Participative Goal Setting in Self-Directed Global Virtual Teams: The Role of Virtual Team Efficacy in Goal Setting Effectiveness and Performance

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Abstract

The frequent use of global virtual teams for accomplishing organizational tasks helps explain the continued interest in research designed to identify and disentangle the relationships among factors influencing team performance. Participative goal setting represents one factor that may be particularly important in these settings. 52 self-directed global virtual teams, consisting of 318 participants, were observed during the life cycle of a team project in order to examine these critical relationships. As hypothesized, results reveal that virtual team efficacy (VTE) indirectly relates to goal commitment through the participative process of setting specific and difficult goals. In turn, participatively setting difficult goals and the teams’ commitment to those goals directly affects actual performance. These findings extend prior research applying social cognitive theory (SCT) in global virtual team research. Implications for theory and practice, as well as opportunities for future research are discussed.

1. Introduction

Global virtual teams are increasingly used to accomplish work in today’s organizations. Some reports indicate that over half of all professional employees currently work, or have worked, in virtual teams [1]. The frequent use of global virtual teams is expected to continue, given the benefits that such teams provide, including reduced travel costs [2], the ability to select the right employee skill set for a project regardless of location [3, 4] and the growing availability of increasingly sophisticated technology to support such distributed work [5].

In many cases, global virtual teams are responsible for decisions about their own work processes and objectives, a work structure referred to as the Self-Directed Virtual Team (SDVT). While some research has addressed SDVTs [6], formal definitions of these self-guided teams are mentioned less frequently. In the current study, we refer to an SDVT as a geographically unrestricted group of people who use information technology to collaborate, and who have the freedom and discretion to organize their work, group structure, and communication processes to best pursue their goals. Note this definition encompasses globally distributed SDVTs. Such teams are particularly germane to this research as the ability to establish efficient goal setting processes is critical in geographically distributed, culturally diverse teams. While the organization of work and group structure constitute essential ingredients to the success of SDVTs, the current study focuses specifically on the participatory goal setting process used by these globally distributed virtual teams.

Research shows that the process of setting goals improves productivity [7], satisfaction [8], intrinsic motivation [9], persistence in the face of obstacles [10] and employee performance evaluations [11]. While much of the goal literature focuses on individuals, other research suggests that participatively set group goals may improve performance outcomes through various motivational processes [12-14]. Because of the overlap between the motivational forces operating within goal theory and social cognitive theory (SCT), individual and collective efficacy beliefs have frequently been evaluated for their role in the goal setting process. However, to our knowledge no research has simultaneously explored the relationship of collective efficacy and group goals in a global virtual team context.

As such, the objective of this study is to extend research examining how virtual team efficacy (VTE)—a domain specific form of collective efficacy—impacts global virtual team performance through specific mediating processes. We accomplish this objective by empirically assessing the direct relationship of VTE to goal specificity and goal difficulty, and its indirect relationship with goal commitment. We then examine the relationships of the goal related variables with actual SDVT performance. A multi-wave, survey methodology was
used to assemble the responses of the SDVT members during the life cycle of a global virtual team project. Results demonstrate the positive relationship of VTE to the goal related variables, as well as relationships between SDVT performance and goal difficulty and commitment. The value of these respective findings lies in the provision of valuable theoretical and practical insight into the unique nature of goal setting in SDVTs.

1.1. Global Virtual Teams

Prior research defines virtual team interaction as “geographically unrestricted.” [15] Global virtual teams are composed of two or more people, often culturally diverse, distributed across time and/or space, working together toward a shared goal [16]. Global virtual teams bring value in part due to their ability to organize by electronic workflow instead of physical location [17], and also by allowing organizations to bring multiple perspectives to bear on important issues [18]. Understanding the functioning of such teams has become a rich area of research with many studies examining how global virtual teams differ from co-located teams in terms of coordination and communication [19-21], as well as how they are affected by the technologies that underlie virtual teamwork [22, 23].

