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## Determinants of Work Loneliness in Hybrid Work: A Comparison Study Between Newcomers and More Experienced Employees\*

### Abstract

Remote and hybrid work became common practices due to the global COVID-19 pandemic. However, they entail a risk of work loneliness, which raises the question of newcomers' socialisation to work communities. This study explores whether the social context of hybrid work is perceived differently by employees who entered the organisation during or after the pandemic and their more experienced employees and if elements of the social context of hybrid work function as antecedents for work loneliness differently among these two groups. This research is based on data (N=1641) on hybrid workers from a large technology industry company collected in December 2022. Our results show that new employees experienced higher work loneliness than experienced employees. Informal communication with supervisors and colleagues and social support from colleagues (and particularly among new employees from the supervisor) were associated with lower levels of work loneliness. Our study provides empirical evidence concerning the antecedents of work loneliness and introduces the contingency factor as an additional element to the work loneliness process model. This study also contributes to organisational socialisation literature by being the first to compare newcomers and experienced employees in the post-pandemic hybrid work context.

Keywords: work loneliness, organisational newcomers, hybrid work, social support, communication  
(JEL: C12, C30, I00, M54)

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## Introduction

The massive shift towards remote and hybrid work in recent years has changed how work communities collaborate and coordinate their work (Jämsen et al., 2022; Mirowska & Bakici, 2023). Social practices within organisations that have adopted remote and hybrid working models have changed (Jebsen et al., 2022). For instance, meetings and communication between people are typically performed in online settings, while face-to-face encounters in offices have diminished drastically (Mirowska & Bakici, 2023). Remote and hybrid work increase the risk of asynchronous presence, both in a virtual working place and physically in the office, causing challenges for dynamics between team members (Brown et al., 2020). Thus, remote and hybrid work may be a situational boundary condition which has been found to increase the risk of work-related loneliness characterised by feelings of an unmet need for belonging at work (Wright & Silard, 2021; Yang et al., 2022). Perceptions of loneliness increase stress-provoking attentiveness to potential social threats and thus impair physiological functioning (Cacioppo & Hawkley, 2009; Hawkley & Cacioppo, 2010), and this is likely to have adverse effects on employees in terms of individual well-being and performance (Ozcelik & Barsade, 2018; Wright, 2005; Wright & Silard, 2021). The sense of not belonging may be particularly strong for new employees who do not have existing networks in the workplace (Cooper et al., 2021), especially if they have joined a work community in which remote and hybrid work is common (Jopling et al., 2023). However, whether new employees in remote and hybrid settings experience more loneliness at work than their more experienced counterparts has not been examined, and therefore, in this study, we focus on work loneliness in remote and hybrid work among newcomers and more experienced employees.

Hybrid work is a combination of working remotely (i.e. from home or some other location not designated by the employer) and from the office (Carrasco-Garrido et al., 2023). In remote and hybrid work, workplace social interactions and communication have become reliant on information and communication technology (ICT), which in turn has resulted in a decline in informal and spontaneous communication (Jämsen et al., 2022; Mirowska & Bakici, 2023; Standaert et al., 2022), and limited the ability to understand the social dynamics of the group (see Karl et al., 2022). It has also been suggested that changes in communication during remote work hinder the maintenance of social interactions and increase employees' subjective feelings of loneliness at work (Jämsen et al., 2022; Yang et al., 2022).

Furthermore, there is evidence suggesting that extensive remote work has a negative impact on social support from the supervisor (e.g. Sardeshmukh et al., 2012) and might also result in reduced social support from colleagues (George et al., 2022; Wang et al., 2021). This is unfortunate, as social support — gaining practical help and appreciation from supervisors and colleagues — is beneficial, especially in the context of hybrid work (Knight et al., 2022). Research shows that organi-

sational social support (which encompasses support from supervisors, peers, and the organisation) is associated with reduced feelings of loneliness (Bentley et al., 2016; Patterer et al., 2023; Wright et al., 2006) also in hybrid work (Knight et al., 2022). These shifts in modern working life are relevant for all employees engaged in dispersed work communities involving remote work and can significantly impact the experiences of new employees when they first join an organisation. Newcomers undergo a socialisation process wherein they acquire the necessary skills and behaviours needed to understand their roles and become integrated into the organisation (e.g. Bauer et al., 2007). The level and quality of communication and interactions between newcomers and more experienced members of the organisation facilitate newcomers' relationship-building and their integration into their work groups (Kammeyer-Mueller & Wanberg, 2003; Wang et al., 2015). Research also indicates that the social support received from supervisors and colleagues fosters adjustment (Nelson & Quick, 1991) and contributes to the sense of belonging in the organisation and work community (Morrison, 2002). Thus, as remote and hybrid work models challenge interpersonal communication and may reduce the availability of social support within organisations, risk factors for work loneliness may emerge and particularly impact new employees. Nevertheless, research on work loneliness and its underlying causes in the context of remote and hybrid work remains scarce (Wright & Silard, 2021), and empirical studies comparing the experience of newcomers with those of more experienced employees are rare.

The aim of this study is twofold: First, we explore whether the social context of remote and hybrid work (i.e. the amount of internal communication, informal non-work related communication with supervisors, informal non-work related communication with colleagues, social support from supervisors, and social support from colleagues) is perceived differently by employees who have entered the organisation after the COVID-19 pandemic started (newcomers) and more experienced employees. Second, we study the relationship between elements of the social context of remote and hybrid work and work loneliness. Furthermore, we study if the elements of the social context function differently as antecedents for work loneliness among newcomers and more experienced employees. Therefore, this study contributes to two distinct research domains of work loneliness and the socialisation of newcomers in organisations, with a particular focus on the context of remote and hybrid work.

## **Work Loneliness Among Newcomers and Experienced Employees**

### **Defining Loneliness**

Loneliness is a distressing feeling that is caused by the perception of inadequate levels of social relationships (Hawkey & Cacioppo, 2010; Peplau & Perlman, 1982). Particularly, the quality rather than the quantity of social relations is crucial regarding loneliness (Hawkey & Cacioppo, 2010), and loneliness can be experienced in

different domains of life, such as in work. However, it is important to distinguish loneliness from being alone and simply having a low level of social relations. Being alone is often only momentary and usually voluntary (i.e. being in solitude), which is described as a rather positive experience as it is seen as refreshing, offers freedom, and facilitates creativity (Long & Averill, 2003; Wright, 2005). Small social networks and infrequent contacts can indeed be a risk factor for loneliness, but this kind of objective social isolation has been consistently proven to have only a modest correlation with loneliness (Holt-Lunstad et al., 2015; Tanskanen & Anttila, 2016).

Strong empirical evidence connects loneliness with perceived stress (Christiansen et al., 2016; Hawkey & Cacioppo, 2010; Laustsen et al., 2023). The regulatory loop model of loneliness (Cacioppo & Hawkey, 2009; Hawkey & Cacioppo, 2010) states that lonely individuals feel unsafe, which provokes a stressful hypervigilance towards social threats and causes maladaptive cognitive bias regarding social interaction. This self-reinforcing loop of loneliness may also provoke feelings of hostility, pessimism, and low self-esteem (Hawkey & Cacioppo, 2010) and activate biological stress responses (Cacioppo et al., 2003; Cacioppo & Cacioppo, 2014; Doane & Adam, 2010). Thus, loneliness may have several negative outcomes affecting the experiences of working life and is thus worthy of further study, although, in this study, we do not examine the possible outcomes of (work) loneliness.

## Work Loneliness

Belonging is one of the basic psychological needs of human beings, and it does not disappear even during the working day (Baumeister & Leary, 1995; Ryan & Deci, 2017). Belonging to a work community often satisfies many of people's social needs, and work may provide an opportunity for social relationships that are perhaps not otherwise available (Wright, 2005). However, unmet social needs at work can generate feelings of work loneliness (Wright & Silard, 2021). According to Wright and Silard's (2021) theoretical model of loneliness at work, every employee differs from each other regarding both their *desired* and *actual* levels of social relationships at work. Accordingly, a discrepancy where an employee desires more and better-quality relationships at work than they are actually experiencing is called a relational deficiency, which can trigger a distressing emotional response – i.e. a feeling of loneliness. Wright and Silard (2021) define loneliness at work as the psychological pain of perceived relational deficiencies in the workplace.

