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From Directive to Shared Leadership: The Context of Virtual Teams

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Abstract

Building on Bell and Kozlowski's (2002) framework, this study proposes that formal leaders in virtual teams can foster shared leadership by using directive behaviors that establish structural support systems. A 10-week field study of 392 team members from 70 teams across two Fortune 500 companies supports the proposed model: directive leadership enhances shared leadership indirectly through team empowerment. This indirect effect is amplified when location diversity is high and perceived media richness is low. The findings contribute to the virtual teams and leadership literatures and offer practical recommendations for leaders managing distributed work.

Keywords

Virtual, teams, directive leadership, empowerment, shared leadership, media richness, location diversity

Introduction

Virtual teams, once outliers seen only in technology companies, have quickly transformed into a core feature of most industries since the COVID-19

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pandemic and are expected to be here to stay (Choudhury, 2020). The growth of virtual teams has necessitated close attention to the changing context of leadership, in which leaders experience physical separation from their teams and rely on technology to interact with their followers. Researchers and practitioners alike have postulated that leading virtual teams is much more difficult than leading traditional face-to-face teams since leaders of virtual teams face higher levels of uncertainty and ambiguity (for a review, Bell et al., 2019). At the same time, leadership has been argued to be crucial to reducing coordination and motivation losses inherent in distributed working environments (Bell & Kozlowski, 2002; Malhotra et al., 2007; Oakley, 1999).

Yet, what should leaders of virtual teams do to enhance the effectiveness of their teams? There seems to be a consensus in the literature that virtual teams benefit from shared leadership, in which influence is distributed across members rather than concentrated in a single formal leader (Bell & Kozlowski, 2002; Carson et al., 2007; Hill & Bartol, 2016; Hoch & Kozlowski, 2014; Hoegl & Muethel, 2016; Wassenaar et al., 2010). As a form of flat organizational structure, shared leadership can reduce the communication challenges inherent in virtual settings (Bell & Kozlowski, 2002; Manz & Sims, 1987). Moreover, virtual work processes are often complex and highly interdependent (Kanse et al., 2024), which renders team participation in decision-making essential for enhancing collective outcomes (Bell & Kozlowski, 2002). Indeed, research has found that shared leadership may be even more important for virtual teams than formally designated leaders (hereafter referred to as *formal leaders* to distinguish them from shared leadership efforts executed by the team; Hoch & Kozlowski, 2014).

Shared leadership, however, might not emerge easily in virtual teams. The development of shared leadership depends on a structural support system comprising aligned goals, coordinated task strategies, and clearly defined role expectations that enable members to function as an integrated, self-managing unit (Bell & Kozlowski, 2002; Carson et al., 2007; Kozlowski et al., 1996). These very conditions are often undermined by the virtual context. Being dispersed across multiple locations and relying on technology-mediated interaction often limit members' visibility into one another's goals, strategies, and roles (Gibson & Gibbs, 2006; Jarvenpaa & Leidner, 1999). Thus, although shared leadership shifts the source of influence toward the team and away from the formal leader, the structural foundation it requires is unlikely to be established without formal leadership. For formal leaders, this creates a difficult tension: a hands-off approach risks leaving the structural support system underdeveloped, whereas a hands-on approach risks undermining the delegation of leadership to the team and impeding the development of shared leadership.

Bell and Kozlowski (2002) proposed that directive leadership is suited to resolving this tension. In their account, directive leadership is critical to

developing the structural support system that virtual teams need to navigate the inherent ambiguity of virtual environments. It involves articulating goals, clarifying roles and responsibilities, and establishing rules and routines that guide team functioning (Manz & Sims, 1987; Pearce et al., 2014). Directive leadership in this sense is less concerned with prescribing or closely monitoring individual members' behaviors (Martin et al., 2013), and more focused on shaping the structural conditions within which the team operates.

Conceptualized in this way, directive leadership is expected to promote rather than inhibit shared leadership, and it can do so by fostering team empowerment. Team empowerment refers to members' shared perceptions of competence, impact, meaningfulness, and autonomy (Kirkman & Rosen, 1997). Shared leadership requires members to act collectively and proactively on behalf of the team, and such action depends on the team's collective sense that it is competent to act, that its efforts will have an impact, that its work is meaningful, and that it has the autonomy to choose its course. By articulating clear goals and priorities, directive leaders enhance perceptions of impact and meaningfulness. By establishing rules and routines that reduce ambiguity, they build collective competence and confidence. At the same time, because directive leadership targets the architecture of work rather than the conduct of individual members, it preserves the autonomy necessary for teams to determine how to operate within that structure. Empowered along these dimensions, virtual teams are both motivated and equipped to enact shared leadership.

Building on this reasoning, the indirect effect of directive leadership on shared leadership is likely to depend on a team's capacity to develop its structural support system independently. Two virtuality dimensions are particularly relevant in shaping this capacity. Location diversity—the extent to which team members are distributed across physical sites—can fragment shared goals and role expectations through subgroup formation and competing interests (O'Leary & Cummings, 2007; Polzer et al., 2006). Perceived media richness—the extent to which teams experience their communication channels as capable of conveying cues, feedback, and nuance—can shape team members' perceptions of their ability to coordinate and build mutual awareness, as well as their perceptions of organizational support (Carlson & Zmud, 1999; Chidambaram, 1996; Daft & Lengel, 1986; Handke et al., 2021; Huang et al., 2010; Yoo & Alavi, 2001), all of which are essential to independently developing a strong structural support system. Thus, when location diversity is low or perceived media richness is high, teams are better positioned to develop their structural support system on their own, rendering directive leadership less necessary. When location diversity is high or perceived media richness is low, however, teams face substantial barriers to doing so, and directive leadership becomes essential to fostering empowerment and, in turn, shared leadership.

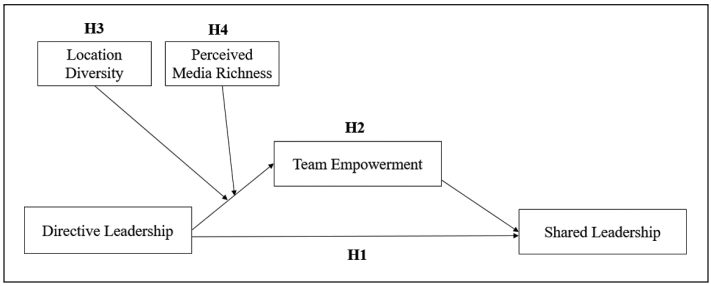


Figure 1. Hypothesized model.

Taken together, this study seeks to make three contributions. First, it advances Bell and Kozlowski's (2002) theorizing by empirically demonstrating that directive leadership can foster shared leadership in virtual teams when oriented toward establishing structure rather than controlling the team. In doing so, it also contributes to the leadership literature, which has often portrayed directive leadership as constraining the proactive and risk-taking behaviors associated with shared leadership (Martin et al., 2013; Zhang et al., 2020). Second, it identifies team empowerment as the mechanism linking directive leadership to shared leadership, thereby clarifying how formal leadership enables the emergence of informal leadership structures. Although prior work has acknowledged that formal leaders can shape shared leadership (e.g., Chiu et al., 2016), less is known about the processes through which this occurs. Third, by examining location diversity and perceived media richness as boundary conditions, this study specifies when directive leadership matters most for shared leadership in virtual teams.

