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"I miss those chance encounters": Innovative work behavior in hybrid and remote work

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ABSTRACT

The contemporary work environment is characterized by hybrid work arrangements. However, both researchers and practitioners have voiced concerns about what such freedom and emphasis on technology-mediated communication in organizations might do to innovation which has traditionally been seen as benefiting from face-to-face interaction. This paper aims to understand employees' perceptions of engaging in innovative work behavior (IWB) in hybrid work contexts. Acknowledging IWB's collaborative nature, we draw on social capital theory and analyze 25 interviews with knowledge workers using a grounded theory approach. Our findings show that even with the availability of different technological tools to connect to others, individuals found that bridging new networks and creating new connections was substantially decreased. Furthermore, the nature of interactions has shifted in ways that undermine the relationship building that is essential for IWB. We categorize challenges in IWB into four dimensions: *dispersement, disrhythm, disengagement,* and *lack of depth.* The results reflect the weakened interaction in hybrid work that hampers the different stages of IWB. In addition, the results signal decreased motivation to engage in the innovation process. For practitioners, these insights are crucial for developing hybrid work guidelines that safeguard and foster organizations' innovation activities.

1. Introduction

The contemporary work environment is characterized by hybrid work arrangements – that is, work arrangements where employees have a certain degree of flexibility to choose when and where to work (Newbold et al., 2022). While hybrid work has allowed for more flexible work schedule and environments (Trevor & Holweg, 2023), which are believed to boost creativity and innovation as employees can work during their most productive hours and in environments that inspire them (Yang et al., 2022), concerns have also been raised. Some companies have reported a slowdown in innovation activities and question whether hybrid work truly supports creativity (Trevor & Holweg, 2023). This apprehension is echoed by leaders such as Disney's CEO Bob Iger, who has emphasized the return-to-office by saying, "Nothing can replace the ability to connect, observe, and create with peers that comes from being physically together" (Miller, 2023). Similarly, organizational studies are increasingly raising concerns about altered social dynamics in hybrid workplaces, calling for more research into the adverse consequences of hybrid work (Bamel et al., 2022; Brucks & Levav, 2022; Deschênes, 2024; Kraus et al., 2023).

While prior studies highlight many benefits related to technology-mediated communication in organizational use, such as reducing feelings of isolation (Liang et al., 2024; Van Zoonen & Sivunen, 2022), ensuring efficient communication (Ten Brummelhuis et al., 2021), helping maintain interpersonal relationships (Deschênes, 2024), and even fostering pro-social behaviors such as helping behavior between organizational members (Büchler et al., 2020), not all research points to positive effects. Hybrid work has been found not only to reduce but also to narrow social interaction and collaboration within organizations (Queiroz et al., 2023; Waizenegger et al., 2020; Yang et al., 2022). Employees interact within smaller subcommunities (Zuzul et al., 2023), encounters are pre-planned (Queiroz et al., 2023; Yang et al., 2022), online interaction with less familiar people is found stressful (Tibbetts et al., 2021), and technology-mediated communication has increased misinterpretations (Bleakley et al., 2022; Parkinson, 2008). These shifts in social interaction have been found to impact, even disrupt innovative behavior both temporally and spatially (Garlatti Costa et al., 2023).

Before the pandemic, remote work or telework was commonly

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understood as working from anywhere using personal devices (Vartiainen & Vanharanta, 2024). The term 'hybrid work' emerged after the initial COVID-19 phase, describing a model where employees split time between home and on-site work (McPhail et al., 2023). Remote and telework dominated early discussions, but they are now seen as specific forms of hybrid work which broadly reflects flexibility in time and space (Vartiainen & Vanharanta, 2024). While we acknowledge that there are differences in the depth of hybridity between these terms, we have chosen to apply the real-world practice of using 'hybrid work' and 'remote work' interchangeably. As work models continue to evolve, the boundaries between remote and hybrid work increasingly blur.

Hybrid work does not show signs of decline, as latest studies reflect a lasting shift in work practices (Vartiainen & Vanharanta, 2024). Yet our understanding of its consequences for innovative work behavior (IWB) remains incomplete. This constitutes an important gap that our study addresses. Existing studies on IWB largely focus on individual innovation in physical, in-person environments (Akram et al., 2017; Anderson et al., 2014) or across organizational boundaries (e.g., Reypens et al., 2021). However, there is a clear lack of research specifically examining how IWB emerges in more socially isolated environments within organizations as "everyday innovations" (Janssen, 2000) and how they are experienced by knowledge workers collaborating with colleagues in the context of more socially isolated work environments. We approach IWB as an individual behavior that intentionally introduces new and useful ideas, work processes and procedures, contributing to organizational innovation and performance (AlEssa & Durugbo, 2022). We acknowledge IWB to be dependent on employees' network of relationships which provides inspiration, information, and the realization of new ideas (Prieto & Pérez-Santana, 2014; Yang et al., 2022).

We focus on knowledge workers' perspective as their work often involves tasks that can be performed on a computer and hence does not necessarily require physical presence in the office. Their work usually involves collaboration and knowledge exchange within teams (Pyöriä, 2005). Thus, hybrid work has presumably changed their way of working with others (Yang et al., 2022). First, we engage with research on hybrid work and virtual collaboration (Choi & Cho, 2019; Schulze & Krumm, 2016) to highlight the characteristics of social interaction in hybrid contexts. Second, we draw on social capital literature (e.g. Granoveter, 1992; Nahapiet & Ghoshal, 1998) to develop a better understanding of the importance of interpersonal relationships and networks in a hybrid work context. After all, social relations are described as crucial in fostering collaborative efforts and supporting innovativeness in organizations (e.g., Akram et al., 2017). Furthermore, by examining the context of hybrid work, we extend our current understanding of IWB in an environment that is dependent on technology-mediated communication and flexibility in the use of time that impact on how individuals are connected to others. Finally, our study uncovers how hybrid work shapes engaging in IWB from an employee perspective.