1.2. The Self Directed Global Virtual Team

Based upon the concept of the self-directed work team (SDWT), self-directed virtual teams (SDVTs) represent a specific form of virtual team commonly used to solve organizational problems [6]. Similar to SWDTS, SDVTs lack formal leadership, forcing team members to internally determine their roles and responsibilities. While obvious differences exist between SDWTs and SDVT’s (particularly in the latter’s need to organize their activities in geographically distributed, technology-mediated environments), SDVT’s also share many common traits with SDWTs. For example, members of SDVTs must similarly decide how to work together, as no manager exists in any traditional sense [24]. This requirement of self-management requires SDVT members to master a broader skill set in order to capably engage in decision-making, task planning, and execution [25].

While past research on SDVTs has examined several success factors, little research has focused specifically on the participative goal-setting processes of these distributed teams. In the current study, we look at the unique nature of goal setting in SDVTs, specifically examining how virtual team efficacy (VTE) acts as an important antecedent to the goal setting process. In addition, we investigate the relationships of goal specificity, difficulty, and commitment on actual performance.

2. Theory

2.1. Virtual Team Efficacy

Social cognitive theory (SCT) proposes a triadic reciprocal relationship between the person, the environment, and behavior. Couched within the person element of SCT is self-efficacy, a cognitive process responsible for a number of self-regulatory processes impacting individual level behavioral outcomes. While much of the SCT literature has focused on individual self-efficacy beliefs, a large body of research has also been conducted at the group level. At the group level, studies are primarily concerned with the influence of collective efficacy beliefs on group level behavioral outcomes. Collective efficacy refers to a general level concept reflecting a group’s perceived conviction that it can successfully accomplish a task within a specific domain [26].

Developed as a specific form of collective efficacy used in the prediction of virtual team outcomes, VTE is formally defined as, “a group’s belief in its ability to work together successfully in a noncollocated, technology-mediated environment” [5], p 215. VTE develops through similar sources, serves similar functions, and operates through similar processes as the more general concept of collective efficacy. Sources used in the development of VTE include enactive mastery (e.g., hands on experience), vicarious experience (e.g., behavior modeling training), verbal persuasion (e.g., coaching) and affective states (e.g., anxiety).

While these sources are commonly investigated in efficacy studies, the processes through which these beliefs influence behavioral outcomes are less frequently investigated. The exclusion of these mediating mechanisms has occurred despite Bandura’s [27] admonition that failing to include these processes results in only weak tests of SCT. While these mediating process are known to operate at the individual and group levels, the mechanisms through which they influence behavioral outcomes may differ depending on the level of analysis. At the group level, mediating processes include cognitive factors (e.g., transactive memory, group think), motivational factors (e.g., effort, persistence), affective states (e.g., group anxiety, conflict), and selective processes (e.g., goal selection, conflict management techniques). These group level mediating processes can also differ depending on the domain in which they are investigated. In the current

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study, the context of interest is geographically distributed, technology mediated teams. Therefore, the specific form of collective efficacy most predictive is VTE.

2.2. Goals

The impact of individual goals on organizational performance has been the focus of over four decades of research [28, 29]. Broadly speaking, goals can be seen as an outcome that a person explicitly seeks to accomplish [30]. More specifically, goals are commonly defined as desired end states to be achieved within a specific period of time [31]. Goals are also suggested to stimulate human behavior, motivating individuals to achieve performance outcomes [32]. Thus, the core of goal theory suggests that consciously held goals will ultimately affect action [33].

Goals influence performance through several mechanisms [31]. First, goals cognitively and behaviorally stimulate effort. Goals also galvanize effort towards the pursuance of end states, especially when goals are difficult to achieve [10]. Finally, goals indirectly increase task performance by motivating people to find and use appropriate knowledge and strategies [34]. Taken in total, goals enhance performance “because they mobilize effort, direct attention, and encourage persistence and strategy development” [32].

Goals that are specific and difficult lead to higher performance than less specific, easier goals [31]. Because “do-your-best” goals are defined idiosyncratically, lack of specificity results in a broad range of acceptable performance levels that do not necessarily invoke the motivational processes, which lead to higher performance. Easily attainable goals also fail to serve in a motivational capacity, and are therefore less effective at increasing performance than are difficult goals.

