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# Leadership and trust in virtual teams

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## Abstract

**Background:** Advances in technology and the COVID-19 pandemic have led to increased use of remote work arrangements. Yet, research studies have examined the role of trust between leaders and employees in remote working conditions, despite the general relevance of trust to collaboration.

**Objective:** Here, we aim to investigate the specifics of remote working arrangements with a focus on the concept of leadership and trust in remote settings as opposed to classical teams.

**Methods:** For this purpose, expert interviews were conducted with representatives from the automobile, pharmaceutical, and financial services industries which have been contacted for that purpose.

**Results:** The expert interviews have clearly shown that differences exist between presence and remote conditions, while there is a realm of determinants which can influence remote team performance. Leadership plays an important role in the functioning of remote teams, including creating conditions that can help build trust.

**Conclusions:** Due to the increased importance of remote working, leadership must take necessary steps to provide optimal conditions so that organizations and employees can benefit from remote working. That requires a careful approach which does consider the specific determinants and the environments that characterize the organization.

## Keywords

leadership, virtual teams, trust, innovation, human resource management, digital work, expert interviews, remote work

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## Introduction

Organizational trust is fundamental to successful corporate culture leadership.<sup>1,2</sup> The emergence of New Work,<sup>3,4</sup> comprising new works of working together like virtual working, has prompted recent research with a particular focus on trust, whether this is between managers and their respective employees<sup>5</sup> or amongst employees.<sup>6</sup> In this context, it is relevant to point out that leadership has a strong role in these changed circumstances of collaboration, particularly in the context of remote working conditions, which are also referred to as telework.<sup>7,8</sup>

As remote work arrangements become more popular, organizations need to provide workers with the necessary tools to allow for sufficient access to knowledge in a virtual setting to ensure optimal team collaboration and performance. It is possible to establish a working mode of collaboration that leverages the advantages of both digital communication and in-person interactions. This requires implementing a distributed work model, providing effective managerial support, and establishing adequate policies while considering the specifics and social dynamics of a

diverse range of collaboration and communication tools.<sup>9–11</sup> Research shows that in particular areas, remote work can enhance performance, such as in the case of product development, where telework improves the quality and speed of work. However, this requires a minimum level of face-to-face contact. While flexible work arrangements also contribute to remote work performance, leadership also contributes positively to remote work success as well.<sup>8</sup>

The present study, therefore, aims to explore the role of leadership and trust in virtual teams. We will provide an overview of the role of trust in organizations and how trust can be cultivated and developed in virtual or remote team collaboration settings, which increasingly characterize the current

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working conditions in the age of New Work. This paper will adopt a qualitative methodology to augment a thorough literature assessment of organizational trust in virtual teamwork teams. The qualitative approach will incorporate insights from expert interviews with virtual team managers.

The business setting of these managers is representative of research and development (R&D) workplaces in the automotive, financial services, and pharmaceutical industries, where trust in the organization is critical to successful knowledge sharing, contributing to innovation and value creation.<sup>12,13</sup>

## Literature review

### *Remote work—Between evolution and disruption*

Numerous scholars and practitioners have described telework as a useful alternative to traditional office work for employees and organizations, highlighting its benefits, drawbacks, and implications for work–family management. The academic discussion on this topic has been ongoing for several decades so far.<sup>14,15</sup> Telework, which is also referred to as remote work or as working virtually, was praised for its capacity to reduce corporate costs and improve people’s work–life balance, which helps to explain why it is becoming increasingly more common. It is characterized as a way of working outside of a typical office setting, for example, by working from home or from another location while typically using digital means of communication technology in order to collaborate and interact with coworkers, supervisors, and customers.<sup>16–18</sup> Remote work may include various employment types, none of which are restricted to only working from home. This includes the so-called satellite offices, suburban telework facilities, and mobile work, enabling people to combine travel with employment.<sup>19</sup> Remote work is therefore an alternative to the typical organizational space, which can be understood as a central work location.<sup>20</sup>

The benefits of remote work and its implications for society and organizations have been identified relatively early in academic research and have been addressed long before the possibilities of using technology have become highly visible. This form of work marks explicitly a return to the decentralized approach that was characteristic in the pre-industrial era, which ended with the benefits of efficiency in the form of a greater centralization of labor in the context of rising industrialization. The majority of jobs can now be performed remotely, as much of the work does not require specialized tools or needs to be completed in a highly structured and systematic manner. Digitalization has enabled this shift toward a more decentralized way of working.<sup>19,21</sup> This, in turn, can provide a potential way of reducing the ecological footprint, albeit for an assessment of the general impact, a complex analysis in terms of numerous consumption choices and telework dimensions, including lifestyle practices of workers, is required.<sup>22</sup>