In organisations, new employees (i.e. newcomers in organisations) are usually referred to as organisational outsiders and experienced employees as organisational insiders. The transformation to become an effective insider happens via a socialisation process, when newcomers learn their organisational roles and become integrated into the work group and organisation (Bauer et al., 2007; for a review, see Allen et al., 2017). Organisational socialisation is a learning and adjustment process for a

newcomer, involving the development of a wide range of knowledge regarding the role, task, and organisational politics and norms, and also familiarising themselves and building relationships with a new social group (Cooper-Thomas & Anderson, 2006; see also Ashforth et al., 2007). Newcomers' socialisation processes are shaped and facilitated by the interplay between the newcomer's own proactive behaviours and the information and social support they gain from coworkers and supervisors (Cooper et al., 2021; Cooper-Thomas et al., 2014; Harris et al., 2020; Saks & Gruman, 2018; see also Harris et al., 2022). However, it is very likely that newcomers' desires and expectations for social relationships at work, as well as the realities they face, do not match up for some period of time. There is some evidence that longer organisational tenure can be related to lower loneliness at work (Anand & Mishra, 2021; Van Zoonen & Sivunen, 2022), although correlations between tenure and work loneliness have mainly been reported as nonsignificant (e.g. Ozcelik & Barsade, 2018; Patterer et al., 2023). It must be noticed that a correlation between tenure (a continuous variable of the years an employee has worked in the organisation) and work loneliness does not provide adequate evidence regarding the differences in the levels of work loneliness between new and experienced employees. However, this indicates that newcomers may be at a higher risk of work loneliness than employees who have already established their roles and places in the work community and developed mutual relationships (Sias, 2005). Nonetheless, while establishing high-quality relationships with organisational insiders might be more difficult and yet highly essential for effective socialisation in a virtual context (Gruman & Saks, 2018, pp. 125–126), extant literature has extended little focus on factors that can sustain the onboarding process of newcomers in remote or hybrid work contexts (Mazzei et al., 2023).

Only one report (Jopling et al., 2023) was found that provides empirical results comparing new and experienced employees' work loneliness after the COVID-19 pandemic, indicating that loneliness at work was higher among employees who had changed jobs during the Covid-19 pandemic compared to their more experienced counterparts (Jopling et al., 2023). However, that study design included employees from many different kinds of jobs and did not provide information specifically about newcomers and experienced employees in a remote and hybrid work context, so our study addresses this knowledge gap.

Whereas newcomers may experience higher work loneliness than more experienced employees, there may also be differences in the possible antecedents for it, as well as how they are related to work loneliness. Therefore, we continue our literature review by examining the possible antecedents for work loneliness, and their differences among newcomers and experienced employees.

## Antecedents of Work Loneliness for New and More Experienced Employees

### Antecedents of Work Loneliness

Different types of *antecedents of work loneliness* have been theoretically identified, although empirical studies have mainly studied the outcomes of work loneliness (Becker et al., 2022; Ozcelik & Barsade, 2018), and research focusing on its antecedents is still very rare (Spilker & Breugh, 2021; Wright & Silard, 2021). The social contexts of the work, such as communication, information-sharing, collaboration practices, the availability of social support from supervisors or colleagues, the quality of leadership, and overall the felt quality of work-related relationships are likely to influence the experiences of work loneliness (Wright, 2009; Wright & Silard, 2021). Work-related relationships are developed through communication, and particularly non-work-related and other informal communication is crucial in this process (Fay & Kline, 2011; Horan et al., 2021; Koch & Denner, 2022; Sias & Cahill, 1998; Wilson et al., 2008). Thus, in addition to the formal and work-related interactions between work community members, informal non-work-related communication with colleagues and supervisors (i.e. talking or chatting about things which are unrelated to work) is also likely to be linked to the experience of work loneliness. For example, frequent communication with a supervisor has been connected with lower levels of work loneliness (Arslan et al., 2020). Furthermore, informal communication is connected with the interpersonal dimension of communication satisfaction (Kandlousi et al., 2010), and satisfaction with communication at work has been seen to be connected with lower levels of worker loneliness (Bowers et al., 2022).

Social support from colleagues and supervisors refers to their willingness to help with work tasks if needed, being available if problems emerge and showing appreciation for one's contribution at work (see e.g. Wännström et al., 2009). Experiencing these kinds of behaviours strengthens the sense of belonging and diminishes feelings of isolation at work. Social support from the supervisor and colleagues has also been connected with lower levels of loneliness at work (Patterer et al., 2023; Wright et al., 2006). Social support seems to be especially relevant in hybrid work, with colleagues' support protecting from loneliness even more than support gained from the supervisor (Knight et al., 2022). Therefore, in this particular study, our indicators for the social context of the work are the amount of internal communication, informal non-work-related communication with supervisors, informal non-work related communication with colleagues, social support from supervisors, and social support from colleagues.

### Antecedents of Work Loneliness – Are They Perceived Differently by Newcomers and Experienced Employees?

Next, we briefly discuss the possible differences in the amount of internal communication and informal communication that occurs between a newcomer and his/her

supervisor and colleagues, as well as the social support gained from supervisors and colleagues. After that, we focus on the possible differences in how these antecedents can be related to work loneliness among newcomers and experienced employees.

Newcomers desire a feeling of identification and interpersonal belonging in the new social context (Bauer et al., 2007; Cooper et al., 2021; see also Ellis et al., 2015), and this triggers their relationship-building and information-seeking strategies (Ashford & Black, 1996; Sluss et al., 2012). Entering a new job and team can be a highly stressful situation that causes uncertainties for newcomers, who thus seek information and feedback to reduce such feelings (Ashford & Black, 1996; Bauer et al., 2007; Saks & Gruman, 2018). A lot of information is also usually provided for newcomers via formal induction and orientation (Antonacopoulou & Güttel, 2010). Therefore, it is likely that newcomers are more often involved in formal communication than experienced employees. Moreover, unlike newcomers, experienced employees (both supervisors and newcomers' colleagues) have had time to develop relationships, social ties (Sias, 2005), and even friendships at work (Horan et al., 2021), and therefore their involvement in informal communication may be higher compared to newcomers, although there is some empirical evidence (Koch & Denner, 2022) that the seniority of an employee is not related to the amount of informal communication. At the entry stage, a prime source of response and feedback for newcomers is their supervisor (Li et al., 2011). When a newcomer enters a new job, they typically receive lots of social support from the supervisor, and although the intensity of supervisor support diminishes over time (Jokisaari & Nurmi, 2009; Kammeyer-Mueller et al., 2013), it is likely that the social support gained from a supervisor is of a higher level compared to that of experienced employees. However, the social support gained from colleagues may emerge differently because colleagues do not typically have such formal roles in relation to newcomers as those of a supervisor (e.g. Cooper-Thomas, 2009), and this type of support may become stronger over time. Therefore, it is likely that the perception of social support from colleagues is higher among experienced employees than with newcomers.

### Are Antecedents of Work Loneliness Different for Newcomers and Experienced Employees?

Frequent and formal communication opportunities between newcomers and experienced employees are not only important for gaining information, but they also provide possibilities to get to know other people better and build meaningful relationships (Batistič & Kaše, 2022; Saks & Gruman, 2018; Wang et al., 2015), as well as helping to reduce newcomers' uncertainties about being accepted by others (Chou & Chang, 2016). In addition, opportunities to share information and ideas with insiders as a newcomer can give a sense of full organisational membership and foster workplace network development (Jokisaari & Vuori, 2014; Rollag, 2004). Appropriate information and feedback exchange from workgroup

members provides opportunities for newcomers to connect with others (Ellis et al., 2017; Li et al., 2011; Rajamäki & Mikkola, 2019), and therefore, the amount of internal communication may be more important for newcomers than for experienced employees in relation to work loneliness.