2. Theoretical background

2.1. Innovative work behavior as a collaborative act

In today's fast-paced world, the ability to adapt to change is vital. Innovations help organizations stay ahead of the competition through new product development and increased efficiency, among other things. Innovative work behavior is an individual behavior that intentionally introduces and implements new and useful ideas, work processes and procedures, and thus it is an important source of an organization's competitive advantage (Strobl et al., 2020). We define IWB as consisting of four different behavioral tasks: the commonly used *idea generation*, *idea promotion*, and *idea realization* (Janssen, 2000; Scott & Bruce, 1994), adding an *idea exploration* stage to precede idea generation to provide a more nuanced perspective to the first stages of the innovation generation (de Jong & den Hartog, 2010). It thus includes both creativity- and implementation-oriented behavior (de Jong & den Hartog, 2010; Hughes et al., 2018) and is behavior that is conducted for the purpose of creating value and competitive advantage for the organization (AlEssa & Durugbo, 2022). Following Janssen's (2000) definition of IWB as "everyday innovation", we acknowledge innovative behavior as "extra role" behavior which resembles proactive personality (Li et al., 2017). Instead of treating IWB as a sequential and linear process, we take the complexity stand, and see innovative behavior as "cyclical, recursive and often chaotic" (Garlatti Costa et al., 2023: 1134), often characterized by moving back and forth during the process (Anderson et al., 2014). Although IWB is an individual-driven activity, innovations usually require that other people be involved. This may take the form of being inspired, sharing information and resources, asking others to listen to an idea, and modifying and improving it (Bani-Melhem et al., 2018; Mannucci & Perry-Smith, 2022). Random encounters and interactions with other people may also lead to the accidental discovery of a chance to improve a product or process, or a problem that requires a response (de Jong & den Hartog, 2010; Mannucci & Perry-Smith, 2022).

Indeed, IWB is profoundly collaborative and seen as strongly affected by relationships with other people (e.g., Thurlings et al., 2015). Drawing on social capital literature, idea generation depends on the number of relationships and on their density and connectivity (structural dimension) (Akram et al., 2017). In addition, innovation depends on the quality of relationships (relational dimension) established between the people involved (Granoveter, 1992; Nahapiet & Ghoshal, 1998). Social capital introduces two behaviors, bridging and bonding, which describe how individuals build relationships (Putnam, 2000). In the context of IWB, bridging refers to the actions and strategies that connect different ideas, people, or resources to facilitate the flow of information and collaboration and bring in fresh perspectives and knowledge. Bonding, on the other hand, refers to strong, trust-based relationships among team members and closer colleagues, which provides emotional support and creates a sense of unity (Putnam, 2000). The closer the social networks are, the stronger the individuals' motivation and willingness to bring new ideas to the organization is (Zhao et al., 2022). These so-called strong ties also provide stimulating ideas and enhance tacit knowledge to redefine problems in idea generation (Mannucci & Perry-Smith, 2022).

The latest research on work practices done indicates a shift where employees are spending a greater share of their collaboration time with their stronger ties (that is, their immediate workgroup members) (Keppler & Leonardi, 2023; Yang et al., 2022). Strong tie contacts are shaped by frequent interaction and encouraged by emotional closeness (Perry-Smith & Shalley, 2003) that stimulate individuals to generate creative thoughts and refine and realize ideas (Cross & Sproull, 2004; Mumford et al., 2002). In a recent study, Mannucci and Perry-Smith (2022) discovered that while many individuals tend to over-rely on their strong ties, conversing with weak ties is actually more beneficial for idea generation. Moreover, acquiring and sharing information across networks has become more difficult while synchronous communication has decreased and asynchronous increased (Yang et al., 2022). Interaction is task-focused, and meeting others takes place in work-oriented activities, thus hindering establishing new ties with their peers. In addition to forming fewer ties with their colleagues, ties become weaker as time spent with peers is focused on tasks rather than strengthening relationships (Bleakley et al., 2022; Colbert et al., 2016). In addition, studies show that interacting with weak ties online predicts more stress and greater negative affect than interacting with strong ties, which may have an impact on engaging in online interaction with less familiar colleagues as it creates more stress (Tibbetts et al., 2021). Further, studies suggest that at the organizational level, networks have siloed and bridges between disparate teams have decreased (Yang et al., 2022; Zuzul et al., 2024). This has led employees to communicate predominantly within their smaller subcommunities (Zuzul et al., 2024) instead of reaching out to other parts of the organization, thus affecting cross-organizational information and knowledge sharing (Yang et al., 2022). The fewer people that they know, the more their so-called relational confidence, trust and feeling of closeness (Keppler & Leonardi, 2023) suffers and creates barriers to approach new people to ask for help and acquire information (Yang et al., 2022).

While defining IWB to be dependent on an employee's network of relationships which provide inspiration, information, and realization of new ideas (Prieto & Pérez-Santana, 2014; Yang et al., 2022), we acknowledge that hybrid and remote work has its impact on social interaction and engaging in collaboration. Following this, we seek to understand how remote work context has changed IWB. Hence, we ask:

RQ1: *How has remote work changed engaging in innovative work behavior?*

2.2. Hybrid work as a context for social interaction

The conventional notion of a workplace has historically been tied to a specific physical location. However, advancements in information and communication technologies have facilitated more workers to work remotely from places outside the traditional office setting. At the same time, it has shaped interaction through timeliness and multilocality, as communication has transitioned to digitally mediated channels, emails, video conferencing, chats and online platforms increasing the amount of asynchronous communication (Yang et al., 2022). Despite different communication opportunities, remote work is found to challenge sustaining frequent interaction between organizational members and reshaping the quality of social relations. Whereas physical space has ideally been seen as a platform that, at its best, increases copresence, encounters, and co-awareness in organizations (Wineman et al., 2008), remote work is experienced as reducing and narrowing social interaction and collaboration within organizations (Waizenegger et al., 2020; Yang et al., 2022).

Communication through technology-mediated channels poses certain technical barriers to interpreting paralinguistic cues, thus challenging the ability to follow attentiveness and identify engagement from others (Bleakley et al., 2022). In addition, video and teleconferencing are mostly pre-planned and scheduled, thus impacting communication negatively by reducing informal social talk, increasing formality (Bleakley et al., 2022; Waizenegger et al., 2020), and making dialogue "inward-looking and self-referential" (Whyte et al., 2022). Mediated communication does not only change communication itself but reflects on organization-wide networks and the nature of social relations.

