018) and contingencies of shared leadership in the broader domain of public administration (Currie and Lockett 2011; Sweeney, Clarke, and Higgs 2019). The study provides evidence that in the context of public organizations, especially in street-level bureaucracies, these two forms of leadership structure can co-exist, their effects are co-dependent, and their interaction is relevant to team motivational states and organizational outcomes. The results suggest that to gain a more complete understanding of leadership in public organizations, the joint effects of informal horizontal and formal vertical leadership structures should be considered.

Shared Leadership and Public Agency Performance

Shared leadership (sometimes called horizontal leadership) is a framework developed in response to new organizational realities such as flatter hierarchical structures, increased complexity, and decentralization (Ospina 2017). It has been defined as an emerging team property where multiple team members willingly influence one another, collectively make decisions, strategize, and share responsibilities in pursuit of a common goal (Pearce and Sims 2000; Seashore Louis, Dretzke, and Wahlstrom 2010). In other words, shared leadership is enacted by multiple individuals regardless of their formal power status, which creates an environment where members rotate roles and share accountability, participation is encouraged, collaborative behaviors emerge, and knowledge and skills resources are pooled to improve overall performance (Gronn 2002; Pearce and Manz 2005).

Viewed in this way, shared leadership positions itself as a broader phenomenon than similar concepts, such as participation in management or participation in managerial decision-making. Specifically, participation in management tends to be more related to managerial and human resource practices aimed at enabling higher employee input in decision-making (Huang et al. 2010; Bartram et al. 2007), which may be limited and not necessarily voluntary (Kahnweiler and Thompson 2000). In contrast, shared leadership goes beyond that and focuses on employee's perception of their voluntary engagement in a wide range of influence processes and their own leadership behaviors rather than those of their managers.

Shared leadership has received some attention from the scholars aligned with New Public Governance and New Public Service who see collaboration as a practice consistent with democratic values (Crosby and Bryson 2018; Ospina 2017) that contributes to the common good by including diverse and potentially innovative perspectives in the governance (Crosby and Bryson 2018; Crosby, 't Hart, and Torfing 2017). Indeed, public organizations are known to promote staff participation and consultation more frequently than private sector

organizations (Boyne, Poole, and Jenkins 1999), and to value more participative leadership styles (Hansen and Villadsen 2010), aligned with shared leadership premises.

Shared leadership is argued to be especially effective in “team-based” and complex settings, such as street-level bureaucracies (Currie and Lockett 2011), where public employees interact directly with citizens and must deal with complex issues in a timely manner. This is because, in such contexts, a single leader is unlikely to provide all the necessary guidance and support (Pearce and Manz 2005). Rather, a shared leadership structure is preferable to pool skills and knowledge from across the organization to guarantee the successful completion of team tasks. Consistently, some governments included shared leadership in their official policy reforms to improve public service delivery in healthcare and education by distributing and developing leadership skills among frontline actors (Currie and Lockett 2011; Currie, Lockett, and Suhomlinova 2009).

Furthermore, by involving more actors in leadership roles, agency managers can not only share their workload but also increase learning capacity and motivation, and improve the perception of working conditions among employees (Tian, Risku, and Collin 2016). All of which have been found to positively influence agency performance (Paarlberg and Lavigna 2010; Heck and Hallinger 2010). As such, and consistent with previous research (Heck and Hallinger 2010; Seashore Louis, Dretzke, and Wahlstrom 2010), we propose:

Hypothesis 1: Shared leadership will be positively related to agency performance.

Shared Leadership and Team Empowerment

Team empowerment is described as a collective emergent state of intrinsic motivation arising from the positive assessment of the tasks the team is engaged in (Thomas and Velthouse 1990). Empowered teams demonstrate a shared belief about the team's ability to attain goals and undertake any task successfully (potency), perceive the team's discretion over

the task execution (autonomy), feel that their work is worthwhile (meaningfulness) and will make a difference in terms of the organizational results (impact) (Kirkman and Rosen 1999; Thomas and Velthouse 1990). Importantly, these dimensions are interrelated and reinforce one another (Spreitzer 1995) to positively influence innovative behavior (Miao et al. 2018) and well-being (García-Juan, Escrig-Tena, and Roca-Puig 2020), as well as in-role and extra-role performance of public employees at the individual level (Taylor 2013; García-Juan, Escrig-Tena, and Roca-Puig 2019).

In this study, we argue that shared leadership is positively related to team empowerment for several reasons. First, when individuals share leadership responsibilities, they are more likely to exchange information and collaborate to plan and strategize about the team's efforts (Bergman et al. 2012). These interpersonal behaviors are relevant team capabilities themselves as they improve team coordination. Thus, employees who share leadership roles and engage in more frequent and open communication with other leaders, are more aware of each other's abilities and become more confident of the team's potential to tackle future challenges and achieve its goals (Lester, Meglino, and Korsgaard 2002). Further, such horizontal information sharing is likely to help public employees to evaluate each other's ideas, improve them, validate them, and help frontline workers to see their contribution to the organization as meaningful (Nisar and Maroulis 2017; Fernandez and Pitts 2011). Along this line, a prior study conducted in public hospitals demonstrated that leadership relationships characterized by high exchanges of resources and support resulted in higher levels of empowerment among nursing staff (Brunetto et al. 2012).

