Virtual Team Leader Communication: Employee Perception and Organizational Reality

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Abstract

Based on a study of leader communication effectiveness conducted in a large human resource outsourcing firm, this article reports how virtual team members' perceptions of their leaders' effective use of communication tools and techniques affect team performance outcomes. The study also investigates the role that trust plays in moderating the relationship between virtual team members' perceptions of their leaders' effective use of communication and team performance. Analysis of 458 responses from 68 teams found a positive relationship between virtual team members' perceptions of leaders' effective use of communications and team members' perception of their team's performance. The study also found that trust strengthens the relationship between perceived leader communication effectiveness and team performance results. Last, the study also revealed serious organizational alignment issues between what team members perceived to be effective leader communication, their perception of team performance outcomes, and the organizations performance measured by a balanced scorecard.

Keywords virtual teams, leader communication, team performance, trust, organizational alignment

Introduction

With the growth of a global marketplace for employing workforce talent, virtual teams have become an increasingly common form of organizing. Virtual teams are defined as teams "whose members use technology to varying degrees in working across locational, temporal, and relational boundaries to accomplish interdependent tasks" (Martins, Gilson, & Maynard, 2004, p. 808). Today, a significant percentage of the workforce interacts virtually and is led by remote leaders. According to a 2016 Gallup survey, 43% of the U.S. workforce spends some of its time working remotely and 34% work predominantly in a remote location.

The rapid growth and prevalence of virtual teams is a result of the advantages of employing virtual workers (Purvanova, 2014). Virtual teams have access to a broader range of skill sets and members typically are available for 24/7 operations where individuals may not be available in the organization's physical locations (Cascio, 2000; Hunsaker & Hunsaker, 2008; Kirkman, Gibson, & Kim, 2012; Purvanova, 2014). Virtual teams can also create higher levels of employee engagement and retention due to the additional flexibility that working virtually offers to employees who need or prefer to work do so (Badrinarayanan & Arnett, 2012; Hunsaker & Hunsaker, 2008).

In addition to these workforce advantages for employee and employer, the cost structure of engaging virtual employees can be appealing (Cascio, 2000; Lipnack & Stamps, 1999; Tate, Ellram, Bals, & Hartmann, 2009; Purvanova, 2014). Having virtual employees lessens the need for office space and allows organizations to take advantage of lower labor costs available across the world (Kumar, Kwong, & Misra, 2009; Mulki, Bardhi, Lassk, & Nanavaty-Dahl, 2009; Travis, 2005).

A key factor enabling growth in the use of virtual teams has been advances in communication technology (e.g., Gilson, Maynard, Young, Vartiainen, & Hakonen, 2015; Hertel, Geister, & Konradt, 2005; Pauleen & Yoong, 2001; Purvanova, 2014; Verburg, Bosch-Sijtsema, & Vartiainen, 2013). Research shows that leaders who have mastered the use of communication technology are more likely to achieve higher levels of virtual team success (Hambley, O'Neill, & Kline, 2007; Powell, Piccoli, & Ives, 2004; Walther, 2007). However, despite the importance of technology, little is known about how leaders use these technology-based communication tools and techniques in combination to effectively lead teams in achieving organizational outcomes (Lilian, 2014; Marlow, Lacerenza, & Salas, 2017).

Virtual team research has mostly focused on differences between how leaders of virtual teams and traditional, colocated teams use specific communication methods (Marlow et al., 2017). For example, studies have been conducted on the frequency of communication (Espinosa, Nan, & Carmel, 2015; Morgan, Paucar-Caceres, & Wright, 2014; O'Leary, Wilson, & Metiu, 2014; Wilson, O'Leary, Metiu, & Jett, 2008), communication predictability (Jarvenpaa & Leidner, 1999; Marlow et al.,

2017; Maznevski & Chudoba, 2000), communication responsiveness (Ford, Piccolo, & Ford, 2016; Mathieu & Zajac, 1990; Olson & Olson, 2012), communication clarity (Marlow et al., 2017; Verburg et al., 2013), and the mode of communication used (Baltes, Dickson, Sherman, Bauer, & LaGanke, 2002; Espinosa et al., 2015; Henderson, Stackman, & Lindekilde, 2016). These studies have found that each of these factors is individually important in virtual team effectiveness. But interestingly, we could find no study that investigates how these combined communications practices affect team performance. Moreover, a majority of this research has been done in lab settings, which has made it difficult to extrapolate the findings to actual organizational practice (Gibbs, Sivunen, & Boyraz, 2017; Purvanova, 2014). Although this body of research affirms the importance of individual communication traits, further studies are needed to address how the combined use of communication tools and techniques by leaders affects team results (Marlow et al., 2017). Consequently, several scholars have suggested that there is a need for more research, especially field research, to gain a better understanding of how the combination of communication tools that effective leaders use can influence virtual team success (Hambley et al., 2007; Hoch & Kozlowski, 2014; Lilian, 2014; Marlow et al., 2017; Montoya-Weiss, Massey, & Song, 2001; Morgeson, Derue, & Karam, 2010; Powell et al., 2004). The purpose of this article is to report the results of a study of how leaders' use of communication tools and techniques in combination affect virtual team performance.