So far, findings on innovation and innovative behavior in virtual collaboration point towards technology-mediated communication hampering idea generation (Brucks & Levav, 2022). This despite the fact that virtual collaboration has been the core channel for virtual teams for years and has successfully provided opportunities for cross-global teamwork. One explanation is that strong e-skills (that is, competencies for using technology to work) and a belief in one's personal efficiency in using digital channels for communication (Grant & Clarke, 2020; Tramontano et al., 2021) are needed to engage in innovative behavior (Dogra & Parrey, 2024). Another explanation is that virtual interaction has a narrower visual focus and thus communicating on a screen is more cognitively demanding (Brucks & Levav, 2022). Creativity, a crucial part of innovative work, is supported in digital channels by creating a stronger sense of community, which requires connective elements such as mutual commitment and goal clarity, but also interpersonal connection, which is built by personal bonds and reciprocal sharing of information (Abi Saad & Agogué, 2023).

As technology-mediated communication plays a significant role in today's work life, shaping our social relations to our colleagues, we need to understand more thoroughly how individuals perceive the role of technology-mediated communication in forming and maintaining social relationships and thus enabling innovative work behavior. Hence, we ask:

RQ2: *How does technology-mediated interaction shape individuals' innovative work behavior?*

3. Methods

3.1. Sample and procedure

The companies that participated in this study were recruited through an association whose purpose is to connect growth-oriented Finnish firms as well as through the interviewer's network. We sought to identify companies that were actively engaged in innovation and interested in developing their innovation capabilities. Attention was also paid to including companies of varying sizes to examine how the pandemic had affected organizations with differing levels of resources. Together with the initial contact to the company, the researcher identified other relevant individuals to be interviewed. These were typically colleagues or subordinates who had hands-on experience with innovation-related processes, such as the organization of idea development or workshop activities. 15 different companies participated, of which 4 are large, 7 are medium-sized, and 4 are small. They represent various industries from logistics, games development, and IT consulting to measuring equipment. Prior to the pandemic, most companies that participated in the study had a strong preference for onsite presence with occasional remote work accepted. A notable exception to this is the games development company where all the respondents had experience in remote or hybrid work with one respondent working fully remotely even before the pandemic. It was clear from the responses that all participants considered the hybrid or remote work arrangements to be permanent and that they did not expect to go back to being fully co-located. Therefore, they were interested in finding the optimal practices for innovating in a mix of face-to-face and online work.

The interviews took place in the spring and fall of 2021 through Microsoft Teams videoconference software and focused on the changes that have occurred in innovation, communication, and collaboration during the pandemic and the subsequent move to a hybrid mode of working. The construction of the interview guide was informed by previous research on the enablers of innovation. The interviews focused on five main themes: 1) the organization of the firm's R&D activities, 2) perceived enablers of creativity and innovation, 3) the impact of the COVID-19 pandemic on the direction of product development, and 4) changes in development practices and collaboration due to the pandemic, and 5) enablers of creativity and innovation in a remote work setting. The interview guide with sample questions is included as an Appendix.

Recognizing that the research topic is in the nascent theory stage (Edmondson & McManus, 2007), exploratory, semi-structured interviews were used to shed light on a phenomenon. The researcher conducting the interviews brought broad topics for discussion and allowed the interviewees to develop ideas and speak freely about the topics and bring up issues they themselves found particularly relevant. However, she directed the conversation as necessary to ensure that their experience of innovating in a remote work setting would be covered in the conversation. The interviews were in-depth in nature, as the researcher encouraged the interviewees to provide a nuanced and detailed description of their experiences. While allowing the interviewees to describe the issues they found particularly important, the same broad questions were covered in each interview.

25 interviews with both employee- and managerial-level workers in diverse roles were conducted. The participant inventory is presented in Table 1. All interviews were audio recorded and transcribed verbatim. They lasted 50 min on average and totaled 21 and a half hours. Certain fundamental insights and experiences regarding the impact of remote work on innovation were consistently raised in the interviews. Therefore, the number of interviews was sufficient to highlight similarities in how moving to remote work has changed the innovation process for individuals, regardless of the size and industry of the company they

Table 1
Participant inventory.

Industry	Firm size	ID	Interviewee's role	Age group	Gender	Education	Organizational seniority
Office furniture	Large	1	IPR manager	45–54	M	M.Sc.	Middle management
Chemical industry	Large	2	Head of development (innovation excellence)	45–54	M	PhD	Middle management
		3	Development manager (incubator team)	45–54	F	M.Sc.	Middle management
		4	Business HR	45–54	F	M.Sc.	Middle management
		5	Manager, innovation culture and ecosystems	35–44	F	M.Sc.	Middle management
Logistics	Large	6	Business strategist	25-34	F	M.Sc.	Operational staff
		7	Development manager	35–44	F	M.Sc.	Middle management
Media	Large	8	Innovation director	55-64	M	M.Sc.	Top management
		9	Innovation lead	45–54	F	M.Sc.	Middle management
Software development	Medium	10	Scrum master	25–34	M	B.Sc.	Operational staff
		11	Head architect	35-44	M	M.Sc.	Middle management
		12	Development manager	35–44	F	M.Sc.	Middle management
Games industry	Medium	13	Director, Research labs	35-44	F	M.Sc.	Top management
		14	Senior machine learning developer	35–44	M	PhD	Operational staff
Laboratory equipment	Medium	15	Technology director	35-44	F	PhD	Top management
		16	Development manager	35–44	F	M.Sc.	Middle management
Electronics	Medium	17	Technology director	35–44	M		Top management
Measurement technology	Medium	18	Technology manager	35–44	M	M.Sc.	Middle management
		19	Head of R&D	35–44	M	PhD	Top management
Industrial products	Medium	20	CEO	55–64	M	B.Sc.	Top management
Staff recruitment	Medium	21	Business director	45–54	F	M.Sc.	Top management
Industrial products	Small	22	CEO	55–64	M	B.Sc.	Top management
Construction	Small	23	CEO	55–64	M	M.Sc.	Top management
Measurement technology	Small	24	Technology director	35–44	M	M.Sc.	Top management
IT consulting	Small	25	CEO	45–54	M	M.Sc.	Top management

work for.

3.2. Coding and data analysis

Given that the goal of this study is to develop in-depth insights into employees' perceptions of innovative work behavior in remote work, we found the inductive research process appropriate (Strauss & Corbin, 1990). We adopted a constructivist grounded theory approach because we are interested in how participants construct meanings and actions from their experiences and see those reflecting time, place, and culture (Charmaz, 2006). The constructivist approach recognizes knowledge as a mutual creation between the researcher and the person studied, aiming to understand the subject's meaning (Charmaz, 2006). A constructivist theory distinguishes between reality and truth, but remains realist, stressing that "social reality is dynamic but that does not contradict the factuality of social reality" (Lomborg & Kirkevold, 2003). Following this, we accept that the results describe a specific time and professional context which reflect the social aspect and environment of knowledge workers.

All authors were involved in the data analysis. We aimed to make sense of how individuals describe and experience innovative work in a hybrid work context. The analysis involved several rounds of reading raw data and during the process, we recognized that individuals described innovative work from a relational perspective and perceived innovative work as collaborative. The impact of other people and the importance of interactions with colleagues in innovative work were frequently highlighted by the respondents. This stage, where we examined data as "investigative journalists" (Murphy et al., 2017, p. 294), led us to refine our research focus on relational aspects, which provided us the social capital perspective already in the analysis stage. Since we did not delay the review but reviewed literature on social capital already at an early stage, our approach can be called an informed version of the grounded theory approach (Thornberg, 2012). This approach emphasizes cumulativeness, that is, relating to or building on earlier work, but remaining critical towards what is useable (Goldkuhl & Cronholm, 2010).

To guide our analysis, we chose to apply the Gioia method, as it provides clear steps and a visual framework to inform readers (Gioia et al., 2013). We saw the interviewees as experts of the phenomenon and listened to them to understand what happens, and how and why it happens (Corley, 2015). As much as possible, we allowed the participants' words to dictate the concepts identified, instead of imposing concepts that emerged purely from theory (Gioia et al., 2013). First, we began by distinguishing expressions from each interview where they described innovative behavior (idea exploration, generation, promotion, and realization) at work. From there, we compared interviews with each other and gradually recognized patterns and themes organized as first-order codes. We then moved on from informant-centric categories to axial coding (second-order categories) that could explain innovative work behavior in remote work and recognized four themes: *dispersement, disrhythm, disengagement* and *lack of depth.* The first describes individuals' sense of working in dispersed places and how that affects interaction and engagement in innovative work. The second theme describes how interaction related to innovative work suffered from disrhythm; that is, ideation is often stopped too soon or there is not enough time to truly find solutions. The third theme, disengagement, refers to one's own lack of engagement with work and the organization, as well as picking up on colleagues' disengagement. Finally, the fourth theme summarized individuals' perceptions of the nature of interaction and decision-making that often lack depth. We then moved to a higher hierarchical level of abstraction in selective coding and recognized two aggregate dimensions: *decreasing bridging* and *breaking bonding.* These dimensions draw together individuals' perceptions on weakened interaction that hinder innovative work behavior.

Throughout the process, second-order themes and aggregates were revised and added on over a long time period and in discussions between two authors, until the final iteration was agreed on (Grodal et al., 2021). The development of the themes included several individual rounds of interpretations, writing notes, commenting on each other's points of view, and discussing differences in interpretations on the shared document in Teams. This process of working simultaneously on the final data analysis and making notes resembles a memo writing procedure which is a core function of grounded theory studies (Lomborg & Kirkevold, 2003). Writing down interpretation and concepts that are recognized during the process enable comparing, evaluating and bridging the gap between coding and conceptual work (Lempert, 2007). Fig. 1 illustrates this process. Initially, the aggregates came from stages of the innovation process (such as *idea exploration* and *idea generation*) and demonstrated how the second-order themes impacted the different stages. While this idea had its merits, the aggregates were not directly derived from the

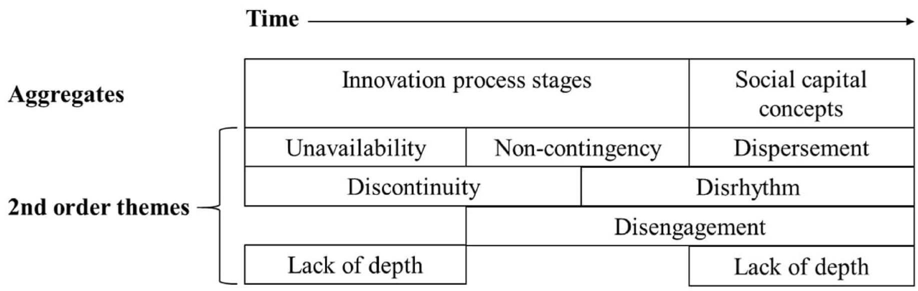

Fig. 1. Steps in the analysis process.

second-order themes and hence did not present the most logical solution. Additionally, it is extremely hard to conclude which second-order theme affects which stage of the innovation process, and we ended up with all arrows pointing to each stage. Once we let go of the idea of incorporating the stages in the innovation process and derived the aggregates from social capital theory, the final data structure clicked into place.

Fig. 1 also shows the steps that we took when conceptualizing the second-order themes. The participants talked about how it has become more difficult to elaborate and work on new ideas because colleagues have different rhythms and because online meetings have such tight agendas that there is little time for wondering about an idea. We identified this as *disrhythm*, and the theme held its place throughout the process with only a change in name to better describe the phenomenon. *Dispersement* was another clear theme in the interviews with the lack of chance encounters being perhaps the most lamented feature of hybrid and remote work. This theme became more clearly focused on space and location towards the end of the coding process to separate it from *disrhythm* which has more to do with time. *Disengagement* and *lack of depth* alternated as we discussed whether they were, in fact, the same theme, only different perspectives. With the change of the aggregates they, too, fell into place. Disengagement became more focused on not "feeling" one's colleagues. Lack of depth, on the other hand, has to do with how the processes (of making decisions or elaborating on an idea) have changed. The final iteration of the data structure presents four distinct second-order themes and aggregates that logically follow from the themes.

4. Main findings

The study shows that despite different technological tools to connect to others, individuals find that interaction and relationships with others are weakened and hinder engaging in IWB. Challenges in IWB in hybrid and remote work are characterized by four dimensions: *dispersement, disrhythm, disengagement* and *lack of depth*. Further, we identified that remote work has different characteristics to onsite work. These characteristics impair bridging behavior (that is, creating new relationships) and harm bonding behavior (that is, creating relationships that are considered crucial in innovative behavior). The following sections explain in more detail the content of the dimensions. We included illustrative quotes from a diverse group of participants, spanning various industries, organization sizes, genders, and hierarchical levels. Furthermore, the dimensions were closely informed by the participants' responses beyond the direct quotes. The data structure resulting from our analysis is presented in Fig. 2.

4.1. Dispersement

Dispersement refers to the fact that colleagues and other cooperation partners are dispersed through multiple locations: some may be in the office, some at home, others can be working from yet another location. Whereas before the pandemic, it was common for people to work in the same space and meet each other regularly and without a preplanned meeting, during and after the pandemic chance encounters have become rarer. The respondents recognized that online meetings can be easy to arrange which helps in moving things along and making decisions more quickly. However, the most fruitful discussions usually take place in

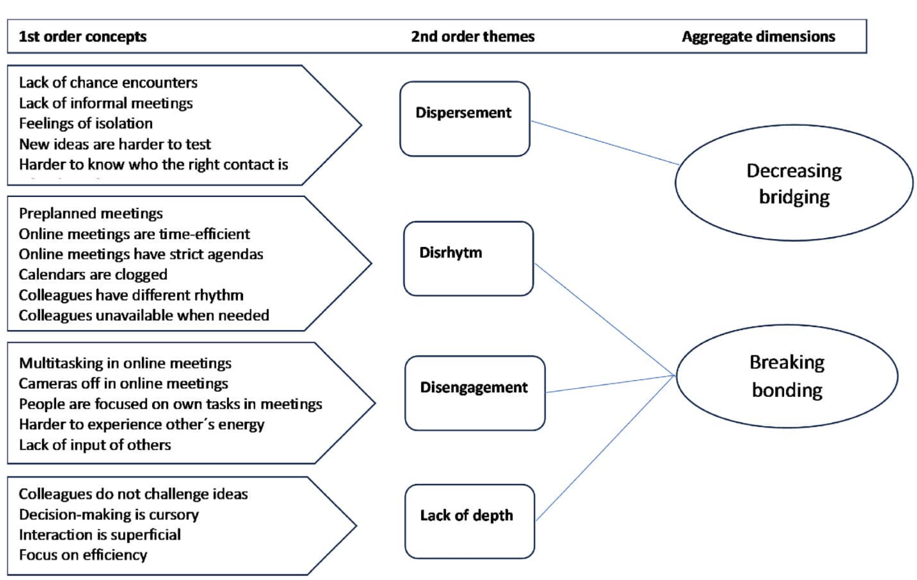

Fig. 2. Data structure.

situations where you could not have known that you should have a meeting with a certain person about a particular topic:

> *R8: I'd say that the most important thing for the initial stage is chance because the idea or the seed of the idea doesn't come out of nowhere. But because we all have knowledge within us all the time then the idea can come from a random discussion that takes place in a totally different context, and you had no way of knowing that you should have booked a time for this discussion.*

Dispersement affects IWB in many ways. "Random" meetings (meaning meetings with people who you could not have known would be helpful, as well as meetings with the "right" people but with whom you discuss without an agenda) was seen by most respondents as a vital source of identifying new opportunities for innovation as well as ideas for how to go about it. Elaborating new ideas, particularly when you have "half an idea" is easier when you can meet collaborators face-to-face; some respondents confessed that they feel hesitant organizing a meeting to discuss an idea that is in the early stage, fearing that they will take up the other person's time with something that is not "really work". Discussing it with someone over coffee or lunch, however, did not carry that same fear, presumably because the meeting was serendipitous. Elaborating new ideas is also impacted by the lack of shared space (e.g., being somewhere where you can draw your ideas on a piece of paper or a glass wall), and by not necessarily knowing who the right person might be with whom one could brainstorm ideas:

> R4: *It's hard to know who the right person is, so you lose a bit of time trying to work that out. When you're physically in the office it's easier to figure out who's who and who to ask for help.*

Participants also expressed feeling isolated and distant from their colleagues, making them less likely to generate and explore new ideas or begin elaborating ideas further.

> R10: *When you're behind the screen you're just more alone with your stuff even though you're trying to work together.*

4.2. Disrhythm

Disrhythm is the phenomenon of not being able to continue a discussion or an idea. This is the result of multiple characteristics of hybrid work. First, the respondents have noticed an increase in the number of meetings they attend since the pandemic hit. Many of these meetings take place online, and these meetings tend to be time-efficient and have strict agendas which to follow, with little or no time for small talk.

> R10: *If the [online] daily scrum runs over a bit, people see that as unnecessary, whereas if the daily was onsite and you stayed to chat afterwards, it doesn't feel pointless the same way.*

Respondents reported a preference for keeping strict time in online meetings, with lines closing at exactly the hour the meeting was scheduled to end, whether the topic was finished or not. Such practice helped them keep on top of their schedules and leave time for completing more tasks. Face-to-face meetings, in contrast, were described as often having more idle time in the beginning and end, which may at times feel as if time is wasted, but can, however, be extremely conducive to innovation.

> R13: *Although you organize Zoom meetings left right and center, it's so different because they always have an* agenda*, they lack this free form tossing ideas around. We don't have that at all anymore and that's the biggest change that has happened.*

Disrhythm affects individuals' behavior in the innovation process through the unavailability of key collaborators or decision-makers at the time they are most needed. This may be because their calendars are full, or because they have different work rhythms and are not available on chat.

> R1: *It can happen that you need to run an idea past someone and the next time they're available is in two weeks. So, something that just requires a bit of discussion has become a lot slower. Not to mention if you need to talk to several people at the same time.*

In technology-mediated meetings and discussions, conversation flows tend to have pre-determined trajectories which do not invite the wondering, questioning, and occasional false steps necessary for the innovation process. On the other hand, individuals expressed that scheduling a meeting for idea generation feels uncomfortable.

> R3: *In online meetings you really stick to the* agenda*. So, a meeting that would take 3 h face-to-face can take 1,5 h online. It's much more efficient use of time.*
> R10: *I've been thinking about something I'd like to try. But I'd need to talk to someone about it but it feels weird to schedule a meeting. You get this feeling that it's pointless, it's not really work.*

4.3. Disengagement

Disengagement occurs when individuals are not personally invested in their work, do not perceive engagement from others, and feel disconnected from the organization's goals and vision. While many respondents expressed being clear about their own tasks, they also confessed to being in their siloes more than before the pandemic. Potentially because of the increased focus on efficiency, employees might be tempted to make sure that their personal responsibilities are taken care of first and show a lack of enthusiasm to embark on company-wide initiatives.

Online meetings are typically the space where disengagement is felt the most. Both one's own; the responses show that many people consider it a given that you do something else while you attend a Teams meeting. They are also where one feels that others are not engaged. Especially if cameras are off, it is obviously impossible to see others' facial expressions and gestures. But even with cameras on, there can be time lags or other connection issues, or simply just the fact that it is more difficult to interpret two-dimensional facial expressions.

Disengagement affects how successfully ideas are found and developed. Feeling disengaged from company goals makes employees less able to notice problems and opportunities where innovations are needed. Multitasking during online meetings makes one less likely to engage in idea exploration, generation, and elaboration; states which tend to require being fully concentrated on the task at hand. Not feeling engagement from others makes it more challenging to recognize when a colleague might be in the right state of mind to explore and share ideas:

> R7: *I do find it empowering when we're physically all present. As an extrovert I get excited when I see other people's reactions and I get more ideas, more eureka moments.*

Additionally, particularly the initial stage when you pitch an idea – when the person doing the pitching is most in need of encouragement and psychological safety – is experienced as difficult if you do not see cues from the other people:

> R7: *When you're pitching an idea and want to get feedback, then live contacts, seeing facial expressions and gestures, are important. If there's no eye contact, then people might not ask you anything. And you don't feel sure and confident about your idea when you can't see other people's reactions.*

Finally, the online communication channels where workers mainly interact make it easier to retreat, be forgotten, or even disappear from conversations by simply pushing a button. The participants felt that such a space does not constitute the engaging environment that the ideation process requires. In addition, they also experienced fewer proactive initiatives from their colleagues:

R13: *People stay in their siloes more now. They are probably less proactive in taking action on the larger-scale things that are common to us all.*

4.4. Lack of depth

Participants experienced that technology-mediated work causes communication, interaction, and decision-making to become more superficial and therefore, to lack depth. Respondents contrasted efficiency and creativity; when one increases, the other necessarily decreases. Their feeling was that remote work emphasizes and is beneficial for efficiency, but they expressed concerns about whether they, or the company, is doing the right things anymore, and that the stilted interaction online where participants are worried about talking on top of each other causes ideas to stop flowing and decision-making to become too cursory:

R24: *When it's one-on-one, Teams works pretty well. But when there's a bigger group and everyone should say something and you should find consensus, it's definitely more challenging.*

Lack of depth is felt the most at the stage where an idea already exists but should be developed and fine-tuned further, and where some initial decisions should already be taken with regards to the future of the idea. Respondents lamented how superficial this stage has become in that there is no real idea development happening online. Instead, idea development may be given to someone as a task, and they will work on it on their own. When asking a colleague for feedback, they felt that there was no real development happening but rather the colleague tends to work on the same idea, without adding on anything new.

R13: *Usually what happens is that I try to work on something on my own and then throw it to a colleague for feedback and comments and it automatically takes the course that I was already on.*

Similarly, suggestions are more often accepted as-is in an online environment, without much questioning or further discussion. Respondents in decision-making positions recognized that they have become laxer in approving the first suggestion:

R14: *Before, when someone's come to ask you face-to-face, it was easier to ask how they arrived at that conclusion, could we maybe do it like this … Now the interaction is missing.*

In sum, despite different digital solutions to interact with colleagues, a sense of disconnection hinders engaging in idea generation and taking part in elaborating and taking innovations further. Technology plays a role in changing the nature of the connection, mainly not from a technical perspective but from how technology-supported interaction is organized.

4.5. The effects of managerial position, gender, and industry on innovating in remote work

The findings above are the result of seeing the high-level picture and we feel confident that the participants would, on the whole, agree with the conclusions that we have drawn from the interviews. However, as always when there are different individuals who have different characteristics, different positions, and work in different industries, there are different voices. In what follows, we give space to these voices to add nuances to the picture we are presenting of how moving to hybrid or remote work impacts innovative behavior. Additionally, we found it fruitful to see whether the commonly used demographic factors in IWB surveys (that is, managerial position and gender; de Jong & den Hartog, 2010; de Spiegelaere et al., 2015; Viitala et al., 2023) had an effect on the participants' experience. We also explored whether, and how, the industry that the participant works for factors in the discussion, as that has previously been controlled for (Pajuoja et al., 2025) and a respondent who works for the chemical industry could, presumably, have a different experience to one who works for IT consulting.

We start with the demographic factors. Managerial position is generally accepted as a significant factor in IWB literature with those in managerial positions engaging more often in innovative behaviors (Hughes et al., 2018; Viitala et al., 2023). Also in the context of remote work, those holding a managerial or senior leadership position are more likely to engage in IWB when compared to non-managers (Ahlgren, 2024).

We found little difference in how respondents in top management, middle management, and operational positions talked about their experiences of innovating in remote work. In the quotes below, respondents representing operational staff (R6), middle management (R2), and top management (R13) talk about how office days and remote days differ, all expressing more or less the same sentiments.

R6: *In an optimal situation, we'd be onsite for sprint starts and ends and for retrospectives. While face-to-face, I can clarify what I need to do, then work on it from home, then meet again to go over something in more detail.*
R2: *In my team we've noticed that when you're at home you have less of those informal discussions so now we come to the office more and innovations are born in the hallways, just like that.*
R13: *We've come to the office once a week and that's for me at least … the more difficult questions that we've had, we've been able to solve them on the whiteboard in a much more efficient way than if we'd tried to do it remotely.*

Innovative behaviors have stereotypically been ascribed to men more than women (Luksyte et al., 2018. Men have also been shown to exhibit more innovative behavior than women (de Jong & den Hartog, 2010; de Spiegelaere et al., 2015). In our sample, men and women expressed fairly similar opinions about innovating in remote work. Below a female and a male respondent talk about online meetings and technology-mediated communication. Both acknowledged that moving online has made meetings more efficient and that more decisions get made than before. Both also saw problems in the way that communication takes place. A female business director in staff recruitment described them as such:

R21: *Online, you're much more careful about not speaking on top of someone else so what happens is that everyone is only listening. And then the conversation doesn't take off the same way and you lose the best ideas which always seem to come when the discussion goes somewhere you hadn't even been thinking about.*

A male technology director in measurement technology expressed almost exactly the same sentiments:

R24: *When you have a Teams meeting, it's a bit like, I talk first, then you talk, and the third person is not talking at all, only listening. It's not exactly interactive.*

Looking at the impact of the industry that the respondents work for, it seems that rather than the industry itself, what affects how the respondents experience how they innovate is whether they, or the company they work for, had experience working remotely prior to the pandemic, and whether the tasks that the individuals have are suited for remote work. To illustrate, we can take a look at two respondents from a games company. The director of research labs had done a lot of her work onsite, travelling at least once a month to the US (to the company headquarters) to work with colleagues face-to-face and working in the office in Finland the rest of the time. She saw many obstacles to innovating remotely:

> R13: *The way we worked before is that we had this glass wall and we drew on it and used it to help us think things through. It was iterative and social. What the pandemic did is that people started to work in their own siloes and we miss the continuous interaction that we used to have daily. […] I personally feel like there's something missing when I can't work face-to-face.*

The senior machine learning developer in the same company had worked remotely for a year and a half already prior to the pandemic. His tasks are well suited for remote work. While he also missed interacting with his colleagues face-to-face, his take on remote work was quite positive:

> R*14: Because of the nature of my work, I work very well from home. […] The fact that I'm remote hasn't created a sense of isolation. The team tends to engage in a bit of banter during meetings and therefore I have gotten to know them on a personal level which helps. I know someone will have five or 10 min to take my call and we can work on some ideas.*

5. Discussion

Ever increasing hybrid work has provided individuals with the flexibility to decide when and where to work from, followed by the shift to technology-mediated interaction with their peers. Despite previous studies on hybrid work telling the story of a new type of organizational dynamics at workplace with decreased interaction (Keppler & Leonardi, 2023) and siloed relationships (Yang et al., 2022), the effect of these changes on innovative work behavior has not received attention. In our qualitative study, based on interviews in expert organizations, we explored *how remote work shapes individuals' innovative work behavior*.

Our study began by asking how remote work changes employees' engagement in innovative work behavior. Results highlight that remote work challenges the different stages of the innovation process. Although innovation is an individual-driven process, interaction with other people is often at the core during idea exploration, when individuals discover or realize problems to be solved (Janssen, 2000; Scott & Bruce, 1994). Remote work decreases daily, unplanned interaction with others as employees do not necessarily work in the same location anymore. The participants felt that working in a dispersed work community created limited opportunities to meet by chance, therefore limiting opportunities to share information and come up with new ideas. They also emphasized that in remote work, people have different rhythms, which challenged finding not just space but also time to take new ideas further together with colleagues. Previous studies emphasize that generating and improving on ideas requires effort and input from others (Bani-Melhem et al., 2018), however, in our study employees experienced that there was less time for free conversation and creative brainstorming. As individuals try to push creative ideas further, find support, and build coalitions by expressing enthusiasm, distance work lacks space for sharing insights and inspiring others, thus making idea promotion harder. Similarly, individuals found that idea realization was more difficult, as it was challenging to engage colleagues to collaborate. Consequently, individuals found that they are less active in innovative work. Remote work also made it difficult to estimate when it was a good time for colleagues to start a conversation and exchange ideas.

Our second research question focused on technology-mediated communication's influence on individuals' IWB. The results suggest that technology-mediated communication has a strong role in changing both the nature of the interaction and the quality of relationships in ways that diminish innovative behavior. Employees in remote work described that digital interaction creates a sense of disconnectedness from their peers. They noticed that technology-mediated communication and decision-making often lack depth, and digital interaction made conversation more superficial. From the point of view of innovative work, the more individuals trust each other and the closer the relationships are, the more open and motivated they are to innovate and bring new ideas to the organization (Putnam, 2000; Zhao et al., 2022). By making it harder to read others' reactions, digital interaction challenges gauging whether colleagues are willing to engage in innovative conversations.

Finally, our findings show that men and women, and managers and non-managers, experience innovative behavior in remote work in a similar manner. In previous survey studies (e.g., de Spiegelaere et al., 2015; Hughes et al., 2018; Viitala et al., 2023), men have been shown to exhibit more IWB than women, and managers to be more engaged in IWB than those not in managerial position. An obvious explanation for this is that we did not look into *how much* innovative behavior is exhibited but rather into *how* the participants experience innovating in remote and hybrid work, and whether this has changed. That both women and men find the process of innovating to benefit from the ability to bounce ideas off someone and to experience their enthusiasm is an aspect that has previously not featured in literature and is a fruitful avenue for future research. Similarly, a managerial position does not seem to alter the way that innovating happens, even though managers may innovate more frequently. Overall, our focus on how innovating happens is a novel one and produces important insights into the challenges in innovating in remote work.

5.1. Theoretical implications

While research recognizes that remote work provides employees with greater flexibility and autonomy, allowing them to manage their time and environment in ways that can enhance creativity and innovation (Yang et al., 2022), this study adds to the growing body of innovative work behavior literature that relationship between remote work and innovation may be more complex. Our findings indicate that although remote work enables constant connectivity and collaboration, remote work interaction has both narrowed and weakened in hybrid and remote work. Innovative collaboration takes place in smaller circles and within closer ties, as it is clear how and when to approach them (Perry-Smith & Shalley, 2003). This threatens new knowledge creation and utilizing organization-wide expertise (Akram et al., 2017; Zhao et al., 2022). Exploring new connections would benefit innovativeness in every stage of the innovation process (Mannucci & Perry-Smith, 2022). Our study indicates that remote workers build fewer bridges to innovate and have weaker bonds with their peers due to the nature of their interaction having changed. Yet, relationship-building is a crucial asset when individuals receive and share information and ideas and solve problems (Prieto & Pérez-Santana, 2014; Putnam, 2000; Yang et al., 2022).

This study also contributes to the literature on IWB by emphasizing that remote work reduces opportunities for creative collaboration. Like Garlatti Costa et al. (2023), who recognize that temporal and spatial changes in our social interactions interrupt IWB, we found that individuals struggle to find space for innovative interaction with their peers. Whereas meetings are often only a matter of arrangement in times of variety of digital communication tools, innovation requires unplanned and unstructured encounters rather than time-limited and task-focused meetings. Organizations should be aware that these types of meetings can harm opportunities for strengthening relationships between coworkers, thus decreasing psychological safety which is at the core of strong relationships (Edmondson & Mogelof, 2006). Our study supports previous notions that emphasize that IWB is not only hampered by the decrease in time spent together, but also by spending time in a digitally-mediated environment which challenges sensing how the other feels and reacts due to the inability to read social clues in an online platform (Brucks & Levav, 2022; Bleakley et al., 2022; Keppler & Leonardi, 2023).

Finally, this study adds to the IWB literature by highlighting that remote work changes how innovative employees are. Innovative work behavior is treated as "extra role" behavior at work, something that is not necessarily part of one's work but strongly led by intrinsic motivation to take charge in solving and developing work-related problems (Li et al., 2017). However, our study shows that individuals are less proactive bringing up initiatives for change, less eager to give feedback, and less likely to engage in elaborating ideas further. This is in line with previous studies that emphasize that employees prefer asynchronous meetings instead of synchronous, which work well for information sharing, but are less useful for ideation and creative collaboration (Yang et al., 2022). Digitally mediated interaction seems to enable withdrawing to a certain degree and can be filled with distractions, such as constant notifications and multitasking, reducing focus and the ability to engage deeply with innovative tasks (Bleakley et al., 2022). This notion warrants more research on the motivation to innovate and on understanding what specific characteristics in job design could promote engaging in innovation processes in remote work.

5.2. Implications for practitioners

From a managerial perspective, we highlight that innovative work behavior is a complex and multifaceted phenomenon that requires employees to, among other things, have access to a lot of information and vast networks. Additionally, there is a strong serendipitous element that defies planning. While ideating and brainstorming can be put into calendars and facilitated effectively also in an online environment, finding the seed for innovation is a different type of activity that poses a challenge for organizations wanting to innovate in a hybrid mode of working. We encourage organizations to take this into consideration when formulating policies for hybrid work. They should bear in mind that ensuring that employees can generate new ideas and work on those ideas online is not enough for innovation to happen if employees have a hard time noticing problems and opportunities that can be innovated. We also urge communicating the value of connecting with colleagues and business contacts informally; besides contributing to a good atmosphere at work, these discussions are invaluable for the innovation process. Managers can model this behavior by being available at the end of meetings to discuss any thoughts raised by what has been covered and signaling that this part of the meeting is as important as going through the agenda. Future organizations face the challenge of discovering new ways to organize work so that it creates a platform that enables idea exploration. Organizations that support collaborative culture and ensure time and space for chance encounters can have a head start in creating innovations.

5.3. Limitations

This study had some limitations. First, the participants in our study had diverse backgrounds in terms of the field and the size of business which provided us with a broad perspective on knowledge worker's experiences. However, as we had a limited number of participants, we were not able to draw conclusions based on work roles or tasks. Further research focusing on certain industries may uncover potential differences in the number and quality of the network of collaborative partners.

Another potential limitation relates to the predominance of managers in our sample. Of the 25 participants, 22 are in a managerial position. Upon a closer analysis, we found that both managers and non-managers discussed innovating in remote work in fairly similar ways; in fact, one of the authors commented that she could not have picked out which quotes were from respondents that were not in a managerial position. Two factors may have affected this. One is the fact that all participants have a university degree, and most of them a master's degree. Similar educational levels may democratize the participants' experiences. Another factor is that Finland is a low-hierarchy society with a low power distance between those in a managerial position and those that are not. Countries that exhibit a higher power distance may see different results.

In addition, we cannot ignore the possible influence of the timing of the interviews. Data were collected in 2021, when the pandemic had been going on for over a year and new practices were created at workplaces all the time. It might influence the participants' experiences and attitudes that they have recently experienced a sudden and forced move to remote work and were still building a new culture of work around hybrid mode. One might expect that hybrid work has now settled in; however, studies show the transition is still ongoing. Several social challenges remain unresolved, such as the threat of isolation and loneliness, the impact of reduced face-to-face interaction, and the continued development of collaboration technologies (Urrila et al., 2025; Vartiainen & Vanharanta, 2024). While individuals may be more accustomed to hybrid work, the same challenges remain, making this study highly relevant for today's hybrid workers as well.

5.4. Conclusions and future work

Our study highlights the distinct challenges remote work poses to relationship-building, a critical component of innovative behavior. Unlike onsite environments, remote settings hinder both bridging—forming new connections—and bonding—strengthening essential ties among peers. These limitations reduce opportunities for sharing insights, promoting ideas, and fostering enthusiasm, all of which are vital for innovation. Furthermore, remote workers demonstrate lower levels of proactivity in initiating change, providing feedback, and elaborating on ideas. As a result, the shift in interaction dynamics under hybrid work conditions may significantly constrain individuals' capacity to collaborate creatively and drive innovation forward.

A logical next step is to explore potential solutions. Future research could investigate specific interventions or tools designed to overcome the challenges in relationship-building, reduced trust, and diminished engagement. Different communication platforms, virtual reality environments, or structured digital collaboration exercises could be tested to see whether they foster the kind of trust and spontaneous interaction necessary for idea exploration and promotion. Examining cultural or contextual factors could offer deeper insights into sustaining innovation across diverse work settings.

Finally, we note that in IWB literature the focus has usually been on *how much* innovative behavior is exhibited. In this study, we shed light on *how* individuals experience innovating; that is, what the process of innovating looks like for them. For example, we find that for both women and men, and managers and non-managers, the ability to bounce ideas off someone and share in their enthusiasm made their innovation process more effective. Pursuing this line of investigation further could produce important insights into how the individual innovation process takes shape.

CRediT authorship contribution statement

Jenni Kantola: Writing – review & editing, Writing – original draft, Formal analysis, Conceptualization. **Maria Pajuoja:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Project administration, Formal analysis, Data curation, Conceptualization. **Outi Vanharanta:** Resources, Methodology, Investigation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.chbr.2025.100823.

Data availability

The data that has been used is confidential.

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