Informal exchanges with experienced employees play an essential role for newcomers in the development of affective bonding (Lapointe et al., 2014) and foster experience and confirmation of membership in the organisation (Morrison, 2002). It has been addressed that newcomers' proactivity in relationship-building (Li et al., 2019; Zhao et al., 2023) and the positive responses to those initiatives from experienced employees (Li et al., 2011; Zheng et al., 2021) facilitate their social bonding and integration into the work community (Sluss et al., 2012). Therefore, it is likely that informal communication with supervisors and colleagues is more important for newcomers regarding work loneliness than it is for experienced employees.

Furthermore, social support from supervisors (see Lee, 2023 for a review) and co-workers help newcomers to engage with the new role and group (Korte & Lin, 2013; Zhou et al., 2021) and encourage newcomers to take the initiative to build interpersonal connections (Kammeyer-Mueller et al., 2011). Social support and satisfying work relationships offer newcomers a sense of belonging within the organisation and also a confirmation of their membership in the work community (Morrison, 2002; Nelson & Quick, 1991). In turn, erosion, reluctance or scarcity of social support and rejective behaviour from insiders are linked with a decreased experience of social acceptance and uncertainty of equal membership (Cooper et al., 2021; Kammeyer-Mueller et al., 2013; see also for a review Rink et al., 2013). The virtue of social support from insiders affects the newcomer's experience of social acceptance, such as feeling comfortable around co-workers and being accepted as one of them (Ellis et al., 2015; Gardner et al., 2022; Morrison, 1993). Perceived co-worker support is found to be especially important for the newcomer's experience of social acceptance compared to more experienced employees (Gardner et al., 2022). Therefore, it is likely that both types of social support gained either from the supervisor or colleagues are more important for new employees compared to their experienced counterparts.

## Work Loneliness in Remote and Hybrid Work Among New and Experienced Employees

Starting as a new employee in a digital environment is different compared to a traditional in-presence working environment, in which most of the previous studies on work loneliness have been conducted. Newcomer socialisation in a virtual environment may pose challenges to learning the new social context, which can subsequently impair an individual's affective commitment and social integration and so make it more difficult for newcomers to establish high-quality relationships with insiders that also involve informal elements (Gruman & Saks, 2018). In

remote work, newcomers feel particular uncertainty about relationship building and need to go the extra mile to proactively develop social ties (Woo et al., 2022).

The increase in remote work means that members of work communities or teams do not share a physical context (e.g. a common office) very often, and thus, communication and collaboration mainly happen via ICT-mediated channels. ICT-mediated communication is challenging and has been described as less satisfying and of a lower quality compared to face-to-face interaction (Jämsen et al., 2022; Sias et al., 2012; Šmite et al., 2023; Wang et al., 2021). For example, it has been found that during the COVID-19 pandemic, remote employees' synchronous communication decreased, and their asynchronous communication increased, and this trend hindered the maintenance of social interactions at work (Yang et al., 2022). High-intensity remote work also brings challenges in seeking advice from others (Wu et al., 2023). Moreover, meetings are nowadays mostly virtual, and it has been reported that videoconferencing limits participants' abilities to understand the social dynamics of the group (see Karl et al., 2022). It has also been found that whereas social interaction comes naturally in face-to-face interaction, it requires a sense of co-location in online meetings, which is a condition that is not always easy to create (Standaert et al., 2022). However, even though remote communication has its drawbacks, it can allow employees to develop and maintain meaningful work-related relationships in a remote work context. For instance, the high frequency of digitally mediated communication has been found to be connected with higher quality interpersonal relationships (Nurmi & Hinds, 2020) and a lower level of perceived social isolation at work (i.e. work loneliness) (Van Zoonen & Sivunen, 2022).

The heavy reliance on ICT for social interactions at work has led to a lack of informal communication, such as the reduction in opportunities for informal feedback and interaction, and other occasions for informal exchanges, such as celebrating achievements and social outings (Jämsen et al., 2022; Mirowska & Bakici, 2023). Even though informal communication between organisation members seems to be a challenge in remote work context (Šmite et al., 2023), it is argued that it might be even more important in remote as opposed to onsite work (Fay, 2011), and it is generally suggested that organisations should provide opportunities for informal communication in remote work in order to promote better quality work relationships (Knight et al., 2022; Van Zoonen & Sivunen, 2022). Thus, it is not surprising that remote workers' satisfaction with their informal communication has, for example, been connected with their liking the colleagues they interacted with the most (Fay & Kline, 2011).

Social support gained from different sources in the organisation (and especially from supervisors and colleagues) plays an important role in remote employees' experiences at work. For instance, Men et al. (2022) studied employees during the pandemic, and their sample mainly consisted of people working from home. They

found the supervisor's praise for work achievements and their clear advice with tasks to be essential for establishing and maintaining trust (Men et al., 2022), which is a building block for all relationships and may be linked to experiences of work loneliness. These concepts are closely related to how we approach supervisor support in this study. In addition, the role of supervisors has been noted as being especially crucial in a remote context in starting and ensuring the adjustment process in the domains of role, social acceptance and work relationships and in providing support and information for newcomers that ease the process in these domains (Ellis et al., 2019; Kim, 2022; Mazzei et al., 2023). A further study conducted during the pandemic highlighted the importance of social support gained from colleagues and showed that it was an important predictor for remote employees' well-being (Straus et al., 2023). Moreover, it has also been found that in remote work, organisational social support (consisting of support gained from supervisors, peers, and the organisation) was related to lower feelings of social isolation (Bentley et al., 2016), and the study of Wang et al. (2021) indicated a negative association between social support and loneliness in remote work. All in all, characteristics of remote and hybrid work, such as the increased reliance on ICT-mediated communication, less time spent in a shared physical place, and a lack of incidental encounters with the supervisor and colleagues, should be acknowledged as situational boundary conditions for the feeling of work loneliness.

In light of the above, the aims of this study are to explore, first, whether the social context of remote and hybrid work (i.e. the amount of internal communication, informal non-work related communication with supervisors, informal non-work related communication with colleagues, social support from supervisors, and social support from colleagues) is perceived differently by employees who have entered the organisation after the COVID-19 pandemic started (newcomers) and more experienced employees. Second, we study the relationship between elements of the social context of remote and hybrid work and work loneliness. Furthermore, we examine whether these elements of the social context function differently as antecedents of work loneliness among newcomers and more experienced employees (see Figure 1).

*Hypothesis 1: Compared to more experienced employees, new employees experience higher levels of a) work loneliness, b) internal communication, and c) social support from supervisors, and lower levels of d) informal non-work related communication with supervisors, e) informal non-work related communication with colleagues, and f) social support from colleagues.*

*Hypothesis 2: The amount of internal communication is negatively associated with a) loneliness at work and b) particularly among new employees.*

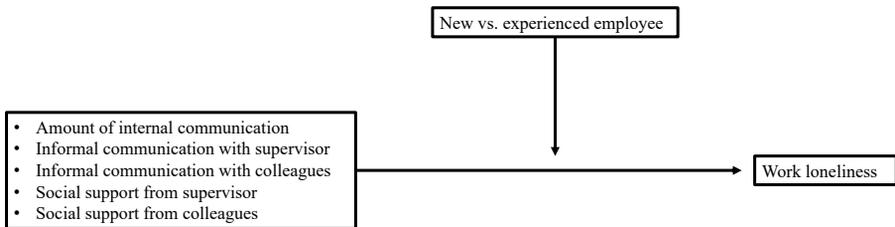
*Hypothesis 3: Informal non-work related communication with colleagues is associated with a) loneliness at work and b) particularly among new employees.*

*Hypothesis 4: Informal non-work related communication with supervisors is associated with a) loneliness at work and b) particularly among new employees.*

*Hypothesis 5: Social support from colleagues is associated with a) loneliness at work and b) particularly among new employees.*

*Hypothesis 6: Social support from supervisors is associated with a) loneliness at work and b) particularly among new employees.*

**Figure 1. Relationships Between Study Constructs**



## Methods

### Sample

The cross-sectional data for this research consists of a large sample (N=1641) of hybrid workers from 11 business units within a large multinational company (MNC) operating in Finland. This MNC represents the technology industry, particularly the energy business industry. This is a very important sector for economies globally and in Finland, and employees in this sector are essential assets for their employers. A large share of the company's employees undertakes expert work, and most of their tasks can be performed remotely. Conducting research concerning remote and hybrid employees' experiences in this context provides valuable insights into how to develop and maintain a decent working life in a changing and turbulent business environment. Furthermore, this particular company was very interested in the possibility of gaining information about their employees, which formed an important reason to collect data from their business units. Also, some other companies operating in the same sector were invited to participate, but for internal reasons, they did not accept the invitation.