Our full hypothesized model is illustrated in Figure 1.

Theoretical Background and Hypotheses Development

The Role of Formal Leadership in Virtual Teams

Virtual teams are teams whose members are spread across multiple locations and work together through electronic means with limited face-to-face interaction (Bell & Kozlowski, 2002; Mak & Kozlowski, 2019). Due to limited face-to-face interaction with their teams, formal leaders of virtual teams often find it difficult to monitor team progress and performance, which hinders their ability to introduce timely interventions necessary for task accomplishments (Bell & Kozlowski, 2002; Oakley, 1999; Purvanova & Bono, 2009).

These leaders also have to cope with the high level of uncertainty and low level of trust inherent in virtual settings (Aubert & Kelsey, 2003; Jarvenpaa & Leidner, 1999).

Several researchers have pointed to shared leadership as a solution, arguing that part of leadership responsibilities in virtual teams should be delegated to the team rather than centralized to the formal leader as is traditionally the case (e.g., Bell & Kozlowski, 2002; Hill & Bartol, 2016; Hoch & Kozlowski, 2014; Hoegl & Muethel, 2016; Wassenaar et al., 2010). Shared leadership exists on a continuum, reflecting varying degrees to which leadership roles are shared with the team, rather than a categorical distinction of whether leadership is shared or not (Carson et al., 2007; Wassenaar & Pearce, 2018). Apart from reducing the heavy cognitive load formal leaders have to bear, shared leadership is expected to minimize communication problems caused by hierarchical organizational structures and increase collective effectiveness given the high task-interdependent nature of many virtual teams (Bell & Kozlowski, 2002). Pearce et al. (2004) found shared leadership to be a strong predictor of team problem-solving quality after observing 28 virtual teams in the context of social work. In a separate study, Hoch and Kozlowski (2014) examined 101 virtual research and development (R&D) teams and concluded that shared leadership behaviors enhanced their performance.

While it is clear that formal leaders of virtual teams should focus on facilitating shared leadership, there is much less discussion about what they need to do to fulfill this role effectively. Among the few studies addressing this question, Bell and Kozlowski (2002) emphasize the importance of formal leaders performing directive behaviors. Their argument draws on the leadership substitute perspective (Kerr & Jermier, 1978; Kozlowski et al., 1996), which asserts that certain characteristics of the task, the team, or the organization can substitute for the effects of formal leadership by providing the guidance and support that leaders would otherwise supply. Building on this logic, Bell and Kozlowski (2002) argue that for virtual teams to regulate their own performance through shared leadership, formal leaders need to establish a structural support system that team members can rely on for information and cues to manage their own performance. Such a system should include specific objectives and a clear direction of where the team is heading, as well as rules and routines in regard to frequently encountered stimuli—especially those related to virtual team characteristics. For example, it can be challenging to monitor what others are working on in a virtual environment given that virtual team members are, in many cases, dispersed across time zones. Formal virtual team leaders thus should ensure everyone is able to use appropriate technological media for different situations and should set norms for open and transparent communication (Bell & Kozlowski, 2002; Bell et al., 2023; Carter et al., 2015).

It is important to note, however, that prior research tends to view directive leadership as counterproductive, rather than enabling, for highly proactive and risk-taking behaviors such as shared leadership (Zhang et al., 2020). For example, Martin et al. (2013) found that by specifying goals and the precise means to achieve them, formal leaders are likely to narrow employees' focus, discourage exploration of alternative approaches, and limit employees' willingness to deviate from prescribed paths. This, in turn, undermines employees' self-directed actions (Locke & Latham, 1990). Directive leadership has also been shown to reduce members' confidence in teams (Peterson, 1997), which may discourage individuals from assuming shared leadership roles.

We posit that the implications of directive leadership for shared leadership may depend on how it is conceptualized. Prior research has typically examined directive leadership as directing and controlling individual member behaviors, which can narrow focus and limit their proactivity. However, when directive leadership is oriented toward establishing structures and support systems that guide team functioning, it may instead promote, rather than hinder, shared leadership. This structural orientation is particularly consequential given the unpredictable and dynamic nature of virtual environments. Because members of virtual teams are physically separated, virtual teams often have less awareness of the broader context and overall team dynamics (Zaccaro & Bader, 2003; Zigurs, 2003). As external conditions change, such as task modifications, new deadlines, or shifts in team goals, virtual teams are likely to rely on their formal leaders to help interpret these changes and facilitate adaptive, appropriate responses (Bell & Kozlowski, 2002; Bell et al., 2023). Moreover, a clear directive approach can enable virtual teams to concentrate on their responsibilities, reduce feelings of anonymity, and improve monitoring of team members' activities (Hoch & Kozlowski, 2014). This support can mitigate the perceived risks associated with shared leadership and guide teams toward successful implementation of shared leadership practices (Zhang et al., 2020).

Hypothesis 1: Directive leadership behaviors are positively related to shared leadership in virtual teams.

Mediating Role of Team Empowerment

Team empowerment is a motivational construct that reflects team members' shared evaluations of their task environment (Kirkman & Rosen, 1999). When teams feel highly empowered, they believe they have the autonomy and competence to carry out meaningful tasks that can significantly impact important organizational outcomes (Kirkman & Rosen, 1997). These shared beliefs

constitute the psychological foundation on which a team's willingness and ability to mobilize collective, self-directed behaviors ultimately depend (Kirkman & Rosen, 1999; Seibert et al., 2011). Because team empowerment is rooted in members' shared interpretation of their work environment, the extent to which teams experience empowerment depends heavily on their formal leaders who often play a pivotal role in shaping that environment (Chen & Kanfer, 2006; Kirkman & Rosen, 1999). Building on this logic, we propose that team empowerment is a central mechanism through which directive leadership is translated into shared leadership in virtual teams. Specifically, directive leaders design the architecture of work, and this structure shapes the four dimensions of team empowerment (i.e., meaningfulness, impact, competence, and autonomy) that together make shared leadership possible.

Directive leaders can begin by promoting shared perceptions of meaningfulness and impact. In articulating a clear strategic mission, setting priorities, and linking the team's tasks to broader organizational objectives, they help teams see why their work matters and how their contributions carry consequences beyond the immediate task (Bell & Kozlowski, 2002). Such clarity is especially valuable in virtual settings where the significance of a team's efforts can be difficult to evaluate, and its sense of collective purpose can easily become fragmented (Hinds & Bailey, 2003). By defining the team's direction in this way, directive leaders do more than orient attention; they ensure that the work itself is experienced as purposeful and consequential.

Directive leadership also builds collective competence by putting in place the rules, routines, and role structures that enable virtual teams to function reliably. Coordination ambiguities (e.g., who is responsible for what, how decisions get made, and when handoffs should occur) are a persistent feature of virtual work and can quietly erode a team's confidence in its own capacity to deliver (Hertel et al., 2005; Martins et al., 2004). Directive leaders counter this erosion by clarifying expectations, specifying roles, and instituting consistent coordination procedures. The structure they provide can do more than reduce confusion; it gives members a concrete basis for believing that the team knows how to operate and can accomplish what it sets out to do. Seen in this light, directive leadership functions less as a constraint than as an enabling condition for team competence.

