

What's Trust Got to Do with It? A Qualitative Analysis of Virtual Agile Leadership

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Abstract

Agile project management methodology was introduced in 2001, emphasizing face-to-face communication. COVID-19 and the need for globally dispersed teams paved the way for the widespread adoption of virtual agile teams. However, virtual agile teams necessarily diverge from the basic agile principle of face-to-face communication. The goal of this study is to better understand the leadership aspects of virtual agile teams. Using interpretive phenomenological analysis (IPA), our team interviewed eight participants to gather first-hand lived experiences where members of agile teams were directed by a virtual leader. A set of *a priori* codes provided the foundation of our analysis, while additional codes and themes emerged inductively. Experiential Statements (ES), Personalized Experiential Themes (PETs), and Group Experiential Themes (GETs) organically emerged, resulting from the team's individual and group analysis efforts. Our study indicated that within the IT industry, trust, social climate, and sensemaking are key elements to team member experiences of a virtual leader's success in virtual agile teams.

Keywords: Agile, Virtual, Leadership, Trust, Social Climate, Sensemaking, Qualitative Analysis

What's Trust Got to Do with It?

The COVID-19 pandemic and the necessity for globally dispersed teams significantly impacted how organizations operate, with many shifting from traditional, collocated workspaces to virtual environments. As a result, managers were and are faced with new challenges in leading virtual teams. Specifically, managers who lead agile teams may need to adjust their roles to lead these changes (Berntzen et al., 2023). The Agile Manifesto, a foundational document of the methodology, emphasizes face-to-face communication and the interactions between team members (Principles behind the Agile Manifesto, n.d.). While a growing body of literature explores virtual leadership, more work is needed to examine how leaders can apply agile methodologies virtually. Therefore, this study seeks to contribute to understanding how virtual teams using an agile method can be effectively led. In doing so, we prioritize team members' experiences and their perceptions of leader behaviors in a virtual environment.

Virtual Leadership

According to Bell et al. (2023), virtual leadership is when leaders and their subordinates are physically separated and interact primarily through technology-based communication channels, such as email and videoconferencing, rather than face-to-face. To address the unique barriers leadership faces in a virtual environment, Bell et al. (2023) explore virtual leadership through the lens of functional leadership theory. Based on this theory, a leader's role is to perform behaviors that meet major team needs, which can thereby foster a work environment that enhances productivity and employee satisfaction. Moreover, the researchers identified a need for further research on the challenges leaders face in virtual and hybrid work environments (Bell et al., 2023).

Given the existing knowledge about virtual leadership functions, we adopted a systematic approach using a set of *a priori* codes representing the virtual leadership functions proposed in existing literature (Bell et al., 2023; Morgeson et al., 2010) (see Table 1 below). The initial categories the *a priori* codes are based on, which focused on in-person leadership functions, were established by Morgeson et al. (2010). Bell et al. (2023) endorse that facilitating the use of technology is critical for the success of virtual leadership.

Table 1

A Priori Codes

Functions that are proposed to be <i>especially</i> important in remote teams Based on Bell, McAlpine, & Hill (2023)	
Code	Definition
Encourage SelfManagement	"...leadership behaviors that encourage followers to contribute to the leadership process." (p. 342)
Establish Expectations and Goals	"leaders provide followers with a clear purpose and definition" (p. 343)
Support the Social Climate	"a relationship-oriented function encompassing leadership behaviors that facilitate positive interpersonal interactions with and between followers" (p. 344)
Facilitate the Use of Technology	"...focuses on helping followers to apply technology in ways that improve their virtual interactions with each other and with the leader."
<i>Note: this was not included in Morgeson et al's taxonomy and was added by Bell et al. (2023)</i>	
Functions Thought to Be Equally Important in Remote and Collocated Teams Based on Morgeson, DeRue, & Karam, 2010	
Compose the Team	"...selecting a cohort of individuals who will be successful in accomplishing the team task outlined by the organization and then ensuring that the mix of individuals is appropriate over time" (p. 12)

