An analysis of shared leadership, diversity, and team creativity in an e-learning environment

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ARTICLE INFO

ABSTRACT

In response to rapid change and fierce competition, creativity is an imperative factor to develop and implement innovation. Hence, most firms have pursued diverse strategies to promote individual and team creativity in the workplace. Shared leadership is a voluntarily, informally emergent structure beyond vertical leadership. A team is composed of individual members, and shared leadership and demographic diversity exist within the team, influencing team creativity. In this respect, we introduced shared leadership as a social network perspective as well as diversity into a team creativity model. In sum, we examined the influence of shared leadership and diversity on knowledge sharing and the subsequent effects on team creativity. Our results showed that role diversity directly influences team creativity, with shared leadership and knowledge sharing positively contributing to team creativity. Thus, knowledge sharing had a partially mediating role between shared leadership and team creativity. Apart from our hypotheses, the present results implied that if gender diversity (as a differentiated factor) is not a minority status, knowledge sharing may have a fully mediating effect between gender diversity and team creativity.

1. Introduction

In order to acquire an organizational competitive advantage and respond to rapidly changing environments, the development and implementation of creativity and innovation is essential to today's turbulent business environment (Lapierre & Giroux, 2003). Many organizations have selected team-based work systems to increase their responsiveness and ability to foster innovation. Such organizations need to be concerned not only with enhancing creativity and innovation among individual employees, but also with developing creative, innovative teams. Relatively fewer studies have been conducted on "team creativity" as compared with individual creativity. In this study, we explore the effects of shared leadership, demographic diversity, and knowledge sharing on team creativity.

Generally, leadership represents itself as a single designated individual. Some scholars (Pearce & Conger, 2003; Pearce & Sims, 2002) have argued that leadership includes shared roles and activities among members of a team. As a team property, we seek to accentuate shared leadership, which is not imposed on a single designated leader, but is distributed among team members (Carson, Tesluk, & Marrone, 2007; Pearce & Conger, 2003). A single leader may not successfully carry out all necessary leadership functions because the environment has inherent complexity and ambiguity (Day, Gronn, & Salas, 2004). Shared leadership represents mutual influences among team members, which can overcome the limitation of a leadership style by a single leader. Therefore, as a type of horizontal, internal team leadership, shared leadership can contribute to team creativity. In this respect, we choose shared leadership as an antecedent, and examine the relationship between shared leadership and team creativity with a social network perspective by using social network density.

In modern organizations, many workers of different backgrounds work together, and diversity is a domain that researchers and practitioners cannot disregard. Women and minorities have become more significant in the workforce (Loden & Rosener, 1991; Offerman & Gowing, 1990), and there is an enhanced need for employees of different occupational backgrounds to work together (Dean & Snell, 1991). Due to the importance of team-based approaches in organizations, our study focuses on heterogeneity at the group level. Diversity (interchangeable with

heterogeneity) is particularly important at the group level, where individuals interact more regularly than at the organizational level (Jackson et al., 1991; Parker, 1994). In this sense, we emphasize demographic attributes (e.g., age, race, gender, education, functional background, and tenure) within teams, investigating the implications of demographic diversity for team creativity.

Knowledge-based systems force the members of an organization to extend their work scopes and establish autonomy (DeNisi, Hitt, & Jackson, 2003). Therefore, knowledge sharing may act as a mediator within our team creativity model. Additionally, we assume that there are moderating effects of task complexity (high-level task variety and low-level task analyzability) between shared leadership and knowledge sharing. Task complexity is significantly related to knowledge sharing (Phang & Foong, 2005). In an e-learning environment, task complexity might also directly (positively or negatively) influence knowledge sharing. However, when team members complexly perceive tasks, an interactive mechanism through shared leadership might be positively related to knowledge sharing. Namely, at the high level of perceived task complexity, team members may mutually depend on the leadership of other members.

We arranged 40 teams consisting of four to eight members in an e-learning environment, identifying and examining the constructs that are most closely related to team creativity. We first review the selected constructs and their relationships based on previous studies. Second, we undertake assessments of the discriminant and convergent validities of these relationships. Lastly, we examine our hypotheses using hierarchical regression analysis.