Second, participating in leadership behaviors implies that team members gain a sense of ownership, control, and responsibility for collectively chosen team goals (Pearce and Manz 2005). Through collective decision making and engagement in leadership behaviors, employees voice their preferences and fully apply their expertise to the task they have chosen

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to perform, which gives them a better opportunity to learn and grow (Pearce, Wood, and Wassenaar 2018; Cho and Faerman 2010; Brunetto et al. 2012). This, in turn, leads to an increased intrinsic motivation and commitment to the expressed goals, strong shared belief that the team can achieve them, and an enhanced sense of empowerment (Cho and Faerman 2010; Carson, Tesluk, and Marrone 2007; García-Juan, Escrig-Tena, and Roca-Puig 2020). This is relevant because bureaucratization of the public environment may create a perception among employees that they lack autonomy, which may hinder their motivation (Petter et al. 2002; Jacobsen, Hvitved, and Andersen 2014).

Finally, repeated positive interactions between team members as well as the willingness to share responsibilities, has been shown to facilitate trust building within commercial teams (Bergman et al. 2012; Drescher et al. 2014). Followers who trust leaders are more confident about future work outcomes and experience interpersonal bonding with their leaders (Colquitt et al. 2012; Miao et al. 2013), which prompts employees to perceive higher levels of team potency and meaningfulness of their work (Schaubroeck, Lam, and Peng 2011; Li and Tan 2013). Trust in multiple informal leaders should also be conducive to an enhanced collective sense of meaning, as it is likely to satisfy the employees' need for relatedness through interactions with multiple team members (Coun, Peters, and Blomme 2019; Battaglio, Belle, and Cantarelli 2021). Moreover, it should lead to a collective feeling of confidence due to mitigated uncertainty about other team members' dependability and capability (Colquitt et al. 2012). As such, we hypothesize:

Hypothesis 2: Shared leadership will be positively related to team empowerment.

Mediating Role of Team Empowerment

Considering the explanatory role of motivational states as mediators of the effects of leadership on team outputs (Nicolaidis et al. 2014), we focus on team empowerment as a

potential motivational mechanism linking shared leadership and team performance.

Specifically, we propose that when team members are confident they can be effective in every situation (team potency), they tend to increase their effort to reach higher performance regardless of any difficulties that may arise, which is likely to overlap with the experience of positive affective states such as energy and vigor (Collins and Parker 2010). Given that positive emotions influence the formation of a broad range of behavioral, social, and psychological resources that help individuals to persist through adversity (Fredrickson 2001), empowered teams should also be more resilient and persistent in the attainment of their goals and demonstrate higher performance. Consistently, studies have confirmed the relationship between team potency and team performance (e.g., Hu and Liden 2011).

Moreover, team members who perceive their work as interesting and worthwhile (team meaningfulness) will likely experience more job satisfaction and intrinsic motivation, engage more in their tasks (Kahn 1990), and improve their performance (Li, Li, and Wang 2009). Relatedly, a study with Dutch public servants has shown a positive relationship between meaningfulness and work effort and commitment (Tummers and Knies 2013). Also, team meaningfulness has been argued to positively influence team learning (Kirkman et al. 2004), which facilitates the improvement of team processes and performance in public organizations (Heck and Hallinger 2010).

Finally, the enhanced sense of independence over task execution (team autonomy) is likely to foster higher levels of responsibility for team outcomes (Spreitzer, Cohen, and Ledford Jr 1999) and organizational commitment of public servants (Brunetto et al. 2012; García-Juan, Escrig-Tena, and Roca-Puig 2020). Consequently, team members should demonstrate increased proactivity on the front line by applying changes to the procedures that are no longer effective (Kirkman and Rosen 1999).

Previous research has confirmed the mediating role of team empowerment underlying the relationship between team inputs and team outcomes in the public sector (Taylor 2013; Miao et al. 2018), while management research shows that shared leadership affects team performance through motivational states (Zhu et al. 2018). This mediating effect takes place because when engaging in leadership behaviors, team members participate in goal setting, are more likely to exchange information, and are more apt to support one another (Hoch and Kozłowski 2014; Pearce, Wood, and Wassenaar 2018). Further, through vicarious experience and enactment of leadership roles, team members in shared leadership structures obtain knowledge about team capabilities (Hoch 2014) and a sense of ownership over common goals (Pearce and Manz 2005). Consequently, the awareness of skills and knowledge distributed within the team, as well as the feeling of involvement in team actions, should lead the team to form perceptions regarding team empowerment, prompt them to work harder, be more proactive and resilient, and achieve high performance (Kirkman and Rosen 1999; Nicolaides et al. 2014; García-Juan, Escrig-Tena, and Roca-Puig 2019). Therefore, we propose:

Hypothesis 3: Team empowerment will mediate the relationship between shared leadership and agency performance.

The Interaction of Shared and Transformational Vertical Leadership

Although formal leaders can influence the emergence of shared leadership structures (e.g., Carson, Tesluk, and Marrone 2007), some authors argue that team leadership can emerge regardless of the existence of formal authority (Gronn 2002; Pearce 2004). As such, appointed leaders can find themselves managing experienced teams with already developed team leadership capacity (Day, Gronn, and Salas 2004). This is the case of many public organizations, where leaders are appointed or elected for a fixed term and cannot assemble their own teams due to legislation protecting tenured public employees (Miller 2013). It is also true for street-level bureaucracies (Lipsky 2010), where employees are more independent

from management and have the opportunity to engage in informal leadership roles (Vinzant and Crothers 1996). Therefore, in order to obtain a more holistic image of leadership and motivational processes in public organizations, we believe it is important to examine the effects of shared and vertical leadership simultaneously (Coun, Peters, and Blomme 2019).