More flexible work settings are replacing highly organized and centralized work cultures. Working hours and organizational structures are becoming less stringent as a result. This trend makes traditional “9-to-5” employment less significant as this more flexible telework approach becomes a key characteristic of work organization.<sup>21,23</sup> However, the trend of working remotely has developed differently in the recent past when considered from a global perspective and has also been different depending on the business environment. For example, telework has spread more widely, especially in innovation- and technology-driven business environments compared to other business environments. Also, the movement toward telecommuting has been more significant in the United States than in Europe, which is explained in the literature as being caused by cultural differences.<sup>24,25</sup> Teleworking is generally more common in managerial, executive, and IT roles, but fewer workers in other divisions report on this option, with R&D being an exception. Businesses typically allow telework for knowledge workers, as this contributes to better retention as employees’ personal circumstances are better taken care of, including family–work management.<sup>16,25</sup>

While a trend towards remote working has been clearly visible for many years, as shown above, its role has become much more relevant and common as a result of the COVID-19 pandemic. This is because more than half of the workforce was engaged in telework, with hybrid work arrangements expected to be more common in the future than in the pre-pandemic area.<sup>26</sup> Implications on the global division of labor have even been drawn in the literature. Still, it was also pointed out that remote working is more relevant for jobs that have been typically located in urban areas with skill requirements. Logistical issues are mentioned as barriers to its future use and implementation.<sup>27</sup> Job characteristics, social context issues, or themes on worker well-being, health, and collaboration are further impacted by remote working conditions, with academic research has not yet fully addressed these issues so far.<sup>16,28</sup> The implications of remote work are, therefore, not yet fully understood as there is not enough consensus on its specific conceptualization.<sup>23</sup> For implementation in practice, organizations must identify both the potential advantages and drawbacks, addressing organizational, cultural, and technological challenges. To utilize remote work effectively and profitably, organizations must establish the necessary conditions and settings for seamless integration into the overall business process.<sup>29</sup>

### *Organizational trust—A conceptual overview in the context of leadership*

Trust is a heavily explored topic in the context of leadership, as the establishment of trust is key task for the successful collaboration of self-interested and independent agents. This

concerns issues on strategic behavior or rational reasoning as well as issues in the context of emotional impacts.<sup>30</sup> There are different viewpoints of organizational trust as well, notably, leaders' trust in their staff and, conversely, the trust that staff place in their leaders.<sup>5</sup> According to the relevant scientific literature, trust is a complex and multifaceted construct with several organizational and personal antecedents.<sup>31</sup> Among these antecedents are organizational culture and leadership behavior. Building organizational trust as a prerequisite to organizational commitment is one of the core challenges and scopes for leaders in a modern corporate environment.<sup>1,32</sup>

It is furthermore critical to note that a focus on prevention tends to undermine trust. This can include activities that aim to prevent negative outcomes or that are characterized by strict vigilance and defensiveness, for example, to achieve minimal goals.<sup>33</sup> This has consequences for goals relating to management and leadership as well as Joseph and Winston (2005) highlight the predictive role of servant leadership, an approach shaped by a humble leader mindset and the self-perception of a leader as a facilitator of appropriate conditions regarding the fostering of organizational trust. Different leadership styles can have a variety of effects on organizational trust.<sup>34</sup> Similar findings can be made about transformational leadership, which Bass (1985) first introduced in 1985 as a communication- and people-centered leadership style which is strongly connected to organizational trust. Here, trust in the leader and a leader-member exchange is highly relevant for organizational outcomes.<sup>35,36</sup> Similarly, a serving style in leadership was also found a contributor to higher levels of trust as well as employees show higher trust towards the leaders as well as towards the organization.<sup>34</sup>

