ARTICLE

HOW TO ENABLE TRUST WHILE TRANSFORMING TEAMWORK FROM A FACE-TO-FACE TO A VIRTUAL ENVIRONMENT IN THE CONTEXT OF COVID-19

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Abstract

The coronavirus pandemic was one of the greatest global challenges in history – primarily as a health issue, but also as an economic challenge. The need to control the pandemic has led to a significant shift towards virtual collaboration, which has also exposed the lack of preparedness of most German companies for the abrupt virtualization of teamwork. This raises the question of approaches to the implementation and design of virtual collaboration in practice. This paper reviews and extends the current state of research into virtual collaboration by interviewing experts in the IT consulting industry, considering the challenges in the context of the pandemic. As a response, this paper proposes practical approaches to the implementation and design of virtual collaboration, including a guideline for adapting to the increasingly virtual collaboration environment within teams and beyond the pandemic.

Implications for Central European audience: The model presented in this paper includes factors that are relevant to current practice and can enhance efficient and productive virtual collaboration in the post-pandemic world.

Keywords: virtual teams; trust; transfer problem; technology adaptation

JEL Classification: O330, D910

Introduction

The COVID-19 pandemic has led to fundamental changes worldwide in how work is approached, requiring extensive virtualization of collaboration (Ravin et al., 2020). For many workers, however, working from home during the COVID-19 pandemic was entirely new.

Companies that had previously offered a home-office option to their employees were unprepared to switch from working together in an office to only working together in a virtual workspace (Ravin et al., 2020). The change in how teamwork must be cultivated and lived out, as well as the change for employees, should be noticed as essential for the ongoing transformation of collaboration. Research shows that most companies had prepared their employees for working in a home-office environment and the known challenges associated with it adequately before the pandemic (Breuer et al., 2019; Costa, 2003). Under normal circumstances, adapting to virtual collaboration can be a prolonged process, often taking months or even years. However, the onset of the pandemic necessitated an expedited adaptation, with no time for such a protracted transition. Therefore, given the hastened shift towards a new form of collaboration caused by the pandemic, what it takes for virtual teamwork to transform successfully remains an open question that requires deeper examination.

In this context, trust is an essential prerequisite for high-performance virtual teamwork and a fundamental component of the adjustments and transformations necessary for the post-pandemic working environment. A review and supplementation of the current state of research into trust in the transformation to virtual collaboration will be conducted via qualitative expert interviews. The aim is to evaluate the applicability of existing models and identify situational factors that may be integral to a post-pandemic trust model. The central research question is as follows:

"How can trust be enabled during the transformation of face-to-face teamwork to a virtual environment in the context of COVID-19?"

By addressing this question, the aim is to provide a context-specific evaluation of trust in virtual teams to establish a trust model that will be applicable beyond the crisis in post-pandemic work practices. This is to emphasize that the importance of virtual teamwork is expected to increase significantly in light of the pandemic-induced acceleration of digital transformation in the corporate world. According to a report from the Massachusetts Institute of Technology, by the first week of April 2020, 34.1% of Americans who used to commute to work were working from home due to the coronavirus (Brynjolfsson et al., 2020) The increasing number of individuals currently working from home indicates that this response to the virus might have expedited an existing trend towards remote work. Numerous organizations will probably continue to adopt remote work to a greater extent even after the pandemic, due to ongoing health concerns and also due to the benefits of operational efficiencies according to Turesky et al. (2020). Moreover, it can be observed that virtual teams had already played an increasingly significant role in the pre-pandemic world of work and the global development towards virtual collaboration has experienced “a rapid and relentless advancement worldwide due to the pandemic, forcing profound changes, including the emergence of remote video conferencing as a vital professional lifeline” (Turesky et al., 2020). The results of this research can serve as guidelines for adequate handling of this virtualization of teams in practice, providing organisations with essential methods and information that support effective collaboration within virtual teams and thus maintain competitiveness.

This research can also serve as a basis for further in-depth analysis and validation through more extensive, quantitative research into this currently highly relevant and yet little-studied topic.

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The research work is divided into six chapters. The introduction is followed by an elaboration of the current research status on key concepts and models such as virtual teams, trust and trust-building within virtual teams. In the trust-building section, an overview of current research into trust models is presented, which serves as a basis for the context-specific adaptation to current challenges in virtual collaboration through this research. In the following, the methodology will be presented for context-specific verification and supplementation of the current state of virtual team and trust research through qualitative expert interviews. It includes the research design, expert selection, preparation and conduct of interviews, and statistical analysis using coding guidelines. The interview transcripts are analysed using coding guidelines, and the results section presents the individual qualitative evaluations of the interviews, followed by their synthesis and further analysis. Subsequently, the context-specific adapted trust model is presented and explained. The discussion includes deriving recommendations and critically reflecting on the methodological approach. The work concludes with a summary.

1 Theoretical Foundation

1.1 Virtual teams

In literature, various aspects are mentioned to define virtual teams. Therefore, a specification of the studied teams for this paper is necessary. Based on a broad definition, Martins et al. (2004) defined virtual teams as teams that work together in different locations, in mutual dependence and via communication technologies. Looking at the evolution of the understanding of virtual teams, previous literature has focused on multi-site working (Jarvenpaa & Leidner, 1998). As further research into the concept of virtual teams unfolds, the use of electronic communication technologies became more relevant for the terminology (Bell & Kozlowski, 2002; Hertel et al., 2005), as well as the type of technology used, such as communication channels (Windsor, 2001). Because of globalization and increasingly connected cooperation, other aspects for specifying terminology have been added, such as collaboration across time zones, long distances and organizational boundaries (Malhotra et al., 2007). In addition to the question of which aspects define virtual teams, there is also an ongoing discussion in the literature about the relevant dimensions of the virtuality of these teams. These include the significance of the communication used, the degree of geographical distribution, media synchronicity or cultural diversity (Hoch & Kozlowski, 2014; Kirkman & Mathieu, 2005). Especially in the current literature, the factor of global cooperation is essential. This factor is one of several aspects that do not apply to the teams studied in this paper. Therefore, a clear delimitation of the examined virtual teams is important. A determining element should be the context-specific increased or exclusive use of technology in the cooperation of the virtual teams studied. This factor was chosen because it can be found repeatedly in research into virtual teams, which suggests a high relevance of this factor. Virtual teams that were already working together entirely virtually before the pandemic are to be distinguished from the teams studied in this paper, as these teams have a different starting situation for maintaining the level of trust in virtual collaboration during the pandemic.

1.2 Trust in virtual teams

Concept of trust

The lack of a standardized definition makes it necessary to specify the concept of trust to which the work will refer. Frequently cited is the definition by Mayer and colleagues. They describe trust as "the willingness of one party to be susceptible to the actions of another party, based on the expectation that the other party will perform a certain service for the trustor, regardless of the possibility of monitoring or controlling that other party" (Mayer et al., 1995, p. 712). What becomes clear here is the dyadic construct between a trusting party, the trustor, and a trusted party, the trustee. Likewise, it encompasses the concepts of trust and trustworthiness. For the comprehensibility of this flow, a separate specification of both terms follows. Fulmer and Gelfand (2012) linked trustworthiness to perceptions and beliefs as well as expectations about the other party's intentions and behaviour, while McKnight et al. (1998) defined trust as the willingness to rely on fiduciaries to undertake a task. This distinction is also consistent with the much-cited model of Mayer et al. (1995). It clearly distinguishes between trust, the antecedents of trust and the consequences of trust. In summary, the majority of established literature definitions consider one or both of these respective vital elements to be important: the positive expectation of favourable treatment by another party and the willingness to be vulnerable (Colquitt et al., 2007; Fulmer & Gelfand, 2012; McEvily & Tortoriello, 2011; Rousseau et al., 1998). Traditional models of trust have seen trust as the result of a long history of interaction. However, previous studies of trust in virtual teams have shown the existence of high initial trust between team members (Hung et al., 2004). Based on the dual-process theories of cognition, it has been argued in the past that individuals form trust attitudes through three different pathways at several stages of a relationship: the peripheral pathway, the central pathway and the habitual pathway (Coppola et al., 2004). When individuals lack information about each other in the initial phase of a relationship, they rely on peripheral cues (e.g., information from third parties, social categories, roles and rules) to build trust (Coppola et al., 2004). Once individuals have a shared history and knowledge about the other party, they use the central pathway to assess the other party's capabilities, integrity and benevolence. Eventually, after long periods of shared history in which individuals develop a habitual pattern of trust, along with possible emotional attachments, they are no longer motivated to evaluate trust consciously and instead simply implement previous trust attitudes via the regular route. The mediated communication environment, predominantly used by virtual teams, slows down the progression between the three routes and increases perceived risk. Past research has focused on three components of trust: capability, integrity and benevolence (Greenberg et al., 2005). It describes and demonstrates which of these components are critical for each lifecycle phase of the virtual team (team building, beginning, organizing, transitioning and task completion). The suggested steps of action for each phase are a starting point for managers and team leaders to help team members develop trust and maintain it, until the successful completion of the project.

