Achieving Global Virtual Team Performance: Leadership status and effectiveness

ABSTRACT

Research on global team leader effectiveness in general, and global virtual team leadership in particular, has largely focused on leadership traits and behavior. However, scholars have to our mind underused social status theory as an explanation for leader effectiveness and team performance. In our empirical study, we address the question whether achieved leader status can provide an explanation for leadership effectiveness and successful team deliverables in the context of global virtual teams. The answer to both questions in our study of global virtual teams is affirmative, as we demonstrate that achieved leader status (as perceived by team members), mediates between team internal environment and leadership effectiveness (as evaluated by team members) as well as team performance in the form of deliverables (as evaluated by an external panel of expert judges). Building on the premise that leaders' achieved status is endowed by team members through a process of interpersonal interaction involving perceptions of competence, expertise and prominence, we contend that achieved leader status is critical to successful team outcomes.

KEYWORDS: Achievement versus ascription; Global leader effectiveness; Global virtual team leadership; Internal team environment; Leader status; Social status

INTRODUCTION

Geographically dispersed work arrangements, fast-tracked by the immediate urgency of the Covid-19 pandemic, have significantly changed work structures and dynamics within organisations during the past decades (Dulebohn & Hoch, 2017; Jimenez, Boehe, Taras, & Caprar, 2017). Organizing work in global virtual teams allows team members, enabled by the development and ubiquity of digital work technologies, to operate across national and cultural boundaries with the purpose of achieving common organizational objectives (Davis & Bryant, 2003; Jarvenpaa & Leidner, 1999; Maznevski & Chudoba, 2000).

Despite widespread acknowledgment of the challenges posed when working in global virtual teams, like transcending space and time (Driskell, Radtke, & Salas, 2003; Maznevski & Chudoba, 2000; Saunders, Van Slyke & Vogel, 2004), handling conflict and building trust in cyberspace (Jarvenpaa, Knoll & Leidner, 1998; Montoya-Weiss, Massey & Song, 2001), and addressing language, communication and culture differences (Kramer, Shuffler & Feitosa, 2017, Klitmøller & Lauring, 2013; Zander, Mockaitis & Butler, 2012), these teams have the potential to excel. Global virtual teams can benefit from drawing on the best suited available resources and people around the world, without travel time and cost, working 24/7 across differing time zones, being able to complete tasks more efficiently and become more effective as problem solvers by working together virtually (Dulebohn & Hoch, 2017; Martins & Schilpzand, 2011; Mathieu, Maynard, Rapp & Gilson, 2008; Nurmi & Hinds, 2016; Taras, Baack, Caprar, Dow, Froese, Jimenez, & Magnusson, 2019). To achieve such positive outcomes, team leadership is critical to bringing out the best in multicultural groups, virtual or not, by overcoming liabilities and bringing potential to fruition (for reviews see e.g. Bell & Kozlowski, 2002; Kayworth & Leidner, 2002; Jonsen, Maznevski, & Canney Davison, 2012; Stahl, Maznevski, Voigt & Jonsen, 2010; Stahl, Mäkelä, Zander, & Maznevski, 2010; Zander et al., 2012).

However, effective team leadership in the context of global virtual teams has received surprisingly limited attention (Han, Kim, Beyerlein, & DeRosa, 2020; Osland, Mendenhall, Reiche & Szkudlarek, 2020), especially in contrast to leadership effectiveness studies of collocated teams (see e.g., Mathieu, Maynard, Rapp, & Gilson, 2008; Zaccaro, Rittman, & Marks, 2001). Our overall aim in this paper is to examine what, given the challenges of working in a digitalized environment, can explain global virtual team leader effectiveness.

Explanations of global leadership effectiveness have almost exclusively focused on leader characteristics, competencies, skills and behaviors, or some combination thereof, and the still limited studies of global virtual team leadership follow suite (Liao, 2017). We decided to take another route, following the direction signposted by Sauer (2008, 2011), who identified 'leader status' as a potent explanation of team leadership effectiveness. We query whether perceived leader status at the end of the team project, in the context of global virtual teams, is linked to team leadership effectiveness, building on, but diverging from, Sauer's (2008; 2011) work with team member perceptions of incoming leader status in collocated teams.

In this paper, we draw on Magee and Galinsky's (2008:359) definition of "social status as the extent to which an individual [or group] is respected or admired by others". Critical to our understanding of achieved team leader status is that perceived leader expertise and competence and any realized "objective accomplishments are translated into status only through subjective interpretations" (Magee & Galinsky, 2008:359). In other words, the status level that an individual may enjoy comes by through interpersonal interaction with team members. Notably, this stands in contrast to work where leader status is based on first impressions (Paunova, 2017; Sauer, 2008, 2011). The focus is instead on team member perceptions after working and interacting with the team leader under the duration of the team project. As noted by Mattan, Wei, Cloutier and Kubota (2018), higher status is associated

with greater perceived competence and advice-giving abilities across cultures, and team leaders who enjoy a high status are more listened to by team members and can more effectively influence the work process (Henrich & Gil-White, 2001). The team members also bestow achievement status on a team leader, who demonstrates knowledge and skills (Magee & Galinsky, 2008).

In this paper, we pose the following two research questions: Can achieved leader status provide explanations for leadership effectiveness, and will higher leader status be associated with successful team deliverables in global virtual teams? We frame our study with a simple yet illustrative input-mediator-output model where the global virtual team environment provides the input, and leadership status is the mediator. Team leadership effectiveness and team outcomes are the outputs in accordance with our two research questions. This approach, basic as it is, of approaching teamwork enables us to tease out and put forth an explanation for team leadership effectiveness. In the next section of this paper, we develop a theoretically-based analytical model by drawing on three literatures (global leadership effectiveness, leader status, and internal team environment) before moving on to testing the model as described in the method and results sections. After this, we discuss our findings and how achieved leader status can provide viable explanations of global virtual team performance and leadership effectiveness, before wrapping up the paper with concluding reflections on the complexities of global virtual team leadership effectiveness.

