

VIRTUAL-TEAM LEADERSHIP

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ABSTRACT

While previous research has identified leader-member exchange relationships as an important factor in affecting relevant organizational outcomes; findings presented here provide some initial evidence to support the proposition that leader-member relationships also matter in virtual environments. In particular, we found that team members' perceptions of the leader-member exchange relationship are related to their attachment to the virtual team and to their perceptions of the team's performance. Individuals in teams where leader-member exchange is high report that their teams perform higher than do those in low leader-member situations and they tended to report stronger attachments to the team.

INTRODUCTION

Virtual teams continue to grow in popularity. In particular, virtual teams are being used in organizations for such tasks as knowledge sharing and problem solving¹ in education for the purposes of enhancing learning, and in computer game environments for greater levels of challenge and entertainment. By combining the functionality of telecommunication and information technologies managers, teachers, and software developers can bring together individuals who are geographically or temporally dispersed for the purpose of accomplishing individual and group goals. While the tools are available for enabling companies to create virtual teams, and the opportunities exist to capitalize on the skills and insights of dispersed individuals, much still remains to be learned about the factors that affect virtual-team performance. Much of what we know about teams is the result of research on co-located, face-to-face groups. Identifying the extent to which phenomena we see in face-to-face teams transfer to the virtual-team environment is one way to highlight the challenges and opportunities faced by managers of virtual teams. Here we report on a study of leader-member relationships, attachment to virtual teams, and virtual-team performance.

While teams can be created to serve a variety of objectives, they are often used in organizations for knowledge-related tasks (e.g., problem solving). In such instances, team performance can be conceptualized along the lines of productivity (e.g., goal accomplishment) and with respect to learning (e.g., displaying a willingness to learn through taking risks, trying new things, and seeking feedback). Previous studies of virtual teams and face-to-face teams have identified team empowerment as a significant predictor of team performance when performance was conceptualized as productivity and learning.¹ We suspect that the extent to which the leader exhibits strong leader-member exchange behaviors will also be related to team performance.

Attachment to groups or organizations is associated with numerous desirable outcomes, such as loyalty,² positive word of mouth,³ and intentions to purchase.⁴ In addition, absenteeism and turnover are negatively related to commitment to various foci;^{5,6} and the psychological attachment of employees to the various foci is positively related to such things as job satisfaction,⁷ citizenship behaviors,⁸ and attendance.⁹ One factor that affects attachment in face-to-face environments is leader-member exchange. Given the central role of leaders in any goal-directed team, we suspect that the relationship will hold in virtual environments as well (i.e., Leader-member exchange relationships are positively related to attachment to the team [H1] and team performance [H2]).

METHODS

Respondents

Subjects were recruited through messages posted on three massive multi-player online role playing games (MMORPG) online discussion threads. As part of a larger survey the questionnaire contained measures of attachment to the team, leader-member-exchange perceptions, and team performance. We received a total of 169 usable responses. Respondents ranged in age from 16 to 74 with a mean of 28 years; 42 percent of the respondents were female. With respect to education, 3.2 percent had some high school education; 7.1 percent received a high school diploma; 45.2 percent had some undergraduate education (i.e., 1 to 3 years). Undergraduate degrees were received by 19.8 percent of respondents, and 15.8 percent had graduate-level training.

Measures

The self-report measure of leader-member exchange (LMX) was a set of items adapted from the LMX-7 scale.¹⁰ A single factor was extracted when the nine items (e.g., my guild leader is willing to use his or her authority to help me solve my specific problems, my guild leader recognizes the potential of my character) were factor analyzed, confirming previous support for the scale. The measure for attachment to the guild was adapted from items reported by Mael and Tetrick.¹¹ A single factor was extracted from the four items (e.g., when I talk about the guild, I usually say “we” rather than “it” or “they”). The measure for team performance was adapted from descriptive terms used in a previous study¹ that utilized process improvement as an indicator of performance (e.g., my guild adapts and improves; my guild seeks feedback; my guild looks for novel or creative solutions). Age, gender, game (e.g., World of Warcraft), and tenure in the team served as control variables.

RESULTS

Measures of leader-member exchange, team performance, and attachment to the team were reliable (Cronbach's alpha equal to .93, .94, and .90, respectively). In addition, the correlations between LMX and attachment (.58) and between LMX and team performance (.61) were positive and significant, offering preliminary support for our hypotheses. With respect to Hypothesis 1, in step 2 of the regression analysis, leader-member exchange perceptions accounted for unique, positive variance in attachment ($b = .76$, $s.e. = .10$, $p < .001$) above and beyond age, gender, game, and tenure in the group, offering support for the hypothesis. With respect to Hypothesis 2, in step 2 of the regression analysis leader-member exchange perceptions accounted for unique, positive variance in performance ($b = .95$, $s.e. = .11$, $p < .001$), offering support for the hypothesis.

DISCUSSION

A mass of literature has investigated the effects of leadership on individual and team performance, and leader-member-exchange research, in particular has highlighted the role of the leader in affecting job satisfaction, job performance, trust, satisfaction with the leader, and other important variables in a face-to-face setting.^{12,13} One challenge for researchers is to develop an understanding of the extent to which the relationship between a leader and a follower has similar effects in a virtual environment. The results of this study provide some initial evidence to support the proposition that leader-member relationships do matter in virtual environments. These results suggest that leaders of virtual teams and those who select and mentor the leaders of virtual teams must think about how to exhibit behaviors that affect the leader-member relationship. We know that in face-to-face settings such things as liking, setting positive expectations, and frequent communications between leader and follower are variables that impact perceptions of the exchange favorably.^{14,15} Identifying individuals who display these behaviors may be helpful for selecting virtual-team leaders, and understanding how to perform these behaviors in a virtual

environment may be helpful for training leaders how to perform. However, more research is needed to understand how (and if) these variables impact leader-member relationships when the primary mechanism for collaboration is a virtual environment.

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