Trust in virtual teamwork

Extending the consideration of trust to the team context, it refers to the trust shared among team members (Breuer et al., 2016; Fulmer & Gelfand, 2012). Extending the consideration to the team level, the dyadic aspect of trust comes into focus, which includes trustees. Team trust is understood as emergent and develops from team members' shared perceptions and

past experiences (Jong & Elfring, 2010; Klein & Kozlowski, 2000; Langfred, 2004). This highlights the dynamic aspect of trust and the development and strengthening of trust, which leads to the question: How can this dynamic be positively acted upon?

1.3 Virtual teams and trust development

As there is a strong consensus on the relevance of trust within a team for its productivity and efficiency, numerous studies identify various positive factors influencing this trust. Results from different studies indicate that the following three key factors positively influence being perceived as trustworthy. The first key factor is "ability", i.e., the aptitude, characteristics and competencies that enable a person or group to influence others (Mayer & Davis, 1999). Second is the benevolence factor, which refers to the extent to which a trusting person believes that the party they trust wants to do good for them (Mayer & Davis, 1999). The last item is integrity. This refers to the trusting person's perception that the party they trust follows a set of principles that the trusting person accepts (Mayer & Davis, 1999). Colquitt et al. (2007) also emphasized the unique relationship between these three key factors and trust.

The influence of these aspects on the perception of trustworthiness in the context of virtual teams has been empirically demonstrated (Aubert & Kelsey, 2003; Jarvenpaa et al., 1998). Numerous empirical studies have identified a wide range of antecedents of team trust. These include organizational committal behaviour (Webber, 2008), as well as predictable and timely communication and frequent interactions (Germain, 2011; Henttonen & Blomqvist, 2005; Lacono & Weisband, 1997). Similarly, a study by Jarvenpaa and Leidner (1998) showed that information sharing is a positive influencing factor. From this, the relevance of communication flow for team trust can be deduced. Furthermore, a positive relationship with perceived fairness has been found (Dayan & Di Benedetto, 2010), while behavioural monitoring, such as tracking the work progress of others (Jaakson et al., 2019; Webber, 2008), has been identified as unfavourable for trust in virtual teams. Ferrazzi (2015) particularly emphasized building shared respect, which should be the norm in a team, as one of the most important aspects of working in a virtual team. Several other factors, namely fostering social exchange at the beginning of the project (Jarvenpaa & Leidner, 1998), shared values (Stewart & Gosain, 2006), positive reputation (Henttonen & Blomqvist, 2005); (McNab et al., 2012), proactive behaviour (Jarvenpaa & Leidner, 1998; Lacono & Weisband, 1997), feedback (Geister et al., 2006; Henttonen & Blomqvist, 2005) and keeping commitments and following rules (Stewart & Gosain, 2006; Walther & Bunz, 2005) have been empirically demonstrated as antecedents of team trust. Furthermore, virtual teams with high levels of trust establish clear roles and create opportunities for casual, non-work-related interactions among employees (O'Hara-Devereaux et al., 1994). A study by Breuer et al. (2019) integrated and complemented a variety of previous empirical findings. In doing so, the study filled a research gap by providing a theoretical framework for the emergence of trust in a virtual team. In addition to capability, benevolence and integrity, the model identified predictability and transparency as key factors (Breuer et al., 2019). Predictability reflects consistency and regularity of behaviour (Dietz & Hartog, 2006), while transparency indicates the need for transparent and open information sharing in virtual teams. These other vital factors are clearly related to the results of the studies mentioned above, and Breuer also provides empirical evidence for the study results. However, due to the topicality and novelty of the exceptional situation caused by COVID-19, it is questionable whether the identified factors also show an equal measure or even a positive correlation to trust in this study. While the need for social interaction and team cohesion may

have higher relevance in the current crisis, it is questionable whether the reduction of contact during the pandemic allows this. Similarly, a lower relevance of the general challenges in building trust in virtual teams included in the study may be suspected. For example, differences in work culture and practice, which according to McDonough et al. (2001) can lead to problems in managing virtual teams, while language barriers are also among the everyday challenges of virtual collaboration. These challenges to building trust in virtual teams are present to a lesser extent in the context studied. In addition, the studied teams were confronted with virtualization in the middle of a project rather than at the beginning. In summary, current approaches to trust development in virtual teamwork do not meet the challenges of the current situation in many ways, such as for the team context studied in the paper. Therefore, it can be assumed that there is a need for context-specific relevant and practicable approaches to address the current challenges, which the present work aims to do.

2 Methodology

2.1 Research approach

Qualitative research

The approach to the underlying question of this paper should enable us to consider this new situation and the associated difficulties in their full scope and complexity. The aim is to look at the disruptive changes brought by COVID-19, their impact on teamwork and the adjustments required when switching from direct to virtual collaboration. Qualitative research is particularly suitable for dealing with new types of problems such as given in the study context. (Lamnek, 2010; Döringer, 2019, p. 265)

Due to the open approach, this way offers the best-rated suitability for the consideration of the topic. The characteristic of the chosen methodology is a careful consideration of solutions that have not yet been considered, which should enable a different approach to the solution. The factors of trust reinforcement in virtual teams identified in the previous chapter will be used as a framework with the model by Breuer et al. (2019) and the related supporting theoretical foundation for the evaluation of new and current solution approaches.

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Table 1 | Trust model

Perceived trustworthiness factors			Behavioural intention
Competence	Task-related	Ability	Team trust
Reputation			
Conscientiousness			
Media literacy			
Proactivity	Team-related		
Positive humour			
Friendliness			
Feedback culture			
Participation			
Task support	Task-related	Benevolence	
Autonomy			
Emotional care	Team-related		
Loyalty			
Keeping commitments	Task-related	Integrity	
Availability			
Consistency			
Confidentiality	Team-related		
Ethical values			
Information transparency	Task-related	Transparency	
Responsibility assignment			
Sharing private information	Team-related		
Openness			

Source: authors (adapted from Breuer et al., 2019)

Therefore, the model of Breuer et al. (2019) will be considered as a guideline for the following qualitative and context-specific investigation of the concept of trust in team-related work. In addition, the approach is to find out how the structures in the formation of trust in teams have changed in practice and what effects on cooperation in virtual teams have arisen due to the current situation. In this context, the current state of research into virtual cooperation and trust and the conditions for cooperation is only of limited use and requires a new evaluation. The existing perceptions will be questioned with the help of the chosen research approach. The aim is to examine which approaches can still be used adequately and whether there is a need to adjust the theoretical basis. For this purpose, qualitative research utilizing the following expert interviews provides access to expertise and knowledge to answer the research question of this study.

Expert interviews

In order to gain the intended knowledge, expert interviews are chosen as the data basis for the study. In order to evaluate the solution approaches concerning their context-specific relevance, consolidate them and test their practical usefulness as trust-building factors, access to adequate specialized knowledge and socially institutionalized expertise (Sprondel & Grathoff, 1979) should be created. In this context, the choice of appropriate experts should be seen as decisive for the results of the qualitative research and for gaining knowledge that is useful for this paper. Knowledge in the following three knowledge dimensions, which define an expert according to Sprondel & Grathoff (1979), is evaluated as a target-oriented information basis for answering the research question: operational knowledge, contextual knowledge and interpretive knowledge. Experts with operational knowledge possess knowledge about internal team processes and decision-making routines, representing

binding rules for solving problems in the team (Sprondel & Grathoff, 1979). This includes relevant knowledge about the teams' operations during the pandemic. Contextual knowledge as another knowledge dimension includes knowledge about context-specific framework conditions, challenges and the practicability of solution approaches (Sprondel & Grathoff, 1979). Contextual knowledge is primarily a matter of assessing and evaluating specific contexts rather than exploring expert action (cf. Meuser et al., 1991, p. 446) In this research, access to this knowledge dimension is particularly relevant, as a specification for the pandemic situation requires both expertise and experience in this context. Thirdly, the expert definition includes interpretive knowledge (Sprondel & Grathoff, 1979), which allows assessing subjective assessments and their relevance for possible confidence-building approaches by the experts interviewed. This also enables a personal assessment of the practicability of trust-building factors. Compared with studies that have dealt with similar problems and had an analogous research objective, such as the study by Breuer et al. (2019), expert interviews were also used to gain the intended knowledge. By analysing the respective rationale presented in the existing studies, the choice of this methodology and the associated approach for the study is assessed as appropriate and purposeful.