In addition to investigating the combined influence of leader communication tools and techniques, this study includes the moderating role trust plays between leaders' effective use of communication tools and techniques and team performance results. A large body of research suggests that a leaders' effective use of communication is influenced by trust (e.g., Boies, Fiset, & Gill, 2015; Dirks, 1999; Jarvenpaa & Leidner, 1999; Yukl, 1989). Team members who trust their leader will be more inclined to effectively complete critical tasks based on faith earned by leader's communication and be more willing to go above and beyond with their work tasks (e.g., Chang & Wong, 2010; Dirks, 1999, Dirks & Ferrin, 2002; Jarvenpaa et al., 2004; Konovsky & Pugh, 1994). This study is designed to assess this moderating impact.

Last, and perhaps most significant, this article reports on organizational alignment issues between employee's perception of their team's performance, and objective performance results reported on the organization's balanced scorecard. Specifically, for the respondents in this organization, there was not a predictive relationship between the team members' perception of their leaders' communications effectiveness and the teams' balanced scorecard results. Since there was a predictive relationship between the leaders perceived communication effectiveness and team members perception of their team's performance, this indicates a communication misalignment between the organization and their leaders.

Leadership Communication and Virtual Teams

Leadership is a frequent component in studies of organizational performance. Leadership has been found to be universally important across different countries, companies, and team structures in its influence on worker motivation, organizational innovation, and team performance (Antonakis & House, 2014). A large body of this research has confirmed that communication is one of the most important tools a leader has to influence team member performance (e.g., Verburg et al., 2013). The quality of a team leader's communication is a critical determinant of team success (Nixon, Harrington, & Parker, 2012; Kozlowski, Watola, Jensen, Kim, & Botero, 2009; Yukl, 2002).

The effectiveness of a leader's communication with a team is important for several reasons. Effective leader communication provides clear direction for the team as it works toward organizational goals and expectations (Verburg et al., 2013) that enhances team performance (DeSanctis & Monge, 1998). Leader communication teaches a corporate culture which facilitates coordination and collaboration among team members that allow them to become more engaged, build on each other's work, and, consequently, better achieve group goals (Zaccaro, Rittman, & Marks, 2001; Zander, Zettinig, & Makaela, 2013). Importantly, for this study, research also shows that communication tools that are effective for face-to-face team leaders do not necessarily yield the same outcomes for virtual teams (Daim et al., 2012; Kahai, Huang, & Jestice, 2012).

Communicating to virtual teams is different from communicating to face-to-face groups. Primarily because leaders of virtual teams must overcome the challenges created by the geographical dispersion of the team (Kahai et al., 2012; Kayworth & Leidner, 2002). Nonverbal communication cues and the ability to use informal communication approaches are absent in most virtual team communications. This creates misunderstandings, delays in information dissemination between leaders and their team members, and less supplemental and contextual information being shared between and among team members (Andres, 2012). Communication challenges unique to virtual teams can also lead to lower levels of group cohesion, diminished employee engagement, and a reduction in cooperation among virtual team members that may result in lower levels of team member engagement and alignment with team goals and objectives (Hoch & Kozlowski, 2014). Several researchers have concluded that leaders who do not pay sufficient attention to communication challenges or improperly use available communication tools and techniques are likely to have less successful virtual teams (e.g., Daim et al., 2012; Hambley et al., 2007; Hertel et al., 2005; Kahai et al., 2012; Ortiz de Guinea, Webster, & Staples, 2012).

Clearly, virtual team leaders must find ways to overcome these challenges and serve as effective communicators to their teams because, for virtual leaders, communication tools and techniques can become an important substitute for leadership (Kerr & Jermier, 1978). That is leader communication tools and techniques can play an especially important role as an enhancer and supplement to direct supervision of virtual teams (Hoch & Kozlowski, 2014; Howell, Dorfman, & Kerr, 1986). For example, the way leaders communicate project goals, performance expectations, deadlines, and rewards to virtual teams can serve as a substitute for direct onsite leadership (Ford et al., 2016). In addition, effective leader communication defines leaders' expectations for how assigned tasks should be completed which also serves as a substitute for direct supervision (Hoch & Kozlowski, 2014).

Researchers posit that there are specific communication tools and techniques that are most important in overcoming the challenges of leading virtual teams. These are communication frequency, predictability, responsiveness, clarity, and mode (Marlow

et al., 2017). First, communication frequency refers to the number of times a leader communicates to team members either separately or as a team. Frequent leader communications with the team has a positive impact on virtual team members (Ford et al., 2016; Morgan et al., 2014; Powell et al., 2004). More frequent leader communication leads to enhanced leader-team relationship development, greater levels of information exchange, and increased virtual team effectiveness (Henderson et al., 2016). More frequent leader communication also improves the quality of the communication exchanged and results in higher levels of team performance (Morgan et al., 2014).

Second, the degree to which a leader's communication is predictable is important for virtual team members (Olson & Olson, 2012). Predictable and timely communication helps develop interpersonal relationships with team members, which can positively affect their performance (Ford et al., 2016; Jarvenpaa & Leidner, 1999). Additionally, predictable communication that provides accurate task feedback has been found to positively affect team performance and organizational commitment, whereas unpredictable and irregular task feedback has been found to undermine team performance (Mathieu & Zajac, 1990; Powell et al., 2004).

Third, the level of responsiveness in leader communication or how timely the leader is in responding to questions and inquiries has a positive impact on team results. Leaders who are responsive and timely with their communication build more effective teams (Ford et al., 2016; Jarvenpaa & Leidner, 1999). Mathieu and Zajac (1990) found that more responsive and timely leader communication with their team will result in an increase in employees' commitment to achieving team performance objectives.

A fourth important communication technique for virtual team performance is the degree to which leaders make their communications clear. Providing clear communication and direction is a core competency for effective leaders and also positively affects team performance (Henderson et al., 2016; Hu & Liden, 2011; Marlow et al., 2017; Verburg et al., 2013). Establishing clear team member goals is especially important to define individual and team tasks and performance accountability. Setting clear goals and providing role clarity also enables employees

to see how their performance objectives connect to an organizational mission and vision allowing team members to self-regulate their performance and align with team member expectations (Henderson et al., 2016; Kirkman, Rosen, Tesluk, & Gibson, 2004).

Finally, leaders of virtual teams should select the mode or tool (e.g., Skype or WebEx vs. a call or group meeting) for communication that is the best fit for the message and team members. The communication mode selected can be synchronous (occurring at the same time) such as a conference phone call with all team members, or asynchronous; (occurring at separate times) such as an e-mail that can be read whenever a team member chooses (Berry, 2011; Dennis & Valacich, 1999). Synchronous communications have been found to be most effective when a group is working on complex tasks when direct interaction and team discussion is needed to reach resolution (Bell & Kozlowski, 2002; Maruping & Agarwal, 2004). On the other hand, asynchronous communication correspondence like e-mail, texting, or case management tools like SharePoint may work best when documentation needs to provide for specific project tasks or individual team members' decisions (Carter, Seely, Dagosta, DeChurch, & Zaccaro, 2015; Montoya-Weiss et al., 2001).

Kahai et al. (2012) found that leaders should be thoughtful with how they choose communication media or tools, with the selection optimally based on context and team dynamics. The media choice can affect how the leaders' communication is understood by those receiving the message (Espinosa et al., 2015). In practice, virtual team members may find different combinations of synchronization desirable based on their specific environmental context such as time zone, language, or cultural differences among team members for which leaders have to adjust their communication mode (Strauss, Miles, & Levesque, 2001).

Although these five tools and techniques (i.e., frequency, predictability, responsiveness, clarity, and mode) have shown positive relationships with team performance, there is no prior work that investigates their combined effect. Thus, based on the discussion above:

- **Hypothesis 1:** Leaders whose use of communication tools and techniques are perceived by their virtual team members as more effective will have higher levels of team performance than those who are perceived as less effective.

Trust

In addition to the five critical communication tools and techniques covered above, the trust team members have in their leader also has been a robust area of research (e.g., Boies et al., 2015; Henderson et al., 2016; Jarvenpaa & Leidner, 1999; Lilian, 2014; Morgan et al., 2014). Several researchers have concluded that trust plays a significant role as a moderator to leader communication with teams in affecting team performance (e.g., Chang & Wong, 2010; Dirks, 1999; Dirks & Ferrin, 2002; Jarvenpaa et al., 2004). Teams that have high levels of trust in leaders "are more proactive, more focused on task output, have a more optimistic spirit, initiate more frequent interactions, and provide more substantive, productive feedback" (Ford et al., 2016, p. 7). The research also notes that teams, especially virtual teams who have high levels of trust in their leader, perceive the communications coming from that leader in a more positive way irrespective of the leader's effective use of the critical communication tools and techniques.

Trust is built between a trustee and trustor when the relationship has certain attributes. These are the trustee's perceived ability, benevolence, and integrity (Jarvenpaa, Knoll, & Leidner, 1998). However, the lack of in-person interactions makes building trust different and more difficult on virtual teams than face-to-face teams and requires different leadership skills and different use of communication tools and techniques (Jarvenpaa & Leidner, 1999; Lilian, 2014). Varying levels of trust have been found to moderate the relationship between team members' perceptions of the leader's effectiveness in the use of communication tools and techniques and virtual team performance (Jarvenpaa et al., 2004). Thus:

- **Hypothesis 2:** Team members' trust in their leaders will moderate the relationship between leaders' effective use of communication tools and techniques and team performance results such that the relationship between a leader's effective use of communication tools and techniques and that leader's

virtual team performance will be stronger in teams whose members have higher levels of trust in their leaders versus teams that have lower levels of trust.

Figure 1 shows the relationship between leaders' uses of communication tools and techniques and their combined impact on virtual team performance. In addition, the level of trust leaders has built with their team members is shown as moderating the influence of the leaders' communication effectiveness and communication style on team performance results.

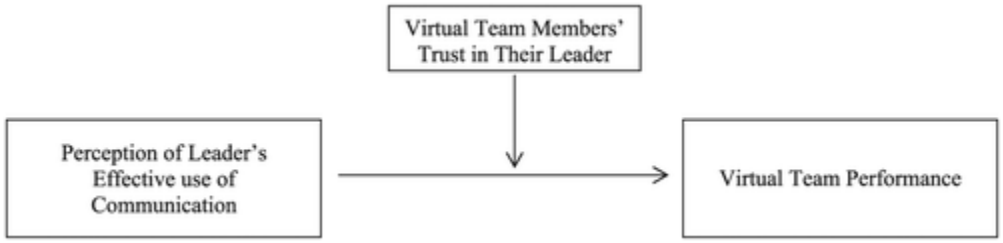

Figure 1. The impact of team member perception of the effectiveness of their leader's communication on virtual team performance.

The next section reports the results of how these communication tools and techniques, when measured in combination, affect virtual team performance results. In doing so, this research represents the first study we know of to measure these communication tools and techniques used by leaders in combination to assess their impact on virtual team performance. The goal is to provide new insight for leaders as to how their communication effectiveness can drive virtual team performance.

Method

This study surveyed 1,322 virtual team members of a large, global human resource consulting and outsourcing company. Teams included in the survey had to have at least 50% of their members working virtually to be included. The respondents included a variety of cultural backgrounds and geographic locations. Respondents worked in one of two business divisions in a large employee benefits and HR services outsourcing company performing client and account management, backroom processing, and technology support. The team members were primarily

located in the United States (64%) and India (34.3%), with remaining team members in Canada.

A total of 458 responses were received (34.6%), and of those, 399 responses could be matched to one of 68 client teams. Responses were initially analyzed at the team level to confirm that individual responses could be mapped to an existing client team (e.g., Acme Company). Forty-one responses could not be matched with an existing client team and were not included in the study results. In addition, 18 responses were removed because of an incomplete or invalid response. The remaining sample had an age range of 21 to 54 years (average age of 35.5 years). The length of employment at the organization ranged from 3 months to 27 years, with an average of 7.67 years of service.

The questionnaire was designed to assess the respondents' perceptions of their leaders' use of communication tools and techniques and their perception of their leaders' trustworthiness. It also asked team members to rate their perception of their teams' performance. The questionnaire combined the following five communication tools or techniques defined above: frequency, predictability, responsiveness, clarity, and mode. These five communication tools and techniques represent the critical determinants of a leader's communication effectiveness in influencing virtual team performance as supported individually by prior research (see Hambley et al., 2007; Kayworth & Leidner, 2002; Powell et al., 2004; Walther, 2007). Furthermore, combining these communication tools and techniques reflected the conceptual framework proposed by Marlow et al. (2017). Marlow et al. (2017) encourage researchers to explore how these communication elements or tools and techniques, as noted in this study, affect team performance in their combined effect.

Since there is not a published measure to capture these communication tools and techniques in combination, a scale was specifically developed and tested for the purpose of this research (see the appendix). A pretest was executed of the new scale with 45 subjects. Their responses allowed calculating Cronbach's reliability alpha to test the scale's reliability and resulted in a scale reliability $\alpha = .945$.

The final scales were sent to the respondents who were also asked to rate their level of trust in their team leaders using a scale developed by Yang and Mossholder (2010). Questions utilized a 7-point Likert-type scale and included items such as “I can depend on my leader to meet his or her responsibilities” or “I can rely on my leader to do what is best at work. Yang and Mossholder’s (2010)scale showed a Cronbach’s reliability alpha of .95, and .96 in the present study.

Team performance was measured in two ways—one subjective and one objective: the perception of team members on their team’s performance and a corporate-developed, proprietary balanced scorecard. Multiple performance metrics were used to account for the belief expressed in prior research that team performance is too complex to measure with a unidimensional measure (Ancona & Caldwell, 1992). This was supported in a later meta-analysis by Richard, Devinney, Yip, and Johnson (2009) who concluded that “organizational performance is not a one-dimensional theoretical construct nor is it likely to be characterized with a single operational measure” (p. 722).

The first performance measure was a subjective survey scale measuring the perception of team members of their team performance. Questions asked team members to assess “How well has my team met expectations over the past year?” (McDonough, Kahn, & Barczaka, 2001, p.114). The five-item scale has a historical Cronbach reliability alpha of .86. In this survey, it had a reliability of .94. The survey scale was adapted to match the performance rating criteria of the organization where data were collected. For example, McDonough et al. (2001) anchored their scales with descriptions ranging from *fell below expectations* for a 1 to *surpassed expectations* for a 5. The survey reported here changed the description to *did not meet expectations* for a 1 and *exceeded expectations* for a 5 to align survey language with the organization’s own terminology. The five areas of team performance were assessed by virtual team members on this scale where each indicated his or her perception of the quality of delivery, relationship with client, operations delivery, technology delivery, and client team metrics. Individual responses were aggregated with other members of their assigned team to determine the level of a team’s perceived performance.