2. Literature review and hypotheses

2.1. Demographic diversity

Demographic diversity refers to the degree to which a working unit is heterogeneous regarding demographic attributes. It generally includes immutable characteristics such as age, gender, and ethnicity (Pelled, Eisenhardt, & Xin, 1999). In other words, it represents individuals' relationships with organizations, such as organizational tenure or functional area. Moreover, it identifies individuals' positions within society, such as marital status (Lawrence, 1997). The attention of demographic diversity started off with both women and minorities in the workforce (Buhler, 1997). The concern intensified the need for organizational strategies that consider more interaction among employees with different functional backgrounds (e.g., Dean & Snell, 1991).

Diversity in regards to age, gender, and race is lowly related to job, but age similarity may not yield similarity in general attitudes about technical work. Race involves a wide collection of experiences, such as traditions, lessons from parents and teachers, and treatment from social activities. Sessa and Jackson (1995) found that age, race, and gender form the context of more general social relationships, and are less directly associated with team objectives. Work experiences may only be a fraction of the total set of experiences it captures. Therefore, age, race, and gender may differ with tenure and team membership.

In this respect, tenure and functional background may have a stronger impact on perceptions of working group tasks as compared with age, race, and gender. In other words, tenure and functional background are highly related to one's job, representing how long one has worked for a company or has been exposed to a specific functional area. During the period, the experience and knowledge obtained are typically required for cognitive tasks performed in organizations. Ancona and David (1992) pointed out that tenure and functional background might be particularly important for tasks within units, such as product development teams, because

they determine one's technical skills, expertise, knowledge, and so on. Other researchers (Milliken & Martins, 1996; Pelled, 1996; Sessa & Jackson, 1995) have similarly asserted that tenure and functional background are particularly relevant to work group tasks.

2.2. Shared leadership

With the presence of several formally appointed or emergent leaders, leadership may be considered as a shared and distributed phenomenon (Mehra, Smith, Dixon, & Robertson, 2006). In this sense, shared leadership is represented by distributed influence within a team and lateral influence among peers (Pearce & Sims, 2002). Also, shared leadership is regarded as an emergent team property resulting from the distribution of leadership influence across multiple team members (Carson et al., 2007). It represents a condition of mutual influence embedded in the interactions of team members that significantly improve team and organizational performances (Day et al., 2004). As shared leadership is defined as a relational phenomenon involving mutual influence among team members, social network theory provides a natural theoretical and analytical approach to studying the relational influence structures of teams (Mehra et al., 2006). Although there are a few useful self-reported ratings (Avolio, Jung, & Sivasubramaniam, 1996; Pearce & Sims, 2002; Pearce, Yoo, & Alavi, 2004), we measured shared leadership using a social network approach (Carson et al., 2007; Mayo, Meindl, & Pastor, 2003). In this measurement, shared leadership is a measure (density) of the total amount of leadership displayed by team members as perceived by others on a team.

2.3. Knowledge sharing

Knowledge sharing is defined as an interactional process that is significantly related to group performance (Nelson, Sabatier, & Nelson, 1996). Knowledge sharing occurs when an individual spreads his or her acquired knowledge to other members within an organization (Ryu, Ho, & Han, 2003). Factors that influence an individual's willingness to share knowledge include costs and benefits, incentive systems, extrinsic and intrinsic motivations, organizational climate, and management championship (e.g., Bock & Kim, 2002; Bock, Zmud, Kim, & Lee, 2005; Kankanhalli, Tan, & Wei, 2005; Purvis, Sambamurthy, & Zmud, 2001; Wasko & Faraj, 2005). Some researchers have examined team characteristics and processes in relation to knowledge sharing. For example, the longer a team has been together and the higher the level of team cohesiveness, the more likely it is that team members will share knowledge (Bakker, Leenders, Gabbay, Kratzer, & Van Engelen, 2006; Sawng, Kim, & Han, 2006). De Vries, Van den Hooff, and De Ridder (2006) investigated team communication styles, agreeable and extravert styles, and found that they were positively associated with knowledge sharing willingness and behaviors. Srivastava, Bartol, and Locke (2006) showed that empowering leadership fostered knowledge sharing among members in management teams of hotels. Thus, intensified research on leadership styles and constructs at the team level is justified.

2.4. Team creativity

Creativity is generally defined as the ability to yield works that are both novel and useful (Lubart, 1994). While creativity at the individual level is pertinent to a situation in which a person solves problems in a job or in daily life, creativity at the social level can lead to new scientific findings, movements in art, inventions, and social programs (Sternberg & Lubart, 1999). Therefore, team creativity is a comprehensive concept that includes new and useful ideas, processes, and procedures in an interactional working