In this study, we posit that the interaction between vertical and shared leadership is likely to enhance the emergence of team motivational states and performance (Pearce 2004; Pearce, Wood, and Wassenaar 2018). This is because shared leadership structures in public organizations face some coordination and motivational difficulties. Specifically, research suggests the presence of several individuals of similar leadership status as related to increased role ambiguity, complexity, and conflict (Grissom 2012; Harris 2004; Murphy et al. 2017). In a public context, where employees already experience increased goal ambiguity (Chun and Rainey 2005), having multiple individuals in leadership roles may result in the pursuit of divergent goals or goals conflicting with the organizational mission. Further, qualitative evidence suggests that some civil servants may regard higher involvement in leadership roles as time-consuming and deterring them from their core activities (Petter et al. 2002), which can negatively impact employee well-being, and ultimately hinder performance (Bakker, Van Emmerik, and Van Riet 2008). As such, formal leaders, who are often personally accountable for the agency outcomes (Currie and Lockett 2011), should be willing to “step in” and use their hierarchical position as a cue for tacit coordination (De Kwaadsteniet and Van Dijk 2010) to overcome the aforementioned processual pitfalls that may appear as byproducts of shared leadership. We thus argue that although the consequences of shared leadership for public service delivery and collective motivation are positive, its effects can be significantly improved if coupled with vertical leadership that facilitates team processes beneficial for team performance and limits those that are hindering it.

The core tenet of transformational leadership theory is the idea that leaders can shape their organizations and secure performance outcomes by articulating a clear vision of the future and inspiring their followers (Bass 1999; Høstrup and Andersen 2020). Specifically, transformational leaders base their influence on the following behavioral components: idealized influence, inspirational motivation, and intellectual stimulation (Wright and Pandey 2010). Drawing from empirical evidence related to the influence of transformational leadership on processes and performance in public administration (Sun and Henderson 2017; Jacobsen et al. 2021), we argue that transformational leaders are particularly well-suited to strengthen the aforementioned effects of shared leadership on team empowerment and performance. Further, although it may seem counterintuitive that a charismatic, “heroic” figure such as a transformational leader would relinquish some of their power and cooperate with informal and shared leadership structures (Currie and Lockett 2011), we contend that it can be beneficial for team performance for three main reasons.

First, as stated above, the enactment of shared leadership structures may trigger feelings of uncertainty and role ambiguity among team members (Murphy et al. 2017; Harris 2004). However, according to the goal-setting theory, performance benefits from the perceptions of clarity, specificity, and challenge of the expressed goals (Locke and Latham 2013). One way of diminishing the impact of job stressors in public service is to provide goal clarity (Pandey and Wright 2006). Transformational leaders are especially effective in the contexts of increased uncertainty due to their influence on goal clarification (Wright, Moynihan, and Pandey 2012; Moynihan, Pandey, and Wright 2011). By focusing on expectations, appointed transformational leaders provide each employee who participates in collective leadership with a better understanding of steps they need to take to contribute to team performance and the larger policy domain (Taylor 2013).

Second, one of the key elements of transformational leadership effectiveness is the ability to present a compelling vision (Wright and Pandey 2010). Rather than appealing to follower's self-interest, transformational leaders exert their influence by aligning organizational vision with individual goals of the follower and by emphasizing the expected impact the employee's work will have on service recipients (Bro and Jensen 2020). As such, transformational leaders can increase the empowerment of the employees who engage in shared leadership by facilitating their social identification with the group (Kark, Shamir, and Chen 2003) and by stimulating their user orientation (Bro and Jensen 2020). Both aspects foster motivation and performance of public employees (Paarlberg and Lavigna 2010).

Third, research drawing from the self-determination theory (Deci, Connell, and Ryan 1989), suggests that engaging in shared leadership satisfies team members' basic psychological needs of competence, autonomy, and relatedness, and thus influences performance-related team outcomes (Coun, Peters, and Blomme 2019). By providing intellectual stimulation, enhancing bonds with other team members through shared values, and communicating team goals in an enthusiastic way, transformational leaders can further enhance the perception of self-determination among team members, empower them, and improve their performance. Specifically, when transformational leaders encourage employees to think independently, the employees will experience an even stronger sense of freedom to decide how they want to apply their intellectual resources to attain the agency objectives. As such, transformational leaders facilitate the integration of organizational and private goals of public servants and make their work more interesting and meaningful to them (Paarlberg and Lavigna 2010). Further, transformational leaders promote collaboration by improving team communication and demonstrating charisma (Ramadass, Sambasivan, and Xavier 2018; Høstrup and Andersen 2020), which can further energize team members and enhance feelings of competence and relatedness.

Based on the aforementioned arguments, we predict that:

Hypothesis 4: Transformational leadership will moderate the effect of shared leadership on team empowerment, such that at higher levels of transformational leadership the effect of shared leadership on team empowerment will be stronger.

Hypothesis 5: Transformational leadership will moderate the indirect effect of shared leadership on agency performance (through team empowerment), such that at higher levels of transformational leadership the indirect effect of shared leadership on agency performance will be stronger.

Method

We tested our hypotheses in a field study with 423 teachers nested in 74 public schools in Rio de Janeiro, Brazil. The data for this study were collected in collaboration with the Board of Education of Rio de Janeiro. The public educational system in Rio encompasses more than 1,000 elementary schools distributed in 11 school districts.

Between 2000 and 2009, the Brazilian government managed to improve the quality of primary education, as evidenced by the increase of average student scores in the Program for International Student Assessment (PISA) (Soares and Nascimento 2012). However, in comparison to other countries, Brazilian students continue to score significantly lower (López-Roldán and Fachelli 2021). Moreover, Brazilian educators have witnessed several educational reforms being implemented and then scrapped by consecutive governments, which has created a climate of uncertainty and led to lower motivation among teachers (Kauko, Takala, and Rinne 2018). As such, there is an urgent need to provide evidence-based insights on how to improve performance in Brazilian public schools.