The sample was collected via an online questionnaire in December 2022 with a response rate of 49%. The link to the questionnaire was distributed to the employees via email. Participation in the survey was optional and voluntary, and employees

could respond to the questionnaire during their working hours. The employer was not provided with information about which employees had or had not responded to the questionnaire. The questionnaire itself was created by the research team, and company representatives from HR departments were able to comment and make suggestions regarding the questionnaire format. Additionally, we obtained demographic background information from the company's personnel register, which improved the validity of the data. Information about the combination of register and questionnaire data was provided to employees at the start of the questionnaire via a link to the research project's privacy notice, as required by the EU General Data Protection Regulation. The amount of missing data was low, as only 62 (4%) respondents had missing values in the study variables. The complete responses ( $n = 1579$ ) were used in all of the descriptive analyses.

Demographically, the sample mostly consisted of men ( $n=1196$ , 76%), and the mean age of respondents was 44.8 years with a standard deviation (SD) of 10.3. The mean amount of remote work was 56.1% (SD = 27.2) of the total working time. Most of the respondents ( $n=1317$ , 83%) were experienced employees, and almost a fifth ( $n=262$ , 17%) were new employees who started working during the COVID-19 pandemic. The respondents were coded (0 = experienced employee, 1 = new employee) based on their employment contract start date, and those who had worked at the company for two years or less were considered as new employees.

## Measures

*Work loneliness* was measured with a five-item scale which has been extensively validated in two different Finnish samples (Kempainen & Tanskanen, 2023). The participants rated five items (e.g., "I feel left out in this organization.") on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach's  $\alpha$  score was 0.86 which indicated a good internal consistency for this measure.

The *amount of internal communication* was measured as the percentage of internal communication (e.g. with colleagues, supervisor, and back office) of the total working time. *Informal non-work-related communication with supervisors* was assessed with two items: "How often do you talk or chat about things which are unrelated to work?" a) face-to-face and b) remotely. Participants evaluated these two items with an eight-point scale (1 = Never, 2 = Less than monthly, 3 = Monthly, 4 = Multiple times during a month, 5 = Weekly, 6 = Multiple times during a week, 7 = Daily, 8 = Multiple times during a day). *Informal non-work-related communication with colleagues* was measured with the same items and the same scale. The overall non-work-related communication scores were calculated as the maximum value of either item score (e.g. an employee with item values 4 and 3 would get an overall score of 4). *Social support from supervisors* and *social support from colleagues* were measured with separate three-item scales from the QPS-Nordic questionnaire (Wännström

et al., 2009). A sample item for the social support from the supervisor scale is “If needed, can you get support and help with your work from your immediate supervisor?” and a sample item for the social support from the colleagues scale is “If needed, can you get support and help with your work from your coworkers?”. Participants responded to these items on a five-point scale ranging from 1 (Very rarely or never) to 5 (All the time or almost all the time). The Cronbach’s  $\alpha$  scores for supervisor support and colleague support were 0.83 and 0.83, respectively. Both of these values indicated a good internal consistency of the scales.

*Control variables* included sex, age, team size, the amount of remote work, the amount of working alone, job autonomy, and quantitative job demands. Sex, age, and team size were retrieved from the company register. *Sex* was coded as 0 = male, 1 = female, *age* was measured in years, and *team size* was calculated as the number of team members under the same supervisor. The *amount of remote work* was measured as the percentage of time spent remote working from the total working time, and similarly, the *amount of working alone* was measured as the percentage of time spent working alone from the total working time. These ratios were evaluated by the employees. *Job autonomy* was measured with a six-item scale based on the Nova-Weba questionnaire (Houtman et al., 1994). Participants rated the six items (e.g. “I am my own boss when it comes to organising my workload.”) on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach’s  $\alpha$  score was 0.84, which indicated a good internal consistency in this sample. *Quantitative job demands* were measured with a four-item scale from the QPS-Nordic questionnaire (Wännström et al., 2009). Participants evaluated the four items (e.g. “Is it necessary to work at a rapid pace?”) with a five-point scale ranging from 1 (Not at all or little) to 5 (Very often or almost all the time). The Cronbach’s  $\alpha$  score was 0.85, which indicated good internal consistency in this sample.

## Analytical Strategy and Statistical Methods

The total number of rows containing missing data was low ( $n = 62$ , 4%). Listwise deletion (LD) was used for respondents with missing values ( $n=33$ ) in the grouping variable (experienced or new employee), as the contract starting date was not recorded for external contract employees. As the remaining amount of missing data was very low, LD was also utilised for the rest of the respondents with missing values ( $n=29$ ), assuming that the missingness was occurring completely at random. The complete cases of respondents ( $n = 1579$ ) were used in the subsequent analyses.

In order to test our first hypothesis, age-adjusted regression analyses with a new versus experienced employee dummy variable as a predictor were conducted. To test the other hypotheses concerning the differences in predictors of work loneliness between experienced and new employees, multiple-group analysis (MGA) was used to estimate separate linear regression models for experienced and new employees.

The differences between the experienced employee and the new employee estimates were tested with the Wald chi-square test by setting the parameter values as equal between experienced and new employees. A robust maximum likelihood estimator (MLR) was used to estimate the models. Descriptive and regression analyses were performed with R (version 4.3.1; R Core Team, 2023), and the multiple-group analysis was conducted with Mplus (version 8.6; Muthén & Muthén, 1998–2017). In MGA, several possible confounders were adjusted as it is likely that, for example, demographics, remote work, the amount of working alone, job autonomy, and quantitative demands have an effect on both work loneliness and its examined antecedents (Knight et al., 2022; Wright, 2005; Wright & Silard, 2021).

## Results

A descriptive analysis of the stratified sample (see Table 1) indicated that the overall level of work loneliness was low in both groups but slightly higher among new employees (mean = 1.91) compared to experienced employees (mean = 1.72). The levels of supervisor and colleague social support and informal communication with them were high among new and experienced employees. New employees were younger (mean = 35.93) compared to experienced employees (mean = 46.58), and there were more women among new employees (36%) compared to experienced employees (22%). Newcomers also reported slightly higher amounts of working alone than experienced employees (55% vs. 52%). Regarding team size, autonomy, quantitative job demands and the amount of remote work, there were no differences between new and experienced employees.

Table 2 presents correlations among study variables stratified to new and experienced employees. Whole sample correlations and descriptive statistics are presented in Table 5 (provided in the Appendix). As presented in Table 2, correlations between work loneliness and the other study variables indicated that social support from supervisors and colleagues and informal communication with them were negatively and similarly correlated with work loneliness among both new and experienced employees. In addition, the amount of working alone ( $r = .13$ ) was significantly correlated with work loneliness among new employees, while among experienced employees, age ( $r = -.09$ ), autonomy ( $r = -.17$ ) and the amount of internal communication ( $r = -.06$ ) were negatively correlated with work loneliness, and quantitative demands ( $r = .11$ ) positively correlated with work loneliness.

