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The Effect of Shared Leadership on Team Processes and Performance

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Abstract

Purpose - This study examined the effect of shared leadership on student project team processes and outcomes. We focused on shared leadership and its association with team processes (coordination, goal commitment, and knowledge sharing) and team performance.
Design/methodology/approach - To examine the shared leadership, team processes, and performance model, we conducted two separate surveys of 158 graduate and undergraduate students working in project teams at a large southwestern university.
Findings - Results showed that shared leadership positively affected coordination activities, goal commitment, and knowledge sharing, which in turn, positively affect team performance, even though shared leadership had no direct effect on team performance.
Research limitations/implications – Our research adds to the knowledge of important team process factors through which shared leadership indirectly affects team performance.
Practical implications - Based on our findings, we provided implications for students and instructors that shared leadership can facilitate team performance by enabling team members to coordinate activities, commit to goals, and share knowledge effectively.
Originality/value – This study presents an initial understanding of the shared leadership-team performance relationship by introducing influential variables, such as coordination activities, goal commitment, and knowledge sharing in a team.

Keywords: shared leadership, coordination, goal commitment, knowledge sharing, team performance, project team

Paper type Research paper

Teams have become a way of life in most organizations (Morgeson, 2005). Employees need to know how to work effectively within teams (Han and Beyerlein, 2016). Preparation for this begins in educational institutions, which increasingly use new types of collaborative tools to promote team-based learning. Students work in teams, share perspectives, and combine their knowledge, skills, and abilities to solve complex problems (Funk, 2014, Kolb, 1999). In the context of student teams, there is not often a single leader, so advocacy of the benefits of adopting shared leadership has been growing (Pearce and Manz, 2005). However, there seems to have been little research on the ways in which students share leadership collaboratively to enhance team performance. Scholars emphasize the concept of shared leadership (i.e., collective leadership, distributed leadership) because it can affect team effectiveness, especially as teams become more complex (Day et al., 2004; Marks et al., 2001; Pearce and Sims, 2000). The literature also has suggested that shared leadership can affect both team and individual outcomes (Neck and Manz, 2007, Nicolaides et al., 2014), and that vertical teams demonstrate a more positive influence on team-level performance than traditional hierarchical leader teams (Carson et al, 2007). However, the fundamental question of what shared leadership means and how shared leadership relates to team performance has not been clear.

The concept of shared leadership includes both task-oriented and relation-oriented components (Grille and Kauffeld, 2015); however, empirical studies of the two dimensions of shared leadership have been rare. Our study adds value because it is the first study to combine the two dimensions of Grille and Kauffeld's (2015) shared leadership scales. Task oriented shared leadership refers to the shared concern among members for achievement of high standards of

performance. A task process consists of the activities that team members deliberately execute to achieve a goal including coordination activities, such as organizing work, assigning work to team members, and explaining rules and standard procedures (Yukl, 2006). Under shared leadership, members work collectively to facilitate group processes and improve performance (Kolb, 2011). In addition, relation-oriented team processes enhance the emotional strength of a team, resulting in both a positive team environment and increased performance (Mannix and Neale, 2005). Effective team members practice a variety of positive socio-emotional behaviors, such as supporting team members and showing consideration for the needs and feelings of team members (Yukl et al., 2002; Yukl, 2006). Therefore, it is important to examine how shared leadership enhances other team processes to improve team performance.

Even though we know that the relationship between shared leadership and team performance is critical, few studies have examined process mechanisms that link shared leadership and team performance (D'Innocenzo et al., 2014). Therefore, we propose three categories of intermediate mechanisms in the shared leadership-performance relationship. We considered the roles of coordination, goal commitment, and knowledge sharing to examine the effect of sharing leadership on team performance to improve team processes and the capability of a team. To examine the relationships of shared leadership, process factors, and team performance for student teamwork, the following research questions guided this study:

1. How does shared leadership enable higher levels of team processes, such as coordination, goal commitment, and knowledge sharing?
2. How do team processes affect team performance under high levels of shared leadership?