We believe this context is appropriate to study shared leadership because educational policies in Brazil provide a basis for the teachers' engagement in leadership roles through the requirement of collective elaboration of the school's pedagogical plans and participation in the school councils (Lima 2014).

Sample and Data Collection Strategy

To select the schools included in the analysis, a stratified randomized sampling (Groves et al. 2011) was carried out to avoid underrepresentation of relevant subpopulations. Using this procedure, we initially selected 154 elementary schools (15% of the total) for the data collection. The following variables were considered in the process of stratification: school district (11 districts), school size (large vs. small, based on the median value), and the human development index (HDI) of the school district (high vs. low, based on the median value). The sample characteristics are presented in Appendix A.

Of the 154 schools selected, 148 provided us with their teachers' contact information. We sent letters and banners to the participating schools explaining our research objectives and providing information about the data collection process. We distributed questionnaires to 1,885 teachers via individual text messages containing links to the survey. Participants were informed that their participation was voluntary and anonymous and that they could withdraw their consent at any time.

In the first trimester of 2018, teachers from 142 schools completed the survey, amounting to a total of 500 participants (response rate of 26.52%). We excluded schools with less than 3 teachers to obtain more reliable aggregate measures at the school level, which rendered a sample of 423 teachers working in 74 schools (an average of 5.71 participants per school). Respondents assessed leadership constructs and group processes that took place in their schools between 2015 and 2017. This period corresponded with the last mandate of the

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school principal, who in Rio de Janeiro is elected by the school community (teachers, staff, students, and their parents) for a 3-year term. The additional data concerning school performance (standardized test scores) and school characteristics, such as the number of students per class and students' socio-economic status, were provided by the Rio de Janeiro's Board of Education and the Brazilian Ministry of Education.

Measures

Shared Leadership. The construct was measured using a short (four-item) version of the six-item scale previously used by Seashore Louis et al. (2010) and similar to the ones used in prior studies in educational contexts (Heck and Hallinger 2010). This scale showed good reliability (Cronbach's $\alpha = .92$). The decision to exclude two items from the original version of the scale was made, as they did not apply to the context of the Brazilian public school system. All measures are presented in Appendix B.

Transformational Leadership. To measure the transformational leadership of the principal, the respondents completed the five-item scale used by Wright and colleagues (2012) and originally developed by (House 1998). The Cronbach's α showed good reliability ($\alpha = .95$).

Team Empowerment. To assess the perception of team empowerment in the school, respondents completed an adapted, shortened six-item version of the scale previously used in the literature (Kirkman et al. 2004) containing three dimensions of team empowerment: team potency, autonomy, and meaningfulness. The Cronbach's α of this measure was adequate (.79). Following best practices from other studies where shortened versions of scales were used (e.g., Wee and Fehr 2021), we validated our version of the scale through a separate sample.¹

All the items included in the survey were anchored on a five-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5). Since our unit of analysis was

the school, we computed the average of teachers' individual ratings to produce aggregate variables at the school level. The r_{WG} for shared leadership (.73), transformational leadership (.74), and team empowerment (.90) revealed that teachers from the same school tended to agree with each other regarding their perceptions of their leaders' and groups' characteristics, allowing us to aggregate participants' responses to the school level.

School Performance. We used the schools' standardized test scores from 2017 (the last year of the principals' mandate) as our measure of school performance. These scores were obtained from a mandatory, nationwide, standardized test designed to assess students' language and mathematical skills, applied every two years by the Brazilian government. The 2017 scores were published in September 2018 (i.e., after the survey responses had been collected).

Control Variables. We controlled for some school characteristics that are related to school performance and that can affect group processes in schools (Battistich et al. 1995; Finn and Achilles 1999), such as the number of students per classroom, students' socio-economic status calculated by the Brazilian Government, and the number of teachers per student. In addition, we created a dummy variable for each school district to control for any "district effect", which is equivalent to using fixed effects for the school district.

Results

Measurement Model

We conducted a confirmatory factor analysis (CFA) using the individual-level data ($N = 423$) to test the goodness-of-fit of the measurement model and the discriminant validity of the study's variables (Appendix C). The three-factor model showed good fit indices ($RMSEA = .07$; $SRMR = .05$; $CFI = .95$; and $TLI = .94$), while the two-factor model (shared and transformational leadership merged) demonstrated a significantly worse fit ($RMSEA = .12$;

SRMR = .06; *CFI* = .87; and *TLI* = .85; $\Delta \chi^2 (2) = 447.64$; $p < 0.001$). Moreover, the fit of the single-factor model (*RMSEA* = .15; *SRMR* = .09; *CFI* = .81; and *TLI* = .78) was also significantly worse than that of the two-factor model ($\Delta \chi^2 (1) = 365.86$; $p < 0.001$). These results show that the three-factor model fit the data best. Further, although shared and transformational leadership were strongly correlated, we found that the square roots of the average variance extracted (AVE) of shared and transformational leadership ($\sqrt{\text{AVE}_{\text{SharedLeadership}}} = .87$ and $\sqrt{\text{AVE}_{\text{TransformationalLeadership}}} = .89$) exceed the correlation between them ($r = .84$; Appendix C), which supports discriminant validity. Bivariate correlations, means, and standard deviations of all study variables are shown in Table 1.

Insert Table 1 here

Hypotheses Testing

We tested our hypotheses using OLS linear regression. Mediation analyses (tests of indirect effects) were conducted using Hayes' (2013) moderated-mediation model number 7 (see Figure 1). Both shared and transformational leadership were mean-centered.

Insert Figure 1 here

The total effect of shared leadership on school performance was positive and significant ($b = 0.24$, $SE = 0.11$, $p < .05$), which supported Hypothesis 1. In line with

Hypothesis 2, we found that the effect of shared leadership on team empowerment (the mediator) was positive and significant ($b = 0.34, SE = 0.12, p < .05$). Moreover, team empowerment significantly predicted school performance ($b = 1.11, SE = 0.23, p < .001$). Figure 1 summarizes the results of the moderated-mediation model. For the complete regression outputs, see the Appendix D.

To test Hypothesis 3, which proposed that team empowerment would mediate the effect of shared leadership on school performance, we conducted a mediation analysis using bootstrapped standard errors (5000 replications). Corroborating our prediction, the average indirect effect of shared leadership on school performance was positive and significant ($b = 0.37, SE = 0.11, p < .01$; Table 2). Further, the direct effect of shared leadership on school performance (Figure 1) was not significant when we included team empowerment in the model, which suggested full mediation.

Insert Table 2 here

Furthermore, the results confirmed a positive moderating effect of transformational leadership on the relationship between shared leadership and team empowerment, as predicted by Hypothesis 4 ($b = 0.15, SE = 0.05, p < .01$; Figure 2).

Figure 2 here

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Finally, we assessed the indirect effect of shared leadership on school performance (through team empowerment) at different levels of transformational leadership, using conditional path analysis (Hayes, 2013). Results reveal that the indirect effect of shared leadership on performance was significant at higher levels of transformational leadership (1 *sd* above the mean: $b = 0.57, SE = 0.25, p < .05$), but not at lower levels (1 *sd* below the mean: $b = 0.29, SE = 0.16, p > .05$), thus providing support to hypothesis 5 (Table 2).

Discussion

Public administration scholars have suggested that distributed forms of leadership can capitalize on employees' public service motivation (Denhardt et al. 2018) by providing public employees with a sense of task significance (Wright and Kim 2004). Indeed, public organizations value staff participation more than their counterparts from the private sector (Hansen and Villadsen 2010) while, in street-level bureaucracies, exercising discretion and leadership roles are an integral part of public employees' day-to-day work (Vincent and Crothers, 1996). In many cases, however, public managers are still individually accountable for agency outcomes (Currie, Lockett, and Suhomlinova 2009; Pearce, Wood, and Wassenaar 2018) and are often appointed to implement policy agenda within a limited timeframe (Miller 2013). This may encourage public leaders to interact with emerging shared leadership structures.

The present study builds on shared and transformational leadership theories and takes a more holistic approach to highlight the importance of horizontal leadership structures in public organizations and their relationship with more traditional, hierarchical forms of leadership. Specifically, the results of the present study corroborate prior research (Heck and Hallinger 2010) and demonstrate that public agencies can significantly improve their performance if multiple public servants engage in leadership behaviors. Drawing from goal-setting and self-determination theories (Deci, Connell, and Ryan 1989; Locke and Latham

2013), we also find that transformational leadership can enhance the direct relationship between shared leadership and team empowerment and the indirect link between shared leadership and team performance via team empowerment. Our study demonstrates that appointed leaders who exhibit high levels of transformational leadership can help teams engaging in shared leadership behaviors to reach their optimal performance by promoting the collective perception of the outcome attainability and positive assessment of the performed tasks among team members.

In assessing simultaneously both vertical and horizontal influence structures, the present study makes three contributions. First, it reinforces prior calls of public administration scholars arguing in favor of shared-power leadership configurations (Crosby, 't Hart, and Torfing 2017). In particular, our findings support the overall positive impact of shared leadership on public-service delivery. Second, our study contributes to the literature by examining for the first time in a systematic way, the contingencies of shared leadership in the public sector (Sweeney, Clarke, and Higgs 2019). We find that shared leadership in public organizations may not predict optimal organizational outcomes unless it is paired with transformational vertical leadership. Whereas shared leadership allows for more direct influence from a broader range of actors (Currie, Lockett, and Suhomlinova 2009), it may also be more difficult to maintain in the public domain due to employee expectations and standardized policies that restrict actors' behavior (Zeier, Plimmer, and Franken 2018). Consequently, the effectiveness of "leadership from the inside" alone, as shared leadership has been called (Gockel and Werth 2010), may be improved by other factors, such as vertical transformational leadership. This topic is particularly relevant to public organizations, which must maintain balance between bureaucratic (vertical) and collaborative (horizontal) accountability (Koliba, Mills, and Zia 2011), and thus cannot adopt completely flat organizational structures like some commercial organizations (Felin and Powell 2016). Third,

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the findings reported here shed light on the antecedents and consequences of motivational states among public servants. Although scholars have predominantly focused on a more static form of prosocial motivation, i.e., public service motivation, recent studies show that motivation in public context can be malleable and affected by environmental factors (Esteve et al. 2016). Our research suggests that the team's state of confidence to achieve desired outcomes and positive evaluation of one's work tasks is conducive to more effective delivery of public service and emerges as a result of leadership processes. Finally, the study advances our understanding of antecedents and consequences of team psychological empowerment, which has been studied considerably less in public settings than structural empowerment (e.g., Fernandez and Moldogaziev 2013) and, to our knowledge, never on the team level. Specifically, we complement prior research showing the effect of transformational leadership on team psychological empowerment (Jong and Faerman 2020), by identifying shared leadership as a new antecedent of collective psychological empowerment in public organizations. Further, we extend previous findings on the mediating role of psychological empowerment and demonstrate that teams can be simultaneously empowered by internal (horizontal) and external (vertical) leadership influence, which then translates into an improved service delivery.

