IT-enabled awareness and self-directed leadership behaviors in virtual teams

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ABSTRACT

Despite the pervasiveness of self-managing virtual teams, organizations find it particularly challenging to motivate virtual team members to exhibit and manage their leadership behaviors. This study contributes to virtual team leadership literature by specifically shedding light on how distinct awareness forms enabled by information technology (IT) signal important cues to virtual team members to self-lead, that is, self-direct their leadership behavior in their team. Our results reveal that IT-enabled disclosure awareness is key to inducing several leadership behaviors: directive leadership, supportive leadership and interpersonal helping. Further, for directive leadership and interpersonal helping, the relationship is contingent on IT-enabled task knowledge and IT-enabled presence awareness. At low IT-enabled task knowledge awareness or high IT-enabled presence awareness, virtual team members who perceived IT-enabled disclosure awareness employed directive leadership and interpersonal helping. Opposite results were found at high perceived IT-enabled task knowledge awareness and low perceived IT-enabled presence awareness. This research highlights the critical role played by specific awareness forms enabled by IT in motivating virtual team members to engage in self-leadership.

1. Introduction

Virtual teams are commonly employed in organizations and across industries (Hoch & Kozlowski, 2014; Wakefield, Leidner, & Garrison, 2008). Virtual teams, which comprise geographically dispersed members holding diverse expertise and perspectives, are established to meet challenging market demands (Cramton, 2001; Hoch & Kozlowski, 2014). Virtual team members communicate predominantly via information technologies (ITs), are assembled on an ad-hoc basis to solve complex problems, and are often disbanded after completion of the assigned project (Gibson & Gibbs, 2006). In self-managed virtual teams (henceforth known as virtual teams), members are responsible for defining and regulating their own work processes and do not have formal leaders assigned (Cramton, 2001; Gilson, Maynard, Jones Young, Vartiainen, & Hakonen, 2015; Malhotra & Majchrzak, 2014). There are various types of virtual teams, such as inter-organizational teams, and distributed ad-hoc task groups (Espinosa, Slaughter, Kraut, & Herbsleb, 2007; Gilson et al., 2015; Malhotra & Majchrzak, 2014).

The prevalent use of virtual teams in organizations has attracted significant research (see Gilson et al., 2015 for a review of virtual team studies). Most studies focus on the dynamics and outcomes of virtual teams (Chidambaram & Tung, 2005; Cramton, 2001; Gilson et al., 2015; Hoch & Kozlowski, 2014). Previous research has shown that swift trust established through communication sets a positive tone and develops trust among team members (Gilson et al., 2015). However, other work has indicated that virtual team members are unresponsive, experience deindividuation and engage in social loafing (free-riding on others' efforts) due to reduced visibility (Alnuaimi, Robert, & Maruping, 2010; Chidambaram & Tung, 2005; Cramton, 2001). In a virtual team setting, the

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significant lack of social contextual cues and uncertainties regarding one's partners increases the tendency toward misunderstanding and misinterpretation (Cramton, 2001; Gilson et al., 2015). For example, the lack of a physical working context in a virtual team reduces the ability of team members to comprehend the task constraints faced by remote partners, impeding the development of a common ground (Rico, Sánchez-Manzanares, Gil, & Gibson, 2008). In these ways, organizations face challenges in motivating virtual team members to exhibit and manage their leadership behavior.

Despite these concerns, virtual team leadership research has generally ignored *what motivates* individual members to engage in self-leadership within their team (Hoch & Kozlowski, 2014; Stewart, Courtright, & Manz, 2011). The focus of virtual team leadership research has been on shared and emergent leadership. Self-leadership, a facilitator of shared leadership (Houghton, Neck, & Manz, 2003), encompasses how individuals manage their own leadership behavior in a team, and it is an important means to reduce process losses and facilitate team effectiveness (Houghton et al., 2003; Stewart et al., 2011). Shared leadership involves *individual* team members undertaking distributed or overlapping leadership responsibilities and roles, as members influence one another in their efforts to collaborate (Houghton et al., 2003). Team members need to self-lead by deciding when to step in; when to step back; and when to enhance, modify or eliminate certain leadership behaviors during collaboration efforts based on the work situation (Stewart et al., 2011). A team level approach to shared leadership, which involves aggregating the leadership of all team members, however, may cloud such important nuances (D'Innocenzo, Mathieu, & Kukenberger, 2016). An individual lens is important too. Moreover, in the context of virtual teams, existing shared leadership research primarily examines the outcomes of shared leadership. Shared leadership has been shown to positively impact team effectiveness, such as effort, communication, coordination and task performance (Cogliser, Gardner, Gavin, & Broberg, 2012; Hoch & Kozlowski, 2014). Researchers have also explored antecedents of emergent leaders by probing what influences members to be selected as leaders by their peers (Charlier, Greco, & Reeves, 2016; Cogliser et al., 2012; Serban et al., 2016; Yoo & Alavi, 2004). To our knowledge, no research thus far has addressed the antecedents of virtual team member self-leadership, that is, self-directing leadership behavior in the team.