**Table 1. Stratified Means, Standard Deviations, and Comparison Tests Between Experienced and New Employees**

Variable	Mean <sub>exp</sub>	SD <sub>exp</sub>	Mean <sub>new</sub>	SD <sub>new</sub>	Test statistic <sup>b</sup>	p	Effect Size <sup>d</sup>
(1) Sex <sup>a</sup>	0.22	0.41	0.36	0.48	20.87	<.001	0.12
(2) Age	46.58	9.56	35.93	9.41	16.51	<.001	-1.12
(3) Team size	10.27	7.24	10.84	6.87	-1.26	.207	0.10
(4) Autonomy	3.79	0.70	3.79	0.76	-0.04	.966	0.00
(5) Quantitative demands	3.11	0.94	2.98	1.07	1.83 <sup>c</sup>	.068	-0.12
(6) Amount of remote work	56.27	26.84	55.18	28.97	0.59	.553	-0.05
(7) Amount of working alone	52.36	21.92	55.84	22.68	-2.33	.020	0.14
(8) Amount of internal communication	35.75	19.56	35.04	19.65	0.36	.592	-0.04
(9) Informal communication with supervisor	4.33	1.48	4.22	1.51	1.12	.262	-0.08
(10) Informal communication with colleagues	5.66	1.33	5.51	1.48	1.53 <sup>c</sup>	.128	-0.11
(11) Social support from supervisor	4.24	0.72	4.37	0.71	-2.65	.008	0.18
(12) Social support from colleagues	4.22	0.66	4.25	0.66	-0.72	.470	0.05
(13) Work loneliness	1.72	0.74	1.91	0.82	-3.77	<.001	0.26

Note: n = 1317 for experienced employees and n = 262 for new employees. <sup>a</sup> 0 = male, 1 = female. <sup>b</sup> Test statistics are T-test statistics t(1577) for continuous variables and chi-square statistic chi(1) for sex. <sup>c</sup> Welch T-test was used as variances could not be equal. <sup>d</sup> Effect sizes are Cohen's d for continuous variables and Phi for sex.

**Table 2. Stratified Correlations of Experienced and New Employees**

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Sex <sup>a</sup>	1	-.03	-.09	-.03	-.04	.11	-.11	.07	-.10	-.07	-.02	.06	.08
(2) Age	.04	1	-.12	-.05	.12	.00	-.09	.07	.03	-.06	-.04	-.10	-.06
(3) Team size	-.11 <sup>**</sup>	.01	1	.11	-.08	.10	.01	-.03	-.16 <sup>*</sup>	.11	-.04	-.05	-.00
(4) Autonomy	.01	.01	.00	1	-.41 <sup>***</sup>	.13 <sup>*</sup>	.13 <sup>*</sup>	-.08	.08	.15 <sup>*</sup>	.25 <sup>***</sup>	.24 <sup>***</sup>	-.04
(5) Quantitative demands	.01	-.02	-.01	-.36 <sup>***</sup>	1	-.05	-.30 <sup>***</sup>	.18 <sup>**</sup>	-.05	-.02	-.25 <sup>***</sup>	-.28 <sup>***</sup>	.07
(6) Amount of remote work	.07 <sup>*</sup>	.00	.01	.11 <sup>***</sup>	-.06 <sup>*</sup>	1	.07	-.08	-.21 <sup>***</sup>	-.30 <sup>***</sup>	-.03	-.05	.04
(7) Amount of working alone	-.05	.05	.07	.15 <sup>***</sup>	-.27 <sup>***</sup>	.12 <sup>***</sup>	1	-.28 <sup>***</sup>	-.16 <sup>*</sup>	-.02	.01	.07	.13 <sup>*</sup>
(8) Amount of internal communication	.13 <sup>***</sup>	-.04	-.01	-.07 <sup>*</sup>	.19 <sup>***</sup>	-.15 <sup>***</sup>	-.52 <sup>***</sup>	1	.10	.04	-.03	.00	.02
(9) Informal communication with supervisor	-.01	-.07 <sup>*</sup>	-.16 <sup>***</sup>	.02	.02	-.19 <sup>***</sup>	-.12 <sup>***</sup>	.10 <sup>***</sup>	1	.46 <sup>***</sup>	.32 <sup>***</sup>	.15 <sup>*</sup>	-.27 <sup>***</sup>
(10) Informal communication with colleagues	-.05	-.10 <sup>***</sup>	-.00	-.01	.04	-.18 <sup>***</sup>	-.08 <sup>**</sup>	.07 <sup>*</sup>	.48 <sup>***</sup>	1	.19 <sup>**</sup>	.25 <sup>***</sup>	-.25 <sup>***</sup>
(11) Social support from supervisor	.01	-.05	-.01	.23 <sup>***</sup>	-.16 <sup>***</sup>	-.01	.02	.03	.26 <sup>***</sup>	.07 <sup>*</sup>	1	.48 <sup>***</sup>	-.44 <sup>***</sup>
(12) Social support from colleagues	.05	-.02	.03	.23 <sup>***</sup>	-.14 <sup>***</sup>	.03	.06 <sup>*</sup>	-.01	.15 <sup>***</sup>	.18 <sup>***</sup>	.55 <sup>***</sup>	1	-.42 <sup>***</sup>
(13) Work loneliness	.01	-.09 <sup>**</sup>	-.01	-.17 <sup>***</sup>	.11 <sup>***</sup>	.02	.02	-.06 <sup>*</sup>	-.20 <sup>***</sup>	-.19 <sup>***</sup>	-.39 <sup>***</sup>	-.49 <sup>***</sup>	1

Note: Correlations for experienced employees are presented below the diagonal and for new employees above the diagonal. \* p <.05, \*\* p <.01, \*\*\* p <.001.

Hypotheses 1a-f were tested with age-adjusted regression analyses (Table 3), which revealed that new employees experienced more work loneliness ( $b = 0.12, p < .05$ ) than experienced employees, as was suggested in H1a. In addition, new employees communicated informally with colleagues less ( $b = -0.27, p < .01$ ) than experienced employees, which supported H1e. There were no other significant differences between new and experienced employees, and therefore, hypotheses H1b (new employees experience higher levels of internal communication), H1c (new employees have more social support from supervisors), H1d (new employees have less informal communication with supervisors), and H1f (new employees experience lower levels of social support from colleagues) were not supported by the data. However, it should be noted that the mean amount of social support from the supervisor was significantly ( $p = .008$ ) higher among new employees (mean = 4.37) compared to experienced employees (mean = 4.24) (see Table 1), but adjusting the age of respondents in regression analysis created no significant difference.

**Table 3. Unstandardized Beta Coefficients, Standard Errors, and 95% Confidence Intervals for Comparisons Between New and Experienced Employees**

Variable	B	SE	95% CI
Work loneliness (H1a)	0.12*	0.06	(0.01, 0.23)
Amount of internal communication (H1b)	-1.02	1.42	(-3.81, 1.76)
Social support from supervisor (H1c)	0.09	0.05	(-0.01, 0.19)
Informal communication with supervisor (H1d)	-0.19	0.11	(-0.40, 0.02)
Informal communication with colleagues (H1e)	-0.27**	0.10	(-0.47, -0.07)
Social support from colleagues (H1f)	0.01	0.05	(-0.08, 0.10)

Note: All models were tested separately with the control variable included. New employees were coded as 1 and experienced employees as 0. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .

The results of the multigroup analysis (see Table 4) revealed associations between work loneliness and the predictors within the experienced employee and the new employee groups. Hypothesis (H2a) was not supported because the amount of internal communication was not negatively and significantly related to work loneliness among experienced employees ( $\beta_{\text{exp}} = -0.05, p > .05$ ) or new employees ( $\beta_{\text{new}} = 0.07, p > .05$ ). Even though the parameter values of the amount of internal communication differed significantly ( $\beta_{\text{exp}} = -0.05; \beta_{\text{new}} = 0.07; p = .05$ ) between experienced and new employees, the amount of internal communication was not significantly associated with work loneliness in the within-group investigations. Therefore, hypothesis (H2b) was also not supported.