THEORETICAL BACKGROUND

Global leadership effectiveness

The word 'effective' stems from 14th century Latin simply meaning to make, to bring about, or to carry out (Merriam-Webster's online dictionary). Contemporary usage of 'effectiveness' adds a planned, intended and earlier-decided-upon dimension when defining it as "the degree

to which something works well and produces the result that was intended" (Macmillan's online dictionary). This definition assumes that an outcome is to be measured against planned desirable objectives. Other definitions may be looser in their formulation, such as in the Cambridge online dictionary where the definition of effectiveness is the "quality of being successful in achieving what is wanted", but the emphasis remains on effectiveness as successful goal fulfillment.

Leadership effectiveness in a national context has been thoroughly studied but research on global leadership effectiveness has only started to receive attention (Hiller et al., 2011; Osland et al., 2020). As noted by Osland et al. (2020), when examining leadership effectiveness in a global context, leaders face more challenges and greater complexity than other leaders. This includes those who work as expatriates, because global virtual team leaders have to influence "…a range of internal and external constituents from multiple national cultures and jurisdictions…"(Reiche, Bird, Mendenhall, & Osland, 2017, p. 556), and to this we can add that the virtual work context is without doubt "… characterized by significant levels of task and relationship complexity." Reiche et al,, 2017, p. 556). Global leadership effectiveness research takes on added complexities and dynamics of intercultural situations into account, by for example focusing on competencies that are influenced by cross-cultural experiences (Caligiuri & Tarique, 2012), mindset (Osland, Bird, Mendenhall, & Osland, 2006; Cohen, 2010), and cultural intelligence (Rockstuhl et al., 2011). In the context of global virtual teams, effective team leaders are found to engage in reliable and prompt communication together with clearly expressed responsibilities and roles, as well as in mentoring, dealing with multiple leadership roles and exhibiting empathy toward team members (Kayworth & Leidner, 2002) all while facing the challenges of computer-mediated communication, which in comparison to collocated teams has a significant impact on how teams perform (Driskell et al., 2003).

Global virtual work, consequently, places additional demands on team leader competence, just as it does on the globally dispersed team members. Team leaders are therefore tasked with harnessing the potential of these global multicultural teams while handling the complex context of working virtually and any associated challenges. It is well-recognized that leading a globally dispersed team requires additional virtual team skills and an ability to engage in appropriate leadership behaviors to offset the lack of in-real-life working experience (Dulebohn & Hoch, 2017). Building on the earlier introduced definitions of effectiveness, global team leadership effectiveness is in this paper is defined as "the degree to which a global virtual team leader successfully leads the team towards fulfilling sought-after goals" . This definition of global virtual team leader effectiveness thus allows for different meanings being imputed into 'lead' and 'goals', and importantly opens up to a broader set of explanations of perceived effective leadership, than the more traditional leadership traits and behavior.

Leader status

The study of status has a long and well-established history across several disciplines (Cheng, Tracy, & Henrich, 2010; Koski, Xie, & Olson, 2015; Magee & Galinsky, 2008). Status has a fundamental impact on humans (and non-humans), how we organize ourselves, how we act, and importantly how we are perceived within our organized entities. Individuals perceived to have higher status enjoy significant advantages such as being more listened to and looked up to, they have more control over decisions, communication patterns and overall more influence in groups (Driskell et al., 2003; Henrich & Gil-White, 2001). Status antecedents, commonly divided into two larger categories, 'dominance' and 'prestige', depict how dominance-based status is involuntarily given in that the status-holder demands conferment by others, whereas prestige-based status results from voluntary leader status conferment (Cheng, Tracy, Foulsham, Kingstone, & Henrich, 2013). Within the prestige-categorization,

we find ascriptive and achievement-oriented sources of status, conceptually juxtaposed since the 1930s (Paunova, 2015), where ascription is based on individual non-controllable characteristics (e.g. age, sex, ethnicity, and height) and achievement on controllable criteria (e.g., different types of functional behavior).

We posit that status conferment can also be categorized from a 'temporal' perspective, that is whether status is based on first impressions (Sauer, 2008, 2011) or through interpersonal interaction over time (Magee & Galinsky, 2008). When leader status is based on the first impression of a set of ascriptive criteria and the person is deemed to have low status, the negative consequences, formed within seconds, can last for an extended period of time (see e.g., Lynn et al., 2009; Magee & Galinsky, 2008; Paunova, 2017). This is very similar to effects of a negative anchoring bias (Tversky & Kahneman, 1974; Furnham & Boo, 2011), which is hard to shake off, especially if the bias remains unrecognized it can last throughout a team's lifecycle and beyond. The opposite is of course also possible: a positive first impression ascriptive effect which, despite not being matched by leader behavior and action, allows the leader to remain in a privileged position and seen as exhibiting effective leadership behaviors akin to a 'halo effect'.

The two types of antecedents of status identification, source (ascriptive vs achievement) and temporality (first impression versus over time) do not necessarily overlap. Although it is close at hand to believe that first impressions are only affected by ascriptive criteria, these can also be influenced by achievement-oriented criteria such as prior information (e.g., type of university degree) or a known reputation of earlier achievements (positive or negative). This is exactly what Sauer (2008, 2011) incorporated into his study of how first impressions of incoming leaders' status influenced team member evaluation of leader effectiveness. In his experimental design, incoming team leaders were identified as either high- or low status, using a mixture of ascriptive criteria (e.g., appearance and objects signifying wealth) and

achievement-based criteria (e.g., from which university the person had graduated, and number of years of work experience). Sauer (2008, 2011) found that similar leadership behaviors were evaluated differently depending on perceived status level, and that the type of leadership behavior was more effective when matching team members' perceptions of leader status. That is, incoming leaders perceived as high status were evaluated as more effective, when engaging in participative leadership than those who were perceived to have lower status. Those perceived as low-status were evaluated as more effective when carrying out a directive-type of leadership style. What Sauer (2008, 2011) found was an interaction effect between first impression status and leadership behavior, which in turn explained perceived leadership effectiveness.