By shifting the focus from the antecedents to the effects of organizational trust—or the impact of its absence—research has also shown how trust can influence information sharing within organizations. This is highly relevant in the context of remote working, given the critical role that information or knowledge sharing has in this setting.<sup>37</sup> In addition, knowledge sharing can be considered as crucial to innovation success and performance.<sup>38</sup> Here, it can be noted that fully remote working conditions can undermine the collaboration quality of workers as interactions face the risk of becoming more static or siloed.<sup>39</sup> Trust has a major role here as it was found that the worker's impression of organizational trust is a key factor in determining whether they are willing to share their (often implicit) expertise and know-how with their peers and with supervisors as well as with other members of their teams.<sup>40</sup> Regarding its practical relevance, it can furthermore be noted that the role of trust and its impact on knowledge sharing is especially important for teams engaged in innovation or research and development, where sharing knowledge and knowledge-based work packages is a key component. Here, knowledge has only limited value when it is not accompanied by trust, which

then works as a prerequisite for knowledge sharing. Consequently, trust is a key issue for value creation and innovation success.<sup>12</sup>

### *Establishing trust in virtual teams—A research framework*

The role of trust in virtual teams can be considered a relatively new area of research that is lacking in-depth research when particularly considered in the context of leadership. This may be due to some neglect of topics on remote work and its specific challenges and core aspects before the advent of COVID-19 in academic research. A considerable amount of research has emphasized a somewhat skeptical view on the viability of such work structures based primarily on negative assumptions.<sup>25</sup> Similarly, measuring employee performance for remote workers in the research and development field was described to be a challenge for leaders,<sup>41</sup> which has further imposed impediments to proper conceptualization and quantification.

The rapid and large-scale adoption of virtual work settings due to COVID-19 has challenged many leaders as they had little or minimal preparation for such a sudden shift. Leaders were required to manage virtual teams despite lacking the necessary skills, training, and experience. Although the challenges vary across sectors, the general view is that the management of virtual teams varies significantly from that of traditional teams that work in physical presence. As a result, leaders have experienced a higher level of difficulty in their roles, while subordinates have, in part, suffered from increased stress levels. In this environment, trust between leaders and subordinates was impaired in the virtual setting as leaders have largely shown trust issues related to the employees' perceived competence, knowledge, skills, or productivity.<sup>42,43</sup> This practical view shows that remote work is often seen as a factor which may limit mutual trust in organizations.

However, this negative attitude on remote working and the view that there is less trust in virtual team settings must be balanced with research that has pointed out some of the determinants to success. For example, it was already stated in the academic literature that the interpersonal trust of an employee in the supervisor is positively related to higher self-perceptions of performance, lower job stress, and higher job satisfaction. Also, frequent employee-supervisor communication has been shown to be a factor in building trust as well, albeit only for remote workers. In addition, leaders are advised to show responsibility and competence.<sup>44</sup> Therefore, the results for this remote working environment show the negative role of prevention on trust levels, which was discussed already in the context of organizational trust above.<sup>33</sup> It furthermore highlights the role of interpersonal issues and leadership style as well.

A recent study points out that trust can be built in remote working conditions with flexibility and technology being contributing factors. Therefore, physical presence is not necessary for trust building in virtual teams.<sup>45</sup> However, some characteristics of working virtually in remote teams are detrimental to trust-building, for example, the general lack of non-verbal forms of communication during social interactions.<sup>46</sup> Gender was also found to be a determining factor regarding the trust that leaders have in team members' data protection abilities, as female leaders have been found to significantly have more trust than male leaders.<sup>47</sup> Other studies investigate the role of mediating factors in the relationship between trust and telework performance with a PLS-SEM approach. It is found that trust positively affects telework performance, while social isolation and fatigue have mediating functions and a negative impact on performance.<sup>48</sup> This has implications for leadership, as it can be argued that leadership activities can help to prevent fatigue and social isolation. On the other hand, they can also help to mitigate these, for example, through a superior communication style that increases the impact of trust on performance.

For the conceptualization of trust in virtual team settings, it is important to also distinguish between affect-based and cognitive-based forms of trust, with affect-based trust being particularly problematic for remote teams. In contrast, cognitive trust appears to be largely independent of the type of collaboration.<sup>44,49</sup> This distinction contributes to the challenge of building trust in fully remote or hybrid teams, which is considered particularly relevant for collaborative tasks such as in R&D departments.<sup>40</sup> Research has highlighted further distinguishing characteristics of building in virtual teams such as regarding the affective impressions of team members. For example, local team members of semi-virtual teams express substantially more favorable impressions of their local than their remote team members, whereas conventional and virtual team members appear similar.<sup>50</sup> The practical implications of this partial lack of employee trust are also highlighted by Staples and Webster, who show how distrust in virtual or hybrid teams can impede knowledge transfer and, as a result, organizational effectiveness.<sup>51</sup> Leadership can tackle these issues through communication in order to eliminate or mitigate these negative repercussions.<sup>52</sup>