Theoretical framework

By using a theoretically guided approach, this study builds on a trust model as a theoretical basis (Kaiser, 2014). This model is used as an introduction to specify and clearly define the concept of trust within teams. A look at established procedures for investigating this concept shows that trust is often measured using comparatively specific measurable and strongly positively correlated factors. These factors are assessed as a basis for the existing measure of the highly abstract concept, of trust within the team, and, consequently, defining and analysing the concept of trust under investigation. This is also used as a structuring and framing guideline to identifying trust-building approaches in this context. By using a theory-driven approach, a context-specific review of the existing state of research is conducted, referencing the research of Breuer et al. (2019) as a theoretical basis. The literature review by Breuer et al. (2019) offers both a bundling of the current state of research for this study and the necessary topicality for the study through the integration and expansion of separate previous findings. In addition, the analogous structure of the study design to this referenced research enables the highest possible comparability of the study results. Breuer and his colleagues also used the method of expert interviews in their study, interviewing 55 educated and trained professionals with experience in virtual and face-to-face teamwork. The interpretative procedure of data analysis of qualitative expert interviews requires a high degree of structuring involving the use of an interview guide (Kaiser, 2014, p. 5), for which the model of Breuer et al. (2019) is suitable due to the structure and the clustering of factors; it is used as a basis for the structure of the interview guide.

2.2 Data collection

Sample

Given that the selection of the experts who serve as the essential "information suppliers" (Kaiser, 2014, p. 2) holds crucial significance for the research, the inclusion of experts possessing the necessary expertise has to be ensured through a pre-test (Meuser et al., 1991). This was conducted with a first pre-selection, based on selection criteria established

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by the authors. Furthermore, additional selection criteria were subsequently queried through a questionnaire to further refine the chosen experts.

Table 2 | Expert selection criteria

Selection criteria	Selection value
Professional experience	- 15 years or more
Professional experience in IT consulting industry	- 3 years or more
Experience working in a team without virtual collaboration	- One team or more
Experience working in a virtual team	- Experience in at leas one virtual team according to the definitions stated in the theoretical foundation
Experience in a leading position in a team with transformation from face-to face to fully virtual collaboration due to the pandemic	- At least temporarily experience in such a team - Team switched to fully virtual teamwork due to COVID-19 - Position of at least team leader or higher with primary responsibility for the affected team - Expert part of the team for at least one year
Context of affected team	- Intercompany constellation of several teams within a consulting project, with at least one team on the client and supplier side - Project start > 6 month before pandemic - Project end > 6 months after main transition to a virtual team due to the pandemic
Members of affected team	- 5-15 members in affected team
Trust relationships within the team at the beginning of the pandemic transformation process	- Team members had any kind of contact in the work context before the transformation to virtual collaboration - Familiar
Turnover rate in affected team	- Turnover rate low - Exception: High short-term fluctuation due to possible abrupt reorganization of team constellations within the project due to COVID-19

Source: authors

The selection criteria ensured the experts' comprehensive professional experience in the IT consulting sector, with a focus on the digitization of the work environment, which is ensured by the contextual demands encountered in their consulting activities.

The chosen experts possess operational knowledge of working with virtual teams and contextual knowledge derived from practical experiences during the pandemic-induced transition to virtual collaboration. The experts' expertise is rooted, among other factors, in their consulting roles related to the digitization of organizational units and structures, which require knowledge of established and new methods for designing virtual collaboration. Additionally, their consulting work involves the competence to proactively develop and implement advanced and innovative problem-solving methods. They can also provide insights into current pandemic-specific conditions, decision-making processes, challenges arising from this context and the practicability of solution approaches within this investigated framework. The collection of such knowledge, with its contemporaneity and breadth, primarily occurs through their professional insights into individual company structures and the respective challenges faced during virtualization processes, particularly in the IT consulting industry.

To gain a profound understanding of team dynamics in this environment, another main criterion was that the experts themselves were affected by the pandemic-induced

virtualization within their own consulting teams. This ensures that they possess knowledge about the problems encountered during the introduction of virtual teamwork and their practical solutions. The selected experts have been exposed to the pandemic-induced virtualization of collaboration both internally and externally, providing comprehensive insights from various perspectives on virtualization during the pandemic.

During the selection of interview candidates, the positions held by the experts within their teams affected by the pandemic were taken into consideration. The selection criteria aligned with each of the expert criteria provided by Meuser & Nagel (1991), where experts are defined as either individuals who bear a certain degree of responsibility for the design, implementation and control of problem solutions or have privileged access to information concerning individuals or decision-making processes. Moreover, to ensure the fulfilment of this expert criterion, the selected experts had been actively involved in the respective project contexts for a minimum duration of one year. The selection criteria specify that the adjustment of working methods in the experts' teams must have been due to COVID-19, and the transition to virtual collaboration was causally linked to the pandemic. Furthermore, the relevant factors include the exclusion of the factor of initial virtual contact and the associated challenge of building trust.

The consulting firms where the expert candidates were employed were pre-selected based on an open corporate culture and flat hierarchies. The contact with the candidates was established through personal recommendations from individuals who recognized the expertise of the expert candidates, in addition to the authors' pre-selection using the selection criteria. This approach is recommended by Kaiser (2014, p. 78) and aims to create an open and honest conversation climate, which was deemed advantageous for knowledge sharing through our research methodology. The assumption according to Kaiser (2014) was that it encourages these professionals to share their knowledge to a high degree. Thus, the authors addressed a methodology-specific issue in data collection through qualitative expert interviews in their research design. In a neutral interview context, there is a risk that the respondents' information is not fully accessible due to potentially obstructive conditions (Vogel, 1995, pp. 78 ff.; Kaiser, 2014, pp. 80-82), such as the external perception of the statements made in the interview.

According to the highest possible level of expertise in the topic and the pandemic-related context, a preselection of experts was made in consultation with an anonymous experts. Questionnaires and the coordination of the preselection will ensure that the context-related knowledge is available, that the similarity of the contexts is given in the course of the virtual teamwork and that there is the highest possible comparability of the examined cases.

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Table 3 | Properties of chosen experts

Properties	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
Position	Leadership of consulting areas of business intelligence, data integration, and IT consulting	Leadership of public line of business, department north	Senior consultant	Senior consultant	Leadership of public line of business, department west
Position in affected project(s)	Technical project management, department lead	Programme leader in charge, department lead	Project leader in charge	PL coach, method consultant	Department leader, responsible for 15 teams in the department
Experience in virtual teamwork	Eight partly virtual teams and four fully virtual teams were organized	Responsible for department virtualization and programme leader including multiple projects	More than five partly virtual teams and one fully virtual team organized	One fully virtual team, jointly responsible for organization of a project with complete pandemic-induced virtualisation	Responsible for 15 teams that had to fully adapt to virtual collaboration due to the COVID-19 lockdown

Source: authors

Interviews

A total of five expert interviews were scheduled. Although this decision impairs the generalizability of the results, it must be seen against the background of the limited scope of the work. This limitation also makes it possible to place an appropriate focus on a structured and well-founded evaluation of the individual interviews.

The interviews were structured based on a semi-structured guideline and a theoretical foundation, which is explained below. The implementation follows the structure of the underlying guideline. It is divided into three parts explained in more detail below: An introduction to the expert context, a central part on the review of the theoretical basis and context-specific extensions in the third part. The choice of a semi-structured guideline offers the advantage of a high degree of flexibility in conducting the interview, which means that the questioning techniques explained below can be used to respond to the experts' statements accordingly (Kaiser, 2014, pp. 80-81; Meuser & Nagel, 1997). This is essential for ensuring compliance with the quality criterion of openness for expert interviews according to Kaiser (2014, p. 9). In the introductory first part of the questionnaire, questions are primarily asked to assess the expert's background experience. The aim of the questioning techniques and interview design is to create a pleasant atmosphere for the interview initially, which should positively affect the transfer of knowledge and information (Kaiser, 2014, pp. 79-80). The experts' possible assessment patterns, such as assessing specific focal points, will also be uncovered in this first part through appropriate questions. The central part focuses on the evaluation of context-specific trust-strengthening influencing factors, both positive and negative. Based on the basic theoretical model of Breuer et al. (2019), the five critical factors of trust-building are queried in five sections. The total of 22 subcategories, which in Breuer's

model represent positive influencing factors for the respective key factors, are not mentioned in the questions. This serves to avoid bias in the survey and suggestive questions. Flexible questioning techniques are used to gather information. According to Meuser & Nagel (1991), question types such as interpretation questions are used to enable the classification and interpretation of new aspects and thus context-specific model extension or adaptation. While deductive and inductive knowledge gain is primarily intended in the central part, the third part explicitly aims at inductive knowledge gain. The third part focuses primarily on specific extensions of the frame of reference, the theoretical basis of Breuer et al. (2019). It includes the question of positive influence factors on trust-building not yet covered by the basic theoretical model, which could not yet be placed in the main part. Due to the flexible orientation of the question techniques in the semi-structured guideline, potential new factors can be addressed in a particularly variable manner in order to evaluate whether the basic theoretical model should be expanded subsequently.

2.3 Data analysis

The interviews were video-recorded for subsequent transcription. The transcription of the interviews for data analysis is based on the guidelines of Meuser & Nagel (1991). In the following, a systematic qualitative content analysis was carried out, analogous to the underlying study by Breuer et al. (2019). Here, transcribing the interviews to ensure the significance of the direct reproduction of the interviews was considered most advantageous. Methods characterized by a more summarizing character, such as written memory transcripts, were excluded in advance as less functional due to their implied higher inaccuracy. The data analysis was structured in the sense of the best possible comparability with the underlying trust model of Breuer et al. (2019), whereby the category system of Breuer et al. (2019) was adopted congruently (see Table 4, adapted from Breuer et al., 2019).

Table 4 | Coding map

Main category	Subcategory	Criteria for coding into this category
Task-related ability	Competence	Expert knowledge, sovereignty, perceived ability, strength, assertiveness, capacity, work experience, measuring up to performance expectations, defective working (negative), generation of good results/successful performance, overtaxing (negative), qualification, meeting the demands of the position
	Reputation	Customer feedback, third person's recommendation, positive previous experience, report of previous successes, shared successes
	Conscientiousness	Structured working, decent working, perfectionism, accuracy, good preparation, preliminary discussion and debriefing, tactical working, sense of duty, checking of tasks
	Media literacy	Looking for personal conversation when in difficulties, kick-off-meeting vs. lack of face-to-face contact, adequate handling of media (e.g., phrasing emails), fit of medium and content
Team-related ability	Proactivity	Independence, no re-delegation, responsibility, interest in work, indifference (negative), extra-role behaviour, commitment, (lack of) own personal initiative (negative), refusal to work (negative), ambition, motivation to work, (lack of) performing voluntary tasks (negative)
	Positive humour	Positive humour, fun, office parties

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	Friendliness	Sympathy, creation of a positive atmosphere, friendliness, impolite behaviour (negative), showing interest in colleagues (small talk), first-name basis, please, thank you and no interruption in conversations, coffee/lunch together
	Feedback culture	Admission of mistakes, reporting mistakes appreciatively, providing feedback, constructive conflict resolutions, appreciation of work, reporting mistakes to the boss instead of resolving them (negative), delayed feedback (negative), support after mistakes, showing understanding for mistakes, no admission of weaknesses/mistakes (negative), suggestions for improvement upon criticism, learning from mistakes, expressing criticism openly, mentioning external reasons for the sake of justification upon criticism (negative), personal attacks (negative)
	Participation	Making decisions jointly, openness to ideas and suggestions, including team members' wishes, implementing suggestions, opinions and ideas, flat/no hierarchies, finding a common consensus, asserting one's own ideas uncompromisingly (negative)
Task-related benevolence	Task support	Egoism (negative), (declining) cooperation (negative), extra-role support, helping with job training, denial of support (negative), denial of help (negative), answering questions, support to high workload, reassurance, helpfulness, explanation of circumstances, work delegation despite high strain (negative), work delegation without offers of mutual support (negative)
	Autonomy	Omission of control, offering room for manoeuvring, promotion through demanding tasks, "confiding" of responsible tasks, free job design/working hours, no work delegation (negative), great leeway in decision-making
Team-related benevolence	Emotional care	Being there for others with problems, listening, motivating, supporting, encouraging and motivating in wearing situations, helping with private matters, reassurance upon stress, "taking care"
	Loyalty	Waiving one's own benefits to grant others an advantage, representing decisions together, no doubting of colleagues' work, exposing and doubting colleagues openly (negative), harming others for own benefit (negative), stabbing others in the back (negative), rolling off work on others (negative), solidarity, blaming colleagues (negative)
Task-related predictability	Keeping commitments	Providing results that were agreed on, adhering to work instructions, fulfilling prescribed tasks, adhering to mutually agreed arrangements, unexcused missing at meetings (negative), fulfilling tasks differently than discussed (negative), not respecting deadlines (negative), adhering to schedules, making promises and not keeping them (negative)
	Availability	Prompt feedback, prompt reply to emails, frequent communication, no reply to group emails (negative), no reaction to inquiries (negative), immediate availability, synchronous communication (fast sending forth and back of messages), confirmations of receipt
	Consistency	Doing what you say, appearing predictable, fulfilling others' expectations, being cranky (negative), often changing opinions (negative)
Team-related integrity	Confidentiality	Not telling confidential information to third parties, wrongly passing information on to others (negative), not talking about others' mistakes, not passing on of events, "squealing" (negative)

	Ethical values	Moral acting, opportunism (negative), speaking badly behind someone's back (negative), accordance with values, lying (negative), keeping one's word, identification, similar performance claims, unethical behaviour (negative), stealing (negative), blasphemy (negative), "kiss up, kick down" (negative)
Task-related transparency	Information transparency	Clear communication of information, complete information, regular team meetings, regular arrangements, information about noncompliance of tasks, punctual communication of information, communication of realistic deadlines, reasons as to why and when a task has to be done, explanation of backgrounds
	Responsibility assignment	Clear instructions, no multiple assignments to tasks, clear responsibilities/roles, clear task areas
Team-related transparency	Sharing private information	Talking about private matters, sharing mutual private interests
	Openness	Discussing confidential matters, speaking openly to one another

Source: authors (adapted from Breuer et al., 2019)

The following material review and interpretation were carried out with the research question in mind through initiated text work and using open coding to expand and revise the initial category system. In doing so, the initial category system of the theoretical basis was reviewed and supplemented by the context-specific relevance of the existing categories and the categories to be added. This deductive-inductive approach thus addresses creating a trust model with practicable and relevant factors in the context of the pandemic. For the inductive data analysis, analogous to the primary category system, first-level topics are formed from the second-level codes of Breuer et al. (2019), which are aggregated into main concepts. Since context-specific main concepts and themes or codes have to be added to the theoretical framework and elaborated anew in the second part and especially in the third part of the interview, this was done with an awareness of the required highly structured use of methodological competence. The experts' virtual teamwork perspective and evaluation patterns, in general, were included, as well as their respective experience of virtualization during the pandemic within their own consultancy project. The basis for this was the analysis of the data from the first part of the interview. With the inclusion of the experts' background, perspective on virtual collaboration and respective project experience context during the pandemic, a content-related analysis, identification and weighting of the respective codes took place.

2.4 Critical reflection of methodology

Even though a qualitative approach using expert interviews can lead to new directions, it should still be borne in mind that this is a demanding methodology. It includes work steps that have considerable problem potential and require a high level of field competence on the part of the researcher. The preparation phase already involves high risk and considerable problem potential of possibly violating the scientific quality criteria. In addition, potential errors can hardly be corrected during the analysis (Cheng et al., 2016). Qualitative research always has a subjective character, which is contrary to the intended objectivity. In addition, there is a comparatively small number of cases in contrast to standardized, quantitative research. It should be noted that the generalization of results and statements must be viewed critically against this background. However, at the same time, qualitative research methods are particularly suitable when the theoretical knowledge on the research question is not yet well

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developed. New correlations are to be identified exploratively, as is the case in the context of the pandemic. However, the scope of the results remains limited to the units of analysis studied and similar team contexts. A high affinity for IT characterizes these teams. Therefore, a high level of competence in remote collaboration can be assumed, which also suggests the existence of a corresponding initial trust basis in these teams. Other industry-specific team characteristics, such as high competencies in agile collaboration and experience in dealing with corporate crises, are further limitations for the scope. These are possible factors influencing disruption through the sudden virtualization of the team during the pandemic and should be considered when generalizing the results. The theoretical relevance of the results is to be classified accordingly and is aimed at teams with similar soft and hard skill levels from the German business context. In addition, effects due to the methodology are conceivable. The interviews might not capture positive factors influencing trust in virtual teams. It is possible that these are seen by the interviewees as presupposed or already established and are therefore not addressed or cannot be mentioned as such unconsciously. An initial interview situation that was as open as possible was created by the fact that some of the interviewees belonged to the same company. This also ensured that access to the relevant experts was established. Questioning techniques were used to create the conditions for an interview situation that was as pleasant and personal as possible. This addressed the challenge of creating the corresponding willingness to share their expertise and the intended information. However, critical to this willingness to share company knowledge was the initial information about a possible publication of the work. It can be assumed that, consequently, in the interviews, there may be a tendency of the experts to answer in the sense of social desirability and intended public presentation. Therefore, a possible subjective bias by both the researchers and the persons studied must be considered in the analysis and interpretation. It was also intended to create a heterogeneity of the perspectives considered.

Nevertheless, the selection of experts should also be viewed critically, as it can be assumed that the experts have a positive attitude towards the topic due to their specialization in the topic. In order to counteract the possible influence on the evaluation of the factors influencing trust, this disturbing factor is considered during the analysis and interpretation. For the analysis, to avoid further possible confounding factors, a highly structured approach is taken, analogous to the basic theoretical approach.

