The Impact of Perceived Subgroup Formation on Transactive Memory Systems and Performance in Distributed Teams

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ABSTRACT

With distributed teams becoming increasingly common in organizations, improving their performance is a critical challenge for both practitioners and researchers. This research examines how group members’ perception of subgroup formation affects team performance in fully distributed teams. The authors propose that individual members’ perception about the presence of subgroups within the team has a negative effect on team performance, which manifests itself through decreases in a team’s transactive memory system (TMS). Using data from 154 members of 41 fully distributed teams (where no group members were colocated), the authors found that members’ perceptions of the existence of subgroups impair the team’s TMS and its overall performance. They found these effects to be statistically significant. In addition, decreases in a group’s TMS partially mediate the effect of perceived subgroup formation on team performance. The authors discuss the implications of their findings for managerial action, as well as for researchers, and they propose directions for future research.

KEYWORDS
Distributed Teams, Subgroup Formation, Subgroups, TMS, Transactive Memory

INTRODUCTION

Distributed teams, also known as dispersed teams or virtual teams, refer to groups comprised of members from different locations who collaborate online toward a common goal (Oshri, van Fenema, & Kotlarsky, 2008). By using information and communication technologies, distributed teams perform tasks such as product development, software development, and strategic planning in organizations (Kotlarsky & Oshri, 2005; Maruping, Zhang, & Venkatesh, 2009; Thomas & Bostrom, 2010). With the rapid growth of globalization, combined with cost-cutting, cross-functional projects and mobility, distributed teams are now common in organizations (Fuller, Hardin, & Davison, 2006; Gressgard, 2011; Jarvenpaa, Shaw, & Staples, 2004; Mahfooz, 2011; Majchrzak, Malhotra, & Lipnack, 2004; Purvanova & Bono, 2009). For example, a 2012 Society for Human Resource Management (SHRM) survey found that 46 percent of firms use virtual teams (Geller, Lee, Alonso, Schmit, & Esen, 2012). Another recent survey on “Trends in Global Virtual Teams” reported that 40 percent of nearly 3,000 survey respondents spend between half and all of their time working on multicultural virtual teams (RW CultureWizard, 2014).
Despite the proliferation of distributed teams in organizations, studies show that it is inherently challenging to achieve team effectiveness in distributed environments, due to temporal, geographic, and cultural differences (Espinosa, Slaughter, Kraut, & Herbsleb, 2007; Kotlarsky & Oshri, 2005; Mukherjee, Lahiri, Mukherjee, & Billing, 2012; Sarker, Ahuja, Sarker, & Kirkeby, 2011). Respondents to the “Trends in Global Virtual Teams” survey report that compared to face-to-face teams, it is more challenging to make decisions (55 percent), manage conflict (54 percent), or express opinions (53 percent) in distributed teams (RW CultureWizard, 2014). Since information technology alone is not sufficient to bridge these reported challenges in distributed teams (Duranti & de Almeida, 2012; Kotlarsky & Oshri, 2005; Oshri et al., 2008), there are calls for research on the social aspects of these teams to improve their effectiveness (Kotlarsky, van Fenema, & Willcocks, 2008; Orlikowski, 2002).

To date, existing studies have focused mainly on positive social aspects of virtual teams, such as trust, social ties, rapport, communication patterns, and formal and informal communication, which improve virtual team outcomes (Glückler & Schrott, 2007; Jarvenpaa & Leidner, 1999; Kiesler & Cummings, 2002; Kraut & Streeter, 1995; Lowry, Zhang, Zhou, & Fu, 2010; Storck & Hill, 2000). Fewer studies, however, have examined the social factors that negatively affect team performance in virtual environments, which limits our ability to reduce and mitigate their impacts on team performance. To complement our understanding of the positive social factors that are essential to the success of distributed teams, we focus on negative social aspects of virtual teams. Specifically, we examine the effect of perceived subgroup formation, a factor that has been found to negatively affect team effectiveness in traditional face-to-face team settings (Carton & Cummings, 2012; Cronin, Bezrukova, Weingart, & Tinsley, 2011), but has received limited attention in distributed teams.

When a team consists of multiple members, there is the potential for the team to split into subgroups, based on one or more factors such as demographic characteristics (Cramton & Hinds, 2005; Homan et al., 2008), the existence of prior relationships among certain members (Polzer, 2004), as well as members’ attitude and beliefs (Harrison, Price, & Bell, 1998). While the impact of subgroup formation within group is well documented in the face-to-face context (Gibson & Vermeulen, 2003; Jehn & Bezrukova, 2010), its impact on the performance of distributed teams has not been thoroughly examined. This lack of attention to subgroup formation may be due to researchers’ beliefs that demographic attributes – which are typically the cause of such subgroups – are less salient or noticeable in fully distributed teams, where each member resides in a different location. We argue that subgroups can emerge in a fully distributed team, although the causes may be unrelated to demographic traits like age, race, or location. Previous studies show that while there may be many factors that contribute to subgroup formation in face-to-face teams or distributed teams, what truly matters is team members’ perceptions of subgroup formation (Cronin et al., 2011). Since the objective attributes are less salient in a distributed environment, we propose that members’ perceptions of subgroups is a critical factor that will influence team interaction and performance outcomes.

We draw on the literature of knowledge management, especially transactive memory systems (TMS), to understand the mechanisms through which members’ beliefs about subgroups affect team performance. The phrase transactive memory system describes team members actively using their collective knowledge of “who knows what” to complete a team task collaboratively. It is considered to be an important “team cognitive process” (Zhang, Hempel, Han, & Tjosvold, 2007) that is especially critical for knowledge intensive teams that seek to achieve high performance (Lewis, 2004). Distributed teams can effectively access diverse expertise across geographic locations (Majchrzak et al., 2004). Thus, the performance of distributed team depends, to a great extent, on a group’s active management of its knowledge and expertise (Herbsleb, Mockus, Finholt, & Grinter, 2000; Herbsleb & Moitra, 2001). However, in a distributed environment, it is inherently difficult for team members to learn what other members know, due to a lack of face-to-face communication and personal interaction.
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