When it comes to status based on interpersonal interaction over time, perceived greater skills and abilities (competence) and expertise are associated with higher achieved status (Magee & Galinsky, 2008; Mattan, et al., 2018). High status is thus awarded to those who make high-quality comments, give advice, and are seen as experts (Henrich & Gil-White, 2001). In this way, status is endowed by team members to the leaders, who are seen as contributing with achievement-based knowledge and experience as well as providing a go-to resource for members in need of advice. There is ample empirical evidence of how perceived competence predicts leadership and influence in groups (Cheng et al., 2013), suggesting that achievement-based status recognized over time through interpersonal interaction between team members and team leaders (Magee & Galinsky, 2008) could provide an explanation for leadership effectiveness, also in global virtual teams.

Internal team environment

'Internal team environment' has in earlier studies been conceptualized using three dimensions: (1) shared purpose, (2) social support, and (3) voice, and found to be empirically linked to team performance (e.g., Carson et al., 2007; Daspit, Tillman, Boyd, & Mckee,

2013). More specifically, 'shared purpose' refers to a common understanding of a team's primary objectives and a taking of necessary steps to collectively achieve these team goals (Carson et al., 2007). Team leaders have an important role to play in initiating positive team processes, where aligning goals among team members is critical to successful team performance (Zander, Zettinig, & Mäkela, 2013). 'Social support' is defined as team members providing emotional and psychological support to each other, thus creating an environment where each individual is recognized and appreciated. 'Voice' has been defined as "the degree to which a team's members have input into how the team carries out its purpose" (Carson et al., 2007) and has been associated with constructive discussion and debate in a team environment. Kahn's (1990) concept of psychological safety (voice plus empathy) has been found to predict team learning and positive effects on team performance (Edmondson, 1999).

When examined in the literature on collocated team performance, a positive internal team environment demonstrates a recognizable positive effect on team outcomes (e.g., Carson et al., 2007; Wang, Waldman, & Zhang, 2013; D'Innocenzo, Mathieu, & Kukenberger, 2014). For example, internal team environment has been found to indirectly predict team performance in collocated consulting teams (Carson et al., 2007) and in cross-functional collocated teams (Daspit et al., 2013). Leading us to query whether the team internal environment in global virtual teams can have a similar effect on team leadership effectiveness, although being complicated by factors distinguishing global virtual teams from collocated teams.

The input-mediator-output model

Studies of team effectiveness and performance are typically explicitly or implicitly based on an 'input-process-output' model, but team scholars have found the process perspective to be limiting. Instead, they promote a model testing the explanatory power of a broader range of

possible mediators on team performance in an ‘input-mediator-outcome’ model (Carter, Seely, Dagosta, DeChurch, & Zaccaro, 2015; Han et al., 2020; Ilgen, Hollenbeck, Johnson, & Jundt, 2005). In their review, Ilgen et al. (2005) describe how the quest to identify what makes teams more effective has been carried out with an emphasis on inputs such as team composition, later followed by process studies attempting to identify why and how certain inputs affect team effectiveness. But as the authors observe, many factors affecting team performance are not process-related as such, and replacing ‘process’ with the use of ‘mediators’ opens up to alternative, more compelling explanations for effective team performance (Ilgen et al., 2005).

Moreover, Ilgen and colleagues (2005) point out that the earlier input-process-output model assumed a linear progression, but such causal linkages may not always be supported. Instead, nonlinear interactions between inputs and mediators have surfaced in the received literature. The relaxation of the causality assumption in the input-mediator-output model (in contrast to the input-process-output model) is important as it opens up the study of input-mediator interaction (instead of causal progression) when testing for explanatory factors of leadership effectiveness. An empirical example is provided by Han and colleagues (2020), who used the team’s global dispersion among members as input and found the global team context to interact with leadership effectiveness in mediating team performance in virtual new-product-development teams.

Hence, we frame our study in an input-mediator-output model where the team internal environment of the global virtual team provides the input, achieved leadership status is the mediator, with leadership effectiveness and team performance as the two outputs (see Figure 1 and Figure 2).

----Insert Figure 1 and Figure 2 about here------

As input we examine the ‘team internal environment’, consisting of a shared purpose with the work to be carried out in the team, within-team social support between members, and team members feeling comfortable giving voice to their ideas, queries and reflections. We test whether ‘leader status’, measured at the end of the team project (achieved status not ascribed status) mediates between team internal environment and two output measures. The first is a measure of how effective the leader is perceived to be by the internal constituents (the team members) and the second team performance, a measure of team project deliverable in the eyes of external constituents (a panel of expert judges). In the subsequent sections, we describe our study (sample and data-collection), as well as the measurement and testing of the two input-mediator-output models on global virtual teams in more detail.

METHOD

Sample and data-collection

Data were collected from geographically dispersed virtual team members after participation in a three-week long competition with the aim of developing a business proposal for a profitable product or service that addresses one of the Millennium Goals of the UNDP. Representing 28 countries, 420 members in 70 teams participated in the competition. Comparable teams of up to eight members were formed to maximize cultural, geographic and linguistic variance within each team. A total of 216 respondents completed our questionnaire, which was sent to all participants, generating an effective response rate of 51.4 %. Two incomplete responses were removed from the analysis after conducting missing value analysis. Of the remaining 214 respondents, 48 were designated leaders of their teams. As we were interested only in team member impressions about leadership and team processes, these were omitted, and 168 respondents were included in the current study. The final sample represents 24 different nationalities with 51.8% female and 48.2% male respondents.

Respondents ranged in age from 18 to 44, and the median age of respondents was 22 years. No respondent bias was detected when examining the sample.

Two sets of data were collected at two different time points from two different sources. The survey was filled out by team members after team project completion, but weeks before the winners, runners-up and honorable mentions in the competition were announced. Representatives from industry who were not involved in the global virtual teams' project were recruited as volunteers to judge the feasibility and quality of the final team reports against externally defined project success criteria and selected winning proposals. The panel evaluated all submitted team business proposals and provided their consolidated judgements for each proposal to the organizer of the competition, who in turn relayed these to us.