Structure and Plan	“...determining or assisting in determining how work will be accomplished (e.g., method), who will do which aspects of the work (e.g., role clarification), and when the work will be done (e.g., timing, scheduling, work flow)” (p. 15)
Train & Develop Team	“...may involve directly providing targeted training to the team through instruction or demonstration, followed by ongoing coaching. This leadership function also entails encouraging team members to use educational resources...” (p. 16)
Sensemaking	“As a team leadership function, sensemaking involves identifying essential environmental events, interpreting these events given the team’s performance situation, and communicating this interpretation to the team” (p. 18)
Provide Feedback	Providing information that “enables the team to effectively assess its past and current performance and then adapt as needed to ensure future success.” (p. 18)
Monitor Team	“...examining the team’s processes, performance, and the external team context...progress toward task completion, the resources available to the team, the team’s external environment, and team member performance.” (p. 20)
Manage Team Boundaries	“...managing relationships between the team and the larger organizational context by communicating and coordinating with key constituents or units outside of the team and by buffering the team from external forces and events...” (p. 20)
Challenge Team	“...challenging teams with regard to their task performance and confronting the team’s assumptions, methods, and processes in an effort to find the best ways of accomplishing the team’s work” (p. 21)
Perform Team Task	“...taking a more active role in the team’s work by participating, intervening, or otherwise performing some of the team’s work” (p. 22)
Solve Problems	“...diagnose and solve any problems that keep teams from realizing their potential” (p. 23)
Provide Resources	“...obtaining and providing informational, financial, materials, and personnel resources” (p. 24)

Virtual Agile Teams

According to Moe et al. (2015), virtual teams are the foundation of successful global software organizations. Such teams are characterized by high interdependence and the need for cooperation among members. While adopting an agile approach can enhance communication and collaboration, virtual teams may face various challenges, especially when international, such as cultural differences, language barriers, limited face-to-face interaction, time-zone discrepancies, and difficulty building and maintaining trust (Moe et al., 2015). Moe et al. (2015) also found that to be successful, an agile virtual team must have an appropriate structure and the ability to evolve into a self-managing team with shared decision-making and leadership to overcome challenges like the lack of face-to-face communication and time-zone differences.

Extensive research has been conducted on the impact of agile frameworks and methodologies on software development and manufacturing industries (Agren et al., 2022). Agile methodologies were initially designed for small teams to reduce software development time (Agren et al., 2022). However, successfully implementing agile techniques among smaller teams led to widespread adoption throughout larger organizations. Created by developers seeking better ways of managing software projects, the agile methodology was created by a team of likeminded practitioners in an agreement named The Agile Manifesto (Highsmith, 2001). This agreement, a foundational document of the agile methodology, emphasizes face-to-face communication (“The most efficient and effective method of conveying information to and within a development team is face-to-face conversation”), and focuses on the interactions between team members rather than a strict process or tools (Principles behind the Agile Manifesto, n.d.). The document also emphasizes the importance of motivated team members, and that projects should be built around them. Moreover, customer satisfaction is of the utmost importance, and an agile team must

continually adapt to market changes to provide clients with a competitive advantage. (Principles behind the Agile Manifesto, n.d.).

As stated by Agren et al., (2022), constant and consistent feedback is the cornerstone of agile methodologies since this feedback allows agile teams to quickly respond to changes in a business environment. Agile teams are supposed to be self-organized, and the role the leader plays in the team is a recurring and consistent topic of discussion and debate across diverse types of research (Spiegler et al., 2021). Furthermore, when employees from conventional companies transition to agile teams, they must adopt a new team dynamic (Spiegler et al., 2021). Overall, when teams adopt an agile methodology, it may lead to improved productivity and efficiency (Agren et al., 2022). While the effects of virtuality among agile teams have been researched, there are few qualitative studies like Busse and Weidner.(2020) indicating the qualities perceived to be critical for leaders of a virtual agile team.

Philosophy of Phenomenology

Among the various qualitative research methodologies available, we have chosen the Interpretive Phenomenological Analysis (IPA) approach. IPA considers qualitative, experiential research (Cuthbertson et al., 2020) through a blended philosophical approach derived from phenomenology, hermeneutics, and idiography (Smith et al., 2022).