Hypothesis (H3a) was supported because informal non-work-related communication with colleagues was negatively and significantly related to work loneliness of both the experienced employees ( $\beta_{\text{exp}} = -0.09, p < .01$ ) and the new employees ( $\beta_{\text{new}} = -0.11, p < .05$ ). The standardised regression coefficients did not differ between the groups ( $\beta_{\text{exp}} = -0.09; \beta_{\text{new}} = -0.11; p = .69$ ), and therefore, hypothesis (H3b) was not supported. Hypothesis (H4a) was partially supported as informal

non-work-related communication with the supervisor was negatively associated with the work loneliness of experienced employees ( $\beta_{\text{exp}} = -0.06$ ,  $p < .05$ ) but not with the work loneliness of new employees ( $\beta_{\text{new}} = -0.08$ ,  $p > .05$ ). This observed within-group difference in statistical significance of the parameters, however, was likely to be due to the loss of statistical power in the new employee group as the group's size was much smaller. Additionally, the standardised regression coefficients between groups were not significantly different ( $\beta_{\text{exp}} = -0.06$ ,  $\beta_{\text{new}} = -0.08$ ,  $p = .80$ ). Because of this result, hypothesis (H4b) was not supported by the data.

Hypothesis (H5a) was supported because the social support from colleagues was negatively and significantly associated with work loneliness of both the experienced ( $\beta_{\text{exp}} = -0.36$ ,  $p < .001$ ) and the new employees ( $\beta_{\text{new}} = -0.31$ ,  $p < .001$ ). Similarly, hypothesis (H6a) was supported because the social support from the supervisor was negatively and significantly associated with work loneliness of both the experienced ( $\beta_{\text{exp}} = -0.16$ ,  $p < .001$ ) and new employees ( $\beta_{\text{exp}} = -0.29$ ,  $p < .001$ ). Hypotheses H5b and H6b were not supported by the comparison results, and there were no differences in standardised regression coefficients between experienced and new employees regarding social support from the supervisor ( $\beta_{\text{exp}} = -0.16$ ,  $\beta_{\text{new}} = -0.29$ ,  $p = .11$ ) or social support from colleagues ( $\beta_{\text{exp}} = -0.36$ ,  $\beta_{\text{new}} = -0.31$ ,  $p = .48$ ).

Some differences were observed in the within-group associations of the control variables. Among experienced employees, age ( $\beta_{\text{exp}} = -0.12$ ,  $p < .001$ ) was negatively related to work loneliness, but the coefficients were not significantly different compared to new employees ( $\beta_{\text{exp}} = -0.12$ ,  $\beta_{\text{new}} = -0.09$ ,  $p = .62$ ). Among new employees, job autonomy ( $\beta_{\text{new}} = 0.12$ ,  $p < .05$ ) and the amount of working alone ( $\beta_{\text{new}} = 0.15$ ,  $p < .01$ ) were positively related to work loneliness. Other control variables, such as the amount of remote work, were not related to work loneliness in either group. Compared to experienced employees, the difference between the standardised regression coefficients of job autonomy was significant ( $\beta_{\text{exp}} = -0.04$ ;  $\beta_{\text{new}} = 0.12$ ;  $p = .01$ ), and the difference between the coefficients of the amount of working alone was almost significant ( $\beta_{\text{exp}} = 0.04$ ;  $\beta_{\text{new}} = 0.15$ ;  $p = .06$ ). However, other standardised regression coefficients did not differ between experienced and new employees.

**Table 4. Standardized Regression Coefficients, Standard Errors, 95% Confidence Intervals, and Wald Difference Test Results for Predictors of Work Loneliness Between Experienced and New Employees**

Predictors	Experienced employees			New employees			Wald test <sup>a</sup>	
	$\beta$	SE	95% CI	$\beta$	SE	95% CI	W	p
Intercept	6.87***	0.29	(6.31, 7.42)	6.11***	0.60	(4.93, 7.28)	1.32	.25
Sex <sup>b</sup>	0.03	0.03	(-0.02, 0.08)	0.09	0.05	(-0.01, 0.19)	1.12	.29
Age	-0.12***	0.02	(-0.16, -0.07)	-0.09	0.05	(-0.19, 0.01)	0.24	.62
Team size	-0.01	0.02	(-0.06, 0.03)	-0.04	0.05	(-0.13, 0.05)	0.29	.59
Autonomy	-0.04	0.03	(-0.10, 0.01)	0.12 <sup>*</sup>	0.06	(0.01, 0.24)	6.51	.01
Quantitative demands	0.04	0.03	(-0.01, 0.10)	-0.01	0.06	(-0.13, 0.11)	0.61	.43
Amount of remote work	-0.01	0.02	(-0.06, 0.04)	-0.06	0.05	(-0.16, 0.04)	0.79	.37
Amount of working alone	0.04	0.03	(-0.03, 0.09)	0.15**	0.05	(0.05, 0.26)	3.60	.06
Amount of internal communication (H2)	-0.05	0.03	(-0.10, 0.01)	0.07	0.05	(-0.03, 0.17)	4.00	.05
Informal communication with supervisor (H3)	-0.06 <sup>*</sup>	0.03	(-0.12, -0.01)	-0.08	0.06	(-0.20, 0.04)	0.07	.80
Informal communication with colleagues (H4)	0.09**	0.03	(-0.14, -0.03)	-0.11 <sup>*</sup>	0.06	(-0.22, -0.00)	0.16	.69
Social support from supervisor (H5)	0.16***	0.03	(-0.23, -0.10)	0.29***	0.07	(-0.42, -0.16)	2.50	.11
Social support from colleagues (H6)	0.36***	0.03	(-0.43, -0.30)	-0.31***	0.07	(-0.44, -0.18)	0.51	.48

Note. <sup>a</sup> df = 1 in all Wald tests. <sup>b</sup> 0 = male, 1 = female.  $\beta$  = standardized regression coefficient, SE = standard error, CI = confidence interval, W = Wald chi-square test statistic. \* p <.05, \*\* p <.01, \*\*\* p <.001.

These results suggest that an increase in informal communication with a supervisor or colleagues and an increase in social support from either of them was associated with a decrease in work loneliness among experienced employees. Similar to experienced employees, an increase in informal communication with colleagues and an increase in social support from either the supervisor or colleagues was associated with a decrease in the work loneliness of new employees. Most of the observed within-group associations with work loneliness were not significantly different between new and experienced employees. The tested model explained 29.6% of the variation in the work loneliness of experienced employees and 33.3% of the variation in the work loneliness of new employees.

In an additional analysis, work loneliness was analysed using a sample combining both new and experienced employees. The results (see Table 6 in the Appendix) indicated that informal communication with a supervisor ( $\beta = -0.07, p <.01$ ) and colleagues ( $\beta = -0.09, p <.001$ ) had minor negative effects on work loneliness, whereas the effects of social support from a supervisor ( $\beta = -0.19, p <.001$ ) and particularly from colleagues ( $\beta = -0.35, p <.001$ ) were strongly negative.

## Discussion

This study aims to increase the understanding of work loneliness and explain how communication and social support between and from different organisational actors are related to the experiences of work loneliness in the context of remote and hybrid work. We also add knowledge about the socialisation of newcomers in organisations in which employees work partly in the office and partly in a remote mode. Our study provides both theoretical and managerial implications.

### Theoretical Contribution

First, we contribute to the knowledge about antecedents of work loneliness, specifically in remote and hybrid work contexts. Even though the amount of work on loneliness literature has increased in recent years, it is still sparse. Specifically, only a few studies (Becker et al., 2022) have examined loneliness at work in a remote/hybrid context, and despite theoretical advances, the empirical research on the antecedents of work loneliness is still insufficient (Spilker & Breaugh, 2021; Wright & Silard, 2021). Previous research has, however, identified a low level of social support from supervisors and, particularly, from colleagues as a predictor of loneliness at work (Knight et al., 2022; Patterer et al., 2023; Wright et al., 2006). Low levels of social support from supervisors and colleagues were the most important predictors of work loneliness in this study as well. In addition to social support, we present the frequency of informal non-work-related communication with supervisors and colleagues as a new predictor of work loneliness to supplement the extant process model of work loneliness (Wright & Silard, 2021). However, the overall amount of internal communication was not associated with work loneliness, supporting the notion that regarding loneliness, it is indeed the quality rather than the quantity of relationships and communication that matters (Hawley & Cacioppo, 2010; Wright & Silard, 2021).