Goal commitment is critical to the performance enhancing effects of setting goals [35, 36]. Suggesting a moderating effect of goal commitment, the respective influence of goal specificity and difficulty is increased when commitment to goals is high [37].

Although less studied, the mediating effect of group level goal commitment has also been proposed [13]. In the latter case, it appears that goal commitment may explain how goal specificity and difficulty influence performance outcomes. Goal commitment has also been suggested to directly influence performance outcomes, as a team’s decision to commit to a goal increases the team’s performance by encouraging all members to strive harder [38] and collaborate more intensely [39].

Goals can be set externally, or through a participative process [40]. Participative decision making refers to the joint management of pertinent aspects of work methods, task scheduling, and assignment of group members to tasks under the team’s control [41]. In situations where SDVTs are used, the team is empowered with the discretion to determine and execute courses of actions they deem appropriate to reach their goals [41, 42]. Thus, participative goal setting can be conceptualized as a special form of participative decision making.

Consistent with social identity theory, the empowerment to participate in team goal setting may also increase the member’s social identification and commitment to the group [43]. Collectively setting challenging performance goals results in higher productivity and satisfaction [40, 44]. These relationships develop during the accommodation of information processes associated with collective cognition [45] that presume a group level effect beyond the sum of the individual efforts of the team members.

3. Research Model & Hypotheses

In this research, we examine the role of virtual team efficacy (VTE) as an important antecedent to the SDVT goal setting process. Specifically, VTE is suggested to be indirectly related to goal commitment through goal specificity and goal difficulty. Goal difficulty, goal specificity, and goal commitment are then proposed as predictors of actual SDVT performance. The following sections provide support for the research model depicted in Figure 1.

![Figure 1: Research Model](image)

3.1. Virtual Team Efficacy as an Antecedent to the Goal Setting Process

Self-efficacy research repeatedly demonstrates that efficacy beliefs predict the activities people pursue. Naturally, people do not jump in to water without first believing they can swim [27]. Thus, people’s beliefs in their abilities direct the activities they pursue, as well as their effort and persistence in accomplishing those activities.
Collective efficacy beliefs operate in a similar manner to self-efficacy beliefs. Groups naturally decide which activities to pursue based upon their perceptions of the team’s joint capabilities. A number of factors influence these perceptions. Individual abilities and self-efficacy beliefs of the team members, group level factors such as trust and cohesion, process related factors such as competition and cooperation, and task related factors such as task importance [45]. In technology mediated environments, group level factors such as group potency and computer collective efficacy may also precede the development of collective efficacy beliefs [5]. Developing a collective belief in the team’s ability takes time because it involves the development of a group level cognition beyond the sum of the individual members’ self-efficacy beliefs [27]. Thus, the measurement of collective efficacy beliefs require the establishment of group level agreement through the application of statistical techniques such as the rwg(j) coefficient [46], or the calculation of interclass correlations [47].

Teams with higher collective efficacy beliefs tend to be more effective [48]. Consequently, groups with higher collective efficacy are also likely to be more effective during the goal setting process [14]. As a result, groups with higher collective efficacy set more specific and difficult goals than do traditional groups with lower collective efficacy [49-51]. VTE represents a domain specific form of collective efficacy [5]; in a global virtual team context, VTE is expected to be a significant, positive predictor of the specificity and difficulty of goals set participatively by the SDVTs.

Hypothesis 1: Virtual team efficacy will be significantly positively related to goal specificity.

Hypothesis 2: Virtual team efficacy will be significantly positively related to goal difficulty.

Participatively setting goals leads to a stronger identification with the team’s decision making processes, in turn impacting downstream commitment to those goals [40]. However, commitment to goals often relies on the nature of the goals set by the team. Teams are suggested to be more committed to difficult, specific goals than either moderately difficult or idiosyncratically defined “do-your-best“ goals [37]. In other words, the process of participatively setting specific, difficult goals aids in the development of commitment to those goals.