Measures

The following measures and control variables were used in our study, for more details, see the Appendix.

Team performance. An external measure of team performance was based on an evaluation of each team's final deliverables by a panel of four judges. The panel provided the final scores allocated on a 10-point scale (0 "not completed" to 10 "outstanding").

Leadership effectiveness. Respondents rated the perceived effectiveness of their team leader using four items (1, "not at all," to 7 "to a great extent"). Items were based on Sauer (2011). Respondents rated the extent to what extent the leader was effective in the leadership role, to what extent were team members' working relationships with the team leader effective?" Participants also rated the extent to which they agreed with the statements "The team leader was successful in leading us through the adventure game" and "The team leader did a good job in his/her role." Cronbach's alpha for leadership effectiveness was .97.

Leader status. All respondents were asked to rate their perceptions about their team leaders' status specifically at the end of the team project. The following five items, based on

Sauer (2008) measure of leader status were: “How much competence did you perceive the team leader to have?”, “How much expertise did you perceive the team leader to have?”, “How much prominence did you perceive the team leader to have?”, “How much influence did you perceive the team leader to have?” and finally “How much status did you perceive the team leader to have?” (ranging from 1 “not at all” to 7 “to a great extent”) were added together to capture team leaders’ achieved status at the end of the team project’s life cycle. Cronbach’s alpha for leader status was .96.

Team internal environment. Respondents rated the team environment with nine items (1 “strongly disagree” to 7 “strongly agree”) that comprise three three-item scales. *Shared purpose* (α = .75) and *social support* (α = .81) were based on Carson, Tesluk and Marrone (2007). *Voice* (α = .62) was based on Carson et al. (2007), Van Dyne and LePine (1998) and De Dreu and West (2001). Following Carson et al. (2007), we combined the scales for shared purpose, social support and voice into a higher-order dimension of ‘team internal environment’, after examining the correlations between them. The zero-order correlations between shared purpose and social support (r=.81, p<.001), social support and voice (r=.53, p<.001) and shared purpose and voice (r=.52, p<.001) were high.

We conducted a confirmatory factor analysis using AMOS, specifying a higher order factor and compared a three-dimension model, including the higher order factor plus leadership effectiveness and leader status, and a five-dimension model, including the separate team internal environment constructs. The five-factor model yielded a good fit to the data (X^2_{109} = 164.4; CFI = .98; SRMR = .04; PCLOSE = .29, RMSEA = .06). However, the fit statistics were slightly better for the three-factor model (X^2_{130} = 191.79; CFI = .98; SRMR = .04; PCLOSE = .34, RMSEA = .05). Given the high correlations between the team internal environment scales, we opted to combine them into the higher-order team internal environment (α = .87) dimension.

Control variables. We included controls for the effects of demographic variables: gender, age, and level of education. Language differences in teams may cause misinterpretations or misunderstandings (Henderson, 2005). We thus included respondents self-rated level of written and spoken English (the working language of the teams) (1 "very weak" to 10 "native").

Data analysis and results

Common method bias was addressed using the following methods (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Principles of objectivity in survey design were used to reduce subjectivity and ambiguity in responses. As outlined above, the CFA was conducted to test the fit of the data to the three-factor model and was satisfactory (X^2_{130} = 191.79). In addition, the criterion variables were measured at two points in time, using different measures and by different raters. Upon completion of the project the questionnaire was filled out by the team members themselves and returned weeks before the panel of judges announced the winners, runners-up and the honorary mentions. Project business proposal evaluation of quality and feasibility was thus carried out by the panel of judges after the submission of the projects, and after the team members' rating of leader achieved status and leadership effectiveness.

The means, standard deviation and zero-order correlations are reported in Table 1.

----------Insert Table 1 about here----------

To test the indirect relationship between team internal environment and leadership effectiveness through leader status, we employed mediation analysis with the Hayes PROCESS macro in SPSS. The macro in question provides a robust test for simultaneously measuring the effects of primary relationships and significant indirect and conditional indirect effects. Using Hayes Process model 4, we tested for indirect effects on the basis of

10,000 bootstrap samples in generating 95% bias corrected bootstrap confidence intervals. A full description of the method is provided in Hayes (2013). The results of the PROCESS analyses are shown in Tables 2 and 3.

----------Insert Table 2 about here----------

As can be seen in Table 2, the results indicate a positive relationship between team internal environment and our first criterion variable, leader effectiveness (c path: β =.88, p <.001). When controlling for leader status, gender, age, education and English ability (c' path), the estimate was also positive and significant (β =.46, p <.001). We also see a significant positive relationship between team internal environment and leader status (a path: β =.63, p <.001) and between leader status and leader effectiveness (b path: β =.67, p <.001). The lower part of Table 2 depicts the result of the bootstrap test of mediation. We see that leader status mediates the relationship between team internal environment and leader effectiveness (effect =.42, *SE* = .08) as the bootstrapped 95% confidence interval (CI) does not include zero (CI .28 to .58).

----------Insert Table 3 about here----------

In Table 3 we conducted a similar analysis to the above (a path remains: β =.63, p <.001), with our second criterion variable, the external measure of team performance. There is a significant positive relationship between leader status and the outcome variable, team performance (b path: β =.60, p <.001). However, there is no significant direct relationship between team internal environment and team performance (c path: ns), even after controlling for leader status, gender, age, education and English ability (c' path: ns). A test of mediation

reveals a significant indirect effect of team internal environment on team performance through leader status (effect = .38, SE = .10) as the bootstrapped 95% CI does not include zero (CI .20 to .60).

DISCUSSION

About ten years ago, our knowledge on global team leadership was found to be surprisingly limited (Bell & Kozlowski, 2002; Jonsen, Maznevski, & Canney Davison, 2012; Joshi & Lazarova, 2005; Malhotra, Majchrzak, & Rosen, 2007; Zander et al., 2012). Today it is acknowledged that leading a global virtual team demands specific skills and abilities (Dulebohn & Hoch, 2017), but being effective as a global virtual team leader has not (yet) received much attention in the literature (Han, Kim, Beyerlein, & DeRosa, 2020; Osland et al., 2020), which we hope to contribute to remedy with this paper.