Therefore, research on establishing trust through leadership within virtual teams requires a more in-depth approach and the consideration of empirical data to draw meaningful conclusions. A number of determining or circumstantial factors were pointed out that can guide research undertakings, such as the role of different leadership styles, a distinguished treatment of affective and cognitive trust, or the role of specific factors in virtual communication and collaboration. Also, the unique conditions that the business environment imposes on team tasks need to be considered as well. It must furthermore be noted that mandated virtual

teamwork, for example, during the COVID-19 pandemic, is potentially different from virtual teamwork that has developed naturally.<sup>43,53,54</sup> Such distinction is essential to the discussion of organizational trust in the context of remote teams because it can be argued that naturally developed remote teams are more likely to be ready for such working models.<sup>55</sup> In contrast, trust disruption can be considered a risk for mandated home office arrangements<sup>56</sup> with negative consequences to social bonding due to enforced isolation.<sup>57</sup>

## Methodology

### Research strategy and scope

We applied a qualitative research approach by conducting expert interviews for the present study. In selecting these experts, sufficient care was taken to ensure that the interviewees come from different areas with a strong focus on areas in the automotive industries that work in research and development. The experts belong to different hierarchical levels and have been in management positions for less than 1 year or more than 10 years. Interviews were conducted with seven participants from the automotive industries, two interviews with participants from the pharmaceutical industries, and a further three interviews with participants from the financial sector. The selection of experts from very different industries was made in order to obtain a holistic view of the topic that would allow a comparison between these different interviews. The interviews lasted 60 minutes on average, with questions focusing on the relationship between trust and control in personal leadership styles. The transcribed interviews can be retrieved from OSF ([https://osf.io/bq4zn/?view\\_only=715172dc9ed84f8b98308969606b38fb](https://osf.io/bq4zn/?view_only=715172dc9ed84f8b98308969606b38fb)) platform.<sup>58</sup>

Generally, such a type of research involves a set of techniques to address a research objective without engaging in quantitative measurements. Therefore, qualitative research is based primarily on the interpretation of the data in order to derive insights. This type of research shows a stronger dependency on the research, as the researcher must extract meaning from the qualitative data.<sup>59</sup> For performing qualitative research, various research strategies can be used, such as case studies, narrative inquiries, observations, or interviews.<sup>60,61</sup>

Within the field of human resources research, a variety of different research strategies are commonly applied, including qualitative designs such as experiments, field or case studies, or different types of interviews.<sup>62</sup> For the research conducted in this paper on leadership and trust in virtual teams, interviews were selected as being the most practical and useful approach for a single-method inquiry. Such a research strategy can be mentioned as common within the field and is used by other researchers as well, including research on trust disruption from COVID-19-induced remote work arrangements, which was addressed by

performing semi-structured interviews with employees and managers.<sup>56</sup> A similar semi-structured approach is used in this study with the help of a standardized interview guideline, which was created based on a preliminary analysis of the research subject and used for conducting multiple interviews. This approach's benefit is providing a guideline and a minimum level of structure during the interview process. In addition, the interview process is defined by allowing for the gathering of spontaneous ideas and insights from the interview participant or expert. The advantage of this method is that the researcher can adhere to a questionnaire with specific questions, although the order of the questions does not necessarily have to be followed. With regard to the current study's survey, it is crucial to understand that adopting qualitative techniques has both benefits and drawbacks. An interview study is constrained by time since it requires planning interview sessions, transcription of audio recordings, and data analysis, which is particularly fascinating for gaining knowledge. Additionally, it is necessary to categorize both coding and category development as laborious processes which place a premium on the researcher's knowledge and abilities. The observations made are frequently conveyed in a very subjective manner, making it challenging to objectify and operationalize them. This makes it more difficult to generalize the findings as they can be considered as having a higher level of subjectivity.<sup>63</sup>

### *Development of a standardized interview guideline*

The empirical study involves using data for personal experience or other subjective items while aiming to find causation in the data. Specifically, data gathering was performed via expert interviews, with the findings used to investigate and critically examine relations. This approach is typically characterized by a limitation of the sample size, meaning that only a few individuals can be treated as study participants. The views and personal experiences of these people have been gathered and thoroughly discussed throughout the interview. Hereby, a high level of openness was intended by and encouraged for collecting qualitative data. The experts have been randomly selected and contacted regarding their interest in participating in the study.