Hypothesis 3: Goal specificity will be significantly positively related to goal commitment

SCT suggests specific mediating mechanisms through which collective efficacy beliefs influence behavioral outcomes. Among these mediating mechanisms are selective processes. Teams with higher collective efficacy tend to set more specific and difficult goals, and the process of selecting those goals can influence various behavioral outcomes including commitment to team goals. Based on the theoretical mechanisms of SCT, the relationship of collective efficacy to goal commitment is expected to be indirect through the participative process of setting specific, difficult goals. Groups with higher collective efficacy tend to set more specific and difficult goals [40], and group goal commitment is higher when collective efficacy and the level of goals are congruent [14]. In globally distributed contexts this effect may be even more pronounced because it is during the process of setting goals that distributed members begin to identify with the team. Team identification in turn impacts commitment to group goals [40]. If teams with high VTE set easily attained or non-specific goals, incongruence will occur. As a result, members will be less likely to be committed to the team’s goals.

Hypothesis 4: Goal difficulty will be significantly positively related to goal commitment

3.2. Goals and SDVT Performance

Goals positively impact organizational performance at both the individual and group levels. Goals can be viewed as an outcome, which organizational members seek to accomplish. Goals stimulate human behavior that motivates effort used to achieve performance outcomes, whether individually, or in groups. Goals indirectly increase task performance by helping individuals and groups find and use appropriate knowledge and strategies, as well as by directly encouraging members to strive more vigorously [38] and collaborate more intensely [39]. In global virtual teams, goal setting effectiveness constitutes an important component of team success [52]. Goal difficulty and commitment have both been demonstrated to directly influence virtual team performance [53, 54]. Specific goals enhance performance to a greater extent than non-specific goals. Therefore, goal specificity should also share a positive relationship with actual performance.
Hypothesis 7: Goal specificity will be significantly positively related to actual performance

Hypothesis 8: Goal difficulty will be significantly positively related to actual performance

Hypothesis 9: Goal commitment will be significantly positively related to actual performance

4. Methodology

Data were collected during a large scale research project focused on global virtual team effectiveness. In all, 52 SDVTs, consisting of 318 undergraduate and graduate business students from universities in the United States, the United Kingdom, and Hong Kong, participated in the study. To maintain realism, group size and makeup were not controlled, however teams had at least one member from each university participating in the respective projects. This method possesses the advantage of nurturing the development of a general research model that can be confidently applied in future studies, maximizing theoretical and practical relevance [5].

4.1. Technology

WebCT was used to facilitate the SDVT projects. A popular online learning environment, WebCT can be used for facilitating both on campus and distance learning courses. WebCT was selected as the collaborative platform for the project because of its ability to facilitate group discussion and the goal setting process (e.g., e-mail and discussion boards), its ability to allow for the sharing of project documents, and its common use among the participating universities. The ability for instructors to return graded deliverables to the project teams was an additional benefit provided by the WebCT platform.

4.2. Tasks

Tasks completed by the SDVTs involved business problems described in the “choose” quadrant of the McGrath [54] circumplex, a well-known taxonomy of group task types [55]. Specifically, project tasks involved deciding on issues with no correct answer (i.e., decision-making tasks). Business problems included the development of a project plan using project management principles, and in some cases, involved the development of an e-commerce web site. Virtual teams were allowed to assign and structure the project tasks as desired, and were free to set their own goals. Students were counseled that being aware of the skills of their teammates, as well as establishing goals through the specific goal setting processes germane to this research, were both well-established predictors of virtual team success. No other manipulations were imposed.

4.3. Data Collection

Three surveys were administered during the project. Demographic information was collected at project initiation. To allow sufficient time for group level perceptions to develop, VTE was collected several weeks after the project started [26]. To reduce the possibility of common-method variance, goal-related data were collected a few weeks after the VTE measure was administered [56]. Actual performance was evaluated following project completion, which occurred several weeks later.

4.4. Goal Specificity, Difficulty, and Commitment

Goal measures were adapted from the prior literature. A one to seven Likert-type scale anchored by strongly disagree and strongly agree was used. The measurement items, factor loadings, and cross-loadings were all within accepted conventions. Cronbach’s alpha for goal specificity, goal difficulty, and goal commitment was .92, .76, and .95, respectively.