Interpretive Phenomenological Analysis (IPA) is rooted in Husserl's methods for helping recognize and categorize life experiences. This focus led IPA practitioners to adopt self-reflection as part of the methodology while seeking to explain a person's or group of people's specific experiences (Smith et al., 2022). Heidegger asserted that as temporal beings, we continually seek meaning through our relationships with other objects to shape our perspective (Smith et al.,

2022). This idea of individual perspective is further defined by the work of Merleau-Ponty and Sartre, who outline the importance of individual interpretation of our experiences (Smith et al., 2022). IPA takes this concept one step further by trying to understand the perspective and relationship of a person to the world around them, focused on a specific event (Miller et al., 2018). Hermeneutics studies how the researcher interprets the participant's experience (Shinebourne, 2011). Idiography focuses on the individual and their tendency to be specific or detail-oriented when sharing their experience. (Tuffour, 2017)

IPA is a powerful qualitative tool, enabling a researcher to explore a person's experiences and providing a robust framework for interpretation (Alase, 2017). Its focus on explaining a person's experience makes it an ideal choice for this study, which investigates the experiences of those who receive leadership, rather than the leaders themselves.

In this study, we adopt a modified form of IPA that incorporates *a priori* codes developed from previous research by Bell et al. (2023) and Morgeson et al. (2010) to guide our research. However, as Bell et al. (2023) added the additional category related to the use of technology in their study, we may add additional categories or new themes developed by using the IPA framework. Thus, combining *a priori* codes developed from existing virtual leadership literature and our inductive approach, we hope to identify all themes related to managing virtual agile teams.

Method

Sample and Recruiting

For this study, we used purposive sampling – that is, recruiting a representative sample of individuals that were part of a virtual agile team of three or more members that work

interdependently toward a common goal in a business setting. Because several variations on agile are used by different teams and companies, we also accepted candidates that were part of a virtual team using agile tools, templates, and methodological approaches, even if their team or department was blending agile and the more traditional “waterfall” methods. Because of the varied interpretations of “agile,” the “agile framework,” and “agile methodologies,” we requested that potential interviewees self-report their current and previous experience with agile, to determine their suitability for this study.

Additionally, each candidate for interview was required to have a leader that primarily interacted with them virtually. The other components of our screening criteria were that each interviewee must be at least 25 years old, that each candidate be based in or currently live in the United States, and that each person was a full-time equivalent employee or contractor that worked at least 35 hours per week. Further, to avoid potential coercion or increased risk, we excluded any potential participants who were in any of the researchers’ organizational reporting lines.

To recruit participants for interviews, our team conducted outreach through our personal and professional networks and organizations, along with open social media recruitment posts through LinkedIn. These recruiting messages included a QR code that linked to a short screening survey through Qualtrics. The survey ensured that those interested individuals met the inclusion criteria stated above, while also collecting relevant contact information. When a survey respondent met the interview criteria, Qualtrics emailed our team of investigators to inform them that a candidate was available to be interviewed. After confirming that the candidate was not in an investigator’s chain of command, a team member emailed the survey respondent with a copy of the informed consent document and a pre-interview thought question that asked the participant to consider times in which their leader did things that were especially effective or ineffective.

The email also included a scheduling request for a thirty-to-forty-five-minute interview timeframe using Zoom or MS Teams. Participants were not offered any incentives to take part in the study.

As a result, our team interviewed nine survey respondents. The transcript of one participant was determined by the investigators to be lacking in content, as it was much shorter and included many closed-ended responses; it was not included in our analysis. Each investigator interviewed a minimum of two participants. Relevant demographic information for those included participants is available in Table 2 below.