Autonomy warrants particular attention here, because directive leadership is often presumed to undermine it. Resonating with Bell and Kozlowski (2002), we argue that this need not be the case. When directive leadership targets the structure of work rather than the moment-to-moment conduct of individual members, it can preserve, or even enhance, the autonomy required for shared leadership to emerge. A leader who specifies what the team is expected to accomplish and the parameters within which it must operate still leaves open

the important questions of how the work gets done, who takes the lead on which tasks, and how members influence one another. Moreover, in "setting the course," leaders can foster perceptions of autonomy by providing clear assurance that the team's self-directed behaviors are aligned with its mission, goals, and expectations (Bell et al., 2023). In the absence of structure, self-direction in the form of shared leadership can be perceived as costly and uncertain, and teams may instead default to passivity or low-risk behavior (Hackman, 2002; Manz & Sims, 1987). Teams that receive no direction at all are likely to experience not autonomy but abandonment (Hackman, 1990).

Once directive leadership enhances team empowerment, that empowerment in turn motivates and enables virtual teams to engage in shared leadership. Meaningfulness and impact provide the motivational basis: teams are unlikely to invest in leading themselves when they view the work as trivial (Kirkman & Rosen, 1999; Spreitzer, 1995). On the other hand, autonomy and competence provide the capability. Without sufficient autonomy, teams have little latitude to choose how to approach their tasks or to shape the processes through which work gets done (Hoegl & Muethel, 2016), and without confidence in their collective competence, they are unlikely to assume leadership functions in environments full of ambiguity and unpredictability, such as virtual teams (Hoch & Kozlowski, 2014). Empirical evidence offers initial support for this line of argument. Hyatt and Ruddy (1997), for example, found that empowerment substantially shaped teams' self-directed efforts to initiate positive change. Wellins et al. (1991) similarly reported that adequately empowered teams are more willing to improve work processes, pursue novel solutions, and persist through obstacles—behaviors that closely mirror the core repertoire of leadership itself (Yukl, 1989). Taken together, we hypothesize that:

Hypothesis 2: Team empowerment mediates the relationship between directive leadership behaviors and shared leadership in virtual teams.

Moderating Effects of Virtuality Dimensions

Location Diversity and Perceived Media Richness as Virtuality Dimensions. Virtuality refers to the extent to which team members are geographically distributed and reliant on technology-mediated communication (Bell & Kozlowski, 2002; Handke et al., 2020; Hoch & Kozlowski, 2014; Raghuram et al., 2019). Early scholarship tended to treat virtuality as categorical, drawing a dichotomous distinction between virtual and non-virtual teams. More recent work, however, recognizes that virtuality exists on a continuum and that meaningful insights come from studying teams across varying degrees of virtuality rather than focusing only on the extremes (Bell & Kozlowski, 2002; Hill &

Bartol, 2016; Hoch & Kozlowski, 2014). In this research, we examine our leadership model across two key dimensions of virtuality: the variety and distribution of team members' physical locations (i.e., location diversity—a distance quality) and the perceived richness of the communication technologies they use (i.e., perceived media richness—a technological quality). Consistent with a continuum view of virtuality, we treat both dimensions as continuous rather than categorical. Focusing on these dimensions is central to our theoretical argument. Our core premise is that directive leadership fosters team empowerment—and, in turn, shared leadership—by providing structural support systems. When virtuality is high, characterized by substantial location diversity and low perceived media richness, teams are likely to encounter greater barriers to establishing these systems on their own, making directive leadership more consequential.

Location diversity reflects the distribution and variety of geographical sites at which team members are based (O'Leary & Cummings, 2007; O'Leary & Mortensen, 2010; Polzer et al., 2006). Global virtual teams, for example, have members spread across multiple countries or even continents, and even within a single country, it is possible for team members to be located in different cities. In prior work, location diversity has often been labeled "geographic dispersion," although that term is also used to refer to the average physical distance between members or sites (Mak & Kozlowski, 2019). To avoid this ambiguity, we use location diversity specifically to denote the variety and distribution of locations at which virtual team members are based (O'Leary & Cummings, 2007; O'Leary & Mortensen, 2010; Polzer et al., 2006).

On the other hand, perceived media richness captures team members' subjective evaluations of how well their communication technologies support immediate feedback, multiple cues, varied language, and personalization (Carlson & Zmud, 1999; Handke et al., 2021, 2025). High perceived richness reflects a shared belief that the team's communication channels convey sufficient depth and detail, whereas low perceived richness signals that available media fail to match the equivocality of the context or the complexity of the information being exchanged (Daft & Lengel, 1986; Klitmøller & Lauring, 2013; Trevino et al., 1987).

Extant literature has conceptualized media richness in two ways. Early work treated richness as an objective, fixed property of the medium (e.g., video conferencing as rich, email and voicemail as lean; Duxbury & Neufeld, 1999; Fulk et al., 1990). More recent scholarship, however, has tended to view richness as a subjective, experiential property that emerges from interaction and depends on members' norms and relationships, their familiarity with the medium, the communication topic, and the broader organizational context (Carlson & Zmud, 1999; Chidambaram, 1996; Huang et al., 2010;

Yoo & Alavi, 2001). Consistent with this latter view, recent work emphasizes that what matters for team functioning is not only the structural features of communication technologies but also how these features are collectively experienced. Handke et al. (2021), for example, argued that the structural properties of communication technologies must be separated from team members' shared perceptions of those technologies, because the two can meaningfully diverge: a team relying primarily on text-based channels may nonetheless experience its communication as rich, whereas a team with ready access to video conferencing may persistently experience information deficits. Media richness can thus be a collectively held state that is co-constructed over repeated interaction as members develop shared interpretations of their communication environment. This line of literature supports our conceptualization of media richness at the team level as a shared, experientially grounded emergent state. In addition, given that richness is suggested to arise from collective use rather than from any single tool, our perception-based conceptualization of media richness allows us to accommodate the reality that virtual teams typically draw on a portfolio of channels and adaptively appropriate them as task and relational demands shift (Huang et al., 2010).

Moderating Effect of Location Diversity. Prior research identifies formal leadership (e.g., directive leadership) and work characteristics (e.g., location diversity) as key antecedents of team empowerment (Chen et al., 2011), and suggests that these antecedents may substitute for one another rather than simply exert additive effects. Formal leadership tends to be most critical when employees derive little empowerment from their work environment but becomes less influential as the environment itself provides sufficient empowerment (Harris et al., 2009; Thao & Kang, 2020). Extending this reasoning to virtual teams, directive leadership and location diversity can be viewed as alternative sources shaping team empowerment.