Theoretical implications

Three specific contributions from our findings are highlighted as follows: first, we contribute to the global virtual team leadership literature with our results from testing a theoretically-developed model of global virtual team leadership effectiveness. Our findings demonstrate that a team environment characterized by team members having a shared purpose to guide them, enjoying social support from each other (much needed when working geographically distributed), feeling comfortable voicing their opinions, and having a direct influence on the work process is linked to positive leader effectiveness evaluations. This suggests that the leader, in one way or another, could have contributed to developing a positive internal team environment, leading to a positive effectiveness evaluation by the team members. Positive evaluations could also be due to a spill-over effect in terms of team members having had a positive experience with their team being more inclined to overrate their team leader's effectiveness (similar to a Halo effect). However, the link between internal team environment

and team leadership effectiveness was found to be positively mediated by achieved leader status. This would support the interpretation that leaders who have been endowed with a high leadership status, based on team members' evaluation of leader competence and expertise, are seen as effective in a global virtual team context.

Our second contribution is to the literature on team performance, which can be hard to measure. We also tested a theoretically-based input-mediator-output model where the output component was an external measure of team performance collected weeks after the other measures. The teams in our study had been tasked with developing and delivering a creative, feasible, and viable business proposal, which had to include a unique idea for a profitable product or service that addresses one of the Millennium Goals of the UNDP. This was a challenging task for the global virtual teams to carry out in only three weeks, without prior knowledge about each other and facing the challenges involved in virtual work across time and space. The quality of the resulting business proposals provides us with an external output measure in that it is the result of deliberations of a panel of judges external to the teams and the research project. After evaluating each proposal a consolidated point rating was made available by the expert panel of judges, who also determined which projects were the winners, runners-up and honorary mentions. These results were only released a few weeks after project completion (and after we had collected the data on achieved leader status and leadership effectiveness). We found that external evaluation of the team deliverables, the business proposals, can be predicted by internal team environment mediated by achieved leader status. However, there is no direct link between internal team environment and team performance, thus firmly establishing that achieved leader status is critical to both leadership effectiveness and team performance.

Our third contribution is to incorporate social status theory in our theorizing. Social status theory is surprisingly underused in the field of global leadership, given its prominence

in other fields such as sociology, psychology, also in areas such as human evolution and neuroscience. There are studies in collocated teams (mostly using experimental designs) centering on status, but these focus on status determination at the first impression, which is different from the ex post achieved status determination that we are examining in this paper. Status is highly relevant to understanding the on-goings in global virtual teams, given that status can explain how and why we organize ourselves in teams (and other entities) who becomes influential in decision-making and communication, receives more attention, is more listened to and more turned to for advice. In our study, we contribute to understanding the consequences of social status endowment in a global virtual team context by distinguishing between leader status along two dimensions; source (ascriptive versus achieved) and a temporal dimension (first impression versus over time). Our findings demonstrate how achieved leader status mediates between internal team culture and leadership effectiveness as well as team performance, demonstrating the criticality of achieved leader status.

Managerial implications

We found that team internal environment is positively mediated by high achieved leader status for predicting high leadership effectiveness and team performance. Team internal environment consists of constructs of shared purpose, social support and voice, which are considered to be more tolling for global virtual teams than for collocated and comparatively less heterogeneous team constellations. Thus, a team leader will in the global virtual teams' case, all else equal, need to invest considerably more energy and resources to facilitate an enabling team internal environment.

The leadership challenge is to develop skills, competencies and expertise that can trigger positive achieved status endowment by engaging and enabling team members to construct a shared purpose, provide supportive means to relate socially and to create an atmosphere in which team members share the belief that a team is safe for interpersonal risk

taking (Kahn, 1990; Edmondson, 1999). Leaders able to succeed in establishing such a positive team internal environment in the highly complex social and organizational setting of global virtual teams, can in return come to benefit from positive team member evaluations of their leadership effectiveness. Creating a positive team internal environment in a complex global virtual team setting will, as we show empirically, reflect positively on the status of the leader and constitute an internal achievement for the leader and the team in its own right.

However, this does not mean that these relationally successful teams will also produce externally favored outcomes. On the contrary, only when we include the mediating factor of leaders' achieved status, is there a significantly positive link between team internal environment and team performance. This result is important as it shows that in virtual teams, with effective leaders in the eyes of the team members do not automatically lead to successful team deliverables in the eyes of external constituents. Well performing teams were found to have leaders endowed with achieved leadership status, that is global virtual team leaders who were perceived as having competence, expertise, influence, as well as prominence and status at the end of the team project life cycle. This has important implications for both selection and promotion of global virtual team leaders. It also points towards the role played by the team internal environment and how its positive effects for the outcome can be mediated by team leaders who are perceived to have achieved leader status, skills that can and need to be developed and honed when working in global virtual teams.

CONCLUSION

Our overall ambition in this study was to contribute to the literature on global virtual team leadership in general, and global team leader effectiveness in particular, by drawing on hitherto underused social status theory. We posed the following two-pronged research

question: Can achieved leader status provide an explanation for leadership effectiveness, and will higher leader status be associated with successful team deliverables in global virtual teams? The answer to both questions is affirmative.

We demonstrate that achieved leader status (as perceived by team members), mediates between team internal environment and two output variables, predicting perceived leadership effectiveness (as evaluated by team members) and team performance in the form of deliverables (as evaluated by an external panel of expert judges).

Building on the premise that leaders' achieved status is endowed by team members through a process of interpersonal interaction involving perceptions of competence, expertise, influence and prominence, in this case through virtual interaction over geographical space and time, we contend that achieved leader status is critical to successful team outcomes and worthy of theorizing, identification of limitations and boundary conditions as well as future study in other types of global virtual team contexts.

REFERENCES

Bell, S. B., & Kozlowski, S. W. (2002). A typology of virtual teams: Implications for effective leadership. *Group & Organization Management*, *28*(1), 14-49.