3 Findings

3.1 Individual interview findings

Interview – Expert 1

Expert 1 shows himself to be a technically and analytically oriented leadership and trust type who attaches importance to the consistent delivery of good quality work results to the customer, despite situationally substantial challenges. He thus also links the allocation of trust within the team. According to Expert 1, the basis for successful cooperation, regardless of the degree of virtual or face-to-face collaboration, is competence in all aspects that positively affect the team's performance. In addition to a high level of appreciation, there is also an expectation for these aspects concerning the team, and no change was observed here due to the COVID-19-related virtualization. With regard to the challenges associated with virtual collaboration, Expert 1 places a strong emphasis on skills that ensure high professional

commitment within the team, such as task support or independence. Competencies that primarily address an excellent team atmosphere are less mentioned. Particularly important for continued strong trust within the team in such a stressful situation, he emphasized proactive, independent and self-reliant action within the team. Independent task support is emphasized and desired, especially within the team, and a strongly autonomous way of working with the team members is considered adequate. He also saw regular feedback and exchange regarding professional topics as situationally significant factors for successful cooperation during the pandemic. Although the existence of positively correlating factors on the predictability of work results established in the team is also seen as a prerequisite, he strongly emphasized that keeping commitments in virtual collaboration is crucial for trust and successful cooperation. This is to ensure consistent delivery of results by the advisory team in such an unpredictable situation. In the virtual environment, the consultant was aware of the risk of information loss, so he took measures to create a high level of information transparency. It mainly addressed task-related transparency rather than interpersonal transparency within the team. Factors that illustrate integrity within the team were not explicitly addressed. In addition to the pandemic-related challenges with a negative impact on team performance, Expert 1 was also aware of his staff's situationally solid private challenges. In the role of enabler, he consciously established more substantial personal leadership care within the teams during the pandemic.

"That means that the employees or colleagues have to be encouraged much more to say, 'How is it for you?' because you do not really notice the facial expressions."

This was also expressed through an increased understanding of performance losses of individual team members, which were due to increased personal stress.

Interview – Expert 2

For Expert 2, working independently and on one's own responsibility and delivering high-quality work results by the team members are elementary for trusting cooperation. Building on this foundation, he initially gives the members of his team a leap of faith. This initial essential trust can be maintained or disturbed by appropriate action. The corresponding competence of a team member is assumed and not emphasized as situationally promoting trust. In order to maintain the level of work results, he emphasizes the increased importance of conscientious work as well as adequate choice, as well as the sensible use of communication channels in virtual cooperation. According to Expert 2, strong proactivity within the team is equally important to maintain cohesion and exchange within the team despite the challenges posed by the pandemic. Mainly due to the pandemic-related restriction of contact, this factor becomes particularly important situationally in order to be able to respond to the individual team members. In such a tense situation with the associated psychological strain on all actors, Expert 2 points out the strong relevance of friendliness and sensitivity in personal contact and a direct and transparent communication structure within the team. Expert 2 also emphasizes this in connection with the context-specific importance of a quick and open discussion of problems and the necessary feedback culture within the team to avoid misunderstandings in virtual cooperation.

"On the one hand, of course, I have to say much, much more clearly what I expect – and also give feedback again, did I get across what I wanted to convey? Furthermore, of

course, the other way round – and on the other hand, my counterpart has to act in the same way – and listen attentively and also ask if anything is unclear."

Expert 2 refers to the lack of informal conversations, for example, in the corridor, and the resulting loss of information in the disruptive and abrupt virtualization due to the lockdown. This makes it more difficult to exchange information about the project to focus on common goals, and, as a result, maintain a commitment to the project. Therefore, maintaining the exchange and flow of information within the team is considered elementary. In addition, according to Expert 2, adherence to deadlines and agreements within the team should be prioritized to continue to ensure continuous delivery of work results. This reliance on the consistency of work results is seen as an essential factor influencing trust since a high degree of autonomy is granted, and performance is evaluated based on results. This requires, among other things, a situationally increased openness in order to be able to trust the proactive addressing of problems and clarification of ambiguities by a team member. This is equally relevant to the particularly emphasized elementary requirement of autonomous working, which was assessed as even more crucial than before during the COVID-19 pandemic.

On the other hand, task support is addressed in the form of the desired mutual support of the team members, whereby the self-management of the participants and the team as a whole is rated as necessary. Autonomy thus has a significantly higher value for trusting virtual cooperation. According to Expert 2, trust and the emotional bond in the team are indispensable factors for the previously mentioned commitment to the project and its goals. He emphasizes that interpersonal care is essential to maintaining the team's emotional bond virtually in this psychologically challenging situation. The integrity of the members within the team, on the other hand, has not taken on an increased significance due to the virtualization caused by the pandemic.

Interview – Expert 3

Expert 3 emphasizes the importance of trust in cooperation for maintaining work performance. Due to the circumstance-related main focus on maintaining team performance, trust-building factors that primarily aim at consistent work performance are emphasized, such as competence, conscientiousness and independent work management. These intertwine and are highly relevant to this goal in a collaborative and interdependent way. Competence in media use, among other things, is not explicitly seen as relevant in the current situation. However, he assumed a high level of it in his team before and during the pandemic. In the context of the pandemic-related virtualization of his teams, he only emphasizes the situationally increased importance of conscientiousness. He considers sound and professional work to be essential to maintaining the level of performance during the pandemic. He sees competencies such as task support, friendliness and proactivity, which affect the team climate, as increasingly relevant. He emphasizes the importance of solid proactivity and participation as a basis for trustful cooperation in a virtual environment. In the context of these factors, essential aspects such as a high level of commitment and the ambition to master challenges together are emphasized. Connected to this are the factors of the necessary contribution to the team and a high level of work motivation to ensure successful cooperation in this highly challenging situation.

"Encourage people to use the telephone frequently, i.e., via video conferencing or video telephony, in other words, to avoid the inhibitions that people may have, such as 'Do I call

him or her now when in the office you would simply call across the table,' or to be aware that the inhibitions are there and prefer to make more frequent calls."

Other factors in the area of team-related ability are not explicitly emphasized, with the exception of the feedback culture. However, Expert 3 mentions structures that indicate a strong presence of friendliness and positive humour, such as the playful disciplinary measure of "cake emails". Constant re-evaluation and adaptation to the unstable work environment during the pandemic are emphasized. Examples include the introduction of lessons-learned meetings. Due to the inadequate accessibility and highly unpredictable fluid situation caused by the pandemic, factors such as commitment compliance and accessibility in the team take on an essential role.

In summary, predictability has a situationally increased importance for Expert 3. For this, he stresses the necessity for all participants to make increased concessions in the tense situation. Strong self-management is underlined in order to maintain work and team performance during the situationally worse accessibility. Similarly, the need for reliability is emphasized. By adjusting the timing, the team members' restrictions due to COVID-19 are taken into account. In addition, task-related transparency, especially information transparency, plays a crucial role in virtual cooperation. According to Expert 3, a strong flow of information, coordination and synchronization to maintain the distribution of information in this abrupt change of structures are essential for a constant level of performance. Self-management also has a key function during the pandemic. The necessity of task support in the sense of assistance within the team is emphasized. In this challenging situation, the team members should support each other with work packages and problems and manage this support independently. This has functional relevance for the essential role of autonomy in trusting virtual teamwork. Autonomy is expected here, whereby an enormous scope for decision-making is granted for the design of virtual cooperation. Here, the strong correlation to trust becomes visible through linking this autonomous work design with the condition of delivering good work results. Expert 3 sees increased goodwill, which relates to the team, as firmly established due to the team's many years of cooperation and can therefore not see any increased necessity during the pandemic. Integrity also does not play an increasingly important role for Expert 3 during the pandemic. Honesty and respectful interaction are seen as basic prerequisites for trust in cooperation in general.

Interview – Expert 4

During the pandemic, Expert 4's main priority was independence and autonomous work management within the team. He sees strong professional competencies as a basic prerequisite for trust within the cooperation. Due to virtualization, conscientiousness has also become much more critical. He points out the necessity of precise work documentation for virtual traceability. The role of media competence is also underlined. Here he points out the more decisive role of adequate use of media for the trust placed in virtual cooperation. As a reason for evaluating a team member's work, he states that the virtual presentation of the work results and the team member's media use for team coordination is crucial in perception. For Expert 4, proactivity and participation are essential for trusting virtual cooperation in the area of competencies. He emphasizes proactive, direct addressing of problems within the team as well as a feedback culture that ensures fair interaction. The starting point for this is the tense situation caused by the pandemic, in which calm and objective feedback within the team is situationally advantageous. He also emphasizes the priority of participation, primarily

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through participation in virtual meetings, as well as the importance of increased engagement in the work context of a team member. Due to the lack of insight into the work due to the decentralized nature of the team, Expert 4 emphasizes the higher relevance of predictability for trusting cooperation within the team. This point includes accessibility and keeping commitments. Due to the elimination of spontaneous agreements, he sees the availability of a team member as essential for the team cohesion, as well as the basis for a high level of performance in virtual cooperation. Consistent behaviour is not explicitly mentioned as promoting trust. Furthermore, he emphasizes the situational necessity of greater transparency in the virtual environment, but this is mainly related to the professional task context and comparatively less to the team context. According to Expert 4, the complicated virtual exchange requires the following points in particular: increased coordination, distribution of information and ensuring that all team members are aware of their respective responsibilities and work statuses.