The second team performance measure was an objective measure, obtained from the company's balanced scorecard results for each team. The scorecard includes 10 performance items that a team may meet or not. Because of the proprietary nature of the scorecard, the specific items must remain confidential. Examples include how quickly the team replies to customer requests (the percentage of requests resolved within 2 days), how quickly the team answers incoming calls (the percentage of calls answered within 30 seconds), and whether the team has created any system defects. In addition, the balanced scorecard includes a measure of whether or not client teams had to pay out any financial penalties and whether people who interacted with the call center are satisfied. Each item has a metric for whether it was met. The scorecard measure utilized for this study is a summary score of the 10 items used to generate the team rating to analyze if team balanced scorecard scores were statistically related to the team members perception of their virtual team leader's communication effectiveness.

Analysis

Factor analysis was performed to confirm the structure of the perception of leaders' effective use of communication tools and techniques and the trust in leaders' scales. For the 12 items on the perception of leaders' effective use of communication tools and techniques, 9 of 12 scale questions had a value of .62 or higher and the three remaining questions had values of .54, .57, and .57, which is an acceptable level for scale factors (Matsunaga, 2015; Tabachnick & Fidell, 2007). Additionally, all 10 items on the trust scale had a value of .68 or greater with a range of .79 to .68.

To protect confidential and proprietary data used in this study, each client team name was changed from the actual company name, that is, "Acme Company" to "Client 1." The data set containing client team data was then updated for all 68 client team member teams and mean responses calculated for further analysis in SPSS. All scales used in the survey had a high Cronbach's alpha showing a reliability of .94 for the team members' perception of their leader's communication effectiveness, .96 for trust, and .94 for the employees' perception of team performance (Table 1).

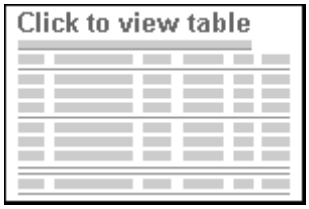

Table 1. Survey Scale Reliability Analysis.

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Scale	Cronbach's alpha	Cronbach's alpha on standardized items	Items
Communication Effectiveness	.94	.94	12
Trust	.96	.96	10
Employee Perception of Performance	.94	.94	5

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Since the study focused on team level results, data for all scales were tested for interclass correlations (ICC2). The measurement for ICC2 evaluated the degree of agreement in the mean responses among team members (Klein & Kozlowski, 2000). ICC results were reviewed to determine whether ICC2 > .50 represents a moderate level of agreement among client team members (Portney & Watkins, 2000). According to Klein and Kozlowski (2000), teams that have low levels of agreement should be excluded from the study results to ensure those results do not affect the overall team results. Therefore, for this research study client teams with ICC2 < .50 were removed from regression analysis for that specific scale.

Pearson correlation coefficients were also calculated to determine the level of significance of relationships across the variables. Table 2 documents the statistically significant positive correlation that was found between communication effectiveness and employee perception of team performance ($r = .38$, $p < .001$). In addition, statistically significant positive correlations were found between communication effectiveness and trust ($r = .84$, $p < .001$).

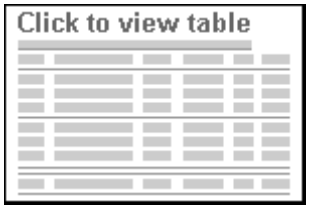

Table 2. Correlation Statistics.

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		M	*SD*	1	2
1.	Communication Effectiveness	5.76	0.49	—	
2.	Trust	5.74	0.75	.84[a]	—
3.	Employee Perception of Team Performance	3.52[b]	0.51	.38[a]	.24

[a]Correlation is significant at the .01 level (two-tailed). [b]On 5-point scale.

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Next, regression analysis was conducted to determine if communication effectiveness was predictive of team performance. Results of the regression analysis are contained in Table 3. Communication effectiveness was found to be predictive of employee perception of team performance (R^2 = .147, p < .01). There was however not a statistically significant relationship between leader communication effectiveness and the balanced scorecard.

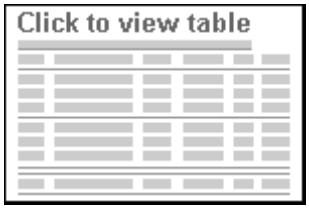

Table 3. Regression Model—Impact of Leader Communication Tools and Techniques on Employee Perception of Team Performance.

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Variable		B	*SE*(B)	β
	Model summary	$R^2 = .147^*, F = 5.68^*$		
CommEffect		0.43	0.19	0.47
Balanced scorecard		$R^2 = .013, F = 0.829$		
		0.34	0.11	0.91

$^*p < .01$.

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Finally, trust was tested for moderation against communication effectiveness to determine if the presence of trust in leaders affected employees' perception of performance. The moderation analysis revealed that trust did positively affect the relationship between communication effectiveness and employees' perception of team performance such that when trust was higher, the employee's perception of team performance was also higher, an increase in R^2 from .147 to .194. The results of this test are shown in Table 4.

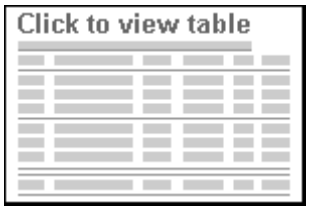

Table 4. Impact on Employee Perception of Team Performance With Moderation.