Caligiuri, P., & Tarique, I. (2012). Dynamic cross-cultural competencies and global leadership effectiveness. *Journal of World Business*, *47*(4), 612-622.

Carson, J. B., Tesluk, P. E., & Marrone, J. A. (2007). Shared leadership in teams: An investigation of antecedent conditions and performance. *Academy of Management Journal*, *50*, 1217-1234.

Carter, D. R., Seely, P. W., Dagosta, J., DeChurch, L. A., & Zaccaro, S. J. (2015). Leadership for global virtual teams: Facilitating teamwork processes. In *Leading global teams* (pp. 225-252). New York, NY: Springer.

Cheng, J. T., Tracy, J. L., & Henrich, J. (2010). Pride, personality, and the evolutionary foundations of human social status. *Evolution and Human Behavior*, 31(5), 334-347.

Cheng, J. T., Tracy, J. L., Foulsham, T., Kingstone, A., & Henrich, J. (2013). Two ways to the top: evidence that dominance and prestige are distinct yet viable avenues to social rank and influence. *Journal of Personality and Social Psychology*, *104*(1), 103.

Cohen, S. L. (2010). Effective global leadership requires a global mindset. *Industrial and Commercial Training*, *42*(1), 3-10.

Daspit, J., Tillman, C. J., Boyd, N. G., & Mckee, V. (2013). Cross-functional team effectiveness: An examination of internal team environment, shared leadership, and cohesion influences. *Team Performance Management: An International Journal*, *19*(1/2), 34-56.

Davis, D. D., & Bryant, J. L. (2003). Influence at a distance: Leadership in global virtual teams. *Advances in Global Leadership*, *3*, 303-340.

De Dreu, C. K. W., & West, M. A. (2001). Minority dissent and team innovation: The importance of participation in decision making. *Journal of Applied Psychology, 86*: 1191-1201.

D'Innocenzo, L., Mathieu, J.E., Kukenberger, M.R. (2014). A meta-analysis of different forms of shared leadership-team performance relations. *Journal of Management*, *42*(2): 1964-1991.

Dulebohn, J. H., & Hoch, J. E. (2017). Virtual teams in organizations. *Human Resource Management Review*, *27*(4), 569-574.

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, *44*(2), 350-383.

Furnham, A., & Boo, H. C. (2011). A literature review of the anchoring effect. *The Journal of Socio-Economics*, *40*(1), 35-42.

Han, S. J., Kim, M., Beyerlein, M., & DeRosa, D. (2020). Leadership role effectiveness as a mediator of team performance in new product development virtual teams. *Journal of Leadership Studies*, *13*(4), 20-36.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* New York: The Guilford Press.

Henrich, J., & Gil-White, F. J. (2001). The evolution of prestige: Freely conferred deference as a mechanism for enhancing the benefits of cultural transmission. *Evolution and human behavior*, *22*(3), 165-196.

Henderson, J. K. (2005). Language diversity in international management teams. *International Studies of Management & Organization*, *35*(1), 66-82.

Hiller, N. J., DeChurch, L. A., Murase, T., & Doty, D. (2011). Searching for outcomes of leadership: A 25-year review. *Journal of Management*, *37*(4), 1137-1177.

Ilgen, D. R., Hollenbeck, J. R., Johnson, M., & Jundt, D. (2005). Teams in organizations: From input-process-output models to IMOI models. *Annu. Rev. Psychol*., *56*, 517-543.

Jarvenpaa, S. L. & Leidner, D. E. (1999). Communication and trust in global virtual teams. *Organization Science*, *10*, 791-815.

Jarvenpaa, S. L., Knoll, K. & Leidner, D. E. (1998). Is anybody out there? Antecedents of trust in global virtual teams. *Journal of Management Information Systems*, *14*, 29-64.

Jimenez, A., Boehe, D. M., Taras, V., & Caprar, D. V. (2017). Working across boundaries: Current and future perspectives on global virtual teams. *Journal of International Management, 23*(4), 341-349.

Jonsen, K., Maznevski, M.L., & Davison, S. C. (2012). Global virtual team dynamics and effectiveness. In *Handbook of Research in International Human Resource Management*, Second Edition. Edward Elgar Publishing.

Joshi A., & Lazarova, M. B. (2005). Do global teams need global leaders? Identifying leadership competences in multinational teams. In D. L. Shapiro (Ed.), *Managing Multinational Teams: Global Perspectives* (pp. 281-301). Amsterdam: Elsevier.

Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, *33*(4), 692-724.

Kayworth, T. R., & Leidner, D. E. (2002). Leadership effectiveness in global virtual teams, *Journal of Management Information Systems, 18*(3), 7-40.

Klitmøller, A., & Lauring, J. (2013). When global virtual teams share knowledge: Media richness, cultural difference and language commonality. *Journal of World Business, 48*(3), 398-406.

Koski, J. E., Xie, H., & Olson, I. R. (2015). Understanding social hierarchies: The neural and psychological foundations of status perception. *Social neuroscience*, 10(5), 527-550.

Kramer, W. S., Shuffler, M. L., & Feitosa, J. (2017). The world is not flat: Examining the interactive multidimensionality of culture and virtuality in teams. *Human Resource Management Review, 27*(4), 604-620.

Liao, C. (2017). Leadership in virtual teams: A multilevel perspective. *Human Resource Management Review, 27*(4), 648-659.

Macmillan Online Dictionary, accessed on March 4, 2021, link: https://www.macmillandictionary.com/dictionary/british/effectiveness

Magee, J. C., & Galinsky, A. D. (2008). Social hierarchy: The self-reinforcing nature of power and status. *Academy of Management Annals, 2*(1), 351-398.

Malhotra, A., Majchrzak, A., & Rosen, B. (2007). Leading virtual teams. *Academy of Management Perspectives, 21*(1), 60-70.

Mathieu, J., Maynard, M. T., Rapp, T., & Gilson, L. (2008). Team effectiveness 1997-2007: A review of recent advancements and a glimpse into the future. *Journal of Management, 34(*3), 410-476.