Literature Review and Hypotheses

We framed our model within the perspective of the input-mediator-outcome (IMO) model to illustrate the pattern of emergent team processes (Ilgen et al., 2005) instead of the traditional input-process-outcome (IPO) model (Salas et al., 2004). We included team performance as a key output and examined the dynamics between a team input variable (shared leadership) and team process variables (coordination, goal commitment, and knowledge sharing). In this study, the concept of shared leadership is used differently from team processes. Team processes include coordination, goal commitment, and knowledge sharing; on the other hand, shared leadership activities are not within the scope of team processes because the concept of shared leadership considers specific leadership activities and how these can be shared among the team members (Hoegl & Gemuenden, 2001). In the next section, we describe each component of the team model before developing hypotheses.

Team Input

Shared leadership defined

The concept of shared leadership is based on the notion that more than one member of the team can lead. Although scholars have recently suggested a variety of definitions of shared leadership (Carson et al., 2007; Pearce and Conger, 2003; Pearce and Sims, 2002), we found similar characteristics among these definitions. Shared leadership acknowledges the interdependent nature of leadership through "collective achievement, shared responsibility, and the importance of teamwork" (Fletcher, and Käufer, 2003, p. 23). Models of shared leadership emphasize the need to distribute the tasks and responsibilities of leadership up, down, and across the hierarchy (Pearce et al., 2009). Pearce and Conger (2003, p. 1) described shared leadership as "a dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals". Shared leadership involves interactive behaviors, such as communicating, influencing, making suggestions, and holding people accountable (Contractor et al., 2012).

We adopted Carson et al.'s (2007, p. 1218) definition of shared leadership as "an emergent team property that results from the distribution of leadership influence across multiple team members." According to Carson et al. (2007), leadership originates from individual team members taking responsibility for activities that influence the other team members through interaction. As a result, a leadership network shapes and influences the whole team's actions and outcomes.

Team Processes

A team processes framework, involving (a) behavior, (b) affective/motivational, and (c) cognitive components (Valentine et al., 2015), is presented because the above three functions work as keys to enable team effectiveness (Ilgen et al., 2005; Kozlowski and Ilgen, 2006). To facilitate team processes, shared team identity emerges when team members have a sense of (a) a behavior component of joint effort, (b) an affective/motivational component of effort toward a common goal, and (c) a cognitive component of knowledge sharing (Valentine et al., 2015). The three components of the framework represent a number of team processes that overlap to capture some of the complexity and dynamic of teams.

Team Behavior Processes

Team behavior processes refer to the actions performed by team members to accomplish interdependent work; therefore, behavior processes include actions such as communication and coordination (Valentine et al., 2015). Based on the Valentine et al. (2015) review of team survey instruments, the most commonly assessed behavioral dimensions of teamwork processes were communication and coordination of activities.

Team Affective/Motivational Processes

Team affective/motivational processes refer to socio-emotional states, such as trust, group emotions, team commitment, or team cohesiveness, as part of the emotional climate of the team (Barsade and Gibson, 2012; Gully et al., 2012; Kasper-Fuehrera and Ashkanasy, 2001; Valentine et al., 2015). Affective/motivation represents the effort individuals will invest in a task. At the team level, affective/motivational processes refer to team members' shared commitment to their shared goals and impact team success (Kozlowski and Ilgen, 2006).

Team Cognitive Processes

Team cognitive processes refer to the importance of knowledge in team functioning (DeChurch and Mesmer-Magnus, 2010). Knowledge sharing and experience that guides effective teamwork is key to the cognitive process (Shuffler et al., 2011). Cognitive functioning can be represented in terms of team learning and sharing (Edmondson, 2012). Team cognitive processes can develop over time and serve as lenses all the members can use to make sense of information related to project goals.

Team Outcome

The IMO framework explains the mediation effects on the relationship between inputs, such as team composition or shared leadership, which shape teamwork processes and lead to outputs, such as team performance (Ilgen et al., 2005). In this article, team performance is considered the final outcome of team processes, having a subjective (expected performance) evaluation from team members.