Table 2

Participant Demographic Information

Pseudonym	Gender	Ethnicity	Industry	Length of Part. virtual?	Leader time work %	Virtual virtual work %
Lucy	F	Caucasian	IT – Logistics	4 years	100	90
Coby	M	Asian-American	IT – Retail	10 years	100	100
Steven	M	Caucasian	IT – Telecomm	~ 9 years	100	95
Francis	M	Caucasian	IT – Travel	4 years	20	90
Elaine	F	Caucasian	IT - Logistics	4 years	100	100
Tony	M	Caucasian	IT - Logistics	4 years	99	100
Dawn	F	Caucasian	IT – Logistics	4 years	100	75+
Jane	F	Caucasian	IT – Logistics	4 years	100	75+

Prior to initiating each interview, our research candidates were informed that their participation was always voluntary and that they were free to withdraw from the data collection process at any point prior to publication. Each interviewee was informed that our research would follow University of Missouri-Saint Louis data security protocols, including examining and redacting quotes for confidentiality, the associated risks of data breaches, that all transcripts of

interviews would redact identifying information with pseudonyms, and that the original, unredacted recordings would be deleted once the study is accepted for publication. Finally, our investigators requested and received verbal consent to proceed with and record the interview.

The study received approval by the University of Missouri-Saint Louis Institutional Review Board and APA ethical guidelines were followed in this study's production.

Interview Procedure

The questions asked by investigators were approved by IRB as part of a semi-structured interview guide (attached here as Appendix A). The questions in this guide were framed to elicit responses from participants about their experiences with agile, virtual leadership. Additionally, the investigator asked some contextual questions regarding industry and team size, and demographic questions regarding age and race. These contextual and demographic questions were not used in the development of experiential themes, other than to reinforce the limitation of the demographic pool as specific to within an IT team.

Based on the participant's response to IRB approved questions, investigators then had the opportunity to ask follow-up questions. Follow-up questions enabled investigators to elicit in-depth and detailed responses from the participants which contributed to the richness of the data. Each investigator conducted their interview using either Zoom or MS Teams. In doing so, the investigator recorded the interview as outlined in the section above. Upon completion, the interviewer generated a transcript using either Zoom or MS Teams through UMSL's password protected Panopto account, where the recordings were stored with access limited to the research team. Each usable interview lasted at least thirty minutes and no interview exceeded one hour in duration.

Analytic Procedure

After cleaning, redacting, and reformatting each transcript, our investigative team followed the seven-step Interpretative Phenomenological Analysis (IPA) process outlined by Smith, Flowers, and Larkin (2022). The steps of this process, and the resulting team actions, are outlined below.

First, each interviewer read and re-read the transcripts of the interviews they conducted. During this stage, the transcripts were cleaned and redacted. Afterwards, each investigator began performing exploratory noting on these transcripts, which provides a more comprehensive, rich set of commentary and notes associated with the transcripts. This included the addition of nonverbal actions and perceived emotional responses from the interviewees. At the next step, team members met in pairs to analyze each individual transcript. By consensus, the pairs discussed constructing potential experiential statements, to produce a clear and simple summary of the most critical components of the notes included in each transcript. The pairs then searched for connections across the experiential statements within each transcript, by charting each potential statement with associated quotes, and grouping those together with potentially aligned or similar themes. After, the team individually drafted names of the Personal Experiential Themes (PETs), while consolidating and organizing them into a table. These themes reflected the entire analysis of the transcript.

Once complete, pairs performed individual analyses of other cases in the data set before working with PETs to develop Group Experiential Themes (GETs) across the cases. This final step required the entire team of four coauthors to convene multiple times and evaluate not only the PET statements but also the sub-themes and, in some cases, individual transcripts, to determine if there were commonalities that warranted clustering the statement into a GET. Only PETs present in over half of our transcripts were considered for inclusion as a GET.

Results

Our team considered the *a priori* codes from Bell et al. (2023) when analyzing our research participants' responses. These codes provided a framework for understanding leadership behaviors within virtual teams. As we delved deeper into the narratives shared by participants, many experiences aligned with the *a priori* codes, though there were also instances where the discussions veered into unanticipated territories that required further discussion and review.

The team determined three Group Experiential Themes (GETs) that were nested within three existing *a priori* codes in our analysis. The relevant *a priori* codes, which are “encourages self-management,” “supports the social climate,” and “sensemaking,” are all notable for their difficulty in transferring from an in-person setting to a virtual one.