This study bridges the above gap by adopting an awareness lens. Awareness of one's team environment (e.g., teammates) has important implications for work processes and task performance (Malhotra & Majchrzak, 2012, 2014; Rico et al., 2008). We believe that *specific* perceived awareness of one's team environment enabled by ITs may serve as an important cue that encourages and guides team members' self-management of leadership behaviors. This study probes the potential roles played by three distinct awareness forms enabled by ITs: disclosure, task knowledge, and presence. IT-enabled disclosure awareness is relation-oriented and concerns the extent to which one is aware of others' personal information (e.g., hobbies and feelings). By contrast, IT-enabled task knowledge awareness and IT-enabled presence awareness are task-oriented. IT-enabled task knowledge awareness relates to the extent to which one holds information regarding one's task environment (e.g., work progress of others), whereas IT-enabled presence awareness involves being able to reach out to others due to their online availability and accessibility (Malhotra & Majchrzak, 2012, 2014). Various IT features (e.g., instant messaging) that support the development of these forms of awareness (Malhotra & Majchrzak, 2012, 2014) are enabled across different social media tools, such as Facebook and Google Docs (Ellison, Gibbs, & Weber, 2015), which are being increasingly embraced by organizations that utilize virtual teams (Gibbs, Eisenberg, Rozaidi, & Griaznova, 2015).

In short, the primary purpose of the present article is to explore the following: what distinct awareness forms enabled by ITs motivate individual virtual team members to self-lead in terms of leadership styles (directive and supportive) and interpersonal helping (concepts that we will elaborate later)? We focus on these leadership behaviors given their effectiveness in shaping team work processes and outcomes, as is evident from the extensive research (Bass, 1999; Pearce & Sims, 2002; Podsakoff, MacKenzie, & Bommer, 1996; Yoo & Alavi, 2004). We suggest and examine the idea that IT-enabled disclosure awareness is integral in spurring leadership behaviors and that IT-enabled task knowledge awareness and IT-enabled presence awareness are contingency factors to the relationship.

This study employs a field study methodology involving self-managed student virtual teams to test the hypotheses. The participants were distributed across three geographical locations within the same country. The results showed that perceived IT-enabled disclosure awareness induced leadership behaviors. Further, for virtual team members who perceived IT-enabled disclosure awareness, they regulated their leadership behaviors—directive leadership and interpersonal helping—based on IT-enabled task knowledge and IT-enabled presence awareness. Our study adds richness to the self-leadership research involving virtual teams by offering a compelling understanding that specific awareness forms enabled by ITs promote self-leadership of virtual team members. Indeed, it is important to understand how individuals lead themselves before they can lead their team members (Houghton et al., 2003; Manz, 1986). Our study takes an initial and important step in this direction and, thus, indirectly informs shared leadership, also.

We start by describing the concepts and key findings of self-leadership, leadership behaviors and awareness forms enabled by ITs. Next, we put forth the theoretical arguments of our hypotheses. Then, we test the hypotheses and report the results and conclusion.

2. Background

2.1. Strategies for developing self-leadership

Self-leadership is "a new silver bullet(s) for the dawn of a new era of leadership" (Pearce & Manz, 2005, p. 133). Developed mainly from the literature of self-management, self-leadership is a process by which individuals motivate, influence and lead themselves using a set of strategies "toward performance of naturally motivating tasks as well as managing oneself to do work that must be done but is not naturally motivating" (Manz, 1986, p. 589). Within a team, members self-lead by applying self-controlling principles to various behaviors, such as managing interpersonal relations, monitoring work processes or initiating structures