Specifically, directive leadership may compensate for the coordination and relational challenges associated with high location diversity. As location diversity increases, coordination becomes more complex because the interdependencies that must be managed across locations multiply. Each additional site introduces distinct local routines, schedules, and contextual conditions that teams must reconcile to function as a coherent collective. These coordination challenges may arise above and beyond the effects of physical distance or demographic differences (O'Leary & Cummings, 2007; O'Leary & Mortensen, 2010). Thus, although such geographical spread can broaden access to knowledge and markets, it also creates internal boundaries that may fragment task coordination and disrupt information flows across sites.

Beyond coordination demands, location diversity shapes how team members relate to one another. According to Polzer et al. (2006), people are likely to use differences in geographical locations as a basis for self-categorization, just as they use differences in demographic categories or organizational affiliations. Relationships among virtual team members who share a location can therefore differ markedly from relationships among members at other locations. Co-located members may experience a greater sense of entitativity and similarity because of the benefits of face-to-face interaction (Olson & Olson, 2000) and the familiarity fostered by close physical proximity (Blanchard et al., 2020; Festinger et al., 1950). By contrast, they may feel less satisfied with, less inclined to communicate with, and more inclined to compete against those outside their local subgroup in order to maximize its benefits. Empirical research shows that teams divided across sites in this way tend to exhibit higher levels of conflict and greater coordination problems (O'Leary & Mortensen, 2010; Polzer et al., 2006). In such contexts, members may prioritize the goals and interests of their local site over those of the team, share less information and cooperate less across locations, and find it harder to develop a shared sense of purpose and capability. Given that team empowerment reflects socially constructed, shared cognitions about the meaningfulness, impact, competence, and autonomy of the team (Kirkman, Tesluk, et al., 2004; Seibert et al., 2011), these dynamics can erode the very beliefs that empowerment requires—members may feel less collectively efficacious, less aligned on the team's goals, and less willing to invest in the team as a whole.

Directive leadership can play a critical compensatory role by addressing both the coordination and relational challenges associated with high location diversity. By providing clear goals, explicit role expectations, and structured interaction patterns, directive leaders help teams manage complex interdependencies across sites and reduce ambiguity in task execution. At the same time, directive leadership can mitigate relational fragmentation by reinforcing a shared team identity, aligning members around common objectives, and encouraging consistent communication across locations (Carter et al., 2015). These behaviors help counteract tendencies toward subgroup formation, information silos, and misaligned priorities, thereby supporting the development of shared perceptions about the team's capability, autonomy, purpose, and impact. Conversely, when location diversity is low and such challenges are less pronounced, teams can more easily develop and sustain empowerment on their own, reducing their reliance on directive leadership. Given that team empowerment mediates the relationship between directive leadership and shared leadership, we further propose that location diversity moderates this indirect effect, such that the indirect effect is stronger when location diversity is high and weaker when it is low.

Hypothesis 3: Location diversity moderates the indirect relationship between directive leadership behaviors and shared leadership in virtual teams via team empowerment. The indirect relationship becomes stronger (vs. weaker) when location diversity is high (vs. low).

Moderating Effect of Perceived Media Richness. Continuing to build on the compensatory perspective regarding the interactive effects of formal leadership and work characteristics on team empowerment (Harris et al., 2009; Kerr & Jermier, 1978; Thao & Kang, 2020), we posit that perceived media richness is another key contextual condition that shapes when directive leadership is more or less critical for empowering virtual teams. Teams that collectively experience their communication environment as low in richness may interpret coordination as difficult and communication as incomplete (Handke et al., 2021). In such settings, members are likely to find it harder to exchange nuanced cues, clarify meanings, and build mutual awareness, which impedes the emergence of shared understanding and robust coordination structures. These interactional difficulties may also weaken teams' beliefs that they can manage their work effectively, thereby undermining their sense of competence (Kirkman, Tesluk, et al., 2004; Trevino et al., 1987). In addition, when virtual team members perceive lower media richness, they tend to report less support and psychological safety (Huang et al., 2010), which undermines the mutual influence processes through which shared perceptions of autonomy, meaningfulness, and impact can develop. Taken together, when communication channels are experienced as lacking sufficient feedback, cues, language variety, and personalization, teams may struggle to construct the coordinated role expectations and shared objectives that support a strong sense of empowerment.

Directive leadership is therefore especially important for fostering team empowerment under conditions of low perceived media richness. In communication environments perceived as not affording the clarity, connectedness, and significance needed for empowerment, directive leaders can compensate by articulating goals, clarifying responsibilities, and instituting coordination routines that teams cannot easily co-create through everyday interaction. When communication is experienced as richer, by contrast, teams are better able to develop these structural support systems autonomously and rely less on formal direction. Given that team empowerment mediates the relationship between directive leadership and shared leadership in virtual teams, we further hypothesize that perceived media richness moderates this indirect relationship, such that it is stronger when perceived media richness is low and weaker when it is high.

Hypothesis 4: Perceived media richness moderates the indirect relationship between directive leadership behaviors and shared leadership in virtual teams via team empowerment. The indirect relationship becomes stronger (vs. weaker) when perceived media richness is low (vs. high).

Method

Sample and Procedures

Our sample consisted of 392 members from 70 virtual teams in two Fortune 500 companies in the United States. In both organizations, virtual team members were distributed across multiple offices spanning multiple states and primarily relied on technological tools for communication. For example, a team might include members located in Washington, Alabama, Missouri, New York, and South Carolina. Participating teams ranged in size from 2 to 27 with an average size of 9.58. Thirty-seven teams worked at an aerospace company, while the remaining 33 teams worked at a healthcare and insurance company. In the aerospace company, most participants worked in technology functions, such as software development, IT support, and systems engineering. In the healthcare and insurance company, participants primarily worked in human resources and administrative roles supporting staffing, training, and internal service delivery. Average team member age was 46.67 years ($SD = 11.09$), average team tenure was 3.94 years ($SD = 4.19$), and 46.81% were male.

HR representatives from participating organizations first introduced the study to potential participants, after which the research team reached out to provide detailed information regarding the study's procedures and objectives. With organizational approval, participants were allowed to complete the surveys either during work hours or at their convenience; participation was voluntary and no financial incentives were offered. Data were collected through online surveys at two time points, separated by 5 weeks. The global member-level response rate was 62% at Time 1, and 94% of these respondents also participated at Time 2. The average per-team response rates were 59% at Time 1 and 55% at Time 2. The 5-week interval was adopted to reduce the extent to which participants would rely on the same mental shortcuts, affective states, or recollections of earlier responses, thereby helping to mitigate common method variance (Podsakoff et al., 2024). This time interval also falls within the 2 to 8 week range commonly used in prior team research employing multiple-wave designs in both virtual and face-to-face settings (e.g., Bisbey et al., 2025; Hill & Bartol, 2016; Sohn & Harvey, 2025).

The first survey contained the measures of directive leadership and the virtuality dimensions (i.e., location diversity and perceived media richness). The

second survey was designed to focus on team empowerment and shared leadership. Each survey took approximately 10 min to complete. To ensure response confidentiality, we assigned a unique code to each participant rather than using their identifiable personal information. In case participants were working on multiple teams at the time of the study, we instructed them to focus on their immediate team (as opposed to any project teams) and presented a roster of team member names to help them define the boundary of their team.

Measures

Unless otherwise noted, all measures used a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree).