Furthermore, intersubjective comprehensibility should be considered in qualitative research. This means that the interview process and the questions and answers provided are all replicated in the report in an objectively understandable way. It is essential to take bias errors into account as well. For instance, one participant explicitly worried about social norms and desirability. People generally respond in a way that seems to be socially acceptable, which may prevent some individuals from telling the truth. On the other hand, bias effects can be minimized when the respondent and the interviewer have a good, established rapport.<sup>59,61</sup>

A standardized interview guideline was developed with questions formulated based on the key areas of interest while

considering the theoretical foundations. This undertaking aimed to provide for a specific, relevant system. This form also allows inferring categorization categories inductively when evaluating the information obtained following the interview. Combining it with a semi-structured approach is thought to be useful since specific modified questioning tactics that vary from the structure provided by the guide can still be used without the procedure being labeled inaccurate. These anomalies are seen as a viable choice instead. A narrative interview, for instance, might be quite helpful when it is necessary to go back and document prior events. Studying such events in this way makes it possible to identify oblique and barely perceptible patterns.<sup>63</sup>

Sekaran and Bougie developed a set of broad suggestions and criteria for management and leadership-related research.<sup>64</sup> These ideas also governed the current study and interview process. Specifically, due to the explorative nature of the topic, the interview guide was designed to include key areas of interest. Specifically regarding leadership from a general and a more specific perspective, as well as the role of leadership and trust from a physical presence and a remote working perspective. By using this structure, it is possible to evaluate the perception and the role of leadership uniquely while also making meaningful comparisons on the role of trust between presence and virtual work.

### *Data analysis*

This study aims to build theory through abduction, where theory building and knowledge are constructed by attempting to identify the best possible explanation for certain phenomena. Given the lack of in-depth knowledge on the particular role of leadership and trust in virtual themes, this approach is beneficial to obtain valuable results and insights from the interview data. To this end, the *Gioia method* of analyzing qualitative data was adopted, which builds on the concept of grounded theory. Key to this approach is a general openness towards potentially new academic explanations while still considering existing knowledge in the data analysis.<sup>65-67</sup>

Two sequential rounds of coding were performed by adopting this grounded theory method. First, by reading through the original material, the first-order concepts have been defined. These form a first compendium of relevant terms, which are subsequently organized on the basis of similarities and differences of the codes. By evaluating the codes in this way, second-order themes are derived, which are then compared to existing theory in case such a connection is possible.<sup>65,66</sup>

### **Main findings**

#### *Relevant categories*

In order to assess the relevance of trust and leadership in remote working, a total of three major categories were

deducted: 1) leadership in remote work, 2) challenges of remote work, and 3) a comparison of office and remote settings. The third category was further distinguished a) into fears and uncertainties on the part of employees in the case of on-site activities and b) possibilities of building trust in remote settings. The first two categories contribute to the academic research of the topic by identifying both general developments regarding the movement towards remote leadership and specific challenges for leaders in this environment, while the third theme looks specifically at the differences between working remotely and working in presence. Within the main categories, sub-themes were identified, which were also presented below.

### Remote work

**Leadership in virtual teams.** Two fundamental aspects can be addressed in the context of the specific changes associated with leadership in the remote context. The lack of personal contact in interpersonal communication, on the one hand, and drastically changing communication conditions, on the other hand, are in general perceived as problem areas here.

Concerning personal interaction, for example, #15 (2022)<sup>1</sup> refers to the challenges: “People are triggered by processing certain inputs. If I now turn off the camera, you would probably have a completely different impression of the conversation. So, these are the input variables. Once facial expressions, gestures, then acoustics. And logically what I then speak and then also no idea what certain human proximity is. It just happens when I’m face-to-face with a person in real life. Is it five meters away, ten, or is it one meter away?” (#15, 2022, p. 2). This is similarly stated by #16 (2022) with reference to the advantages of hybrid forms of work, where there is at least a basic minimum of personal interaction. The lack of personal interaction is also described in terms of the extent of social or informal interaction: “So something like that, which, when people say on the spot, you just exchange over coffee or where people are informed. And then, when they are separated, these contacts are missing. There is a great need for general topics. Yes, what’s new?” (#17, 2022, p. 5). The role of informal communication was mentioned as a key issue for successful leadership: “For me, good leadership also means creating a good climate and helping to resolve conflicts.” (#19, 2024, p. 1).