Hypothesized Research Model

Each team process can help team members to enhance team performance by practicing shared leader responsibilities. Team members need to pay attention to team processes and deliberately monitor the development of team behavioral, affective/motivational, and cognitive processes. Therefore, we hypothesized the research model as below.

The relationship of shared leadership with coordination, team goal commitment, knowledge sharing, and team performance

In a leaderless group, shared leadership emerges as an evolving "mutual influence process" (Pearce, 2004, p. 48) "relationally produced, emerging through interactions and communication between actors in a context" (Denis et al., 2012, p. 49.). Therefore, we assumed that shared leadership can affect team process factors, which can be categorized into three levels: (a) behavior, (b) affective/motivational, and (c) cognitive process. Behavior processes include effort exerted, quantity and quality of task-related communication, and task coordination (Rico et al., 2008). Affective/motivational processes include goal commitment (Kukenberger et al., 2012). Cognitive processes relate to learning and sharing knowledge (Valentine et al., 2015).

Coordinating. Coordination processes refer to the activities orchestrating the sequence and timing of interdependent work, such as organizing work, assigning work to team members, and explaining rules and standard procedures (Yukl, 2006; Zalesny et al., 1995). According to McGrath (1990), coordination mechanisms include scheduling deadlines and coordinating pace of effort. Coordination processes require team members' communication to "articulate plans, define responsibilities, negotiate deadlines, and seek information to undertake common tasks" (Rico et al., 2008, p. 165). Likewise, coordination activities are seen as a critical behavior for teams to exchange information and align the sequence of team member contributions (Marks et al., 2001).

A number of scholars assumed that shared leadership improves coordinating activities and controlling the pace of work (Bell & Kozlowski, 2002; Malhotra et al., 2007; Wageman, 2001), and monitoring performance outcomes (Cascio, 2000). Task-oriented shared leadership behaviors may have a positive impact on team coordination. One examine of this would be sending an e-mail asking team members to take responsibilities for different tasks (Wageman, 2001). Therefore, we propose:

Hypothesis 1: Shared leadership among team members positively affects coordination.

Goal Commitment. Strong team goal commitment indicates that team members feel an attachment to team goals, and they are determined to achieve them (Aubé and Rousseau, 2005). Committed teams tend to devote their cognitive and behavioral resources to achieving their goals (Aubé and Rousseau, 2005). A few researchers have investigated the impact of team-level empowerment and processes on team commitment and found a significantly positive relationship (Kukenberger et al., 2012). For example, members may initiate conversation to set up work goals, identify procedures to accomplish jobs, and periodically report their work status to everyone else in the team (Wageman, 2001). Thus, we suggest investigating the following hypothesis:

Hypothesis 2: Shared leadership among team members positively affects team goal commitment.

Knowledge Sharing. Knowledge sharing refers to how well team members share information to perform their tasks (Mesmer-Magnus and De Church, 2009). Differences, including values, expectations, perceptions, and behaviors, can reduce the team's ability to share knowledge. Previous studies show that differences in cultural norms and values around knowledge sharing influence in-group/out-group dynamics, which result in reduced information flow (Gibson and Gibbs, 2006).

Even if scholars attempted to explain the effect of knowledge sharing with other variables, such as team communication styles, cohesion, decision satisfaction, and performance (De Vries et al., 2006; Mesmer-Magnus and DeChurch, 2009), little research has examined the effect of shared leadership on knowledge sharing (Srivastava et al., 2006). However, shared leadership is essential because when team leaders facilitate knowledge sharing, team members are willing to rely on and disclose information in the team, which in turn increases team knowledge sharing (Arnold et al., 2010; Lee et al., 2010). Lee et al. (2015) recently examined the influence of shared leadership and diversity on knowledge sharing and the subsequent effects on team creativity, and they found that knowledge sharing had a partially mediating role between shared leadership and team creativity. Therefore, we need to further investigate the following hypothesis:

Hypothesis 3: Shared leadership among team members positively affects knowledge sharing in teams.

Team Performance. Initially, some scholars theoretically proposed (Ensley et al., 2003) and others found that shared leadership was positively related to team performance (Carson et al., 2007; Chen et al., 2007; Ishikawa, 2012; Small and Rentsch, 2010; Wood and Fields, 2007). D'Innocenzo et al. (2014) provided meta-analytic support for the positive relationship between shared leadership and team performance. Lorinkova et al. (2013) found that teams with high shared leadership experienced higher performance over time due to higher levels of team learning, coordination, empowerment, and mental model development. However, several studies failed to find support for the idea that shared leadership led to better team performance (Boies et al., 2010, Mehra et al, 2006) as Boies et al (2010) found that using a transformational leadership dimension of shared leadership had negative effects on team performance. Another study indicated that a direct relationship between empowering leadership and performance was not supported in management teams (Srivastava et al., 2006).

The inconsistent results of shared leadership on team performance may be the result of the way shared leadership has been conceptualized (Wang et al., 2014). Some studies measured shared leadership with the aggregation of team-level, social network approach, density of a network, or network centralization as an index of shared leadership in teams (D'Innocenzo et al., 2014). Likewise, earlier studies on shared leadership have not used a consistent measure or instruments (transformative, transactional leadership, etc.) that capture leadership distribution, so the proposed relationships have not been tested directly. Therefore, we suggest the following hypothesis:

Hypothesis 4: Shared leadership among team members affects team performance.

The Relationship of Coordination, Team Goal Commitment, and Knowledge Sharing with Team Performance

Given the benefits of coordination, teams that exhibit a high degree of implicit coordination are likely to perform more effectively. For example, studies have shown that coordination processes are positively predictive of team performance (Fisher et al., 2012; LePine et al., 2008; Lorinkova et al., 2013). Specifically, task coordination can positively influence team performance in student project teams (Kanawattanachai and Yoo, 2007). Therefore, we propose:

Hypothesis 5: Coordination activities positively affect team performance.

Teams with strong beliefs about their abilities can achieve higher performance levels since they put more effort toward the task (Gully et al., 2002). Even if the development of collective affective/motivational process in a team setting may be challenging as they lack time for team building and interactions, the current literature supports the positive influence that team goal commitment may have on team performance (e.g., Hecht et al., 2002). Scholars found that team goal commitment and team performance have a significantly positive relationship (Aubé et al., 2014). Thus:

Hypothesis 6: Team goal commitment positively affects team performance.

Cognitive processes emphasize knowledge sharing or understanding that members have in common, which contribute to the team's performance (Kozlowski and Ilgen, 2006; Mohammed and Dumville, 2001). Several studies have argued that team knowledge sharing significantly predicted team performance (De Vries et al., 2006; Lee et al., 2010; Lorinkova et al., 2013; Srivastava et al., 2006), including a meta-analysis of information sharing and team performance (Mesmer-Magnus and DeChurch, 2009). Consistent with this previous research and theory, the following is hypothesized:

Hypothesis 7: Knowledge sharing among team members positively affects team performance.

Figure 1 depicts the hypothesized relationships in the research model. We examined how team processes play a role when considering shared leadership on team performance. We then focused on the logic behind the relationships.

[Insert Figure 1 about here]

Methods

Sample

Students from organized courses in an educational human resource development department at a large Southwestern university were the proposed participants for this study. Most of the teams conducted a project lasting from four to ten weeks during the semester involving organizational clients in the profit or not-for-profit sectors. Some of the teams attended class on campus and thus had the opportunity to meet face-to-face, supplementing meetings with electronic communications. Other classes were online with students geographically dispersed; thus they worked virtually, relying on electronic communication devices all or most of the time. The students represented both the undergraduate and graduate levels. For the graduate level, the typical student is typically an older, full-time employee in contrast to undergraduates who were younger, full-time students. All instructors in the department received invitations to involve their students in the study. About half of them agreed and then encouraged students to participate in this study.

This study collected data through online questionnaires at two separate times: (a) Time 1: at the beginning of the semester (Week 4-5, the initial phase of the project) and (b) Time 2: at the end of the semester (Week 11-12, termination phase of the project). 305 students responded to the first online survey at Time 1, and 377 students responded to the second online survey at Time 2. The main purpose of the first survey was to measure the level of shared leadership in the early stage. The time spent for each project was different (from four to ten weeks), but at Time 2, all the teams' projects were over or in the final stage. Although some team projects ended relatively early, each team had to finish the project in order to be credited at the end of the semester. To more accurately measure team performance and other variables, the second questionnaire was completed at the end of the semester. A subset of 158 provided usable data because we used the same students' responses across the two-time-point. Most participants were female (144), white (94), undergraduate students (111) with a mean age of 24. Table 1 shows the demographics of the participating students. We investigated students' ethnicity, education level, gender, and course type, and the number of students in each team. The demographics of the respondents were as follows.

[Insert Table 1 about here]

Measures

At Time 1, the first online survey was conducted to examine team member's perceptions of shared leadership about one month after the semester began. At Time 2, the second online survey was conducted to examine team process factors and team performance at the end of the semester. The survey questionnaires consisted of scales representing the variables described above with course and team identifiers.

Measuring Shared Leadership. We assessed shared leadership with the questionnaire developed by Grille and Kauffeld (2015). The questionnaire measures four different aspects of shared leadership behavior: task-, relation-, change-, and micropolitic-oriented leadership using 5-point Likert-type scales. The four scales demonstrated good measurement qualities in a confirmatory factor analysis in two independent German samples (Grille and Kauffeld, 2015). For this study, we used only task-oriented leadership and relation-oriented shared leadership scales because change- and micropolitical-oriented leadership dimensions are more relevant to a corporation setting than a higher education setting. The task-oriented shared leadership scale consists of items, such as "As a team we ensure that everyone knows their tasks." The relation-oriented shared leadership scale consists of items, such as "We support each other in handling conflicts within the team." We combined two scales to measure shared leadership. The Cronbach's alpha for the scale for task leadership was .88 and for relation leadership was .88. The Cronbach coefficient alpha for the composited scale of task and relation leadership in this study was .91.

Measuring Coordination. Coordination refers to the activities orchestrating the sequence and timing of interdependence (Zalesny et al., 1995). According to McGrath (1990), the coordination mechanisms include schedule deadlines, coordinated pace of effort within and between members, and specification of time spent on specific tasks. The scale for measuring coordination was derived from Bourgault and Daoudi's (2014) study. All four items are measured with perceptual 5-point Likert scales from (1) I disagree completely to (5) I agree completely. The scale consists of five items, and a sample item is "activities were well coordinated between project team members." The Cronbach's alpha for this scale was .88, and the Cronbach's alpha coefficient was .80 in this study.

Measuring Team Goal Commitment. Measuring team members' shared commitment to shared goals impacts the team's capacity to perform successfully (Kozlowski and Ilgen, 2006). The goal commitment scale was used to measure a team's goal commitment, which explains their motivational team process. Commitment to team goals was assessed using three items provided by Aubé and Rousseau (2005). The Cronbach coefficient alpha calculated in this study was .85. Each item is linked to a 5-point scale ranging from *not true at all* (1) to *totally true* (5). A sample item is "we really care about achieving the team's goal." The Cronbach's alpha for this scale was .85, and the Cronbach coefficient alpha calculated in this study was .86.

Measuring Knowledge Sharing. Knowledge is created by team members' knowledge-sharing behaviors (Lee et al., 2003). The instrument assessed the level of effort to share knowledge and skill based on Wageman, Hackman and Lehman (2005)'s scale. The average of these three items provided an overall measure of knowledge sharing under a cognitive process. All items used a 5-point scale ranging from *highly inaccurate* (1) to *highly accurate* (5). A sample item is "members of our team actively shared their special knowledge and expertise with one another." The Cronbach's alpha for this scale was .89, and the Cronbach's alpha for this scale was .84.

Measuring Team Performance. The team performance measures include four dimensions: content, efficiency, excellence, and originality. These measures were modified based on Hinds and Mortensen (2005)'s team performance scales. The original five dimensions on their scales were efficiency, quality, technical innovation, adherence to schedule/budget, and work excellence. The Cronbach's alpha for this scale was .84, and the Cronbach coefficient alpha calculated in this study was .92.

Data Analysis and Results

In this section, we discuss the process of data analysis and its results. This study used the AMOS and SPSS to perform the data analysis.

Factor Analysis

This study conducted a Confirmatory Factor Analysis (CFA) to test the validity of each measurement. The criterion of factor loading was above .50; as a result, one item of knowledge sharing and one item of coordination were deleted. The results of CFA are presented in Table 2.

[Insert Table 2 about here]

Descriptive Statistics, Reliability, and Correlations

Table 3 shows the means, standard deviations, reliability, and correlations among the study variables. The normality assumption (i.e., skewness < 2, kurtosis < 7; West et al., 1995) and reliability of the measurements (high reliability: Cronbach's $\alpha > .70$; Kline, 2005) were well satisfied. According to the result of bivariate correlation analysis, all the correlation coefficients were significant in the expected direction.

[Insert Table 3 about here]

Analyses of the Structural Models

Prior to testing the hypothesized model, item parceling was adopted for shared leadership. Parceling has a number of advantages. For example, it makes a model more parsimonious and lowers sampling error (MacCallum et al., 1999). We considered shared leadership as a unidimensional construct. Thus, the ten items for shared leadership were randomly combined into five parcels of two items without replacement according to the guideline for parceling from Little, Cunningham, Shahar, and Widaman (2002). Based on modification indices—rather than parceling two random items—this study combined the two items that have a high covariance between the error terms because these two items are considered more relevant. On the other hand, the covariance between knowledge sharing and goal commitment, knowledge sharing and coordination, and goal commitment and coordination were connected because the correlations among these variables were high (from $r = .555$ to $r = .632$).

Table 4 shows the model of fitness for the research model. We used goodness-of-fit indexes that have a criterion for interpretation, such as the Comparative Fit Index (CFI; Bentler, 1990), the Tucker Lewis Index (TLI; Tucker and Lewis, 1973), the Root mean Square Error of Approximation (RMSEA; Steiger and Lind, 1980), and the Standardized Root Mean Square Residual (SRMR). A value of the CFI and TLI of .90 and higher indicates an adequate fit, and a threshold of .08 and lower on the SRMR designates an adequate fit (Hu and Bentler, 1999). A value of the RMSEA of .05 designates close fit, while values near .08 indicate fair fit and those of .10 or higher show a poor fit (Browne and Cudeck, 1993). The results indicate that a data adequately fit the research model (CFI = .949, TLI = .936, RMSEA = .076, 90% confidence interval (CI) is from .060 to .091, and SRMR = .0475).

[Insert Table 4 about here]

The result of the structural equation model analysis is shown in Table 5 and Figure 2. To be specific, shared leadership has no significant effect on team performance, which does not support hypothesis 1. However, shared leadership has a positive effect on goal commitment ($\beta = .270$, $p < .01$), knowledge sharing ($\beta = .221$, $p < .05$), and coordination ($\beta = .300$, $p < .01$), which supports hypotheses 2, 3, and 4, respectively. With respect to team process factors, goal commitment ($\beta = .205$, $p < .05$), knowledge sharing ($\beta = .365$, $p < .001$), and coordination ($\beta = .387$, $p < .001$) have

positive effects on team performance, which supports hypotheses 5, 6, and 7, respectively. These results imply that shared leadership can indirectly contribute to team performance through team process factors, such as goal commitment, knowledge sharing, and coordination even though shared leadership does not directly improve team performance.

