



Determinants of managerial perceptions of the impact of telework: The effect of information communication technology support, trust, and frequency of communication

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ABSTRACT

Considering teleworking's pros and cons on organizational performance and the importance of managers on teleworking maintenance, this study aims to analyze three resources that influence managers' perceptions of teleworkers' effectiveness during the COVID-19 pandemic. Using a sample of 170 small and medium enterprise managers in Spain, the hypotheses were empirically tested through path analysis, and the model was estimated using the maximum likelihood method. Based on the job demands-resources model, this study contributes to the teleworking literature by demonstrating how the frequency of communication with teleworkers and managers' trust in employees are positively related to managers' perceptions of the organizational impact of teleworking. These relationships are not direct but are mediated by the perceived effectiveness of organizational communication. These findings have important managerial implications as they indicate the context that ensures managers' support for teleworking. Although this study has some limitations, such as its focus on a specific country or its cross-sectional nature, it lays the foundation for future studies considering individual, organizational, or sectoral variables that could moderate the analyzed relationships.

1. Introduction

The COVID-19 pandemic has changed the way organizations work. One of the main consequences of the COVID-19 global health crisis for organizations was the need to change from working in the office to teleworking suddenly. Indeed, teleworking was the only option for continuing business while safeguarding employee health by avoiding gathering in the same place (Belzunegui-Eraso and Erro-Garcés, 2020). Before the COVID-19 pandemic, only 3.2 % of employees in the EU-27 usually worked from home; however, at the peak of the lockdown in Europe in April 2020, over 39 % of employees teleworked, and this percentage rose to 48 % in the following summer (Sostero et al., 2020). Similarly, 50 % of employees in the United States teleworked during the pandemic, and 35.2 % said they had to switch to working from home (Brynjolfsson et al., 2020).

In this context, research has highlighted the need to know whether this increase in teleworking during the pandemic implies its definitive adoption or is only temporary and will disappear and be forgotten when the pandemic has finally come under control (e.g., Belzunegui-Eraso and Erro-Garcés, 2020; Brem et al., 2021). Given that teleworking has been

found to have both positive and negative effects on employee outcomes (Park et al., 2023), a priori, how managers perceive the impact of teleworking on organizational performance cannot be ensured. These perceptions are important because managers' beliefs about the causes and effects of the economic value of work-related investments have been shown to influence their decision-making (Arthur et al., 2016). Thus, studying managers' perceptions of the consequences of a specific practice can help anticipate its continuation in the future. As managers can either approve or avoid teleworking and provide teleworkers with the necessary support, their perceived attributes of teleworking and interpretations of their advantages and disadvantages are critical in consolidating this modality of work in an organization (Bentley et al., 2016; Lautsch and Kossek, 2011).

Based on the job demands-resources model (Bakker and Demerouti, 2007), the main aim of this study is to analyze resources that could influence how managers assess telework demands and, therefore, their perceptions of the impact of teleworking on organizational performance. Hence, our study contributes to the teleworking literature by focusing on managerial perceptions of teleworking, which have received less attention compared to studies focused on teleworkers (Park and Cho,

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2022), despite the importance of such perceptions for teleworking maintenance and effectiveness. Specifically, we analyze three resources: information and communication technology (ICT) support provided to employees, the frequency of communication between teleworkers and managers, and managers' trust in teleworkers. Thus, we contribute to the teleworking literature by considering factors other than ICT, which have received most of the attention in previous studies (Park and Cho, 2022). In addition, we contribute to the teleworking literature by analyzing how these resources can affect managers' perceptions, considering two mediating variables: managers' perceptions of the ability to telework to ensure effective communication and good working relations within the organization. Finally, we focus our study on the specific context of the COVID-19 pandemic, which is an extraordinary situation that deserves particular attention.

2. Teleworking: pros and cons before, during, and after the COVID-19 pandemic

Telework refers to employees performing assigned tasks at locations other than the company's facilities (Bailey and Kurland, 2002). Although teleworking has been assumed to be positively related to the organization's performance (e.g., Bloom et al., 2015; Martínez-Sánchez et al., 2007, 2008; Sánchez et al., 2007), this assumption has been mainly based on the favorable opinion of employees (Nakrošienė et al., 2019). However, Park et al. (2023) showed that teleworking can positively and negatively affect employee performance.