Mattan, B. D., Wei, K. Y., Cloutier, J., & Kubota, J. T. (2018). The social neuroscience of race-based and status-based prejudice. *Current Opinion in Psychology*, 24, 27-34.

Maznevski, M., Canney Davison, S., & Jonsen, K. (2006). Global virtual team dynamics and effectiveness. In G. K. Stahl, & I. Björkman (Eds.), *Handbook of Research in International Human Resource Managemen*t (pp. 364-384). London: Edward Elgar Publishing.

Maznevski, M., & Chudoba, K. (2000). Bridging space over time: Global virtual team dynamics and effectiveness. *Organization Science, 11*(5), 473-492.

Merriam-Webster on-line dictionary, accessed on March 4, 2021, link: https://www.merriam-webster.com/dictionary/effective

Montoya-Weiss, M. M., Massey, A. P., & Song, M. (2001). Getting it together: Temporal coordination and conflict management in global virtual teams, *Academy of Management Journal*, *44*(6), 1251-1262.

Osland, J., Mendenhall, M., Reiche., S., & Szkudlarek, B. (2020) *Advances in Global Leadership, Call for Papers*, Volume 14, accessed on Feb. 14, 2021, https://connect.aom.org/HigherLogic/System/DownloadDocumentFile.ashx?DocumentFileKey=5845fe78-49dd-4f73-af24-99b584c4b4a4

Osland, J. S., Bird, A., Mendenhall, M., & Osland, A. (2006). Developing global leadership capabilities and global mindset: A review. In G. K. Stahl & I. Björkman (Eds.), *Handbook of Research in International Human Resource Management* (pp. 197-222). Cheltenham: Edward Elgar Publishing.

Paunova, M. (2017). Who gets to lead the multinational team? An updated status characteristics perspective. *Human Relations, 70*(7), 883-907.

Podsakoff, P. M., Mackenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*, 879-903.

Rockstuhl, T., Seiler, S., Ang, S., Van Dyne, L., & Annen, H. (2011). Beyond general intelligence (IQ) and emotional intelligence (EQ): The role of cultural intelligence (CQ) on cross-border leadership effectiveness in a globalized world. *Journal of Social Issues, 67*(4), 825-840.

Sauer, S. J. (2008). *Taking the reins: The effects of incoming leader status and behavior on influence patterns in teams*. [Doctoral dissertation, Cornell University]. Ecommons.cornell.edu.

Sauer, S. J. (2011). Taking the reins: Effects of new leader status and leadership style on team performance. *Journal of Applied Psychology, 96*, 574-587.

Saunders, C., Van Slyke, C., & Vogel, D. R. (2004). My time or yours? Managing time visions in global virtual teams, *Academy of Management Executive*, *18*(1), 19-37.

Stahl, G. K., Mäkelä, K., Zander, L., & Maznevski, M. L. (2010). A look at the bright side of multicultural team diversity. *Scandinavian Journal of Management*, *26*(4), 439-447.

Taras, V., Baack, D., Caprar, D., Dow, D., Froese, F., Jimenez, A., & Magnusson, P. (2019). Diverse effects of diversity: Disaggregating effects of diversity in global virtual teams. *Journal of International Management*, 25(4), 100689.

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, *185*(4157), 1124-1131.

Van Dyne, L., & LePine, J. A. (1998). Helping and voice extra-role behaviors: Evidence of construct and predictive validity. *Academy of Management Journal*, *41*, 108-119.

Wang, D., Waldman, D. A., & Zhang, Z. (2013). A meta-analysis of shared leadership and team effectiveness. *Journal of Applied Psychology*, *99*(2): 181-198.

Zander, L., Mockaitis, A., & Butler, C. L. (2012). Leading global teams. *Journal of World Business*, *47*, 592-603.

Zander, L., Zettinig, P., & Mäkelä, K. (2013). Leading global virtual teams to success, *Organizational Dynamics*, *42*(3), 228-237.

Zaccaro, S. J., Rittman, A. L., & Marks, M. A. (2001). Team leadership. *The Leadership Quarterly*, *12*(4), 451-483.