As another theoretical contribution to work loneliness, we introduced a contingency component into the existing process model of work loneliness of Wright and Silard (2021). Thus, we hypothesised that the antecedents of work loneliness are not universal, and the set of antecedents and their strength can vary depending on contextual factors or in different groups. Specifically, we examined the relationships between antecedents and work loneliness within new and more experienced employees, and we suggest future studies to focus on other contingency variables as well, for instance, to examine if the work loneliness process is different for supervisors and subordinates, or if the diversity of the team (e.g. in terms of cultural diversity or diversity based on the age of employees) would be influential. Moreover, we suggest how the division of the time between working remotely and in the office (i.e. hybrid work) is organised and what the adopted practices are are situational boundary conditions for work loneliness and worth studying in a more detailed manner in the future.

Second, we contribute to the field of *newcomer socialisation* by comparing the perceptions about the social context of remote and hybrid work between employees who have entered the organisation during and after the COVID-19 pandemic in terms of newcomers and experienced employees. We found that work loneliness is higher among newcomers compared to their more experienced counterparts who have worked in the organisation for a longer time. Our results are aligned with earlier evidence (Anand & Mishra, 2021) that the shorter the organisational tenure is, the stronger the work loneliness. In addition, we also confirm that those who started as newcomers during the COVID-19 pandemic are likely to suffer from work loneliness more than their colleagues with longer organisational tenure (Jopling et al., 2023). Our study adds to the previous knowledge by focusing on the context of remote and hybrid work and confirming that the same trend exists. However, in the study by Joplin et al. (2023), the intensity of remote work itself was not found to be a risk factor for work loneliness, and our findings are aligned, although adding to earlier knowledge by showing that it was not a risk factor for either newcomers or experienced employees. Consequently, we are not able to confirm that the amount of remote work itself impairs newcomers' socialisation in their work community (in particular, increasing their work loneliness), although the virtual work context has been suggested to pose a challenge for them (Gruman & Saks, 2018; Woo et al., 2022). In addition, there is evidence (Mergener & Trübner, 2022) that social relationships, in particular, the working atmosphere with colleagues and the supervisor, affect employee's decisions about whether to work remotely or in the office. Therefore, it is also conceivable that the quality of social relationships determines the extent of remote work. Future studies should dig deeper into this phenomenon and, for instance, compare newcomers' and experienced employees' work loneliness between teams or groups that mainly or totally work remotely and ones that mainly or totally work in the same physical place. Also, a more detailed understanding of the length of stay in the organisation is needed (e.g., by dividing employees into better-differentiated groups rather than just newcomers and experienced employees). In addition, future studies could also study the differences between organisational newcomers who are just starting their careers and those changing jobs and who already have experience in other organisations. Moreover, longitudinal study designs are needed to explore the causality between the amount of remote work and the quality of the social work environment and also whether this functions similarly for newcomers and more experienced employees.

Furthermore, it seems that there were surprisingly few differences in the other social context factors of the work environment between newcomers and experienced employees, as only the frequency of informal communication with colleagues was lower for new employees. It is understandable that experienced employees have had more time to develop deeper relationships with colleagues (Horan et al., 2021; Sias, 2005) that likely include informal elements. However, it seems that our participants were not involved in informal communication very often, and on average,

people communicated informally with their colleagues once a week and even more rarely with their supervisor. Remote work was common in our sample, and thus, communication was likely to be largely ICT-mediated. Earlier literature has found that ICT-mediated communication is challenging and perceived as being of lower quality compared to face-to-face interaction (Jämsen et al., 2022; Sias et al., 2012; Šmite et al., 2023; Wang et al., 2021). Our findings may even indicate that remote and hybrid work specifically placed new employees in a situation where they did not have many possibilities for spontaneous discussions or occasions for informal exchanges (Jämsen et al., 2022; Mirowska & Bakici, 2023; Standaert et al., 2022). Moreover, we expected newcomers to differ from experienced employees regarding the amount of available social support either from supervisors or colleagues, but this was not supported in the age-adjusted analysis. Even though experienced employees can have more developed support networks, new employees are likely to need and receive more support, which balances the difference. Moreover, there is also a possibility that more experienced employees who witnessed the shift during the pandemic might experience a greater sense of losing social support than those who never went through a comparable experience or have no earlier experiences as a reference. Future studies that aim to study the amount and quality of communication in remote and hybrid work should adopt different methods, for instance, diary studies, meeting recordings, and longitudinal study designs, to follow the development of newcomer communication practices over time. Moreover, a more detailed investigation of how remote and hybrid work contexts affect expectations for social relationships and their fulfilment in different phases of employment would be useful and help shed more light on the process of socialisation in the modern world of work.

Turning the focus to the relationships between our antecedents and work loneliness, we found that the amount of internal communication was not related to work loneliness for either newcomers or experienced employees. There was no statistically significant difference between the groups in regard to the importance of factors of informal communication with supervisors and colleagues, as well as the social support from supervisors and colleagues. However, the standardised estimate for the effect of supervisor social support on work loneliness was substantially bigger for new employees ( $\beta=-0.29$ ) compared to more experienced colleagues ( $\beta=-0.16$ ), but the estimates did not differ significantly due to a larger standard error in the new employee estimate that is likely caused by a smaller sample size.

It is also worth mentioning that for new employees, support from both the supervisor and colleagues was an equally strong predictor of low levels of loneliness at work. Among experienced employees, support from colleagues had a remarkably stronger association with work loneliness compared to supervisor support. It is already known that social support protects employees from work loneliness (Bentley et al., 2016; Wang et al., 2021), but our study is the first to show how the source of social support differs among new and experienced employees in the hybrid work

context. In sum, we suggest that informal communication in the organisation is a protective factor from work loneliness for all employees, whereas the importance of the source of social support may differ depending on the status of being an 'outsider' or an 'insider'. For newcomers (outsiders), all available support is valuable and needed, whereas, for experienced employees (insiders), social needs at work become satisfied mainly through the support they gain from their peers.

In addition, our results indicate that high job autonomy and working alone can increase feelings of work loneliness among new employees, whereas, among experienced employees, they were not associated with work loneliness. The result relating to working alone is not surprising as, for example, collaborative work has been connected with lower work loneliness (Abelsen et al., 2023). But previous research has also associated job autonomy negatively with work loneliness (e.g. Wang et al., 2021). Accordingly, high autonomy could be detrimental for newcomers as high autonomy means high independence, which can particularly isolate new employees from social resources (Harris et al., 2022). Thus, while autonomy can further lead to self-sufficiency and independence, co-working, learning, getting feedback, and interdependency would be more beneficial for newcomers.

### Strengths and Weaknesses

The sample of this study was collected from one MNC and its 11 business units, which involves advantages and disadvantages. First, expert work done in this technology industry company represents typical information work that can be carried out at least partially remotely, and therefore, the findings of this study are likely to be relevant for other organisations that have high-tech expert employees working in a remote or hybrid mode. Second, our case MNC had certain HR practices and processes that were relevant for all of our participants, although business units had high autonomy, for instance, in how the share of remote and office work was organised in each unit. Thus, even though the HR practices especially relevant for our study (i.e. those related to hybrid work) were not uniform in all of the studied units, in the future, data from several companies with different HR practices related to hybrid work should be studied in this regard.

Moreover, a comparative study requires a large sample size, and even though the sample of this study was big and there were 262 newcomers in the sample, in some cases, the power of the analysis remained restricted. Therefore, even bigger sample sizes in future studies would enhance the statistical power in analysis and enable a comparison of different newcomer groups, such as those who had just started working versus those with a little more experience or those starting in a senior versus an entry-level position. This study is based on cross-sectional data, and future studies would benefit from adopting a longitudinal research design, which could be utilised to confirm causal relationships between predictors and work loneliness and exclude possible reverse causalities. That would also allow for the

testing of possible causalities between different variables considered as antecedents for work loneliness in this study, such as the amount of remote work and the quality of the social work environment (Mergener & Trübner, 2022).