Directive Leadership (Time 1). The directive leadership scale comprised three items representing the behaviors described in Bell and Kozlowski's (2002) framework: defining mission ("*My team leader develops and articulates a clear team mission*"), establishing expectations and goals ("*My team leader ensures that the team has clear performance goals*"), and structuring and planning ("*My team leader defines and structures own work and the work of the team*"; Cronbach's $\alpha = .88$). These items were taken from Morgeson et al. (2010); each represented the item with the highest loading for its respective directive leadership behavior. We consider these three functions to collectively capture the support-structure-building purpose of directive leadership. Other dimensions in Morgeson et al.'s (2010) scale (e.g., monitoring team performance or challenging the team) are less concerned with building such structural systems and therefore were not included. Factor loadings for each item were drawn from a pilot study conducted prior to the main study. In that pilot study, we recruited 300 participants from an online panel through Prolific. Thirty percent of the participants were female. The average age was 30.97 ($SD = 8.88$) with an average of 12.09 months ($SD = 14.33$) of team tenure and 13.73 months ($SD = 20.14$) of virtual work experience. Participants were asked to rate their current virtual team leader's behaviors using the full measures from Morgeson et al. (2010). Participants were also instructed to focus on the leader of the team to which they devoted the most time if they were working in multiple virtual teams. The factor loadings of all the items are available in the Supplemental Material.

Location Diversity (Time 1). We measured location diversity using Blau's (1977) index: $1 - \sum p_i^2$ where p is the proportion of team members in the ith site.

Perceived Media Richness (Time 1). To assess perceived media richness, we adopted Dennis and Kinney's (1998) eight-item scale. A sample item was "*The virtual communication tools that we are using get in the way of our sharing of opinions*" (reverse-coded; Cronbach's $\alpha = .83$).

Team Empowerment (Time 2). To measure team empowerment, we instructed participants to respond to the 12-item scale from Kirkman, Rosen, et al. (2004). The items captured four dimensions of empowerment, including meaning (e.g., "*My team feels that its work is meaningful*"; Cronbach's $\alpha = .89$), competence (e.g., "*My team believes that it can be very productive*"; Cronbach's $\alpha = .92$), autonomy (e.g., "*My team determines as a team how things are done in the team*"; Cronbach's $\alpha = .79$), and impact (e.g., "*My team performs tasks that matter to this company*"; Cronbach's $\alpha = .89$). Following previous research (Kirkman & Rosen, 1999; Kirkman, Rosen, et al., 2004), we combined the items of the four dimensions into a single, global scale of team empowerment.

Shared Leadership (Time 2). We assessed shared leadership using a three-item measure developed by Bell et al. (2018; Cronbach's $\alpha = .88$). A sample item was "*Decision making power in the team is distributed among team members rather than held solely by the team leader.*"

Control Variables. We controlled for team size and task interdependence (three items, adopted from Campion et al., 1993; Cronbach's $\alpha = .79$) since both have been found to impact shared leadership (Lorinkova & Bartol, 2021; Nicolaides et al., 2014). To assess the effects of location diversity and perceived media richness above and beyond other distance- and technology-related dimensions of virtuality, we controlled for geographical dispersion (i.e., the average physical distance among team members) when assessing the moderating effect of location diversity and technological reliance when assessing the moderating effect of perceived media richness. We measured geographical dispersion using a formula from O'Leary and Cummings (2007) which consists of seven indicators (e.g., distance in miles between sites and total number of team members across all sites). To measure technological reliance, we followed a similar approach to Hoch and Kozlowski (2014). We first asked participants to allocate 100 points to indicate the frequency with which their teams used different communication channels (i.e., asynchronous tools, video calls, phone calls, and in-person). The technological reliance score of each team was then determined by summing the points for asynchronous tools, video calls, and phone calls. Lastly, we controlled for organization to account for any differences across the two participating organizations. The organization variable was dummy coded, with the aerospace organization serving as the reference category (coded as 0) and the healthcare and insurance organization coded as 1.

Pre-Analyses

Justification for Aggregation. As the theoretical focus of our research model is specified at the team level, we computed ICC(1) (i.e., inter-rater reliability), ICC(2) (i.e., reliability of team-level means; Bliese, 2000), and r_{wg} (i.e., inter-rater agreement) to justify aggregation. The ICC(1), ICC(2), and r_{wg} across the measures were as follows: directive leadership was 0.12, 0.39, and 0.79, perceived media richness was 0.18, 0.50, and 0.83, team empowerment was 0.15, 0.45, and 0.95, and shared leadership was 0.13, 0.42, and 0.62. Overall, the aggregation statistics were within the common range for field studies, providing support for aggregating individual responses to the team level (e.g., Bliese, 2000; Hill & Bartol, 2016; Woehr et al., 2015). We also compared ICC values for our observed sample to those derived from a random group resampling (RGR) procedure. Across all studied constructs, the ICC(1) values for observed groups (0.12–0.18) were substantially higher than those for random groups (0.00–0.01), as were the ICC(2) values (observed: 0.39–0.50; random: 0.03–0.09). These RGR results further justify the aggregation decision (Woehr et al., 2015).

Assessment of Common Source/Method Bias. Most variables in our study were assessed through team members' ratings, which may raise concerns about common source/method bias (Podsakoff et al., 2003). To minimize such concerns, we collected ratings on team empowerment and shared leadership at a later time (Time 2) than directive leadership and perceived media richness (Time 1; Podsakoff et al., 2024). However, it is important to note that the interaction between directive leadership and perceived media richness may not be as susceptible to issues arising from common source/method bias (see Evans, 1985; Siemsen et al., 2010).

Using Mplus (Version 8.8), we further conducted a series of confirmatory factor analyses (CFAs) on the team-level data to ensure that directive leadership, team empowerment, and shared leadership are empirically distinct. To improve the variable-to-sample size ratio, we employed item parceling for team empowerment (Bagozzi & Heatherton, 1994). This approach is appropriate given that empowerment is theorized as a multidimensional construct (Kirkman & Rosen, 1997), and our primary interest lies in the relationships among latent variables rather than item-level parameters. Team empowerment comprises four dimensions, each measured with three items. We combined the items within each dimension into a single parcel, resulting in four parcels.

All CFAs were estimated using Maximum Likelihood Robust (MLR; Satorra & Bentler, 1994) since it is more robust to possible violations of multivariate normality (Kline, 2016). We adopted the commonly accepted cut-off values (Comparative Fit Indices (CFI) $>$ .90, Root Mean Square Error of

Approximation (RMSEA) < .08, Standardized Root Mean Square Residual (SRMR) < .08) as indicative of good fit (Kline, 2016). As shown in Table 1, our hypothesized three-factor model fit the data well (Scaled $\chi^2 = 62.37$, $df = 32$, $p < .001$, RMSEA [95% CI] = 0.12 [0.08, 1.17], CFI = 0.93, SRMR = 0.06). While the RMSEA is relatively high, prior research indicates that RMSEA can over-reject adequately specified models in CFA applications with modest sample sizes and limited degrees of freedom (Chen et al., 2008; Kenny et al., 2015). Accordingly, we relied on other fit indices and found that both the CFI and SRMR indicated good model fit. Against this baseline three-factor model, we examined two alternative models. The first alternative model was a two-factor model combining team empowerment and shared leadership into one factor to determine whether variables measured at the same time point could be distinguished from one another. The second alternative model was a single-factor model where all variables were loaded on one overall factor. To compare the models in MLR estimation, we utilized the Satorra and Bentler (2001) method and computed a scaled (mean-adjusted) chi-square difference statistic. As shown in Table 1, all alternative models demonstrated significantly worse fit than the three-factor model, which supported the distinctions among the three variables.