Figure 1

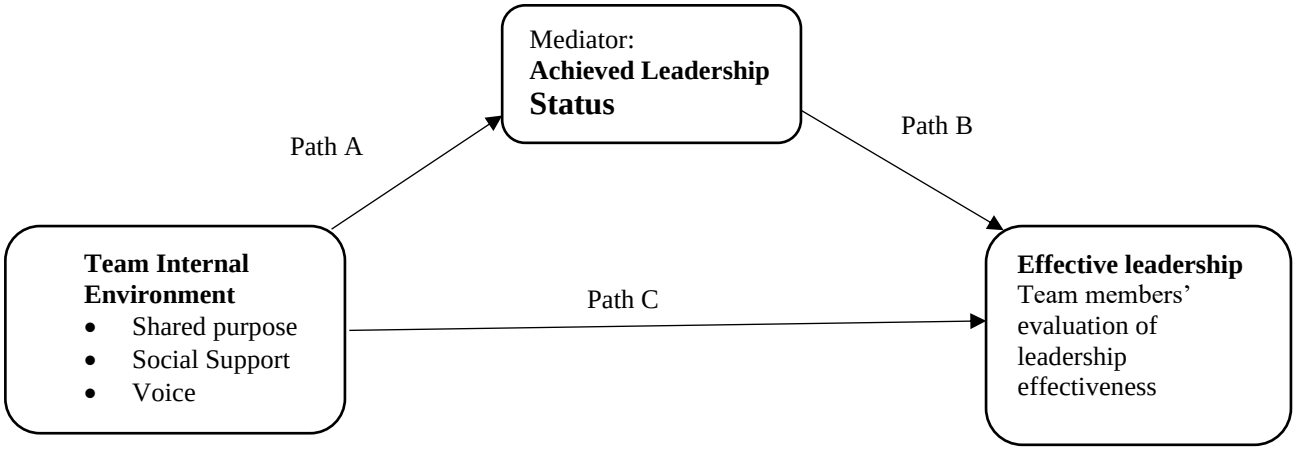

Figure 2

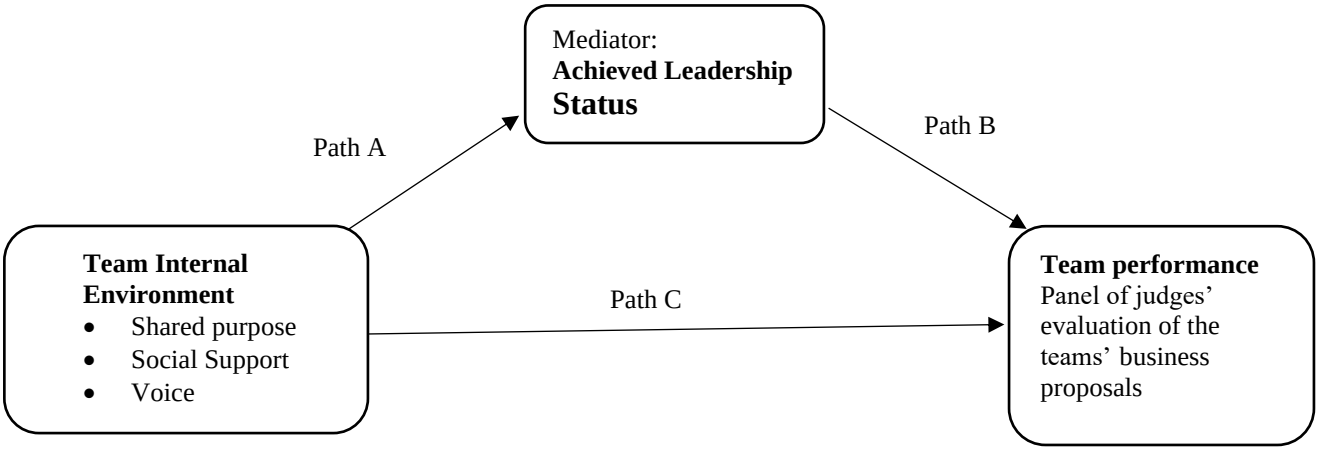

TABLE 1
Correlations between variables and variable level statistics.

Variables	M	SD	1.	2.	3.	4.	5.	6.	7.
1. Leader effectiveness	5.06	1.73							
2. Team performance	4.31	2.53	0.16*						
3. Team internal environment	5.07	1.21	0.65***	0.00					
4. Leader status	5.23	1.47	0.75***	0.23**	0.53***				
5. Gender	0.52	0.50	-0.01	0.03	-0.07	-0.02			
6. Age	22.78	3.58	0.05	0.06	0.13	0.15	-0.01		
7. Education	3.34	0.87	-0.10	-0.03	-0.06	0.02	-0.04	0.35***	
8. English ability	7.43	1.67	-0.08	0.02	-0.12	0.02	-0.16*	-0.18*	-0.15

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$ [p-values are two-tailed]

TABLE 2

Results of mediation analysis for the indirect effect of leader status on the relationship between team internal environment and leader effectiveness

	β	SE	*t*	R^2
Direct and total effects				
Leader status regressed on team internal environment (a path) X→ M	0.65***	0.08	7.81	0.30***
Leader effectiveness regressed on leader status (b path) M →Y	0.69***	0.07	10.23	0.64***
Leader effectiveness regressed on team internal environment (c path) X → Y	0.88***	0.09	9.84	
Leader effectiveness regressed on team internal environment controlling for leader status, gender, age, education, English ability (c' path)	0.44***	0.08	5.33	
	Indirect effect	Boot SE	Boot LLCI	Boot ULCI
Bootstrap results for indirect effect	0.45	0.09	0.29	0.64
Leader status				

Notes: N=161; CI = confidence interval. Bootstrap sample size = 5000; 95% bootstrap confidence intervals reported.

TABLE 3

Results of mediation analysis for the indirect effect of leader status on the relationship between team internal environment and team performance (external)

	β	SE	*t*	R^2
Direct and total effects				
Leader status regressed on team internal environment (a path) X→ M	0.65***	0.08	7.81	0.30***
Team performance regressed on leader status (b path) M →Y	0.64***	0.16	3.95	0.10*
Team performance regressed on team internal environment (c path) X → Y	0.04	0.17	0.22	
Team performance regressed on team internal environment controlling for leader status, gender, age, education, English ability (c' path)	-0.38	0.20	-1.91	
	Indirect effect	Boot SE	Boot LLCI	Boot ULCI
Bootstrap results for indirect effect				
Leader status	0.41	0.11	0.21	0.64

Notes: N=161; CI = confidence interval. Bootstrap sample size = 5000; 95% bootstrap confidence intervals reported.

APPENDIX

Items assessing Leadership Effectiveness

1. To what extent was the leader effective in the leadership role?
2. To what extent did the team leader do a good job in his/her role?
3. To what extent were team members' working relationships with the team leader effective?
4. To what extent was the team leader successful in leading the team through the project?

Items assessing Leader Status

How much…

1. status did you perceive the team leader to have at the end of the project?
2. prominence did you perceive the team leader to have at the end of the project?
3. competence did you perceive the team leader to have at the end of the project?
4. influence did you perceive the team leader to have at the end of the project?
5. expertise did you perceive the team leader to have at the end of the project ?

Items assessing Team Internal Environment

Shared Purpose

1. The members of my team spent time discussing our team's purpose, goals and expectations for the project.
2. The members of my team discussed our team's main tasks and objectives to ensure that we all had an understanding about them.
3. The members of my team devised action plans and time schedules that allowed us to meet our team's goals.

Social Support

4. The members of my team talked enthusiastically about our team's progress.
5. The members of my team recognized each other's accomplishments and hard work.
6. The members of my team gave encouragement to team members who seemed frustrated.

Voice

7. As a member of this team, I had a real say about how this team carried out its work.
8. Everyone in this team had a chance to participate and provide input.
9. My team supported everyone who actively participated in decision-making.