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Variable		B	*SE*(B)	β
	Model summary	$R^2 = .194^*, F = 5.148^{**}$		
CommEffect		−0.62	0.57	−0.68
Trust		−1.08	0.55	−1.7*
TrustMod CommEffect		0.191	0.09	2.7*

$^*p \leq .05$. $^{**}p < .01$.

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Results

The purpose of this study was to assess the impact of the perception of virtual team members on how effective their team leaders' combined use of communication tools and techniques are and the impact on the leaders' effective communications on their team's performance results. In addition, the study investigated how team members' trust in their leader moderates the impact of effective use of communication tools and techniques on performance where higher performance is obtained when trust in leader is high.

Through an analysis of the study results, several important findings are revealed. First, the study shows that when team members perceive their leaders' combined use of communication tools and techniques to be effective, then those virtual team members also subjectively perceive their teams to have a higher level of performance. Second, this study developed and validated a new scale to measure the combined usage of a virtual team leader's communication tools and techniques. Third, the study also showed that trust strengthened the relationship between the perceived effectiveness of leaders' use of communication tools and techniques and employees' perception of team performance, such that when trust was higher, the team's perception of its performance was higher.

Last, and perhaps most significantly, the study revealed a gap in alignment between how employees in this organization perceive their leader's communication effectiveness and the ability for leader through communication to drive subjective versus objective performance results (e.g., the balanced scorecard, our objective measure vs. team members' perception of team performance, our subjective measure). This raises an interesting organizational challenge. Even if the leaders are perceived as effective communicators by team members, they are not communicating what is most important to the organization related to performance.

Hypothesis 1 was partially supported by the study data. There was a moderate level of correlation ($r = .38$, $p < .001$) observed between virtual team members' perception of their leaders' communication effectiveness and the team members' perception of their team's performance. However, there was not a significant correlation between the employees' perception of leader communication and the company's scores of team's performance measured by its balanced scorecard. Regression analysis

showed that the degree to which virtual team members perceived their leader to be an effective communicator was predictive of the team members perception of their team's performance (R^2 = .147, p < .001). However, this same team member measure of their leader's effective use of communications did not predict the balanced scorecard performance score. An interesting conclusion can be drawn from these results is that there is a misalignment between what management thinks performance is and what the employees think it is. The greater the team members perceive their leaders to be effective communicators through their use of communication tools and techniques (i.e., frequency, predictability, responsiveness, clarity, and mode), the higher the team members perceive the team's performance output. However, the team members' perceptions did not have a significant predictive relationship with the company's performance measures. This raises the concern that leaders who are effective communicators are communicating the wrong information about performance goals based on the organization's objectives. There are a number of potential causes for the gap between the perceived effectiveness of leader communication and the balanced scorecard results. Clampitt (2005) suggests that communication is subject to contextual interpretations of the receivers of the communication, resulting in the potential for misinterpreting the intended message. For example, a new team member who was recently reorganized out of a company may interpret a message about business challenges and strategies to overcome them differently than a team member who has been part of the organization for long time and been through several business cycles. Additionally, Pfeffer and Sutton (1999) discuss how leaders too often communicate in overly confident and complex language, which omits meaningful actionable instructions for the team to follow. This gap between instructions without specific action goals results in a lack of alignment between the leader and employee action. Furthermore, a lack of goal clarity in leader communications negatively affects employee alignment by making it more difficult for employees to recognize or identify management's strategic priorities (Cha & Edmondson, 2006; Osborn, Hunt, & Jauch, 2002). Our study found that team members feel positive about their leader's communications and their perception of team performance, while ignoring or discounting the objectively measured balanced scorecard measure of team performance.

Hypothesis 2 was also partially supported. In the regression model, when trust was added as a moderator, the relationship between the perception of leader communication effectiveness and the perception of team performance by the team increased from $R^2 = .147$ to $R^2 = .194$; $p \leq .05$). However, there was no significance in the model when evaluating trust as a moderator on the balanced scorecard scores. These results mean that the addition of trust in team member's perception of effective leader communication strengthens their perception of their team's performance. Consequently, this widens the alignment issue between how leader's communication is driving their team's perceived performance versus that measured by the organization in the balanced scorecard.

Discussion: Putting Concept in Practice

The initial goal of this research project was to provide insight to leaders of virtual teams about how a leader's effective use of communication tools and techniques in combination affects virtual team performance. The study sought to provide a better understanding of how effective use of all the critical communication tools and techniques in combination influences virtual team performance. While this study showed the importance of the combined use of the communication tools, it also uncovered alignment issues between, how employees perceive the team's performance results, and how this organization defined effective team performance. This points to larger concerns that leaders may be communicating effectively but not effectively communicating those performance measures most important to the organization.

Effective Virtual Team Leader Communication

The study calls attention to the importance of leaders paying attention to all five key communication tools and techniques identified in prior research as their combination has an impact on their virtual teams' performance. To support this finding, the study used a newly created measure ("Perceived Effectiveness of the Leader's Communication") designed to incorporate all five specific tools that were identified in prior research as important. These are communication frequency, predictability, responsiveness, clarity, and the mode of communication. The new scale's ability to

assess the combined tools and techniques a leader created a more complete measure for assessing how business leaders use the tools and techniques of communication that are importantly related to team performance. Additionally, and most importantly, this validated scale provides a diagnostic tool for organizations to use to assess their leaders' ability to communicate with their teams and the performance results their leaders' communication is able to influence.