4.5. Virtual Team Efficacy

Virtual team efficacy was assessed using an existing four item measure developed and validated by [5]. Consistent with recommendations for collective efficacy scales [57], a yes/no, 10 to 100 scale was utilized. Cronbach’s alpha for the virtual team efficacy measure was .95.

4.6. Actual Performance

Team performance was measured via a percentage based final project grade (0 to 100) awarded by an instructor unaware of the study hypotheses.

5. Analysis

A two-step process was used to evaluate the group-level model. First, intergroup agreement among the respective SDVTs was evaluated. The measurement and structural models were then tested.

1 Instrument development details were omitted due to space constraints, but are available as an appendix upon request from the first author.
5.1. Step 1 - Intergroup Agreement

To insure the presence of a group level effect, intergroup agreement must be established before individual level responses can be aggregated to the group level [26]. One method for demonstrating agreement is through the calculation of the rwg(j) coefficient, which is well-suited for studies involving multi-item latent constructs. This approach overcomes the “all-or-nothing” proposition ascribed to common methods used for establishing agreement for single-item measures [58]. The rwg(j) formula was applied to the VTE, goal specificity, goal difficulty, and goal commitment measures. Each exceeded the .7 value advocated as sufficient for establishing intergroup agreement [59]. Based upon the results of this analysis, the study data were aggregated to the group level.

5.2. Step 2 - Model Tests

The relatively small group level sample (52 groups) precluded the use Covariance Based SEM. Components based PLS was therefore used to evaluate the measurement and structural models.

5.3. Measurement Model Results

Following aggregation, SmartPLS 2.0 was used to reevaluate the validity of the VTE, goal specificity, goal difficulty, and goal commitment measures previously established at the individual level using AMOS 19 (details available from the first author upon request). Results revealed that all items loaded above .6 on their respective constructs, demonstrating the convergent validity of the measures. Discriminant validity was established in two ways. First, the square root of the average variance extracted (AVE) exceeded the respective constructs’ correlation with any other variable in the model. Second, all item loadings and cross-loadings exceeded the minimum difference of .10 [60].

5.4 PLS Model Results

Supporting Hypotheses 1 and 2, virtual team efficacy was significantly, positively related to goal specificity (b = .481, t (51) = 5.915, p < .001), and goal difficulty (b = .546, t (51) = 9.629, p < .001). Goal specificity (b = .524, t (51) = 5.915, p < .001) and goal difficulty (b = .441, t (51) = 9.629, p < .001) were in turn significantly, positively related to goal commitment, supporting Hypotheses 3 and 4.

To evaluate Hypotheses 5 and 6, procedures recommended by Baron and Kinney [61], complemented by those recommended by Shout and Bolger [62], were used. Baron and Kinney [61] recommend that the direct path between the independent and dependent variables should be established prior to including the mediating variable in the model. In the current study, this means that the direct path from VTE to goal commitment should be estimated first. The weight associated with this path was .568 and significant at the p < .001 level.

The second step involves estimating the paths from the independent variable(s) to the mediating variable. In the current study, this requires using the paths from VTE to goal specificity and goal difficulty estimated previously (.481, and .546 respectively). The final step recommended by Baron and Kinney [61] involves estimating the path from the independent variable to the dependent variable with the mediating variable(s) in the model. In the current study, this means estimating the path from VTE to goal commitment with both goal specificity and goal difficulty included in the model. The path from VTE to goal commitment was not significant (.114), indicating that goal specificity and difficulty collectively mediated the VTE goal commitment relationship.

Although the resultant non-significant path between VTE and goal commitment would normally be interpreted as indicating complete mediation under the Baron and Kenny [61] guidelines, Shrout and Bolger [62] recommend estimating the effect proportion mediated (PM) as an additional measure of the strength of mediation in the model. In the current model, calculating this effect is particularly important, as it allows for a closer examination of the respective partial mediating effects of goal specificity and difficulty. PM is calculated by first estimating the indirect effect (the regression weight from the independent variable (IV) to the mediating variable multiplied by the regression weight from the mediating variable to the dependent variable (DV)) when the direct path is included in the model, and then dividing by the regression weight from the IV to the DV (step 1 as recommended by Baron and Kinney [61]).