[Insert Table 5 about here]

[Insert Figure 2 about here]

Discussion

In this research, we identified team performance as a key output and examined the dynamics between shared leadership and team process variables, such as coordination, goal commitment, and knowledge sharing. These three variables were chosen because of their emergence in the literature. It is possible, however, and likely that factors outside the scope of this study have relevance for the process by which shared leadership is related to team performance.

Our results show that shared leadership enabled team members to coordinate activities, commit to goals, and share knowledge effectively; however, the direct relationship between shared leadership and team performance was not significant and strong. There are two possible explanations for this result. First, we considered several factors that acted as important roles in team processes. For example, when team members share their leadership, they can focus on their goal. Creating a cohesive atmosphere will positively increase team performance (Gully et al., 2012). To avoid team members acting independently, collaboration and shared knowledge is encouraged. By doing this, team performance is enhanced through members learning from each other (Lee et al., 2010); and if a team member acquires a substantially equivalent position within the team, team performance will increase through synergies based on horizontal relationships (Ishikawa, 2012). Shared leadership in and of itself is not a defining factor for team performance, but rather it is successful when accompanied by team's goal commitment, coordination, and knowledge sharing.

Second, the present study showed that shared leadership does not directly enhance team performance, but this does not mean that shared leadership is not a factor in successful team performance. Rather, it should be interpreted that shared leadership, as an antecedent, establishes an environment that can contribute to team performance through team process factors. Furthermore, shared leadership establishes an environment where leadership does not remain in isolation, but it is instead, a dispersed responsibility.

Theoretical and Practical Implications

Although several studies have presented the antecedent conditions of team processes that enable shared leadership to develop (Carson et al., 2007), few studies have explored the impact of shared leadership on team process factors, which increase team performance. Our study has demonstrated the effect of shared leadership on team process factors and performance by using the IMO framework. Given the encouraging results obtained in the present study, some avenues of research are proposed to further develop knowledge about shared leadership, team processes, and team performance.

We examined only three process variables. Research on additional variables would expand our knowledge of ways in which shared leadership affect team process and ultimately team performance. In addition, terms of shared leadership, coordination, goal commitment, and knowledge sharing need to be specifically defined and sub-scales need to be chosen depending on situations and context of the research. For example, results may change depending on which goal commitment (learning versus performance) team members pursue and which one researchers choose to measure. All these constructs have several sub-dimensions, so researchers need to be cautious about choosing measures that capture the specific aspect of interest. These decisions should be clearly explained in research reports to enhance our understanding of current research and develop paths for future research.

The present findings have several implications for educators in terms of instructional design, coaching, training, and learning culture in higher education. Study results suggest that shared leadership enables team members to encourage knowledge sharing, feel commitment to the goal, and become effectively involved in coordination activities, all of which ultimately enhance team performance. Instructors can coach students on effective shared leadership behaviors

and teaming behaviors that increase team performance. In doing this, instructors need to acknowledge that modern day learning systems are flexible and adaptable to different levels of learning strategies. Empowering students to manage their own learning and actions by creating positive and supportive environments is important to allow them to achieve team goals and learning. Therefore, instructors should design team activities that encourage the sharing of creative ideas. Also, to be realistic, organizational and team context should be considered when fostering shared leadership when designing the interventions. Constraints on team autonomy and shared leadership should be acknowledged to work within whatever framework exists in their organizations.

Those who work with organizational teams, and those who manage employees in these teams, will also benefit from research that leads to improved application of these principles. Workers spend a great deal of their days in team environments. Substantial time, effort, and money is devoted to ways to enhance team process and performance. The extent to which team members share knowledge, demonstrate commitment to the goal, and participate in coordination activities and the ways in which these variables ultimately affect team performance are issues of interest to Human Resource Development and Organization Development practitioners team members, and corporate leaders and top management.

To conclude, the team process model examined in this study will provide a valuable framework for researchers to use when considering other potential intervening variables that might increase team performance when shared leadership plays a role. Additionally, this shared leadership model will help practitioners develop strategic interventions to enhance team performance in organizations.

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