Ultimately, our respondents acknowledged their gratitude toward leaders and teams that trust them to deliver their completed work products in a way that enables the rest of the team to perform their own work. But they challenged their leadership with a need to sharpen their interpersonal awareness and social infrastructure, in a manner that allows for better sensemaking opportunities as a collective unit.

The GETs are further detailed below, with definitions and supporting quotes in Table 3 below. Please reference the table for the referenced quotes.

Table 3

Group Experiential Themes (GETS)

A. GET #1: "I APPRECIATE THE TRUST THAT MY LEADER AND TEAM HAVE IN MY INDEPENDENT, VIRTUAL PERFORMANCE."

Definition: Encourage Self-Management

"leadership behaviors that encourage followers to contribute to the leadership process."

Representative Quotes:

- *"You can't micro-manage as much virtually, definitely. I guess... you have to be a little more trusting of your, your folks." (Steven)*
 - *"It takes more work for a remote leader. You have to do more trust building." (Dawn)*
 - *"I think it's helped in a way that I have trust. I feel like I can be honest. With my boss, I feel like, I can be honest, with the two team members, 'cause they just know me better." (Elaine)*
 - *"I'm not one to, like, be micromanaged." (Lucy)*
 - *"Each of us own the responsibility in making sure that nobody's blocked at the end of the day." (Coby)*
-

B. GET #2: "LEADERS MUST CREATE THE INFRASTRUCTURE FOR A SUPPORTIVE SOCIAL CLIMATE IN A VIRTUAL AGILE TEAM"

Definition: Supports the Social Climate

"a relationship-oriented function encompassing leadership behaviors that facilitate positive interpersonal interactions with and between followers"

Representative Quotes:

- *"(Empathy is) a hard thing to pick up on... If I was going into the office every day, my old bosses (could see the associated complications)." (Lucy)*
 - *"If somebody is fairly introverted, it becomes, I guess, a little more obvious because that person doesn't speak up." (Jane)*
 - *"It just felt weird to have a, like a review, or like, getting criticism over Zoom... we need to fix something. Those conversations just are a little bit harder remote." (Dawn)*
 - *"There were all (these) things that upper management didn't understand, didn't care about. They just wanted to know 'when is it gonna be done?'" (Francis)*
 - *"I can contact my (direct leader) outside of (established) touchpoints but I don't always get immediate responses." (Steven)*
-

C. GET #3: "SENSEMAKING BY LEADERS IS MORE DIFFICULT AND MORE IMPORTANT."

Definition: Sensemaking

"As a team leadership function, sensemaking involves identifying essential environmental events, interpreting these events given the team's performance situation, and communicating this interpretation to the team"

Representative Quotes:

- *"And the other comments (from participants) were like 'get back in your Land-Rovers and drive back to your house.'" (Steven, on HR hosting a company-wide session on compensation)*
 - *"Sometimes, you know, there will be a change made and not everybody who should have heard about it directly hears about it before the announcement goes out." (Dawn)*
 - *"(We're not) in the know of like, all of the gears or everything that's kind of turning behind the scenes." (Lucy)*
 - *"I'm not sure we're getting where they (sr. Leaders) want to go. I'm not sure that this (project) is gonna help them. It's harder to do that when we're just talking about how to do the thing that somebody wrote down on a JIRA card." (Francis)*
 - *"My supervisor is, like deeply connected with those other teams like the up and downstream from us. So anytime that we have, you know, that we've got big work coming up." (Tony)*
-

Our first GET, "I appreciate the trust that my leader and team have in my independent, virtual performance," was present in five of our eight transcripts. It was well summarized by a statement from Steven, an analyst in a global telecommunications company, who stated that his boss "is very much a 'I don't really care what you do during the day, if you get your work done' leader." Steven's quote suggests he was satisfied that his leader did not need to constantly monitor him and trusted him to manage his own time to meet his assigned goals. Upon asking further questions of our participants, many elaborated on the need for a trusting relationship with their

leadership in which the leader trusts the individual to act professionally and perform well without the leader “looking over their shoulder,” so to speak.