"And that is why it is always very important that [...] the results that you want to bring, i.e., future tasks, or what you have already done, that you also write that down somewhere and say, here is what came out now."

Autonomy is an essential factor for Expert 4 for trust in the team, before and explicitly during the pandemic. Here, autonomy is seen as playing a significant role in maintaining the quality of outcomes within the team. In this context, assistance with tasks plays a supportive and functional role. The aim here is to help the team members to help themselves, ergo to work autonomously. Due to the circumstances, Expert 4 is aware of the need for increased emotional care. However, this is not necessarily actively promoted during virtualization and also takes on a lower personal status. Due to the pandemic, fair treatment within the team is more clearly emphasized, justified by the tense situation of the team members in the work and personal context. In addition, in the context of integrity, he emphasizes the role of honest and direct problem-solving in order to avoid aggravation or emergence of conflict situations in this work environment. For Expert 4, this is classified under feedback culture and is an important component of internal team cooperation.

Interview – Expert 5

Expert 5 shows herself to be a caring manager who builds on emotional trust and places great value on respectful, supportive and interpersonal interaction within her team. For Expert 5, leadership from within the team is an elementary component of employee management. She therefore places great value on the involvement of her team members, both in terms of planning and organization and in terms of transparency and interaction within the team. Due to the COVID-19-related changes in cooperation and the associated virtualization of team leadership, information transparency is a higher priority for them than before the start of the pandemic. Transparent communication strengthens team cohesion and thus contributes to a trusting relationship with each other. In doing so, Expert 5 takes a proactive approach and shares thoughts and information with the team to strengthen trust in the environment and herself.

"I do not know how to do it myself. And forgive me if now comes a measure that maybe does not work so well, but I am trying to get the best out of it for us now."

She is not concerned with directing people but with integrating them and showing them respect. Based on this behaviour, she creates trust within the team and thus creates an

emotional bond among her team members, which positively affects the quality of work within the team.

"I think they also notice that I am fully behind them, and that makes them trust me even more, and they are also more loyal to me."

Sharing personal information and openness within the team is also becoming more critical. This is proactively promoted and supported by her, for example, through an increased number of exchange meetings or small team events. A high priority is to address problems openly and directly and to support each other in tasks. Due to the COVID-19-related changes, emotional care took on a higher significance within the team. Due to the increase in emotional and psychological stress on the staff, increased care had to be ensured. Expert 5 also underlines this with the high prioritization of ethical values such as honesty and sincerity. The proactive introduction of humour and kindness within the team structures has also become a higher priority due to the COVID-19 crisis. These are elementary for maintaining the social factor and team climate within the project. The core here is also the proactive participation of the team members in appointments, team events and communication. In doing so, she promotes independent involvement in the team context. She attaches importance to the fact that this creates an environment of trust, which positively affects the working atmosphere and thus the work results. By promoting proactive and independent behaviour, Expert 5 activates the team members' sense of responsibility and thus ensures a higher degree of trust within the team. Other factors, such as availability within the team structures or keeping statements or appointments, have not been given increased importance during the COVID-19 pandemic. Expert 5 considers these factors to be core factors that must be present as a prerequisite for successful teamwork. In this context, it is also vital for her to have a transparent error culture and communicate potential problems openly to avoid consequential damage or cascading developments. Competence is not a priority for her; she explicitly emphasizes that mistakes play a subordinate role and are rather to be forgiven and that dealing with each other is in the foreground. Expert 5 does not explicitly comment on the points of media skills and responsible working but takes them for granted.

3.2 Comparison of interview findings

Overall, there is a consensus among the experts regarding the design of abrupt and disruptive virtualization: maintaining the team's performance under these highly challenging circumstances. Trust in the team is essential for its performance and efficiency. In the interviews, all the experts focused on the trust-building factors that positively influence the team's performance and less on assumed or unconsidered necessary factors.

It is striking that none of the experts attribute increased importance in this context to the two team-related skills of competence and reputation. Synergies can be identified in the evaluation of these factors as important prerequisites. However, no increased priority is attributed to them during the pandemic. In this context, media competence also does not play a higher role in the examined team virtualization. Expert 4 stands out here with a strikingly contrary position. He emphasizes that the adequate use of technology conveys an important impression for presenting one's own work, which significantly affects the trust placed in the team members. Therefore, he ascribes a corresponding relevance to media competence. However, the general consensus among the experts is that skills related to the team are essential for trustful cooperation in this challenging situation. In this area, proactivity,

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participation and an adequate feedback culture are emphasized by all experts as elementary. These support the maintenance of trust in the team during pandemic-related virtualization and thus also the performance level of the team. It is striking that, in contrast to the model of Breuer et al. (2019), no increased relevance for trust in the team is attributed to the factor of positive humour. However, it can be seen from the structures within the teams and the interpretation of the experts' statements that this factor is established within the teams and is also lived by the team members. Also, in contrast to the model of Breuer et al. (2019), friendliness plays a secondary role for the experts in this context. The underlying view is that this factor is assessed as less relevant for maintaining the level of performance in a tense situation. In the interviews, the experts emphasize that task-related goodwill plays an elementary role during the pandemic.

Task support is of partly functional relevance, aiming to promote a team that works independently and in a self-organized manner. Task support is widely emphasized as essential to enable the best possible performance of the team through these support structures. In this regard, the consensus is that increased mutual support within the team is important for enabling a high level of autonomy and independent working of the team members under these circumstances. Expert 5, on the other hand, emphasizes task support against the background of making it easier for team members to work in a tense situation and thus giving them a sense of support. At the same time, there was a consensus on autonomy as the main influencing factor in trusting virtual cooperation. Expert 2, in particular, rates this factor as elementary. By strengthening the factor of task support, the factor of autonomy is also addressed. Both factors are rated as highly relevant. Expert 4 also takes a contrary standpoint here by prioritizing the autonomy of the team members and assigning less importance to task support. On the other hand, we can see consensus on the increased relevance of emotional care. All the experts emphasize that this plays an essential role in the tense situation, which is partly described as necessary. Expert 5 assesses this as extremely elementary, while Expert 4 refers to the situational necessity. Concerning predictability during virtual cooperation, keeping commitments is one of the prioritized relevant factors; here, too, the experts express a congruent assessment. It is unanimously emphasized that this reliability is essential under highly challenging circumstances to maintain team functionality and team performance.

In contrast, the interviewees unanimously rated accessibility as highly relevant in virtual cooperation. However, substantial concessions in this regard were also rated as important due to the team members' psychologically and organizationally challenging personal circumstances during the pandemic. It is worth noting at this point that consistency, in contrast to the theoretical basis, does not play a decisive role in this context. This significantly lower weighting can also be seen analogously for factors relating to integrity. Confidentiality and ethical values are of a higher context-specific relevance for all respondents than the teams' status quo. These factors are a basic prerequisite for cooperation, especially for Expert 5, who emphasizes their general high, but not situationally increased relevance. Concerning transparency, the interview participants unanimously emphasize the main context-specific influencing factor of information transparency on maintaining team performance and trusting virtual cooperation. The loss of information is unanimously seen as a danger of situational, abrupt virtualization. In all the teams studied, there is a strong focus on creating structures to maintain information transparency and strengthening the awareness of the relevance of this factor within the teams. Responsibility assignment plays a less relevant role in this respect,

pointing to an existing awareness of the distribution of roles within the teams. The consideration of team-related transparency, on the other hand, is strongly divergent. While the omission of informal discussions is mentioned as problematic by all interviewees, the promotion of exchange refers mainly to professional topics and less to private topics. This sharing of private information plays a secondary role for Expert 1, Expert 2 and Expert 3, which is left to the individual team members. Expert 3 does initiate corresponding structures, such as virtual coffee meetings, but these are terminated again in the further course due to low acceptance. Expert 4, who does not expect this, and Expert 5, who considers this private exchange to be a factor that needs to be addressed more strongly to maintain team cohesion in the virtual environment, are also opposed to this. Similarly, Expert 5 also rates openness as an elementary factor for trusting cooperation, which is gaining relevance situationally and virtually. The other experts, especially Expert 2 and Expert 3, also emphasize the relevance of openness in the team in the sense of open and direct discussion of problems for the purpose of quick resolution and a strong flow of information. However, openness is not evaluated as an autonomously situationally more relevant factor.

In summary, there is a strong consensus among the interviewees on the essential trust-building factors in the context of the pandemic; the primary factor here is information transparency. In the area of competencies, conscientiousness, proactivity, feedback culture and participation should be mentioned. Task support, autonomy and emotional care are also among the main influencing factors and are assigned to the desire to live. In the classification of predictability, keeping commitments and being accessible in the best possible way, depending on the circumstances, were uniformly regarded as elementary. It is striking that no factor in the area of integrity was the main focus of the teams studied.

3.3 Resulting trust building model

Based on the expert interviews conducted and the model of Breuer et al. (2019), an adapted model for strengthening and building trust in virtual teams emerges.

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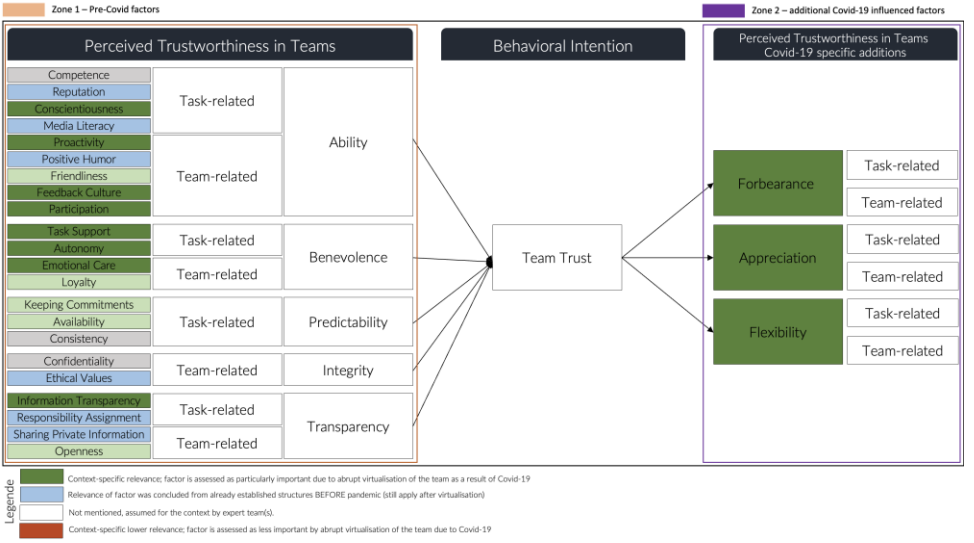
Figure 1 | Resulting trust model



Source: authors

This includes a revision and pandemic-related relevance assessment of the positive influencing factors presented by Breuer et al. (2019) (see Figure 1, Zone 1) and an expansion to the model to include factors that have gained essential importance as a result of the pandemic (see Figure 1, Zone 2). In the model review, the relevance of Breuer's trust factors is shown as follows. Shaded in grey are the influencing factors for which no change in their importance could be determined during the pandemic. Shaded in blue are the influencing factors required in the course of the change from face-to-face teams to virtual teams to enable successful and trusting cooperation in the team. The influencing factors that have gained importance are highlighted in green.

Further differentiation is made here, as a broken-down relevance assessment was determined in the expert interviews. Light green shows the influencing factors that were of increased importance but were not classified as the main influencing factors. Dark green shows the factors rated by the experts as highly relevant and thus strongly increasing the importance of trusting cooperation in the team. Furthermore, the following three factors, which have gained substantial importance for maintaining and expanding trust in virtual teams due to the pandemic, are added to the model: forbearance, appreciation and flexibility. All the factors have an entirely relevant impact on trust within a team, which is shown by the colour coding, analogous to the classifications of the most critical factors in the model of the theoretical basis (Breuer et al., 2019).

With regard to the classification and subdivision of the additional factors, differentiation into both task- and team-related is possible. However, a further breakdown based on this, as carried out by Breuer et al. (2019) in their model, is not possible from the data collected. Similarly, the expanding factors collected from the survey data should not be incorporated into the existing model of Breuer et al. (2019). For this reason, the additions to the three factors of forbearance, appreciation and flexibility have both a task-related and a team-related reference (see Figure 1, Zone 2), but no further breakdown.

4 Discussion

4.1 Comparison of state of research

There is a broad scientific basis in the field of virtual cooperation and trust-building in the team environment. However, due to the implications of the COVID-19 crisis and the associated changes in everyday working life, another aspect has emerged with regard to virtual teams, the analysis of which could not yet take place comprehensively in research due to the topicality of this aspect. The aspect of the abrupt change and the stress that now increasingly arises from the impeded socio-interactive behaviour of the team members is a challenge for cooperation that is still little researched. The research of the past years has evaluated the necessary adjustments in the company structures and presented success factors for successful virtual collaboration (Newman et al., 2021), which also include aspects such as social backgrounds and a shared history within the teams, processes of getting to know each other and protracted trust-building. Current research supports the trend of shifting core factors of interactions in virtual teams and shows a shift towards social factors (Whillans et al., 2021). As revealed in the expert interviews, in this research context, several of the skills that were classified as core factors in the past are now assumed and are often no longer supported by additional measures and processes in the teams studied. Examples of this are factors such as proactivity, a friendly demeanour, positive involvement in the team, the exchange of private information and confident handling of media.

Proposition 1: It can be observed that in this particular corporate environment, virtual cooperation is increasingly built on the basis of ethical and social-interactive core values. This is considered more relevant than factors such as reputation, competence or external image.

In this respect, a shift in weighting from basic trust-building measures to increased social responsibility within the group can be observed, which above all places in the foreground points such as proactivity, active participation in the virtual everyday working life, as well as transparency among each other and the associated support in the event of problems. Due to the adapted framework conditions in virtual cooperation during COVID-19, this study shows that scientifically proven foundations for building trust in teams, such as competence, reputation or confidentiality, seem to play a lesser role and should be replaced with other structures and mechanisms. The results of previous research suggest that high levels of trust were maintained in teams that maintained continuous and frequent interaction, moved more efficiently through project phases, focused on the work content of their projects, and achieved sufficient levels of social penetration or interaction during the initial work phases of a project to increase their work effectiveness throughout project completion (Gilson et al., 2020). The comparison of the statements from the expert interviews with the basics of comparable studies from recent years (Whillans et al., 2021; Newman et al., 2021) form the basis at this point for the necessary comparison of the existing models with potential new factors in order to integrate them into the aforementioned existing models, as shown in chapter 4.3. In this sense, the model of the theoretical basis of this study by Breuer et al. (2019) was reviewed utilizing the interviews. While factors such as continuous and frequent interaction, as well as project work focused on the work result, are primarily described in the previous research by Garro-Abarca et al. (2021) as the basis for trust-building in virtual teams, new focal points in the aforementioned social-interactive aspects of virtual cooperation were highlighted in the expert interviews. Another finding from the expert interviews, the shift towards a team-based

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leadership style to promote trusting teamwork, is supported by current research and is thus a second conclusion from the study.

Proposition 2: The shift towards a social-interactive focus in trust-building suggests that in order to enable trust and trustful cooperation in the team, a team-based leadership approach is more promising than a task-based leadership approach.

4.2 Discussion of modification factors

Based on the findings from the interviews, the applicability of the results must be critically reflected on. The research took place in a very specific team context, so any broad generalization must be viewed critically if not supported with further empirical evidence. Nevertheless, it could be observed that existing research results and processes are only conditionally supported in this specific context and are weighted differently in the pandemic working environment. The revision of the model by Breuer et al. (2019) includes the following evaluated assessment statuses: presupposed factors, factors assessed as of increased importance in the context in various gradations, and factors not addressed by the experts, equivalent to factors assessed as not relevant. At this point, the model correction is dealt with first and then the context-specific and model-extending factors are handled. The question arises as to whether the inclusion of other possible factors influencing these study results could have been included in the evaluation. This idea is based on the sometimes strong deviation from the theoretical basis of Breuer et al. (2019) and the relevance ratings of the five trust domains.

Factors that were identified in the literature review as the main influencing factors on trust within virtual teams are less strongly addressed. In order to answer the question about other possible influencing factors, the experts' evaluation pattern is discussed in more detail below. A rating of lower importance of some of the factors evaluated by Breuer et al. (2019) can be attributed to the specific characteristics of the teams studied. The teams come from the IT consulting industry, which has two implications. Firstly, a high level of technical expertise can be assumed within the teams. As already discussed in preliminary considerations in chapter 3.4, this indicates a strong presence of factors with a technical component, such as an established level of media competence among the individual team members. At the same time, the industry also places high demands on the consultants in terms of the team members' competence and adaptability to complex challenges, which means that the factors of task-related categorized skills, as well as the task-related categorized establishment of transparency in the teams, can already be considered to be strongly present. The environment of the teams studied can be considered a corresponding "high-performance" environment. The conclusion is drawn that the experts unconsciously presuppose these factors and thus do not address them as correspondingly relevant for trust in the survey. However, this should not lead to the generalized conclusion that these factors are irrelevant to trusting virtual cooperation. Instead, a self-evident prerequisite of the factors should be taken into consideration. This idea is reinforced by a will, brought out by the negated questioning technique, not to want to do without these factors. This points to unconscious knowledge, which, in contrast to conscious knowledge, can hardly be evaluated by means of the chosen survey methodology. Therefore, factors that belong to this unconscious knowledge could be assumed subconsciously and thus not have been addressed in the survey as an established basis in the team. In addition, the specific team constellation is

another feature of the research context, which leads to a further adapted evaluation of influencing factors.

For example, some teams already have a high initial level of trust due to many years of previous cooperation. Expert 3 cites team members in his team who have worked together on various projects since their student days as an example of this. The factors in the category "team-related benevolence", which are rated as less relevant in relation to the theoretical basis model, can be attributed to this unique feature of the teams studied. Within these teams working together for many years, existing consolidated cohesion is very likely, which means that the mutual goodwill among the team members could be less emphasized than when a team without long-standing preceding personal relationships meets. In the latter case, trust is still more volatile within the team, which is consequently more influenced by the goodwill shown among team members than in a team with a similar context as in this study, with long-standing and deep personal relationships. Therefore, the model is meaningful for the study's specific context and should not be generalized to teams with very different characteristics in these areas. In conclusion, the model should always be considered against the background of the team contexts studied.

Furthermore, the evaluation of the interviews revealed some additional core factors specific to the context of the pandemic, whose necessity for inclusion in existing models should be reflected upon at this point. In the interviews, three additional factors were discovered that were not considered in the model of Breuer et al. (2019): flexibility, appreciation and forbearance. Even though it is possible to include them among the five key factors of the existing model, they were mentioned several times as independent factors by the experts, and their importance was underlined. The flexibility factor was mentioned above all in the area of adaptability in relation to adverse or difficult work circumstances. Due to the many adaptations caused by the COVID-19 pandemic, it was indispensable, according to the experts, to have flexibility in thinking, acting and working methods in order to work together successfully and trustfully in the team. Building on the core factors such as reliability, proactivity and transparency, it was emphasized that the employees' adaptability was an independent success factor for trusting cooperation and should be classified as such.

The second factor, appreciation, was also mentioned several times independently of existing core factors and is thus also classified as independent. According to the experts, the effects of a respectful working environment, both from the employer's and the employee's point of view, were an essential factor in trusting cooperation in the course of the pandemic. Appreciation should be considered separately from existing core factors in existing models or research results. It is no longer an addition to certain other factors, such as friendliness, reliability or support. Instead, it is valued as a separate permanent factor in the course of value creation in a team. Based on the experts' statements, the factor should be added to the existing models.

The forbearance factor is the third newly added positive first-level influence factor. It refers primarily to the challenging situations for all employees and employers, in both the everyday work context and direct communication between team members. Forbearance is mentioned as a separate and self-sufficient core factor. Its importance has dramatically increased during the pandemic and can no longer be considered a sub-item of existing model factors. Even though core factors such as support, openness and reliability can be considered in relation to the complementary core factor of forbearance, forbearance is both team-related and task-

related, an elementary cornerstone within the teamwork during the COVID-19 pandemic and trust-building in virtual teams. It can therefore be evaluated as a separate core factor in this situation.

4.3 Theoretical contribution

Based on the expert interviews, a deep and practical insight into the crucial factors for trust-building in virtual teams could be gained in this context and under the influence of the working conditions enormously changed by COVID-19. The results of the interviews provide insight into the changed factors and show a shifting importance of core factors, which can be further investigated in research terms. Therefore, the evaluated correlations and characteristics of existing trust systems can be seen as an impetus for well-founded and empirically more meaningful research into the topic area. The interviews have revealed aspects of the research field of trust in virtual teams that had previously been little or not at all covered. Thus, the study opens up a new field of research by including the context of the pandemic, which relates to one of the most formative events in modern history. Both the pandemic-related virtual cooperation and the general topic of virtual teamwork will not lose their relevance in actual economic practice and thus also in future research.

The findings from the analysis of the expert interviews provide measures for existing practice in companies that can be profitably used to build trust in virtual teams. The spontaneous changeover to virtual cooperation in project teams and the necessity of the high implementation speed confronted many companies with far-reaching problems, in terms of both IT infrastructures and dealing with each other in daily work. The experts also underlined this. Due to the new situation and the resulting problems, new approaches for practical cooperation were required. Concerning the interpersonal component of cooperation, this paper provides insight into the necessary measures for trusting virtual teamwork. The building of trust in these new circumstances and the resulting change in priorities in dealing with each other are essential factors that are important for the success of the company. The analysis and evaluation of the expert interviews provide companies with insights into factors on which particular importance should be placed. A distinction is made between general factors that were already relevant before the pandemic and factors that have become more or less important due to changes in handling the pandemic. The interviews revealed that factors such as information transparency, proactivity and independent involvement in the team context have become much more critical.

In contrast, factors such as ethical values, positive interaction with each other and independent working are seen as essential requirements for virtual cooperation. For companies, this changes the approach to team building in the virtual context and, associated with this, also changes the fundamental economic processes that have to be lived in practice. The findings of this work are the basis for an up-to-date and unfiltered view of processes within teams. It also shows the internal problems within virtual teams that have arisen from the challenges posed by this health crisis. The investigation of cross-company team constellations of clients and consultants offers added value in the daily handling of difficulties of the pandemic-related conversion to virtual cooperation through evaluating the trust model in this work.

Conclusion

The research question of how to establish and strengthen trust while transitioning teamwork from a face-to-face to a virtual environment, in the context of the COVID-19 pandemic, was addressed in this research. It provided insights into effectively managing this novel challenge of rapidly virtualizing collaboration under extreme circumstances and identified essential factors for dealing with this challenge. The research objective of developing a procedural model from the pandemic context that is applicable for further adaptation in other contexts was achieved and the resulting “trust model” was provided. Considering the characteristics of the examined virtual teams and their respective environment, the findings may be viewed with regard to this context; nevertheless, they do answer the research question: "How can trust be enabled while transitioning teamwork from a face-to-face to a virtual environment in the context of COVID-19?" Furthermore, they offer the necessary positive influencing factors for adapting the trust model based on existing research. The study not only assessed the relevance of previous trust-enhancing factors in the specific context of team composition during the pandemic, but also evaluated factors relevant to trust in virtual collaboration in these contexts. As a result, three additional factors that have become particularly relevant due to the challenging situation were identified: flexibility, forbearance and appreciation. In the interviews, experts emphasized that the situation is highly stressful, requiring strong commitment from all parties and notably, tolerance from all team members. The challenge lies in considering both functional factors for virtual collaboration and the equally important aspect of the interpersonal foundation that underpins cooperative collaboration based on trust.

Limitations

The narrowing of the scope can be partly attributed to the methodology used. Firstly, the restricted number of interviews in the qualitative research prohibits generalization of the results; the statements are applicable to this research as well. Additionally, it is imperative to scrutinize the trust model developed in this study considering potential subjective biases introduced by both the researchers and the interviewed experts.

One significant limitation is that respondents were unable to articulate or express unconscious factors during the interviews. This gap is particularly notable and hinders accessing the full range of expert knowledge needed to address the research question. Consequently, it was challenging to consider these unspoken factors when developing the trust model. The interviews primarily focused on conscious factors such as performance and enthusiasm, while certain fundamental factors, deeply ingrained in the interviewees' cognitive structures and crucial for teamwork, were difficult to articulate. Therefore, the model evaluation was confined to consciously recognized trust-enhancing factors. Additionally, the chosen data collection methodology was unable to assess the context-specific significance of potentially relevant factors that were not consciously expressed by the interviewees, such as kindness, as posited by Breuer et al. (2019); the adopted data collection methodology lacks the capacity to furnish a valid assessment of their context-specific significance.

An additional constraint on the transferability of the findings stems from the research context. The trust model originated in a context that embraced change positively, fostered openness and exhibited a certain degree of technological affinity. The research is aimed at identifying novel and innovative approaches that may be adaptable in more conservative professional

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domains. As such, its transferability to an analogous team context is limited. However, for more conservative and less change-oriented teams, this research can offer valuable insights into navigating the disruptive virtualization of collaboration, which can be cautiously integrated into these team contexts. In the process of adaptation, it is recommended to align the research findings with the specific characteristics of teams and industries, thereby enabling their appropriate application. Nevertheless, the research is aimed at identifying novel and innovative approaches that may be adaptable in more conservative professional domains. Thus, the intended findings can be derived from the evaluations when the limitations are taken into account.

Future research

The need for future research arises in the first instance from the limited scope of the research results and the resulting problem of data validation. This should take into account both the need for a more significant number of participants and the inclusion of other economic sectors in order to ensure higher generalizability of the statements as well as transferability to other economic sectors. In summary, the previous scope can be expanded, and, in this sense, this first explorative qualitative research of the new context can be used for further well-founded analyses. Through this work, in-depth insights have been provided that revealed context-specific, relevant and practicable factors for future quantitative research. There is also a need for expert validation of theory-based concepts and theories. Previous studies have neglected both changes in digital collaboration, which are irrefutably finding their way into the everyday work of many industries, and the problem of the interpersonal factor. The target group in future studies should be more diversified. This applies to age, gender and education level. In order to achieve high significance in the generalizability of the results, it must be ensured that the participants of the study show a high degree of comparability with the average of the labour market. A diversified distribution of the investigated teams should ensure the highest possible significance of the study and cover the socio-economic aspects of society and the associated manners.

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