To evaluate the respective PM for goal specificity and goal difficulty, two steps are necessary [62]. First, the weight associated with the path from VTE to goal specificity (.480) multiplied by the regression weight associated with the path from goal specificity to goal commitment (.492) are used to calculate an indirect effect of .236. The indirect effect is then divided by the weight associated with the direct path from virtual team efficacy to goal outcome perceptions (.568), as estimated in step 1 of the procedure recommended by Baron and Kinney [61]. This results in a PM of .415. Next, the weight associated with the path from VTE to goal difficulty
(.546) multiplied by the regression weight associated with the path from goal difficulty to goal commitment (.394) are used to calculate an indirect effect of .215. This is then divided by the weight associated with the direct path from virtual team efficacy to group outcome perceptions (.568), as estimated in step 1 of the procedure recommended by Baron and Kinney [61]. The result is a $P_M$ of .379. Summing these two ratios results in a total $P_M$ of $(.415 + .379) = .794$ with 1.0 representing complete mediation. The results of this analysis provide further support for Hypotheses 5 and 6.

Failing to support Hypothesis 7 the relationship between goal specificity and actual performance was non-significant ($b = -.205$, $t (51) = 1.49$, ns).

Supporting Hypothesis 8, goal difficulty was significantly, positively related to actual performance ($b = .236$, $t (51) = 2.39$, $p < .001$). Finally, supporting Hypothesis 9, goal commitment was significantly, positively related to actual performance ($b = .405$, $t (51) = 2.44$, $p < .001$). Results are depicted in Table 1.

Table 1: PLS Results

<table>
<thead>
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<th>Hypothesis</th>
<th>Beta</th>
<th>$R^2$</th>
<th>Indirect Effect</th>
<th>$R^2$ Indirect Effect</th>
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6. Discussion

Hypotheses 1 and 2 results revealed that VTE significantly, positively predicts the specificity and difficulty of goals set participatively by the SDVTs. This finding is consistent with SCT, as well as prior findings reported in the group literature. Consistent with goal theory, Hypotheses 3 and 4 results revealed that goal specificity and goal difficulty were significantly positively related to goal commitment. The relationship between VTE and goal commitment was partially mediated by goal specificity and difficulty respectively (Hypotheses 5 and 6), resulting in a complete mediation of the VTE-goal commitment relationship. This finding is consistent with the group level goal setting literature, in which the congruence of collective efficacy beliefs and the difficulty of goals are expected to result in greater goal commitment. Unexpectedly, and somewhat inconsistent with goal theory, no relationship between goal specificity and actual performance was observed (Hypothesis 7). We suspect that this result may have occurred because the goal specificity items were focused more on process-related activities than on outcomes-related activities. Therefore, goal specificity may not have invoked the motivational processes necessary for increasing performance outcomes. Consistent with goal theory, goal difficulty and goal commitment were found to be significantly, positively related to actual performance (Hypotheses 8 and 9).

6.1. Theoretical Implications

By examining the impact of VTE on the goal-setting processes of SDVTs, this study extends prior research in the areas of global virtual teams and participative goal setting. Consistent with SCT and goal theory, VTE predicted the difficulty and specificity of goals participatively set by the SDVTs. Contributing to theory in this area, the relationship between VTE and goal commitment was found to be mediated by the combined effects of goal specificity and goal difficulty. This finding extends the global virtual team and participative goal setting literatures by establishing that teams with higher VTE are committed when setting more specific and more difficult goals. This finding is important because prior research has generally assumed a direct relationship between collective efficacy and goal commitment in traditional teams.

Unexpectedly, goal specificity was unrelated to actual performance. This non-significant relationship may be due to the measure of goal specificity employed in the current study, as it was designed to focus on process- rather than outcome-related goals. This finding is important, as it encourages the pursuit of research investigating the possible relationships between process-related goals and other global virtual team success factors. Goal difficulty and goal commitment were significant, positive predictors of SDVT performance. These finding help to broaden the application of goal theory by establishing these relationships in a geographically distributed environment where goals were participatively set by the members. This later finding is particularly important because it implies that in SDVTs, where decisions are made internally by the team, the difficulty of goals set by the team, as well as the team’s commitment to those goals foster global virtual team success, adding to the broad range of literature on this topic. Cumulatively, these findings also extend the VTE nomological network by articulating additional mechanisms through which VTE influences behavioral outcomes.
6.3. Practical Implication

The establishment of a positive relationship between VTE and goal setting in SDVTs provides valuable guidance to organizational managers interested in improving the performance of globally distributed teams. For example, in an effort to raise the VTE of SDVTs (and ultimately goal setting effectiveness), specific managerial interventions can be designed around the four sources of efficacy information specified by SCT. For example, enactive mastery gained through prior performance or hands-on training is suggested to be the strongest source of efficacy building information. Activating VTE beliefs in a similar manner, training interventions that provide opportunities for SDVTs to practice their skills may be implemented by managers, boosting VTE beliefs, and ultimately improving goal-setting processes in globally distributed virtual teams.

Another source of efficacy, vicarious experience, can be delivered through the observation of others, or oneself, demonstrating a given task or skill. Based on this knowledge, managers can provide opportunities for SDVTs to observe other teams as they successful participate in task-related activities. When attempting to influence efficacy through observation, it is also common to edit video tapings to reflect only successful behavior. In a similar manner, managers could record SDVTs as they participate in video conferencing meetings, or record desktop conferencing and chat sessions, and then edit those recordings so that only successful interaction is shown, thus increasing VTE.

The third source of efficacy information, verbal persuasion, is provided through feedback mechanisms, with positive feedback tending to boost efficacy perceptions. This is perhaps the easiest method for managers to implement. When globally distributed SDVTs engage in effective decision-making, managers should provide feedback that reinforces such behavior. Reward structures that incent team effectiveness could be designed as an additional feedback mechanisms used to increase VTE in a reciprocal fashion.

Finally, psychological and affective states can also affect efficacy beliefs. In these situations, rather than designing training initiatives, managers may need to simply monitor SDVTs for signs of physical and emotional stress and take action when signs are detected. For example, providing SDVTs with unscheduled breaks, or providing extracurricular entertainment activities, may reduce the psychological and affective states that are detrimental to the SDVTs wellbeing, and ultimate performance.

6.4. Limitations and Implications for Research

As with all studies, this study has its limitations. While a field study adds realism to the research, the methodology does not allow for the control of extraneous factors that may have influenced our results. Despite this limitation, we believe the methodology offered several benefits. For instance, the multi-wave survey allowed us to better control for common method variance than using a cross-sectional design, and the results are applicable to a wider range of virtual teams and tasks than if we had used a controlled experimental setting. The use of student subjects may also be criticized; however, their use in studies for developing theoretical insight in collaborative studies is not uncommon, and generally recognized as informative in such settings. Nonetheless, future research should attempt to replicate our findings in organizational settings, using complementary methodologies where possible.

7. Conclusion

This study examined the participative process of setting goals in globally distributed SDVTs, highlighting how virtual team efficacy (VTE), a domain specific form of collective efficacy, acts as an important antecedent to the SDVT goal-setting process. Specifically, VTE was found to influence goal commitment through the participatory process of setting specific and difficult goals. This finding was argued to have important theoretical and managerial implications. In terms of theory, the finding that goal specificity and difficulty mediate the relationship between VTE and goal commitment extends prior research finding a direct effect of externally set goals on goal commitment, yet no direct effect for participatively set goals. In terms of practice, the establishment of VTE as an antecedent to the SDVT goal setting process was argued to provide valuable organizational insight that can be used to develop training interventions for boosting VTE beliefs, thus improving the downstream participative goal setting processes of SDVTs.

Goal difficulty was found to have a direct relationship with actual performance in addition to its indirect effect through goal commitment. This finding was argued to have additional theoretical and managerial implications by establishing a potential mediating effect of goal commitment beyond the moderated and direct effects often reported in the literature. Finally, this research provides valuable theoretical and practical insight into the goal setting process within geographically distributed, technology mediated environments, providing the groundwork.
for IS researchers interested in the complex process of goal setting in virtual teams. We hope our research will stimulate additional investigations in this respect.

8. References