Tests of Hypotheses

We used Stata MP (Version 19.5) for all hypothesis-testing analyses. We used hierarchical regression to test Hypothesis 1. Regarding the remaining hypotheses that concern mediation (Hypothesis 2) and moderated mediation (Hypotheses 3 and 4), we followed the procedures described in Preacher and Hayes (2008) and used bias-corrected bootstrapping to obtain standard errors and confidence intervals (Preacher et al., 2007). Our moderated mediation model resembles Model 2 in Preacher et al. (2007) and the first-stage moderation model in Edwards and Lambert (2007).

Results

Descriptive statistics and bivariate correlations of all study variables are presented in Table 2. Note that for the tests of our hypotheses, results were similar with or without the control variables. Thus, for completeness, we present the results with the control variables.

Regression analyses are reported in Table 3. Our first hypothesis proposed that directive leadership would positively influence shared leadership. As shown in Model 6, directive leadership was significantly and positively associated with shared leadership ($b = 0.98$, $p < .001$), supporting Hypothesis 1.

Table 1. Comparison of Factor Structures Among Directive Leadership, Team Empowerment, and Shared Leadership.

Model	Scaled χ^2 (*df*)	Scaling correction factor	Δ *Scaled* χ^2 (Δ *df*)	RMSEA [95% CI]	CFI	SRMR
1. A three-factor model (directive leadership, team empowerment, and shared leadership)	62.37 (32)	1.01		0.12 [0.08, 1.17]	0.93	0.06
2. A two-factor model combining team empowerment and shared leadership	146.53 (34)	1.09	40.81 (2)***	0.21 [0.18, 0.25]	0.76	0.90
3. A single-factor model combining all measures	204.63 (35)	1.19	56.90 (3)***	0.26 [0.23, 0.30]	0.64	0.14

Note. $N = 70$ teams. *df* = degrees of freedom; RMSEA = root mean square error of approximation; CFI = comparative fit index; SRMR = standardized root mean square residual. Models 2 and 3 were compared with Model 1.
***$p < .001$.

Table 2. Descriptive Statistics and Correlations Among Variables.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Team size	9.58	5.89	—								
2. Task interdependence	4.18	1.08	.18	—							
3. Directive leadership	6.32	0.49	−.03	.10	—						
4. Team empowerment	5.73	0.60	−.11	.05	.55***	—					
5. Shared leadership	4.90	0.97	.17	.16	.40***	.49***	—				
6. Location diversity	0.51	0.21	.18	.19	−.22*	−.31**	−.02	—			
7. Perceived media richness	5.64	0.65	−.10	−.32**	.50***	.48***	.24*	−.67***	—		
8. Geographical dispersion	1,258.92	1,255.43	.05	.17	−.16	−.06	.05	.23*	−.34**	—	
9. Technological reliance	99.04	3.18	−.21	−.09	.09	.07	.01	.04	−.05	−.15	—

Note. $N = 70$ teams. Two-tailed tests.
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 3. Results of Hierarchical Regression Analysis.

	DV = Team empowerment				DV = Shared leadership		
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Organization	0.35*	0.13	0.15	0.14	−0.33	−0.64*	−0.72**
Team size	0.01	−0.00	0.03	0.03	0.00	0.08	0.07
Task interdependence	0.06	0.01	0.02	0.09	0.15	−0.01	0.01
Geographical dispersion			0.16				
Technological reliance				−0.03			
Directive leadership		0.59***	0.47**	0.42**		0.98***	0.57**
Team empowerment							0.56**
Location diversity			0.42*				
Perceived media richness				0.38*			
Directive leadership × Location diversity			0.25*				
Directive leadership × Perceived media richness				−0.22*			
R^2	.07	.40	.42	.42	.08	.35	.44
Adjusted R^2	.03	.37	.38	.38	.02	.32	.40

Note. $N = 70$ work teams. Unstandardized estimates are reported.
*$p < .05$. **$p < .01$. ***$p < .001$. Two-tailed test.

In Hypothesis 2, we predicted that directive leadership would affect shared leadership via team empowerment. As shown in Model 7, when both directive leadership and team empowerment were entered into the model, the relationship between directive leadership and shared leadership became weaker ($b = 0.56$, $p < .01$) than when team empowerment was not entered into the model (Model 6: $b = 0.98$, $p < .001$). This result provided some preliminary insights into the hypothesis. We then followed the procedures described in Preacher and Hayes (2008) and indeed found a positive indirect effect of directive leadership on shared leadership via team empowerment (*Estimate* = 0.37, 95% bias-corrected CI based on 10,000 resamples = [0.01, 0.73], $p < .05$). Thus, Hypothesis 2 was supported.

Next, we examined the individual moderating effects of location diversity (Hypothesis 3) and perceived media richness (Hypothesis 4) on the indirect relationship, while controlling for the effects of geographical distance and technological reliance. According to Model 3 of Table 3, the interactive effect between directive leadership and location diversity on team empowerment, which represents the first stage of the moderated mediation model, was statistically significant ($b = 0.25$, $p < .05$). We further found that location diversity moderated the indirect relationship between directive leadership and shared leadership via team empowerment (*Estimate* = 0.15, 95% bias-corrected 10,000-time bootstrapping CI = [0.03, 0.36], $p < .05$). As presented in Table 4 and Figure 2, the indirect relationship was stronger when location diversity was one standard deviation above the mean (*Estimate* = 0.38, 95% bias-corrected 10,000-time bootstrapping CI = [0.09, 0.67], $p < .05$), and weaker when location diversity was one standard deviation below the mean (*Estimate* = 0.23, 95% bias-corrected 10,000-time bootstrapping CI = [0.002, 0.46], $p < .05$). Hypothesis 3 was thus supported.

We also found support for the moderating role of perceived media richness. According to Model 4 of Table 3, the interactive effect between directive leadership and perceived media richness on team empowerment, which represents the first stage of the moderated mediation model, was statistically significant ($b = -0.22$, $p < .05$). Moreover, the full moderated mediation model was also significant (*Estimate* = −0.05, 95% bias-corrected 10,000-time bootstrapping CI = [−0.07, −0.0001], $p < .05$). As presented in Table 4 and Figure 3, the indirect relationship between directive leadership and shared leadership via team empowerment was stronger when perceived media richness was one standard deviation below the mean (*Estimate* = 0.27, 95% bias-corrected 10,000-time bootstrapping CI = [0.04, 0.50], $p < .05$), and weaker when perceived media richness was one standard deviation above the mean (*Estimate* = 0.22, 95% bias-corrected 10,000-time bootstrapping CI = [0.001, 0.44], $p < .05$). Therefore, Hypothesis 4 was supported.