The value of this scale's ability to assess leader communication behaviors is amplified by the fact that it predicts virtual team members' perception of their team performance assessed in a field setting which can be applied to other organizations. Research from Gibbs et al. (2017) and Purvanova (2014)warn that it may be problematic to assume results in virtual team research are generalizable between created student teams and actual field research. Consequently, providing leaders with context specific knowledge for which communication tools and techniques create a positive organizational perception of performance also positively affects employee retention, employee identification with the company, organizational commitment, and team performance (Carmeli, Gilat, & Waldman, 2007; Wayne, Shore, & Liden, 1997). In addition, this study provides support for earlier research that showed that more effective leader communication can lead to higher levels of team success (e.g., Hayes, 2002; Pinto & Pinto, 1990).

The decision to test communication tools and techniques as a single factor in the model that combined communication frequency, predictability, responsiveness, clarity, and mode was made for two reasons. First, validating how a leader's use of communication tools and techniques collectively affect performance provides a roadmap for busy leaders. That is, of the many leadership traits a leader should consider, these five traits are critically important to effective communication and can drive team performance results. Second, we could find no other research which tested these five communication factors as practiced and conceptualized by Marlow et al. (2017).

Several specific managerial elements can be put into practice on "Monday morning." Leaders who use all the critical communication tools and techniques together effectively can positively influence team members' perception of their team's

performance. Based on the results from the Perceived Effectiveness of the Leader's Communication scale, team leaders should recognize the importance of the critical communication elements measured by the scale, ensuring their communication is clear and varying communication modes based on what is most effective for the current team communication need. Virtual team leaders should utilize these techniques together in frequent, predictable communication patterns, providing guidance on process, performance results, and business updates. Last, leadership should ensure responses to team inquiries is responsive to maintain a high level of effectiveness. Organizations with virtual employees should benefit from providing training to their leaders in these communication tools and techniques.

The regression value in team members perceiving their leaders' communication as effective was increased when the team members also had a higher level of trust in their leaders. There are many behaviors leaders can display to build trust such as conveying genuine interest in the team members, providing predictable, timely, and substantive responses to communication requests, and demonstrating benevolence, ability, and integrity when working with the team (Jarvenpaa & Leidner, 1999; Jarvenpaa et al., 1998). Thus, training leaders on how to build trust can add to team member's assessment of their team's performance.

Leader Communication and Alignment With Objective Performance Measures

A very important outcome of this research is the lack of alignment between the two performance outcomes. The employees' perception of their leaders' communication was found to be related and predictive of the employee's perception of their teams' performance. In contrast, the employee's perception of their leader's communication did not affect the balanced scorecard performance results. The discovery of an organizational misalignment issue between what employees perceive and results as measured objectively by the organization is similar to a pattern reported by Lurey and Raisinghani (2001) and provides additional support for prior researchers who advocate using multiple performance measures.

A key implication of this misalignment is that team leaders may not be communicating the goals and outcomes to their teams that are most important to the

organization or do not understand the performance criteria built into the balanced scorecard. Pfeffer and Sutton (1999) discuss the problem of leaders communicating in overly confident and complex language, such that the message being communicated, results in employees not understanding or correctly interpreting the messages in ways aligned with organizational initiatives. This “smart-talk” gap is obviously detrimental to the employees’ ability to focus on desired organizational goals and objectives. Furthermore, the lack of alignment between perceived leader communication skills and the balanced scorecard suggest that other factors like the context and how the employees receive the message will affect the meaning of the message they actually hear and act on, exacerbating alignment issues (Clampitt, 2005).

The challenges related to ensuring employee alignment with the organization’s performance objectives is exacerbated by the unique communication challenges presented by virtual teams where the informal aids to communication available to those in face-to-face communication are diminished or eliminated (Daim et al., 2012). This finding and misalignment is potentially very problematic for the organization, in several ways, as it can result in teams of employees who have perceptions about how well their r team is performing, but those perceptions are at odds with the performance outcomes measured by the company-created balanced scorecard. Since a statistically significant and positive relationship is demonstrated between the perceived effectiveness of the leaders’ communication with the teams and the perception of team performance, leaders’ communication to their teams is almost certainly contributing to this lack of alignment and more interestingly, the better the communicator a leader is the worse the misalignment is likely to become. Sadly, the result is an environment where the balanced scorecard measurements do not resonate with the team members. Thus, they may feel positively about their contributions as a team but are not aligned to the overall organization’s objectives.

The consequences of such poor alignment can be significant. When there are differences between organizationally determined performance goals and team perceptions of outcomes, lower levels of team performance and even feelings from employees that they are not a good fit for the organization can result (Joshi, Kathuria,

& Porth, 2003). Isolation of virtual team members may be exacerbated and gaining alignment on virtual teams can be more difficult due to the geographical distribution of the team members and the unique communication challenges that distribution presents (Daim et al., 2012). Hence, it is critical that any alignment issues this kind of study identifies be addressed by the organization and its leaders, as it is absolutely essential that organizations achieve and maintain organizational alignment between employee's perception and the organizations objectives (Boswell, 2006). This suggests a need for additional systematic review and analysis from the organizations leaders on why the discrepancy occurred, how leaders communicate performance results at a team level, and dedication of resources to affect better alignment with company-defined performance outcomes.