This is attributed to the difficulty mentioned above with regard to personal interaction. #11 (2022) explains in a similar way that this results in a lack of social and human proximity, which is also perceived as critical by the employees: “I mean, the challenge in remote work is the loss of personal contacts. This means that you have to be practical, i.e., you can no longer have a random conversation at the coffee machine, for example, where interpersonal topics happen, usually a personal connection, but it also means recognizing that something is smoldering” (#11, 2022, p. 2).

Although video chat systems such as Skype and Zoom, in particular, are perceived as helpful here (#17, 2022), human contact is nevertheless perceived as only peripherally sufficient. As a possible approach to solving or improving this situation, I2 (2022) mentions that the conscious search for informal contacts can also be used: “What is already changing, you have to be more active in making sure that you don’t lose contacts. And there really more often once, because you just, you drop completely that you meet anyone in the hallway constantly” (#12, 2022, pp. 1-2). It was also reported that virtual work causes a gap or delay in the collaboration, particularly when there are issues to be solved which are time-critical: “It’s only problematic because queries about working from home are not always possible right away” (#19, 2024, pp. 2-3).

**Leadership challenges.** Overall, three blocks of topics were identified concerning leadership-related tasks or challenges in the context of remote work: Adequate goal communication in digital collaboration mode (#14, 2022; #15, 2022), the need for empathic leadership (#11, 2022; #17, 2022), and keeping in touch authentically despite the lack of physical proximity or corresponding interaction conditions (#12, 2022; #13, 2022; #14, 2022; #15, 2022; #16, 2022; #17, 2022, #110, 2024).

Regarding the adequate communication of goals, #15 (2022) explains that this also represents a corresponding challenge at the managers’ level. In the context of remote work structures, it must also be possible to communicate implicit and soft goals, which is seen as more difficult in this collaboration mode. “Leadership, you have to have some goal or strategy in the business of what you’re doing. Now, if I were a leader in a mid-sized company, I would probably have to have that kind of goal setting relatively quickly because there are few leaders there and a clear goal picture of a product. But sales figures? That’s also the topic we’ve been discussing in the last two days at this management workshop or the managers’ meeting” (#15, 2022, p. 3). In this regard, #14 (2022) also refers to the issue of transparency—concerning digital management structures, it must be possible to ensure full transparency at all times when agreeing on goals in order to maintain mutual trust between employees and managers.

Concerning the need for more empathetic approaches to leadership, I1 (2022) and I7 (2022) describe that managers must succeed in creating suitable conditions consciously and actively: “That is more difficult, i.e., you must consciously plan to meet with employees, and you must also be much more sensitive in order to notice which moods, fluctuations or topics are currently developing. It’s easier that way in person at the desk” (#11, 2022, p. 2). Higher demands are mentioned regarding the perception and interpretation of non-verbal elements of communication in virtual settings as well: “Through personal encounters or eye contact, moods and dynamics of the employee or the team

can be judged which in a remote setting can only be made with significantly higher attention or more time” (#18, 2024, p. 1). This can impose a higher time investment for leaders: “Taking more time with everyone to understand what worries them, what is unclear” (#112, 2024, p. 2). However, time investment was also mentioned as lower due to remote working, while demands on collaborating are increasing: “For my department, however, it [virtual work] was surprisingly associated with advantages relatively quickly, because I had to spend much less time-solving ad hoc inquiries in the office. However, it does place demands on the organization of meetings and coordination processes” (#19, 2024, p. 2).

This is also described concerning maintaining formal and informal contact. For example, #13 (2022) explains that this is consistently difficult in larger teams—for instance, in a department led by I3 with more than 200 employees. The balance between optimal involvement of all participants and transparent communication is described as difficult here. As a specific feature of this constellation, #16 (2022) refers to the hybrid form of collaboration. While it was still possible to use suitable digital formats for purely remote work, as was the case in the context of the COVID crisis, for example, this proved to be particularly difficult for hybrid mixed forms of communication: “Above all, this phase that has now come to us, this hybrid form. When we were all at home, we met briefly more often every day via teams and exchanged ideas. Now that has diminished a bit, because we are mostly here. But if individual colleagues are not here, then they feel, yes, excluded. Or I just feel that I don’t get enough information” (#16, 2022, p. 2).

### *Comparison of office and remote work*

With regard to the differentiation between remote and office work, two distinct categories could be identified, which were recorded accordingly by the interview partners. These refer to the fears and uncertainties as well as to the possibilities of building trust.

*Fears and uncertainties on the part of employees in the case of on-site activities.* In this context, #17 (2022) mentions that for many employees, the feeling of being judged during on-site work can lead to uncertainty. He gives the following example: “Of course, I mean, that is then, can also be an issue, that this unconsciously influences performance. As you say, if I now have, I don’t know, the whole body tattooed because I just think it’s beautiful, but my manager doesn’t think it’s so great, and that’s why you then somehow have a bit of a difficult relationship with each other, which has nothing to do with work performance in that sense” (#17, 2022, p. 11). A feeling of control is perceived as threatening by the employees—as summarized by #11 (2022), for example. A return to the office would be perceived by many employees as a substantial encroachment on their freedom and as a lack

of trust. However, fears also arise regarding personal or job performance perception by the supervisor as employees perceive themselves as less visible (#18, 2024, p. 2). It must, therefore, be stated that there are specific or unique fears of presence work and virtual work. Furthermore, it must be pointed out that some fears are characteristic of the particular personality of the employee, for example, regarding the degree of introversion or extroversion (#18, 2024, p. 2).

In addition, #12 (2022), #14 (2022), and #15 (2022) explain that classic uncertainties are also relevant in the on-site mode. In particular, the issue of mutual trust is addressed here: “And even if I trust you now and I entrust something to you, to what extent does that then carry? Does that then carry across the board? Or can I entrust something to you in trust? So, what I just keep to myself. It doesn’t matter. So, if I entrust you with something, then I already have a relatively high level of trust” (#15, 2022, p. 6). Some fears are also part of the specific business model of the firm, like in the field of institutional investing: “Some employees may still be influenced by the attendance culture and it cannot be completely denied that a high level of personal presence is always positive for development and career” (#110, 2024, p. 2). Working remotely may therefore increase the fear of missing out on potential opportunities for career development.

*Possibilities of building trust in remote settings.* Referring to the issue of trust, which has been addressed several times, different measures can be identified in both remote and on-site settings. For remote activity, showing presence (#12, 2022; #16, 2022; #17, 2022) is described as an important tool for building trust. Managers must also take care in remote settings to give employees the feeling of being always involved and approachable. Along with this, the visibility of managers is defined as an important approach (#11, 2022): “The employee must be able to read what you, what goals there are and what makes a manager tick. So that’s how I would see it. So that means you have to be predictable to a certain extent and stand by what you say. That’s the foundation” (#11, 2022, p. 3).

Face-to-face conversations and the opportunity for direct and straightforward communication are also described as valuable tools for building trust in the remote context. Here, for example, #11 (2022), #12 (2022), and #14 (2022) explain that it is necessary to succeed in making the communication structure as open and transparent as possible. In this context, similar modes as in the on-site mode are chosen throughout, or comparable challenges are perceived: “If I sense something like that, and that is what I said at the beginning, which is, of course, on-site, where you have many more signal levels, in personal interaction with each other, if I notice something like that, then I have to address it. So, if there’s something between you, then there’s a one-on-one conversation. So under no circumstances do you have to somehow air it out in front of employees or other employees,

but if you do, then you have to try to find out the reasons and, if possible, eliminate them” (#11, 2022, p. 4). The fundamental basis of any remote collaboration is defined by #14 (2022) as the degree of freedom: “I just give them the trust that they are doing the right thing. [...] I have to be fair, but that goes both ways, the expectations, that’s what I mean too, lead your boss. So, that we know each other so well” (#14, 2022, p. 6).

Gaining trust was mentioned in the interviews as more challenging in remote settings. Still, it can be supported by showing caring behavior (see #112, 2024, p. 2), albeit the success of this undertaking can depend on the personality type of the employee (see #18, 2024, p. 2). This can be achieved by investing time in “digital coffee talk and personal communication” (#111, 2024, p. 2). Nevertheless, in professional settings, gaining trust is strongly connected to job performance: “Trust is gained through performance, not presence. It doesn’t matter whether someone is sitting at a desk in the office or is connected virtually” (#110, 2024, p. 2). Regaining trust was also mentioned in the context of conflicts in the workplace. This requires openness by leaders and the ability to not overly engage in criticism about failures: “I think it helps to leave employees’ mistakes in the past and look to the future. This is how trust can be rebuilt” (#19, 2024, p. 3).

## Discussion and conclusion

The present empirical study showed that the challenges of leadership in a remote environment are different in some aspects from those in the classic office setting that is characterized by physical presence. In this respect, leaders must navigate and adapt to the demands of New Work,<sup>3,4</sup> which requires fostering a sufficient level of trust as a precursor to cooperation.

Leadership in the context of virtual teams was found to be characterized by a lack of personal contact while technology is used for interpersonal communication. This can create problems of social isolation or a lack of depth in communication, for example, as a result of lost information from nonverbal clues. These issues are mentioned already in the academic literature<sup>46,48</sup> and were confirmed by the results obtained via the interviews. However, it was also reported that these issues need not necessarily cause problems as leadership can implement digital means of communication to address even information and non-work-related communication adequately. The results, therefore, show that a nuanced view should be taken here.

Furthermore, various challenges were addressed, such as adequate goal communication in the context of digital collaboration mode, the need for empathic leadership, and the requirement to keep in touch authentically within virtual teams. In this context, it seems to be essential that managers consciously find opportunities and approaches for informal communication. The omission of such informal interaction

is consistently described as a central challenge, which can also be problematic in terms of mutual trust. By consciously creating suitable structures, it is possible to create favorable working conditions. A fundamental appreciation of digital collaboration and one’s own employees is evident as it was found that such forms of digital collaboration can succeed in a remote environment as well. The role of leadership as a determinant of remote working success, which is mentioned in the literature, was therefore confirmed with the data as authentic, servant, and transformational styles show promising results.<sup>32,34,35</sup>

In addition, fears and uncertainties have been addressed, as well as the possibilities for building confidence and trust in the setting of remote teams. It is evident that on-site and remote work can be attributed to unique uncertainties or fears on the part of employees. However, it became apparent that unique determinants exist that contribute to the rise of fear or its absence. For example, the personal characteristics of employees can determine if fear and uncertainty pose issues. Also, highly demanding and professional settings show relatively low levels of fear created solely by virtual work as demands on employees are similarly high to present work. This can be interpreted with reference to the role of affective and cognitive forms of trust which are different regarding their impact on collaboration success.<sup>44,49</sup> Here, it can be argued that organizations with high levels of cognitive trust are better equipped to profit from remote work than organizations that are more impacted by affect-based trust. As a result possibilities for providing attractive remote work arrangements can exist, which can be designed in a way to reduce uncertainties and fears to employees. Industries, sectors, or the business environment within an organization can, therefore, be a relevant factor in the proper management of virtual team structures.

The results generally show a strong connection between the success of remote work arrangements and trust. It is clear that leadership takes an important role in providing optimal conditions and solutions to trust-building, which are adapted to the needs of the organization and/or the needs of the particular type of employee. Here, the consideration of personality differences has been found as relevant. Therefore, leaders need to obtain the relevant skills and competencies to create trust in the leader-subordinate relationship or team collaboration by addressing the lack of physical presence and face-to-face communication with adequate alternatives. This also requires a careful approach to conflicts in remote working relations where strong criticism can fundamentally damage trust in the relationships<sup>42</sup> and where cautious behavior is needed to prevent or mitigate remote worker isolation and fatigue.<sup>48</sup>

In summary, remote work has established itself as an essential way of collaboration within organizations. That, in turn, has led to on-site presence being relatively less important. As a result, the challenges of such a mode of work must be mastered while opportunities can be seized.

However, capitalizing on the benefits of remote or virtual work arrangements requires leadership geared towards establishing the conditions for trust as one of the key pre-conditions for successfully collaborating in virtual environments. We hope our findings will help leaders navigate this area to their benefit while inspiring academic research to investigate open issues more closely. These might refer to a proper understanding of the role of personality in remote working conditions or to a nuanced treatment of firms that show differences in their professionalism.

## Statements and declarations

### Author contributions

Conception: SK and CCC, methodology: SK and CCC, data collection: SK, interpretation or analysis of data: SK and CCC, preparation of the manuscript: SK and CCC, revision for important intellectual content: SK and CCC, and supervision: CCC.

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### Note

1. It should be mentioned that the references to the interview partners are stated with abbreviations. For example, #15 refers to interview 5 (interview participant 5). This is performed similarly with all references to the interviews.

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