Steven pointed out that constant monitoring/micromanagement is less feasible in a virtual setting (“*You can't micro-manage as much virtually, definitely*”). Because team members are not collocated, it becomes more difficult to “stop by” and observe what they are doing. However, in a virtual agile team, leaders may need to establish trust more intentionally. For example, Dawn's acknowledgment of the increased effort required for trust-building as a remote leader reinforced the idea that trust does not simply materialize in virtual teams; it must be actively cultivated. Remote leaders face unique challenges in establishing trust without the benefit of face-to-face interactions, requiring them to invest more time and effort into building relationships and fostering open communication. Additionally, as Coby points out, it requires shared responsibility among the team members. When the leader is not constantly present, the team members must take more responsibility to ensure that they coordinate effectively (“*Each of us own the responsibility in making sure that nobody's blocked at the end of the day.*”).

Participants spoke of the positive benefits of this type of trust and the absence of micromanagement. Elaine's reflection on the relationship between trust and honesty underscored the symbiotic nature of these concepts. Trust creates a safe space for honesty to flourish, enabling team members to express themselves freely without fear of judgment or reprisal. In a virtual environment, where communication can feel more formal and detached, the presence of trust fosters a sense of authenticity and transparency. Furthermore, many individuals dislike being micromanaged and are happy to be free of it. For example, Lucy's statement, “I'm not one to be, like, micromanaged,” suggests that the virtual setting and leader trust provide a sense of freedom

from constraints. Without the need for constant oversight, team members are free to work independently and creatively, enhancing their performance and productivity.

The second GET determined by our team was a finding that “leaders must create the infrastructure for a supportive social climate in a virtual agile team.” Present in six of the eight transcripts; our interviewees expressed concern about the social disconnect between members of virtual organizations, particularly in the context of accommodating diverse needs, fostering open communication, and providing timely feedback and support. Lucy's mention of the challenges in noticing empathy in a virtual setting highlighted the need for understanding individual circumstances and a supportive social climate to promote well-being and high-quality Leader Member Exchange (LMX) interactions (*(Empathy is) a hard thing to pick upon... If I were going into the office every day, my old bosses (could see the associated complications)*)

Jane's observation (*a little more obvious because that person doesn't speak up*) about introverted individuals underscored the need for inclusivity and encouragement within virtual teams, without feeling pressured to conform to extroverted norms. Participants also shared discomfort with remote performance reviews and feedback sessions. The lack of understanding of a potential solution for ensuring the exchange of difficult messaging emphasizes a gap in virtual agile teams, as team members currently lack confidence in expressing their concerns and receiving feedback, which is best illustrated by Dawn's views (*Those conversations just are a little bit harder remote*).

Another common thread between participants is their frustration with upper management's lack of understanding is highlighted by Francis's statement (*things that upper management didn't understand, didn't care about. They just wanted to know 'when is it gonna be done?'*) and Steven's experience of lack of immediate response from his direct leader spotlights

the importance of accessibility and responsiveness in virtual leadership. The lack of accessibility and responsiveness prevents resources from receiving the guidance and support necessary, eventually leading to degradation of trust. In a supportive climate, leaders prioritize open communication, empathy, and collaboration, ensuring that team members feel valued and understood. Overall, these quotes collectively emphasize the importance of creating an infrastructure for a supportive, social climate within virtual agile teams. By prioritizing empathy, inclusivity, open communication, constructive feedback, and accessible leadership, teams can cultivate an environment where every member feels valued, supported, and empowered to contribute their best to the collective effort.

Our third GET, present in five of eight transcripts, was that "sensemaking by leaders is more difficult and more important." Within a virtual landscape of agile teams, the sense of isolation can be profound, as reflected in the quotes highlighted in GET #3 in Table 3. This was especially true for our participants, who remembered fondly a time pre-COVID when virtuality among agile teams was less widespread. Our interviewees collectively perceived that the loss of a water cooler or a breakroom disconnects them from the employee conversations that allow for a perspective of leadership decision-making.

Steven's sarcastic comment toward the HR representatives running a session on compensation changes (*get back in your Land-Rovers and drive back to your house*) and Dawn's comment (*there will be a change made, and not everybody who should have heard about it directly hears about it before the announcement goes out*) reveals a disconnect between the management and the employees. The sarcastic remark about Land Rovers suggests a perception of elitism, creating a divide that can make employees feel isolated and undervalued. Missed

communication led to feelings of exclusion and confusion, further exacerbating the sense of isolation. The feelings of Fear of Missing Out (FOMO) are further emphasized by Lucy's words (*or everything that's turning behind the scenes*). Issues such as challenges in collaboration, lack of face-to-face discussion, and a sense of disconnection and isolation are accentuated by Francis's observations (*I'm not sure we're getting where they (sr. Leaders) want to go*). Tony's comment (*My supervisor is, like deeply connected with those other teams like the up and downstream from us. So anytime that we have, you know, that we've got big work coming up*) spotlights the importance of networking in a remote environment.

This GET highlighted the critical need for effective communication, inclusivity, and transparency in a remote agile environment to mitigate feelings of isolation and foster a sense of belonging and engagement among all team members.

Discussion

As more organizations turn to distributed teams, they are also simultaneously adopting agile-based project management strategies. This creates some disconnect, as the Agile Manifesto clearly endorses face-to-face communication and upholds it as most effective. Thus, there is an increasing need to understand how leaders of virtual agile teams can effectively manage their teams to capitalize on the benefits of agile processes in a virtual environment. To this end, we interviewed a sample of individuals working in these contexts to better understand what their leaders do and how those leader's behaviors are perceived. Although different organizations implement the agile framework in different ways, we identified some common needs and challenges that seem to affect virtual agile teams.

A major key takeaway from this study is that it's essential for leaders to build trust with their team members. Trust building is essential for building a strong team. The other essential

takeaways are that the participants also highly valued the leader's guidance through changes in the social climate at work making sense of the changes.

Practical Implications

With the unprecedented increase of globally separated teams, authors suggest that organizations be very aware of the need to train their people leaders in the concepts of trust building and gauging social climate. The leaders should also be able to pick up on their resources' social cues and be the anchor to guide them through the potential turmoil at work. Organizations should aim to develop targeted or specialized training for such purposes. Leaders who are trained in such tactics should implement them to build strong and productive teams.

Potential Limitations & Suggestions for Future Research

The primary limitation of this study is that the authors were able to interview only eight participants due to time constraints because the authors completed the study as part of the DBA course curriculum. The secondary limitation is that most (5 out of 8 or 62.5%) of the participants were from the logistics industry. The authors encourage future researchers to increase the number of participants and study if the findings from this study are supported in industries other than logistics as well.

Conclusion

This qualitative study focused on better understanding the key leadership aspects of a virtual agile team. Using qualitative research methodology and the underlying IPA concepts, our study indicates that members of virtual agile teams within IT prioritize trust, social climate, and sensemaking as critical leadership qualities.

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Appendix A: Interview Guide

Intro and Consent

Greet the participant and thank them again for their time. Maybe engage in a few minutes “small talk” to establish the relationship. State that before the interview begins, you’d like to review some information about the project and confidentiality with them.

Review informed consent information. Ensure they understand that:

- Participation is voluntary and they may stop at any time.
- I will record the interview now; it will be stored on a secure, password-protected, and UMSL-approved place and will be deleted after the study is published.
- We will use quotes from the interview when we write up and present the results of the study, but names and company names will be replaced with fake names to protect your privacy.

If they are amenable to participating, start the recording, and obtain verbal consent on the record.

Main Interview Prompts

Note: when [focal group] appears, substitute Agile Team, Multi-National Team, or MultiGenerational Team.