Table 4. Indirect Effects of Directive Leadership on Shared Leadership via Team Empowerment Across Levels of Virtuality Dimensions (Hypotheses 3 and 4).

Moderator	Level	Coefficient	Bootstrap *SE*	*p*	95% CI Lower	95% CI Upper
Location diversity	1SD − Mean	0.23	0.12	.049	0.002	0.46
	1SD + Mean	0.38	0.15	.01	0.09	0.67
Perceived media richness	1SD − Mean	0.27	0.11	.02	0.04	0.50
	1SD + Mean	0.22	0.11	.049	0.001	0.44

Note. $N = 70$ work teams.

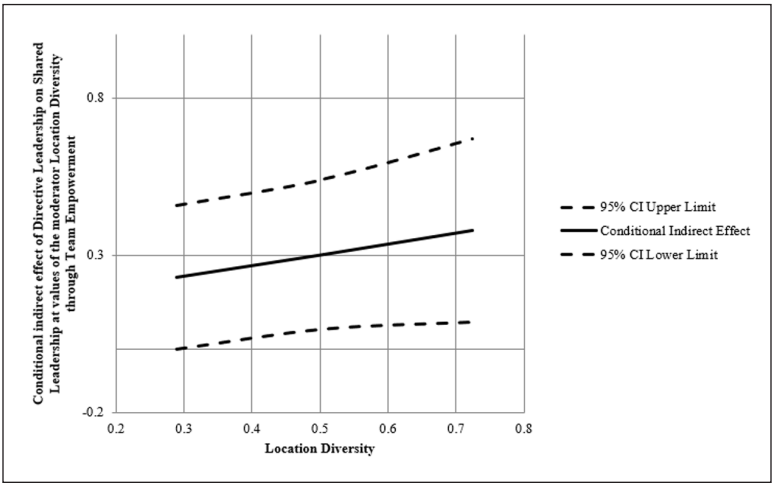


Figure 2. Indirect effect of directive leadership on shared leadership via team empowerment across levels of location diversity.

Discussion

In summary, this paper proposes a research model that builds upon, evaluates, and extends Bell and Kozlowski's (2002) theoretical perspective on the role of directive leadership in virtual teams. Our findings demonstrate that directive leadership is positively associated with shared leadership, a key predictor of team effectiveness in virtual settings (e.g., Hoch & Kozlowski, 2014), and that this relationship is mediated by team empowerment. Importantly, this mediated effect is not uniform across all virtual teams; rather, it varies depending on the levels of location diversity and perceived media richness in the team.

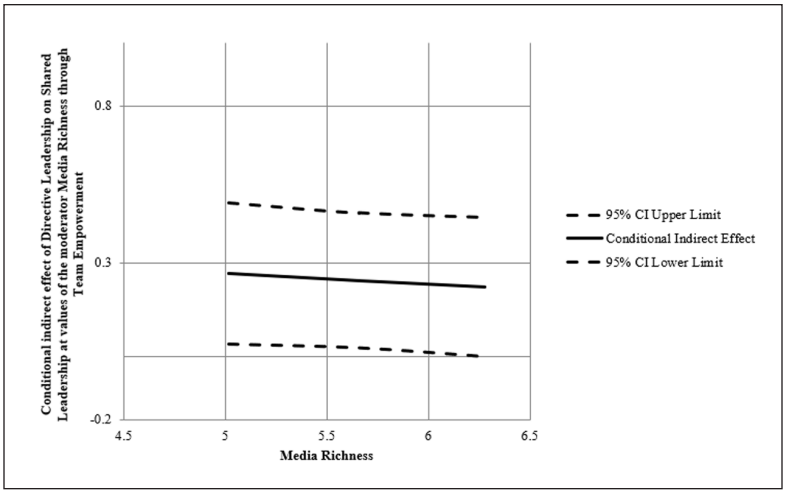


Figure 3. Indirect effect of directive leadership on shared leadership via team empowerment across levels of perceived media richness.

Theoretical Implications

First, although the virtual teams literature recognizes the importance of formal leadership, prior research has largely focused on the role of formal virtual team leaders in enabling shared leadership without fully specifying the specific "what"—the concrete leadership behaviors—required to fulfill this role. By examining what formal leaders actually do in virtual teams, our study fills this gap and advances existing knowledge. This research also complements the broader shared leadership literature, which has emphasized relational styles, such as servant leadership (e.g., Wang et al., 2017) and leader humility (e.g., Chiu et al., 2016), as predictors of shared leadership. We show that formal leaders who adopt task-oriented and directive behaviors can also effectively foster shared leadership within teams.

Our second theoretical implication is centered on the role of team empowerment in mediating the link between directive leadership and shared leadership. Investigating team empowerment not only allows for a more comprehensive understanding of our leadership model but also sheds light on the process through which formal leaders enable their virtual teams to take charge. While extant research has acknowledged the coexistence of formal leadership and shared leadership (e.g., Chiu et al., 2016; Wang et al., 2017), most studies have focused on establishing this relationship rather than going beyond to answer how it occurs. Our examination of team empowerment as

a mechanism is, therefore, an initial step toward elucidating these understudied processes, and suggests that the pathway from formal to shared leadership may run through teams' collective beliefs about their competence, autonomy, meaningfulness, and impact.

Further, our examination of location diversity and perceived media richness contributes to a growing line of research emphasizing that virtuality is a multidimensional and partially subjective phenomenon (Handke et al., 2021; Raghuram et al., 2019). These findings advance the virtual teams literature in several ways. First, they highlight the value of theorizing and empirically distinguishing among multiple virtuality dimensions with conceptual and operational clarity. While the distributed nature of team members has received considerable attention in prior research, often under the broader umbrella of "geographic dispersion," our findings suggest that how this term is conceptualized matters substantially. Location diversity captures the variety and the distribution of sites at which team members are based and reflects coordination challenges arising from subgroup formation and fragmented coordination that are distinct from those associated with average physical distance between members. Importantly, we found that the moderating effect of location diversity was above and beyond the effect of geographical dispersion as physical distance, suggesting that location diversity contributes unique variance beyond what physical distance alone can capture.

A parallel insight emerges with respect to technology. The moderating effect of perceived media richness was above and beyond technological reliance, indicating that how teams collectively experience their communication environment matters independently of how heavily they depend on technology for interaction. This finding reinforces the value of distinguishing the structural properties of communication technologies from team members' shared perceptions of those technologies (Handke et al., 2021, 2025) and helps explain why teams with similar technological infrastructures may nonetheless experience very different patterns of leadership and collaboration.

Practical Implications

Our findings suggest that directive leadership plays an important role in enabling shared leadership in virtual teams—one of the strongest predictors of their effectiveness (Hoch & Kozlowski, 2014). Although directive leadership is often portrayed as constraining, our results indicate that in turbulent, unpredictable environments such as virtual teams, directive behaviors that articulate goals, define roles, and establish routines can provide the structural clarity members need to coordinate effectively and take initiative. From an HRM perspective, organizations should ensure virtual team leaders can enact these behaviors when conditions demand them.

Critically, directive leadership must create structure that enables team autonomy, rather than devolving into excessive control or micromanagement (Bell & Kozlowski, 2002). This drift might not be a sudden or obvious shift in leader behavior, so leaders and HR professionals need to watch for subtler signs. For example, leaders who continue closely specifying goals and workflows well after a team has internalized its mission and routines are likely prescribing execution rather than enabling structure. Declining team initiative, or members routinely deferring decisions that fall within their own scope of responsibility, can similarly signal that directive behavior is discouraging self-directed action (Locke & Latham, 1990; Martin et al., 2013). Organizations can build more systematic detection into existing tools, such as those capturing team members' collective sense of meaning, competence, autonomy, and impact (Kirkman, Rosen, et al., 2004). Tracking these dimensions through periodic pulse surveys, alongside reports of leader directive behavior, offers a practical way to catch drift before it undermines empowerment.

The moderating effects of location diversity and perceived media richness suggest directive leadership should be tailored to the team's context. When teams are highly dispersed and/or perceive their communication channels as low in richness, directive behaviors are especially important for fostering empowerment and enabling shared leadership. As virtuality decreases and teams can develop routines, norms, and coordination mechanisms independently, directive leadership may become less central. In those settings, practitioners may consider shifting emphasis from creating structure to approaches that leverage existing systems to sustain empowerment and cultivate shared leadership.

Our study also underscores the importance of perceived media richness. Media richness is not simply a fixed property of technology but emerges from how team members collectively experience and interpret communication channels; thus, the same tools can yield very different outcomes depending on use and norms. Teams may have sophisticated collaboration tools yet still report low perceived richness if members are unfamiliar with the technology, communication norms are weak, or tools are poorly aligned with task requirements. Conversely, teams using primarily text-based channels may develop high perceived richness through consistent interaction patterns and shared interpretations. This emergent, subjective quality has practical implications: rather than merely investing in objectively "richer" technologies (e.g., video conferencing), organizations should focus on how teams experience their communication infrastructure. Practical steps include regularly assessing perceived media richness via brief surveys, focus groups, or structured discussions to capture whether channels support feedback, convey multiple cues, and match task complexity. When perceived richness is low, useful interventions may include training on effective tool use, clarifying communication

norms, expanding the portfolio of available channels, and helping teams adaptively select media based on task and relational demands.

Limitations and Future Directions

In highlighting the theoretical and practical implications of the paper, we would like to recognize its limitations and suggest possible avenues for future research. First, same-source and common method bias may have inflated some of the field study findings, particularly the main effects of directive leadership on team empowerment and shared leadership. We sought to mitigate these concerns by measuring directive leadership at a different time and by conducting CFAs to establish discriminant validity, but because team empowerment and shared leadership were measured concurrently, common-method bias cannot be fully ruled out. Future research should increase temporal separation among these constructs and, where feasible, draw on multiple sources (i.e., leader, peer, or archival assessments). As common-method variance is less likely to inflate interaction effects (Evans, 1985; Siemsen et al., 2010), the significant moderating effect of perceived media richness is less susceptible to method-based inflation, which increases confidence in that result. Nevertheless, future work should still obtain directive leadership and perceived media richness ratings from different sources to further reduce method concerns.

Second, the generalizability of our findings is limited by our sample, which came from two organizations in the aerospace and healthcare/insurance industries. Although both used virtual team arrangements, they differed in levels of shared leadership. As shown in Table 3 (Models 6–7), the healthcare and insurance organization exhibited lower shared leadership than the aerospace company, while team empowerment did not differ significantly between organizations except for a positive organizational effect in Model 1 that disappeared once directive leadership was controlled. These patterns point to possible industry- and function-specific contingencies in how shared leadership develops in virtual teams. In the aerospace organization, most participants worked in technology functions (i.e., software development, IT support, and systems engineering), where complex problem-solving, high technical interdependence, and distributed expertise may naturally foster shared leadership. By contrast, participants in the healthcare and insurance organization were primarily in human resources and administrative roles supporting staffing, training, and internal service delivery—positions that commonly operate within formal hierarchies and standardized, regulation-driven processes. Such structural features may constrain opportunities for shared leadership to emerge in virtual settings, even when teams feel empowered within their defined scope of work. Together, these patterns suggest that the conditions enabling shared leadership are not uniform but depend on

functional role and industry context. Future research should therefore incorporate these factors into theoretical models of virtual team leadership.

Third, future studies are encouraged to compare directive leadership with more relationally oriented approaches as predictors of shared leadership in virtual contexts. Leadership styles such as servant leadership (e.g., Wang et al., 2017) and leader humility (e.g., Chiu et al., 2016) have been shown to foster shared leadership in non-virtual settings, yet whether they do so to a similar or even greater extent in virtual ones remains an open question. Contingency models of leadership (Fiedler, 1964; House, 1971) suggest that the effectiveness of different leader behaviors depends on situational demands. Directive behaviors may be especially valuable early in a team's life or under conditions of high virtuality, where they provide the structure and role clarity that enable members to step into leadership roles; relational behaviors, by contrast, may become more effective as virtuality decreases and interpersonal dynamics come to the fore. An equally important question concerns the mechanisms through which different leadership styles cultivate shared leadership. Our findings identify team empowerment as the pathway linking directive leadership to shared leadership, but it remains unclear whether relational styles operate through the same mechanism or activate alternative pathways.

Fourth, adopting a multilevel perspective to further explore the effects of directive leadership may yield valuable insights. It may be worth exploring, for example, whether our leadership model exerts similar or differential influence on individual and team outcomes and how such influence varies as teams become more or less virtual. It is also possible that members of the same team perceive directive leadership differently depending on their virtual work arrangement characteristics such as frequency of in-person communication with the leader, or physical isolation from the team (O'Leary & Mortensen, 2010). Finally, future research should be explicit about its conceptual and operational choices when studying virtuality dimensions. The construct of geographical dispersion offers a useful illustration: scholars have used the term to capture quite different underlying ideas, such as the variety of sites at which team members are located versus the physical distance among them (Eisenberg et al., 2019; Raghuram et al., 2019), making it difficult to compare findings across studies. Researchers should therefore specify which aspect of dispersion is theoretically relevant to the phenomenon under investigation and select measures that align with that conceptualization. Such clarity would help avoid conceptual slippage, enable more precise comparisons across studies, and support cumulative knowledge building in the virtuality literature. A related avenue for future research is to identify additional virtuality dimensions (e.g., temporal dispersion in teams working asynchronously across time zones or the degree of interaction synchronicity) and examine their implications for leadership in virtual teams.

Conclusion

Building on Bell and Kozlowski's (2002) work, this research demonstrates that leaders of virtual teams who engage in directive behaviors effectively empower their teams, which in turn fosters shared leadership. Moreover, the impact of directive leadership on promoting shared leadership is influenced by both location diversity and perceived media richness. We hope these findings help to stimulate further research on formal leadership in virtual teams and the significance of directive behaviors for enhancing team functioning across diverse virtual team contexts.

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Supplemental Material

Supplemental material for this article is available online.

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