The present study has important practical implications. To policymakers, focusing on actions promoting leadership behaviors outside of traditional sources of power such as managerial positions is likely to improve performance in public organizations. Furthermore, our research indicates that despite the ability of shared leadership to produce positive outcomes that contribute to public value, complementing it with a suitable form of vertical leadership can significantly improve results. Thus, to ensure good spending of public resources, in addition to promoting leadership behaviors among public servants, public organizations should provide adequate, more holistic training to public managers so that they

could support the functioning of collective leadership initiatives in their agencies (Seidle, Fernandez, and Perry 2016). Some authors previously suggested that leaders should “avoid getting in the way” of leadership processes and learn how to capitalize on them by engaging in collaboration with horizontal forms of leadership present in their organizations (e.g., Van Wart 2013). Our study indicates that appointed leaders should motivate teams with shared leadership using transformational leadership behaviors. This is especially important given that a recent study shows that public managers tend to limit the use of transformational leadership behaviors in complex and ambiguous contexts, such as schools (van der Hoek, Beerkens, and Groeneveld 2021).

While this study has significant strengths, such as the use of probabilistic sampling and multiple data sources, which likely rendered a more representative sample of schools (Groves et al. 2011) and mitigated endogeneity issues (Podsakoff et al. 2003), it also has some limitations. First, the survey data come from the same individuals, which might have inflated correlations between the constructs, especially in the case of transformational and shared leadership. However, given that moderating effects are not impacted by the common method variance (George and Pandey 2017; Siemsen et al. 2010), the significant interaction between vertical transformational and shared leadership structures can likely be confirmed in future studies. Further, it is important to note that the observed effects on school performance cannot be influenced by common method variance since performance is an external objective measure (Andersen, Heinesen, and Pedersen, 2016). Indeed, using data from different sources is one of the main procedural remedies for common method variance proposed by (Podsakoff et al. 2003; George and Pandey 2017). Nonetheless, we encourage further studies on the contingencies of shared leadership in public context, as this topic remains largely unexplored. For instance, it would be interesting to explore whether the effects reported here extend to other types of public organizations than street-level bureaucracies.

Second, although the cross-sectional design of our study does not allow us to exclude the possibility of reverse causality between shared leadership and team empowerment, our results are consistent with research showing that shared leadership affects team performance through the development of emergent motivational states, such as team potency and team efficacy (Zhu et al. 2018). Future research could validate our findings in a longitudinal study.

Furthermore, we applied a shortened version of the scale of team empowerment, which did not include the dimension of impact. Although reduced versions of the scale have been used previously (Kirkman et al. 2004; He, Baruch, and Lin 2014) and the dimensions are highly correlated (Kirkman and Rosen 1999), we believe that the teams that additionally report high level of impact are likely to have even better performance outcomes.

Finally, the measure of shared leadership used in this study assumes that the interaction of the principal with the shared leadership structures in the school is homogeneous and does not allow for its more precise assessment. Future research could apply the social network approach (Carson et al. 2007) to test if specific individual characteristics could further moderate the relationship between vertical transformational and shared leadership.

Conclusion

Although some attention has been given to the concept of shared leadership in public settings, its interaction with traditional forms of formal authority as well as the mechanisms explaining its influence on service delivery are less understood. Based on the results from a sample of 74 street-level bureaucracies, we find that the “either/or” framework usually adopted concerning vertical and shared leadership is too narrow. Our findings suggest that the presence of appointed transformational leaders poses a unique opportunity to enhance team motivational processes and outcomes resulting from shared leadership. Formally appointed transformational leaders who articulate common goals and an attractive vision can help the

employees engaged in leadership roles to improve agency performance by framing the issues and providing the team with an overall sense of direction. In particular, the results indicate that transformational leadership improves both the direct relationship between shared leadership and team empowerment and the indirect relationship between shared leadership.

Endnotes

1. Following other examples from the literature (e.g., Wee and Fehr 2021), we validated the use of our scale in a separate study. We recruited 189 currently employed participants through Amazon MTurk. The average age was 37.60 years ($SD = 10.37$), the average work experience was 16.13 years ($SD = 9.81$), and 51.32 % were female. Participants responded to the full 12-items scale (Kirkman et al. 2004) using the same 5-point scale as in the main study.

The results show that the six-item shortened scale of team empowerment ($\alpha = .80$) was highly correlated with the 12-item version of the scale ($\alpha = .89$), $r = .95$, $p < .001$. In addition, we found that all of the six items loaded significantly onto a single factor, with factor loadings ranging from .60 to .80. These findings provide evidence that our six-item scale of team empowerment is a suitable substitute for the 12-item measure.

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Table 1. Descriptive Statistics and Intercorrelations

Variables	Mean	SD	Min	Max	1	2	3	4	5	6
1. Performance	5.25	0.87	3.20	7.20						
2. Shared Leadership	3.99	0.73	1.82	4.91	.26*					
3. Transf. Leadership	4.09	0.79	1.33	5.00	.18	.84***				
4. Team Empowerment	4.34	0.39	2.87	4.88	.51***	.62***	.54***			
5. Students per Classroom	29.74	8.37	18.5	65.66	-.46***	-.19	-.14	-.30**		
6. Teachers per Student	0.04	0.01	0.02	0.08	.06	.13	.01	.05	-.25*	
7. Socio-economic Status	52.50	1.86	48.29	56.76	.24*	.18	.07	.09	-.15	.04

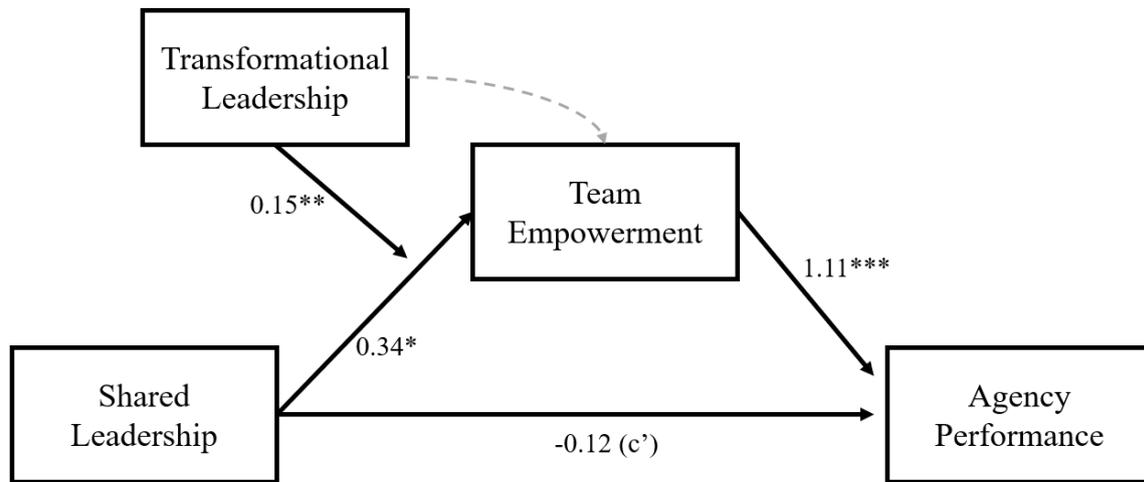
Note. $N = 74$ schools. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 2. Indirect Effects of Shared Leadership on School Performance

	Coefficient	SE	CI (Lower Bound)	CI (Upper Bound)
Average indirect effect of Shared Leadership	0.37**	0.11	0.15	0.58
<i>Conditional indirect effects:</i>				
Low Transformational leadership	0.29	0.16	-0.02	0.60
Average Transformational Leadership	0.44*	0.18	0.08	0.79
High Transformational Leadership	0.57*	0.25	0.09	1.08

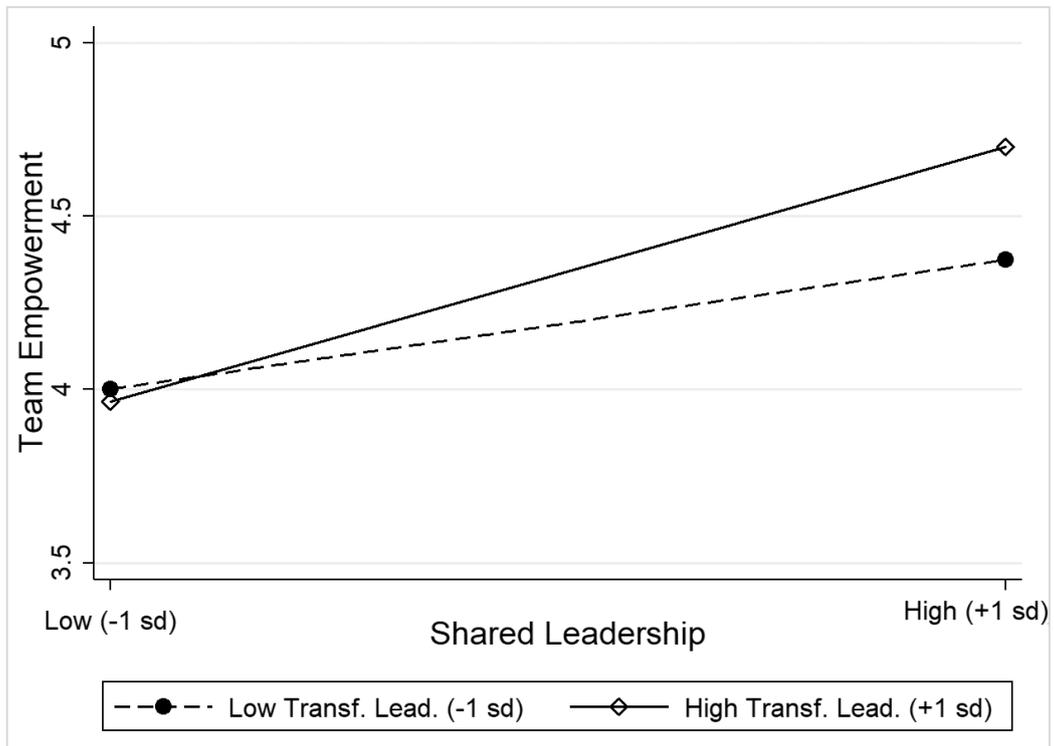
Note. $N = 74$ schools. * $p < .05$; ** $p < .01$. Bootstrapping: 5000 replications. Low = 1 *sd* below the mean; Average = mean; High = 1 *sd* above the mean.

Figure 1. Joint Effects of Shared and Transformational Leadership on Team Empowerment and Agency Performance



Note. * $p < .01$ ** $p < .01$ *** $p < .001$. c' = direct effect of shared leadership on agency performance (controlling for team empowerment). All control variables have been included in the regressions. Fixed effects for school district. Dashed line in gray: non-significant effect of transformation leadership on team empowerment.

Figure 2. Effects of Shared Leadership on Team Empowerment at Different Levels of Transformational Leadership



Appendix A
Sample Characteristics

Average Characteristics	Population (<i>N</i> = 1009)	Selected Sample (<i>N</i> = 154)	Final Sample (<i>N</i> = 74)
Number of Teachers per School	25.55	27.74	29.32
Number of Students per Class	30.50	30.20	29.74
School Performance	5.14	5.24	5.08
HDI of School Neighborhood	0.80	0.79	0.79
Proportion of Schools per School District:			
District 1	6%	6%	10%
District 2	10%	10%	7%
District 3	9%	9%	6%
District 4	11%	10%	12%
District 5	8%	9%	8%
District 6	7%	7%	5%
District 7	12%	11%	11%
District 8	12%	13%	16%
District 9	10%	10%	11%
District 10	12%	12%	12%
District 11	3%	3%	2%

Note. ^a Standardized test scores in 2015 (range: 0-10).

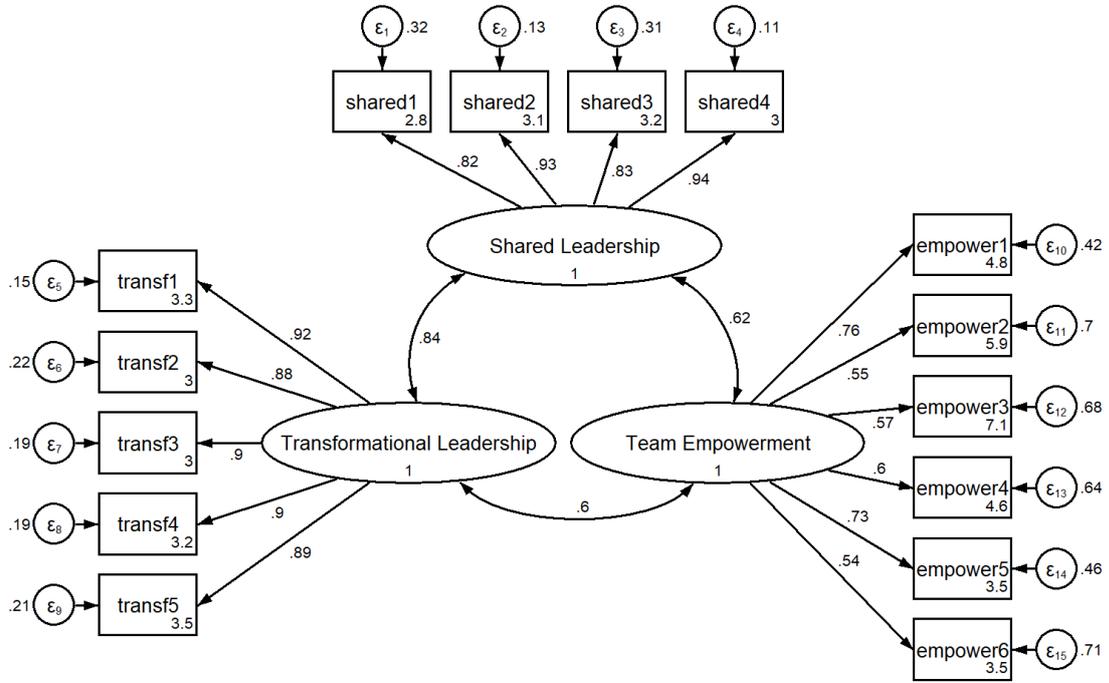
Appendix B

Scale Items

Variable	Item	Description
Shared Leadership	1	Teachers influence how money is spent in this school.
	2	Teachers have an effective role in school-wide decision making.
	3	Teachers have significant input into plans for professional development and growth.
	4	School's principal ensures wide participation in decisions about school improvement.
Transformational Leadership	1	Our Principal clearly articulates his/her vision of the future.
	2	Our Principal leads by setting a good example.
	3	Our Principal challenges us to think about old problems in new ways.
	4	Our Principal says things that make employees proud to be part of the school.
	5	Our Principal has a clear sense of where our organization should be in the future.
Team Empowerment	1	We, teachers, have confidence in ourselves as a group.
	2	Our team believes it will get a lot done when it works hard.
	3	We, teachers, believe that our work is meaningful.
	4	My team feels that its tasks are worthwhile.
	5	My team determines as a team how things are done in the team.
	6	My team makes its own choices without being told by management.

Appendix C

Measurement Model



Appendix D

Regression Output – Effects on Team Empowerment

Independent Variables	Model 1	Model 2	Model 3	Model 4
<i>Study Variables:</i>				
Shared leadership		0.33*** (0.05)	0.34* (0.12)	0.37** (0.12)
Transformational leadership			-0.01 (0.12)	0.09 (0.112)
Interaction: Transformational X Shared				0.15** (0.05)
Team empowerment				
<i>Control Variables:</i>				
Students per class	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.01 (0.00)
Teachers per student	3.34 (5.15)	2.20 (4.00)	2.15 (4.17)	0.80 (3.98)
Socio-economic Status	0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	0.00 (0.02)
Constant	3.96	5.01	5.02	4.64
R ²	.15	.49	.49	.56

Note. N = 74 schools. * $p < .05$ ** $p < .01$ *** $p < .001$. We controlled for school district (fixed effects).

Regression Output – Effects on School Performance

Independent Variables	Model 1	Model 2	Model 3
<i>Study Variables:</i>			
Shared leadership		0.24* (0.11)	-0.12 (0.12)
Team empowerment			1.11*** (0.23)
<i>Control Variables:</i>			
Students per class	-0.03** (0.01)	-0.03** (0.01)	-0.02* (0.01)
Teachers per student	-7.35 (8.71)	-8.18 (8.44)	-10.63 (7.26)
Socio-economic status	0.05 (0.04)	0.04 (0.04)	0.05 (0.04)
Constant	4.22	4.99	-.55
R ²	.49	.53	.66

Note. N = 74 schools. * $p < .05$ ** $p < .01$ *** $p < .001$. We controlled for school district (fixed effects).