Another weakness of the study is the use of self-assessed measurements, which runs a risk of common method bias (Podsakoff et al., 2003). The potential for bias was mitigated by purposeful elements of questionnaire planning (e.g. reverse items, random item arrangement, proximal separation of themes, different scale anchors and numbers of scale points) and emphasising anonymity (Podsakoff et al., 2003). Only employees themselves can estimate their levels of work loneliness, but more objective measures of communication and social support could be utilised in future studies. For instance, data collected from emails, calendars, instant messages, or video/audio calls may provide possibilities for this purpose (e.g., Yang et al., 2022). That said, examining several different possible work loneliness predictors among new and experienced employees can be seen as a strength of the study (Koch & Denner, 2022), and furthermore, we distinguished supervisors and colleagues as different sources of social support and companions in informal communication.

### Practical Implications

This study has significant practical relevance for both newcomers and experienced employees, as well as human resource management professionals. In order to protect all members of organisations from work loneliness, employees themselves should pay attention to how they interact with each other in the remote and hybrid work context. Supervisors or team leaders should ensure that meetings (online, face-to-face or hybrid) also involve elements that encourage informal communication between employees. Informal communication comes most naturally in face-to-face encounters and may be challenged by remote and hybrid work (Šmite et al., 2023; Wu et al., 2023; Yang et al., 2022). So, working in the employer's facilities instead of the home office could provide more possibilities for natural interaction. However, going to the office is not necessarily an infallible solution for meeting coworkers face-to-face, as other team members may not be there, and common practices to enhance a synchronous presence in the shared physical space of team members are required.

Providing help and being available for others when needed, in other words, 'giving social support to other members of the organisation' (Kammeyer-Mueller & Wanberg, 2003), is important in fostering the perception of belonging. Therefore, we suggest that regularly sharing information about each team member's skills and knowledge may help other members understand what kind of issues each person can help with and thus advance the realisation of social support between peers. In order to have access to various sources of social support, onboarding programs for remote and hybrid employees should involve appointed contacts with different actors in the organisation, the creation of practices that match newcomers with

mentors and ‘buddies’, more informal points of contact, and organised events aimed at building networks within the workplace.

Supervisors’ should remember that their role is particularly important for newcomers, and therefore, we suggest that, especially in the remote and hybrid work context, the supervisor should be in frequent contact with newcomers in order to provide the possibility for them to ask for help and support, and also to create a space for informal communication. In addition, we recommend that newcomers’ first tasks are planned in a way that allows them to collaborate with colleagues and not be left to work alone with too much autonomy.

## Conclusion

The primary objective of the current study was to address a gap in existing scholarly knowledge concerning how newcomers and more experienced employees perceive working in remote and hybrid contexts. We examined whether the social context of remote and hybrid work is perceived differently by employees who had entered the organisation during or after the pandemic and more experienced employees and if elements of the social context of remote and hybrid work function differently as antecedents for work loneliness among these two groups. We show that new employees experienced higher work loneliness than experienced employees. Informal communication with supervisors and colleagues and social support from colleagues (and particularly among new employees from the supervisor) were associated with lower levels of work loneliness. We suggest that the application of the contingency approach to work loneliness has much to offer for research investigating its antecedents and outcomes. Studying newcomers and experienced employees in remote and hybrid work contributes to research on newcomer socialisation, and social and team dynamics in the post-pandemic hybrid work context.

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Appendix

Table 5. Means, Standard Deviations, and Correlations of Overall Combined Sample

Variable	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Sex <sup>a</sup>	0.24	0.43	1												
(2) Age	44.81	10.33	-0.02	1											
(3) Team size	10.36	6.04	-0.10 <sup>***</sup>	-0.03	1										
(4) Autonomy	3.79	0.71	.00	.00	.03	1									
(5) Quantitative demands	3.08	0.97	-0.02	.03	-0.02	-0.37 <sup>***</sup>	1								
(6) Amount of remote work	56.09	27.21	.07 <sup>*</sup>	.01	.03	.12 <sup>***</sup>	-0.06 <sup>*</sup>	1							
(7) Amount of working alone	52.94	22.09	-0.05 <sup>*</sup>	.00	.06 <sup>*</sup>	.15 <sup>***</sup>	-0.28 <sup>***</sup>	.11 <sup>***</sup>	1						
(8) Amount of internal communication	35.63	19.58	.12 <sup>***</sup>	-0.02	-0.01	-0.07 <sup>**</sup>	.19 <sup>***</sup>	-0.14 <sup>***</sup>	-0.48 <sup>***</sup>	1					
(9) Informal communication with supervisor	4.31	1.49	-0.03	-0.04	-0.16 <sup>***</sup>	.03	.00	-0.19 <sup>***</sup>	-0.13 <sup>***</sup>	.10 <sup>***</sup>	1				
(10) Informal communication with colleagues	5.64	1.36	-0.06 <sup>*</sup>	-0.07 <sup>**</sup>	.02	.02	.03	-0.21 <sup>***</sup>	-0.07 <sup>**</sup>	.07 <sup>**</sup>	.48 <sup>***</sup>	1			
(11) Social support from supervisor	4.26	0.72	.01	-0.07 <sup>**</sup>	-0.01	.23 <sup>***</sup>	-0.18 <sup>***</sup>	-0.01	.02	.02	.27 <sup>***</sup>	.08 <sup>***</sup>	1		
(12) Social support from colleagues	4.23	0.66	.05 <sup>*</sup>	-0.03	.01	.23 <sup>***</sup>	-0.16 <sup>***</sup>	.01	.06 <sup>*</sup>	-0.01	.15 <sup>***</sup>	.19 <sup>***</sup>	.53 <sup>***</sup>	1	
(13) New employees <sup>b</sup>	0.17	0.37	.12 <sup>***</sup>	-0.38 <sup>***</sup>	.04	.00	-0.05 <sup>*</sup>	-0.01	.06 <sup>*</sup>	-0.01	-0.03	-0.04	.07 <sup>**</sup>	.02	1
(14) Work loneliness	1.75	0.76	.03	-0.11 <sup>***</sup>	-0.01	-0.15 <sup>***</sup>	.10 <sup>***</sup>	.02	.05	-0.04	-0.22 <sup>***</sup>	-0.20 <sup>***</sup>	-0.39 <sup>***</sup>	-0.47 <sup>***</sup>	.09 <sup>***</sup>

Note. <sup>a</sup> 0 = male, 1 = female. <sup>b</sup> 0 = experienced employees, 1 = new employees. \* p < .05, \*\* p < .01, \*\*\* p < .001.

**Table 6. Standardized Beta Coefficients, Standard Errors, and 95% Confidence Intervals for Overall Combined Model**

Variable	$\beta$	SE	95% CI
Intercept	6.64***	0.26	(6.14, 7.14)
Sex <sup>a</sup>	0.04	0.02	(-0.00, 0.09)
Age	-0.13***	0.02	(-0.17, -0.08)
Team size	-0.02	0.02	(-0.06, 0.02)
Autonomy	-0.02	0.02	(-0.06, 0.03)
Quantitative demands	0.03	0.03	(-0.02, 0.08)
Amount of remote work	-0.01	0.02	(-0.06, 0.03)
Amount of working alone	0.06*	0.03	(0.01, 0.12)
Amount of internal communication	-0.02	0.02	(-0.10, 0.01)
Informal communication with supervisor	-0.07**	0.03	(-0.12, -0.02)
Informal communication with colleagues	-0.09***	0.03	(-0.14, -0.04)
Social support from supervisor	-0.19***	0.03	(-0.25, -0.13)
Social support from colleagues	-0.35***	0.03	(-0.40, -0.29)
New employees <sup>b</sup>	0.05*	0.03	(0.00, 0.10)

Note. <sup>a</sup> 0 = male, 1 = female. <sup>b</sup> 0 = Experienced employee, 1 = New employee.  $\beta$  = standardized regression coefficient, SE = standard error, CI = confidence interval. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ .