The Impact of Interaction Anticipation and Incentive Type on Shared Leadership and Performance in Virtual Teams

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Abstract
This research examines whether expectation of future interaction or team-based incentives can influence shared leadership and performance in virtual teams. The results of an experiment indicate that teams provided with team-based incentives generated higher levels of individual and team performance. Teams anticipating future interaction and incentivized by team-based incentives achieved the highest levels of performance. Our results indicate that anticipation of interaction and team-based incentives are useful methods for motivating shared leadership and achieving increased team performance for virtual teams.

1. Introduction
This study looks at how the anticipation of future interaction and incentive types influence perceptions of shared leadership and performance in virtual self-led teams. Virtual teams (VT) are groups of geographically and organizationally dispersed individuals that interact using a mix of communication and information technologies to accomplish an organizational task [41]. VTs are self-led when they determine their leadership structure, as opposed to an imposed hierarchy. Increased challenges for performance exist for VT given the reliance on computer-mediated communication (CMC) needed to facilitate interaction.

Self-led teams need to develop leadership structures to improve interaction processes and outcomes. As many VTs have unidentified leaders, the ability of team to develop and benefit from self-leadership becomes important. However, typical organizational structures apply vertical leadership structures, where an identified leader has responsibility and accountability for outcomes. In non-VTs, the emergence of shared leadership has been shown to be associated with greater success and outcomes on teams [3]. Organizations would like this level of success to be predictable in VTs as well.

Prior research has examined how to encourage collective leadership in self-led teams where there is no formal leader assigned[11]. Self-leadership is defined as a process through which people influence themselves to achieve the self-direction and self-motivation needed to perform [17].

As VT use grows in organizations, additional concerns emerge challenging transition of traditional leadership styles to virtual environments. While some research has examined similar concepts, e.g., how to incentivize individuals to encourage self-interested participation in virtual communities [4], less research has looked at factors that encourage shared leadership and performance in VTs.

This study examines how incentives can influence shared leadership and team performance. Prior studies have shown that shared leadership is a key component of effective teams [10]. However, while incentives can affect physical team performance, there has been little study on incentives and the development of shared leadership in these VTs.

Given differences in perceptions and performance outcomes found in prior research when considering ad hoc and ongoing teams [38], it also important to understand how the anticipation of future interaction might also influence shared leadership and team performance. In this paper, we report on the results of an experiment that examines the differential effects of anticipation of interaction and incentive on VT performance and perceptions. Next, we present prior literature, the research method, and present our results. We conclude the paper with a discussion of the implications of this work.

2. Literature Review and Hypotheses

2.1 Shared Leadership and Performance

Shared leadership is defined as a “dynamic, interactive influence process among individuals of a group for which the objective is to lead one another to the achievement of group or organizational goals or both” [35]. More succinctly, shared leadership is an emergent team property that results from the distribution of leadership across team members [6]. Shared leadership is often found in mature teams in which leadership skills of members have had an opportunity to develop and members understand and are can take advantage of each other’s skills. In a functional leadership approach [32], team members
sharing leadership duties are responsible for identifying problems that could impede task accomplishment, generate appropriate solutions and implement them [5]. The emergent nature of shared leadership stems from engagement in simultaneous, ongoing, mutual influence processes [37].

Dispersed teams have been shown to fail 50% of the time at meeting their objectives due to their inability to coordinate their activities [24]. Cox et al. find that coordination problems in dispersed teams can be overcome via shared leadership [9]. Prior literature shows that shared leadership is an important predictor of team effectiveness [36]. Shared leadership can significantly improve team and organizational performance [10]. Enactment of leadership behavior by most or all of a team’s members has been found to be more predictive of team performance than more traditional, concentrated leadership [18].

Collective leadership is not static throughout the history of a team. Over time, different problems emerge and different skills and expertise are required from various team members [12]. As a result, the general leadership role is cycled among different members of the collective over time [8]. Collectively, members of the team must monitor group activities and move the group forward in a participative manner to successfully accomplish the task [7].

2.2 Virtual Environment on Shared Leadership

Teams rely on the ability to exchange social and task information to generate performance on tasks. Prior research has found that where teams are able to exchange such information, team performance improves as team members feel connected to the team, and are engaged to generate superior performance [31]. In VTs, the ability for teams to quickly develop and be productive is of concern. The ability of VTs to develop social structures and interaction norms has been examined using of Social Identity Model of Deindividuation Effects (SIDE) and Social Information Processing theory (SIP), both of which help explain how teams may develop in computer mediated environments.

SIDE suggests that in a virtual environment where the ability to easily communicate social identifying cues is lacking, individuals will develop a stronger affiliation with the group identity [30], taking on group beliefs and norms as their own. SIP theory adds to this by explaining how individuals in cue restricted communication contexts (CMC) may develop relationships and understandings of one another.

However, due to the limited cues in exchange, they take longer to develop [46].

Even with innovative CMC technology, there are challenges unique to virtual settings [25]. The ability to develop relational links among team members may be hindered [46]. SIP’s perspective is that CMC’s limited bandwidth may delay normal impression development and relational communication. CMC forces both task-related and social information into a single verbal/linguistic channel and it take more “real time” to exchange the same number of messages in CMC as it does in a face-to-face interaction [43]. A unique challenge to VTs is this inherent delay.

Prior research finds that liking, trust, team goal commitment and sociability occur over time [45]. Shared leadership is also dynamic, emerging over time [35]. However, there has been little research that examines how organizations can influence individuals to more efficiently develop productive teams. How can organizations manipulate team and incentive structures to influence desired outcomes such as shared leadership and subsequent team performance?

In this research, we are interested in two factors that may influence the ability of teams to generate performance and develop a shared leadership perspective more quickly, incentive structures and anticipation of future interaction.

2.3 Incentives and Virtual Team Outcomes

Explicit incentive systems can foster a culture of extensive information sharing [40]. An incentive system for collective work rather than for individual work can generate among members a reciprocal association which can facilitate relationship building [19]. Further, individuals who believe that group benefit dictates individual benefit, are more motivated to trust each other and share their information [29].

As individuals are incented to share with the team, it is expected that this incentive to share will result in increased team understanding and knowledge, resulting in greater team outcomes, at the potential expense of individual performance.

In addition to shared leadership, shared context, shared purpose, and shared identity are related facilitating factors that support improvements in team performance. We expect that the occurrence of these characteristics will correlate with teams that exhibit shared leadership. Hinds and Mortensen suggest that shared identity and shared context are emergent states within teams [16]. Shared identity can create a psychological tie between distant team members that helps them to bridge the physical and contextual
distance that separates them. In the presence of a shared team identity, distant team members may have more faith in other members and be more likely to talk through issues that arise. Teams with a strong team identity see themselves working toward a common goal [15]. This increased interactivity increases focus on the basis of their connection, namely the team, creating a stronger team identity than an individual identity [30], potentially leading to shared leadership. Team incentives should generate a stronger team identity, leading to shared identity. Individual incentives will promote individual gains, resulting in a stronger perception of self, and weaker shared identity.

Shared context exists when team members have access to the same information and share the same tools, work processes, and work cultures [16]. Occupying different contexts can make it more difficult to co-orient to a particular object or approach [39], develop mutual understanding [13], and establish common behavioral norms[15]. A shared context can reduce the likelihood of misunderstandings and divergent approaches emerge. In distributed teams, missing contextual information can make it more difficult to identify and resolve coordination problems before they devolve into conflict [14]. SIDE suggests that increasing focus on team needs and outcomes should increase perceptions of team context as individuals develop more team-based association. Individual incentives would draw focus to self, decreasing the perceived need to share and the relevance of the team to personal outcomes. Team incentives should increase collaboration among VT members, leading to increased shared context.

Shared purpose exists when team members have similar understandings of their team’s primary objectives and take steps to ensure a focus on collective goals [6]. Prior work has theorized and demonstrated that team members who have a common sense of purpose and agreed-upon goals are more likely to feel motivated, empowered, and committed to their team and work [27]. These heightened levels of motivation, empowerment, and commitment that individuals experience when their team possesses a shared purpose increase the willingness of team members to share the team’s leadership responsibilities [1]. Carson suggests that shared purpose as a tenant of internal team environment likely influences the development of shared leadership [6]. A team incentive should likewise draw attention to team concerns, reducing individual goals and approaches to the task. Alternatively, drawing focus to individual states with individual incentives would lessen the desire for members to share, due to the risk of not attaining individual goals. Therefore, team incentives should contribute to commitment to team goals and teamwork, generating a stronger perception of shared purpose.

Teams incentivized to work together will experience greater collaboration and information exchange, leading to better team outcomes. Incentives that are designed to promote collective performance are expected to motivate and support cooperative behaviors in VTs [29] leading to better team performance, at the potential risk of lower individual-level performance. Team-based incentive systems are also expected to positively impact perceptions of shared leadership [6]. We hypothesize that:

**H1a:** Team incentives will result in higher individual perceptions of shared leadership than individual incentives.

**H1b:** Team incentives will result in lower individual performance than individual incentives.

**H1c:** Overall team performance will be greater in VTs with team incentives than VTs with individual incentives.

### 2.4 Interaction Anticipation and VT Outcomes

In a CMC environment, SIP proposes that fewer social cues coupled with asynchronous interaction will limit team members’ ability to quickly accumulate personal knowledge based on interactions [44]. It takes VTs longer to accumulate knowledge of team members and task. An individual’s formation of task and social understanding is dependent on the team member’s motivation and ability to process information [20]. Continuous interaction among team members fosters important team social factors such as trust and commitment and predicts team performance [21]. VT literature also establishes that the development of trust and commitment to be positively related to performance [22].

Anticipation of future interaction has been shown to increase team members’ awareness of other members such that more team member information is shared, increasing team identity and cohesion. Anticipation of future interaction can reduce uncertainty [46] and may lead to greater information seeking and intimacy/liking [43]. Those anticipating future interaction with a target person feel more similar to that target person than do persons without such anticipation [2]. The lack of past and future association decreases the potential for the existence of trust [23] while anticipation causes team members to present themselves positively and with greater friendliness [26]. When team members expect future interaction,
they share more, increasing team identity and association [28, 43]. The expectation of interaction increases team member cooperation, such that more information is shared between team members regardless of prior individualistic beliefs [42].

With anticipation of interaction and increased sharing, it is expected that increased levels of shared context, shared purpose, shared identity, and ultimately, shared leadership would result. Likewise, both individual contributions to team performance and overall team performance would increase as team members better understand their role in the team and develop stronger team identity. We hypothesize that:

**H2a**: Individual perceptions of shared leadership will be higher in VTs anticipating future interaction than VTs with no anticipation of future interaction.

**H2b**: Individual performance will be higher in VTs anticipating future interaction than VTs with no anticipation of future interaction.

**H2c**: Overall team performance will be higher in VTs anticipating future interaction than VTs with no expectation of future interaction.

We expect an additive effect from team incentives and anticipation of interaction on perceptions and outcomes. When both are in the VT context, increased attention to team social requirements and task outcomes should generate higher perceptions of shared leadership and result in increased individual and team performance. Anticipation of future interaction would promote a higher level of engagement with social aspects of team interaction, while team incentives would focus attention on team performance outcomes. As a result, both aspects of perception and performance should increase. However, while anticipation of interaction should promote perceptions, individually-based incentives would be expected to change focus from team performance to individual performance, weakening team outcomes but increasing individual outcomes [3]. We hypothesize that:

**H3a**: In VTs anticipating future interaction, team incentives will result in higher levels of individual perceptions of shared leadership than teams with individual incentives.

**H3b**: In VTs anticipating future interaction, team incentives will result in higher levels of individual perceptions of individual performance than teams with individual incentives.

**H3c**: In VTs anticipating future interaction, individual incentives will result in lower of overall team performance than teams with team incentives.

In VTs with no anticipated interaction, but with team incentives, these team incentives will promote information sharing leading to perceptions of shared leadership. However, due to the lack of anticipated future interaction and only team-focused incentives, individuals will identify with the team less, leading to weaker individual performance and lower overall team performance. Teams with no anticipated interaction and individual incentives will increase individual focus, resulting in greater individual identity, resulting in greater individual performance, at the cost of team performance. This individual focus will also result in a lower perception of shared leadership and related constructs. We hypothesize that:

**H4a**: In VTs with no anticipated future interaction, team incentives will result in higher levels of individual perceptions of shared leadership than teams with individual incentives.

**H4b**: In VTs with no anticipated future interaction, team incentives will result in lower individual performance than teams with individual incentives.

**H4c**: In VTs with no anticipated future interaction, team incentives will result in lower levels of overall team performance than teams with individual incentives.

### 3. Research Method

A laboratory experiment with a 2x2-factorial design was utilized. The first factor, incentive type, had two levels indicating whether the incentive was individual or team oriented. The second factor, anticipation of interaction, had two levels indicating whether the participant was told that they would be with the same team members for a second project or on a team with different members.

#### 3.1 Subjects

Participants were from an undergraduate business systems course at a large public university in the southeastern United States. The average age was 20, 68% male, 97% business majors, 70% with work experience, and 35% had 1–3 years of work experience. A total of 598 participants were recruited. Participants were recruited from three different sections of a productivity software course. The sections had approximately the same number of students in each section, thereby allowing the creation of three-person teams with team members coming from a different section to minimize the likelihood that team members knew one another prior to the experiment. A
3.2 Task

Participants developed a spreadsheet dashboard. They were provided with a 600 record dataset and required to develop several different interactive dashboards that provided graphical and table representations of statistical information about the data in Microsoft Excel. The dashboards required the use of functions and formulas, as well as macros and various types of formatting. Teams were allowed two weeks to complete the task. While it is possible that one person could have completed the dashboards, quizzes on the development of the dashboards ensured that team members participated in the development process. The course contained two such team projects; the data collected for this study is based on the first project, and participants knew of the subsequent project.

Teams were provided with the dataset and a set of requirements. While the course provided information on how Excel functions and macros work, the teams had to determine which Excel functionality would be used. Teams had to figure out how to create the dashboards and how to develop the logic behind each one that would allow automatic recalculation of dashboard elements when the underlying data changed.

Teams were not allowed to exchange information among each other as this was a course requirement. A group of teaching assistants was trained in assessing the dashboards and the grading rubric used, and multiple teaching assistants assessed each team’s submission for even assessment.

3.3 Experimental Procedures

Participants were randomly assigned to three-person teams and randomly assigned to one of the treatment groups. Team members were instructed to communicate and exchange files exclusively via an online discussion board tool. All collaboration and final project submissions were completed via the discussion board. While it is possible that participants could have interacted together offline, it was stressed at each class that performance assessment was dependent on the exclusive use of the online system. Examination of online communications showed that while some teams did mention meeting, most also remembered the need to only interact online. There was no indication that teams met offline, but it cannot be verified.

The study was introduced to three sections of an introductory business systems course. The primary researcher provided the informed consent and an introduction to the virtual communication technology. The instructor for the course provided an introduction to the software and task for the VT project. Participants completed two surveys, a demographic survey prior to beginning the project and a survey capturing dependent variables after project completion.

The individual incentive was a $15 Starbucks’ gift card provided to the top three individual performers for each course section. The team incentive was three $15 Starbucks’ gift cards provided to the top performing team (one per team member) for each course section. In total, nine individuals were rewarded for top performance and three teams (totaling nine individuals) were rewarded for top performance.

3.4 Dependent Variables

The dependent variables of interest are shared leadership, shared context, shared purpose, shared identity, and individual and team performance. All perceptual items were measured using a 7-point Likert scale with values ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). A copy of all items used is available from the authors. Descriptive statistics for the individual and team-level dependent variables by treatment are provided in Table 1.

Shared leadership is “a dynamic, interactive influence process among individuals of a group for which the objective is to lead one another to the achievement of group or organizational goals or both”. It was measured with seven items developed by [34] (alpha = 0.957). Shared context is when team members have access to the same information and share the same tools, work processes, and work cultures. It was measured by four items developed by [16] (alpha = 0.873). Shared purpose is when team members have similar understandings of their team’s primary objectives and take steps to ensure a focus on collective goals. It was measured with three items developed by [6](alpha = 0.905). Shared identity is the psychological tie between distant team members with...
which they bridge physical and contextual distance that otherwise separates them. It was measured by six items developed by [33](alpha = 0.876).

Individual performance is the participants’ individual contribution and performance on the individual aspects of the team project. It consists of the scores received on separately submitted assignments and quiz associated with the team project.

Team performance is the overall performance on the team project, as assessed by the instructor and teaching assistants in the class. The instructor’s rubric was followed in the assessment, and multiple teaching assistants worked together across all projects to ensure fair and consistent application of the grading rubric.

### 4. Results

Post-hoc statistical tests found no differences between the treatments in terms of age, gender, and work experience. A manipulation check of two questions regarding incentive basis and team makeup was asked at the end of the project. Participants correctly answered both questions, indicating that the treatments were successful.

The individual-level hypotheses were tested using MANOVA and team-level hypotheses using ANOVA with a level of significance of .05. Two analyses were performed, one for the individual-level perception and performance variables and one for the team-level performance variable.

The initial MANOVA for individual-level testing identified a significant main effect for Incentive and interaction effect between Incentive and Anticipation.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Anticipation</th>
<th>No Anticipation</th>
<th>Anticipation</th>
<th>No Anticipation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.68 (1.56)</td>
<td>3.53 (1.69)</td>
<td>3.56 (1.58)</td>
<td>3.95 (1.49)</td>
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<tr>
<td>3</td>
<td>3.43 (1.74)</td>
<td>3.50 (1.58)</td>
<td>3.13 (1.59)</td>
<td>3.64 (1.57)</td>
</tr>
<tr>
<td>2</td>
<td>3.10 (1.37)</td>
<td>2.99 (1.36)</td>
<td>3.19 (1.53)</td>
<td>3.46 (1.33)</td>
</tr>
<tr>
<td>4</td>
<td>4.39 (1.44)</td>
<td>4.51 (1.33)</td>
<td>4.35 (1.41)</td>
<td>4.50 (1.30)</td>
</tr>
<tr>
<td></td>
<td>37.80 (7.14)</td>
<td>39.13 (6.99)</td>
<td>41.50 (5.86)</td>
<td>38.46 (8.17)</td>
</tr>
<tr>
<td># Participants</td>
<td>122</td>
<td>122</td>
<td>127</td>
<td>111</td>
</tr>
<tr>
<td># Teams</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>49</td>
</tr>
</tbody>
</table>

The ANOVA for the team-level testing identified a significant interaction effect between Incentive and Anticipation on overall team performance.

#### 4.1 H1 Team Incentive > Ind. Incentive

Individuals on teams provided with a team incentive were hypothesized to have higher perceptions of (a) shared leadership and shared leadership characteristics and (b) lower individual performance than individuals on teams with an individual incentive. Of the shared leadership constructs, only shared context was found to be higher in teams with team incentives (p=0.029). Individual performance was found to be significantly higher in teams with a team incentive (p=0.019). Teams with a team incentive were also hypothesized to have (c) higher performance than teams with an individual incentive. Team performance was higher for team-incentive teams, but not significantly different. As a result, only H1a was partially supported.

#### 4.2 H2 Anticipation > No Anticipation

Individuals on teams anticipating future interaction were hypothesized to have (a) higher perceptions of shared leadership and shared leadership characteristics and greater (b) individual performance than individuals on teams with no anticipation of future interaction. No main effect was found for anticipation at either individual or team levels, failing to provide support for H2a, H2b, or H2c.

#### 4.3 H3 Anticipation + Team Incentive > Anticipation + Ind. Incentive

Individuals on teams anticipating future interaction and provided with team incentives were hypothesized to have (a) higher perceptions of shared leadership and shared leadership characteristics and (b) greater individual performance than anticipating teams with individual incentives. For these teams, only individual
performance was found to be significantly greater (p=0.001) providing support for H3b.

Teams anticipating future interaction and provided with team incentives were also hypothesized to have (c) higher overall performance than anticipating teams with individual incentives. Overall team performance was indeed significantly greater for anticipating, team incentive teams (p=0.004) providing support for H3c.

4.4 H4 No Anticipation + Team Incentive < No Anticipation + Ind. Incentive

Individuals on teams with no anticipation of future interaction and team incentives were hypothesized to have (a) higher perceptions of shared leadership and shared leadership characteristics and (b) lower performance. Individuals on not anticipating teams perceived higher shared leadership (p=0.048), higher shared context (p=0.011), and while performance was lower, it was not significantly lower providing partial support for H4a.

Teams not anticipating future interaction and provided with team incentives were expected to have (c) lower performance than teams not anticipating future interaction and individual incentive. While overall performance was greater for these teams, it was not significantly greater, failing to support H4c.

Table 3. Individual MANOVA and Team ANOVA Results

<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLE</th>
<th>WILK'S LAMBDA</th>
<th>F</th>
<th>HYP DF</th>
<th>ERROR DF</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incentive</td>
<td>0.97</td>
<td>2.934</td>
<td>5</td>
<td>474</td>
<td>0.013</td>
</tr>
<tr>
<td>Anticipation</td>
<td>0.99</td>
<td>1.130</td>
<td>5</td>
<td>474</td>
<td>0.344</td>
</tr>
<tr>
<td>Incent * Antic</td>
<td>0.97</td>
<td>3.255</td>
<td>5</td>
<td>474</td>
<td>0.007</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEAM INDEPENDENT VARIABLE</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
<th>SIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected</td>
<td>801.318</td>
<td>3</td>
<td>267.1</td>
<td>3.401</td>
<td>0.019</td>
</tr>
<tr>
<td>Incentive</td>
<td>175.995</td>
<td>1</td>
<td>176</td>
<td>2.241</td>
<td>0.136</td>
</tr>
<tr>
<td>Anticipation</td>
<td>89.869</td>
<td>1</td>
<td>89.87</td>
<td>1.144</td>
<td>0.286</td>
</tr>
<tr>
<td>Incent * Antic</td>
<td>533.26</td>
<td>1</td>
<td>533.3</td>
<td>6.791</td>
<td>0.010</td>
</tr>
<tr>
<td>Error</td>
<td>15312.7</td>
<td>195</td>
<td>78.53</td>
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<td></td>
</tr>
</tbody>
</table>

5. Discussion

The results of an experiment designed to identify the impact of anticipation of future interaction and incentive structures provide a mixed view of the impact of these factors on perceptions of shared leadership and individual and team performance. By itself, team incentives do little to influence perceptions of shared leadership, only influencing the degree to which individuals share enough information to develop a shared understanding of the context in which each team member operates. Likewise, individual incentives are a much stronger influencer of individual performance than team incentives.

Anticipation of future interaction alone had little impact on perceptions of shared leadership, but with team incentives, positive influences on individual and team performance were found. Without anticipation of future interaction, team incentives had a positive impact on perceptions of shared leadership and shared context, but performance at individual and team levels were not significantly different. While supported results of this experiment appear limited, the results do have implications for both research and practice.

For future research, the findings suggest some considerations regarding the use of incentives and their impact on task and social aspects of interaction. Theoretically, SIDE and SIP both suggest that interactions between team members in a VT supported by CMC tools will take time to develop social understanding of team and others. Both theories are consistent in that the virtual environment and reduced transmission of cues can delay understanding development such that individuals slowly (compared to face to face) share social content to develop understanding of others (SIP) and can share enough social information to form a shared identity with the team. This research contributes to the literature by showing that the process of team identity development (a necessary component of shared leadership) and team performance may be influenced through the use of multiple incentives. While anticipation of interaction has been found to influence the development of social relationships between team members [42, 43], its impact on performance has not been well understood. This research finds that in isolation, anticipation of future interaction has little influence on individual or team performance. Team incentives can generate superior performance compared to teams anticipating interaction and individual incentives. Incentives that influence the sharing of social information and task-oriented task information can improve performance outcomes at both individual and team levels.

In environments with no anticipation of future interaction, the use of team-level incentives can influence information sharing such that perceptions of shared leadership and context improve. While anticipatory effects would suggest a limited interest by individuals in sharing social information, team
incentives can trump individual self-focus by causing enough information to be shared, positively influencing social perceptions. This contributes to the literature by suggesting that focusing individual communication on team-based results can facilitate the sharing of social information, in addition to task-based information, influencing social perceptions.

Organizations should consider the manner in which incentives can be designed to improve VT outcomes. Most incentives available are individual in nature. This research finds that individual incentives primarily influence individual performance. Organizations should consider the potential benefit associated with team incentives. In teams with anticipation of interaction, this research finds that both individual and team performance is superior in teams provided with individual incentives. In fact, team and individual performance was greater in this treatment group than in any other experimental condition. Even without anticipation of interaction, team incentives provided similar performance while improving social exchange that generated higher perceptions of social leadership. While future research is needed to test the limits of these team incentives across different types of tasks, our findings suggest that a change in incentive structure may be beneficial regardless of any anticipation of interaction.

5.1 Limitations

The research results should be considered in light of the limitations inherent in this research. Results could be limited to the type of technology and task used in the study. A different technology could be used for CMC resulting in greater or lesser effects than what is seen here. Furthermore, team communications were asynchronous which may have made collaboration more difficult. Communication technology providing a more interactive effect would be expected to increase social exchange, resulting in more positive results than those found in this research. We utilized a short-duration two-week team project. VT projects may not yield the same results over a longer period of time. It is possible that there is a ceiling effect to the influence our results have in longer-term projects. In this study, we did not measure other forms of emergent leadership. It is possible in teams with no shared leadership that some other form of leadership emerged.

Finally, the research involved undergraduate student participants who may not be generalizable to other populations. While undergraduate students may have a different approach to task and social challenges in a VT environment, as the task was a course project, participants were very engaged and concerned about successful outcomes similar to business employees in a VT project at work. Likewise anecdotal conversations with indicated that participants were interested in performing well, and in earning the performance incentive. As with research with any student population, caution must be taken when generalizing these results to other populations that may have different levels of knowledge, experience or skill.

7. Conclusion

Prior literature shows that shared leadership is important for team effectiveness. Our study is consistent with and extends prior literature that shared leadership benefits from anticipation of future interaction. This indicates that companies can benefit from allowing VTs to work together over time on multiple projects rather than constantly reassigning team members. Further, the use of team incentives improved performance. Team incentives motivate team members to share information and act collectively. Using team incentives has significant implications to practice. Organizations will have a tool to motivate dispersed individuals to be more invested in their team members’ success and team outcomes.

8. References


[38] Saunders, C.S., and Ahuja, M.K., "Are All Distributed Teams the Same? Differentiating between Temporary and Ongoing Distributed Teams", Small Group Research, 37 (6), 2006, pp. 662-700.