Limitations

This article offers several important insights for virtual team leaders. However, as with any research project, some limitations are worth noting. Some other constructs would have been beneficial to analyze in the survey as independent variables such as organizational commitment and trust. Since the study measured employees' perceptions of communication effectiveness and their perceptions of team outcomes, the level of organizational commitment as a moderator could have provided additional insights related to engagement and cohesion, which have been found to affect organization job performance (Mathieu & Zajac, 1990).

In addition, electronic communication is practiced in several ways via different electronic communication techniques and preferences. These includes use of capital letters, emoticons, and acronyms by those communicating. These communication nuances were not explored in this study.

In terms of generalizability, the data were collected from one organization in the human resource outsourcing field. Results may also vary based on the global dispersion, and this study primarily gathered data from the United States and India. The applicability to other cultures may vary because different communication norms and leadership styles have different affects based on culture and location (Hofstede, 1983).

Future Research

There are several clear possibilities for future research exist based on this study. First, the development of the Perceived Effectiveness of the Leaders Communication scale is a good start in creating a diagnostic tool for organizations to leverage in their assessment of how leader communication affects team members perception and results. However, it should be applied to other organizations and environments to determine the applicability in those industries on performance results. In addition, as a new scale, it would strengthen its usefulness to test its psychometric characteristics in other organizations, potentially refining the items. An opportunity also exists to apply this new scale against other leadership outcomes such as the impact of leader's communication on employee engagement and organizational commitment for virtual teams, both of which are important to organizational performance results and retention. The scale could also be tested on virtual individuals instead of teams, analyzing how leader communication influences an individual's perception of performance. This would allow for more individual outcomes and moderators to be added to the model like team complexity or moderators like organizational commitment.

Researchers may also find opportunities to improve and expand the scale, perhaps developing subscales for each of the five communication tools and techniques (communication frequency, predictability, responsiveness, clarity, and mode). This would better allow researchers to make specific assessments of the relative value of each leader communication tool and technique and its impact on performance results.

Researchers could also test the perceived effectiveness of leader's communication against other performance measures. As previously noted, testing the perceived effectiveness of leader use of communication tools and techniques against financial performance would be a valuable analysis. The breadth and complexity of the balanced scorecard used by the organization made it attractive data to include but, as developed by the company, it is by nature extremely broad and certainly not validated. Analyzing operational performance on a more targeted single performance metric, like the number of customer escalations or the number of system defects,

may provide additional insights on individual operational metrics. This would also allow the company to isolate operational metrics and determine if different leader actions affected individual metrics in different ways.

Additionally, evaluating the impact of the perception of leader communication on performance by type of task would also be valuable. This analysis may show that leader communication is more important on specific types of tasks then others, and thus provide leaders insights for prioritizing the most important areas to target their communication efforts. Potentially conducting research on multiple groups in an organization and controlling the task they were given to accomplish would provide data on how communication should vary based on what task a team is trying to perform. In addition, as some companies like Hewlett-Packard, ADP, and IBM start thinking about rolling back some of their virtual workforce, it would be valuable to study communication, tasks, and performance to begin to reveal insights about what type of work is most successful in a virtual versus face-to-face environment and how leader communication and leadership style facilitates that success.

Last, there is an opportunity to conduct more research on how leader communication drives priorities. In this study, we found an alignment between leader communication effectiveness and team performance as perceived by employees; however, effective leader communication was not predictive of objective balanced scorecard results. A separate assessment of each tool and technique comparing the objective to the subjective performance assessments could be conducted to measure how well leader communication skills predict organizational outcomes priorities and more thoroughly understand the root cause of the alignment issues.

Appendix

Perception of Leader's Effective Use of Communication Tools and Techniques Scale

Please think about the communication you typically receive from your team leader. Please indicate the extent to which you agree with the following statements (1

= *strongly disagree*, 2 = *disagree*, 3 = *slightly disagree*, 4 = *neutral*, 5 = *slightly agree*, 6 = *agree*, 7 = *strongly agree*):

1. My team leader effectively uses the appropriate communication technology to provide work-related information to our team.
2. My team leader mostly speaks to us using “live” communication techniques (e.g., phone calls or meetings) when communicating with our team.
3. My team leader chooses modes of communication (e.g., telephone, e-mail, video conference, etc.) that are most effective to provide work-related information to our team.
4. My team leader makes effective use of online meeting tools (Webex or Lync) when providing information in telephone conference calls to our team.
5. I can expect prompt responses from my leader to my work-related questions.
6. My team leader provides responses to the team in a timely matter.
7. My team leader provides predictable responses to work-related queries.
8. My team leader is responsive to our team’s communication requests.
9. My team leader is clear when communicating the assignment of work tasks to our team.
10. My team leader is clear when communicating performance expectations to our team.
11. The goals and objectives communicated from our team leader are clear.
12. My team leader communicates using an appropriate level of frequency.

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