1. In our study we are interested in understanding the workplace experiences of people who are on [focal group] teams and who also have virtual leaders. To start with, can you describe what you feel are some of the general challenges that [focal type teams] sometimes experience?
2. We’re also very interested in virtual leadership. And in this case, we’re referring to your direct supervisor or boss who is over your virtual team. Can you tell us a story or two about times when things were going especially well in terms of virtual leadership for the team?
3. Conversely, can you tell us a story or two about times when things maybe *didn’t* go so well in terms of virtual leadership for the team?
4. Would you please tell us about a time when you felt like having a virtual boss for the team was very *different* from having an in-person boss for the team?
5. Conversely, would you please tell us about a time when you felt like having a virtual boss for the team was NOT so different from having an in-person boss for the team?
6. Is there anything else about virtual leadership that’s on your mind?

Basic Info (Short Descriptive Questions)

Next, we have some short, hopefully easy questions that we are asking to better understand the context of your previous answers.

*So, for these questions, we are asking about **the situation you were in when you were working with the team and virtual leader you described before.***

1. What was the industry?
2. What percentage of the time did/do you, yourself, work remotely in an average week?
3. Was/is your distribution of remote vs. in-person time something you can choose, or did the organization dictate that?
4. Can you describe the basic team situation in terms of where the different team members are/were located?
5. How closely did/do you need to work with the other members of the team to get your job done?
6. How large a part of your workload is/was your work with this team? (For example, some people might work full time with their team and other people might split their time among multiple projects or teams.)

Note: if contextual questions remain after all previous questions are answered, additional questions may be asked clarifying the Agile, multi-national, or multi-generational context.

Next, we have some standard demographic questions. Some of these might seem a little obvious or awkward for us to ask, but we try not to make any assumptions so we would like to hear the answers directly from you. So, we will go ahead and ask you...

1. How would you describe your race?
2. And how would you describe your gender?

Thank them again for participating in the study and invite them to follow up with you if they have any questions or thoughts later. Tell them also, that at some point in the future, you might get back in touch with them with any short follow-up questions or to ask for their input on the draft of the paper.

Final goodbye and sign-off.

Example probing, clarification, and follow-up questions to elicit rich data (to be used as needed).

- [Silence] or [nod]
- “Can you describe it to me? What happened?”
- “How did you experience it?”
- “Go on...”
- “Could you say something more about that?”
- “Can you give a more detailed description of what happened?”
- [Repeat significant words of the answer, such as an unusual term or a metaphor]
- “Do you have further examples of this?”
- “How was your emotional reaction to that?”
- “How did you respond?”
- “Is it correct that you felt...?”

Appendix B: IRB Approval Letter

February 05, 2024

Principal Investigator: Stephanie Marie Merritt

Department: Management

Your IRB Application to project entitled BUSAD7102 Class Projects Spring 2024 was reviewed and approved by the UMSL Institutional Review Board according to the terms and conditions described below:

IRB Project Number	2100317
IRB Review Number	403406
Initial Application Approval Date	February 05, 2024
IRB Expiration Date	February 05, 2025
Level of Review	Exempt
Project Status	Active - Exempt
Exempt Categories (Revised Common Rule) 45 CFR 46.104d(2)(ii)	
Risk Level	Minimal Risk consent_forms_v1.0.docx
Approved Documents	screening_questionnaire_v1.0.docx interview_guide_v1.0.docx recruiting_messages_v1.0.docx

The principal investigator (PI) is responsible for all aspects and conduct of this study. The PI must comply with the following conditions of the approval:

1. Enrollment and study related procedures must remain in compliance with the University of Missouri regulations related to interaction with human participants at https://www.umsystem.edu/ums/rules/collected_rules/research/ch410/410.010_research_involving_humans_in_experiments.
2. No subjects may be involved in any study procedure prior to the IRB approval date or after the expiration date.
3. All changes must be IRB approved prior to implementation utilizing the Exempt Amendment Form.
4. The Annual Exempt Form must be submitted to the IRB for review and approval at least 30 days prior to the project expiration date to keep the study active or to close it.
5. Maintain all research records for seven years from the project completion date.

If you are offering subject payments and would like more information about research participant payments, please click here to view the UM Policy: https://www.umsystem.edu/ums/policies/finance/payments_to_research_study_participants

If you have any questions or concerns, please contact the UMSL IRB Office at 314-516-5972 or email to irb@umsl.edu.

Thank you,

UMSL Institutional Review Board