Considering that during the COVID-19 pandemic, teleworking was mandated for social distancing and was abruptly implemented in most countries (Park et al., 2023), the literature on teleworking must now consider the changes introduced because of the COVID-19 pandemic. The pros and cons of teleworking are presented below, classifying these factors temporally: before, during, and after the COVID-19 pandemic.

2.1. Pros and cons of teleworking in the pre-COVID-19 era

Previous research has shown that teleworking has a positive effect on employees' perceived autonomy and a negative impact on work-family conflict. At the same time, it improves employees' job satisfaction and performance and reduces turnover intention and role stress (Gajendran and Harrison, 2007). Similarly, teleworkers have shown a better ability to concentrate and less need for recovery than non-teleworkers (Biron and van Veldhoven, 2016), and they perceive organizations adopting teleworking as more concerned with employees' well-being, thus increasing their organizational commitment (Martin and MacDonnell, 2012).

Nevertheless, research on teleworking during the pre-COVID-19 era has highlighted some potential negative effects. Most of them are related to the consequences that the isolated environment can have on employees (Bailey and Kurland, 2002; Cascio, 2000; Golden et al., 2008), demonstrating that teleworking does not always lead to better job satisfaction (Morganson et al., 2010), performance (Lautsch et al., 2009) or motivation (Caillier, 2012) than working at the office.

2.2. Pros and cons of teleworking during the COVID-19 era

Gohoungodji et al. (2023:605) proposed five categories of group factors influencing telework: *technological materials, non-technological materials, teleworkers, teleworker work environment, and teleworker family environment*. Several studies have shown that one of the main negative aspects of teleworking during the pandemic was employees' emotional exhaustion (Chong et al., 2020; Mihalca et al., 2021; Miglioretti et al., 2022). During the pandemic, employees had to cope with various setbacks in their tasks, which turned out to be stressors positively related to emotional exhaustion at the end of the workday (Chong et al., 2020). In the same vein, other studies showed that during the pandemic, other disadvantages emerged for teleworkers, such as

isolation, increased workload, fatigue, stress, and lack of psychological well-being (Carillo et al., 2021; Dandalt, 2021; Ficapal-Cusí et al., 2023; Kapoor et al., 2021). Concerning the teleworker family environment, several researches have shown that telework did not achieve work-family conciliation during the pandemic but rather accentuated the emergence of work-family conflicts (Andrade and Lousa, 2021; Çoban, 2022). Studies carried out during the pandemic in countries with different work and social configurations showed that women have suffered a higher risk of making their work more precarious (Magnier-Watanabe et al., 2023), even consolidating their role as traditional housewives (Çoban, 2022; Kapoor et al., 2021). Concerning the teleworker work environment, one of the success factors for teleworking is having an adequate workspace at home (Carillo et al., 2021; Magnier-Watanabe et al., 2023), but the pandemic has highlighted the absence of a suitable environment for teleworking (Carillo et al., 2021).

However, during the pandemic, several positive aspects of telework were also highlighted (Moens et al., 2022). Essentially, teleworking has enabled many firms to continue operating using technology to maintain firm productivity (Khan et al., 2021). For example, Moens et al. (2022) empirically demonstrated that although the pandemic involved an exceptional situation of "sudden, compulsory and high-intensity telework" (Moens et al., 2022: 729), this was also interpreted as a situation of increased efficiency and reduced risk of burnout. Similarly, Okubo (2022) found that working environments were considerably improved during the pandemic through a greater richness of IT communication tools, digitalization of offices, and more flexible working hours. More recent studies have confirmed these positive effects by showing that properly managed, teleworking decreases work overload and, therefore, reduces emotional exhaustion and increases task performance (Silva et al., 2022), and even has been associated with employees' creative performance (Tønnessen et al., 2021). Additionally, from the perspective of managers (not employees), Dandalt (2021) indicated that during the pandemic, managers associated teleworking with improved work-

Table 1
Pros and cons of teleworking during COVID-19 pandemic.

Negative effects of telework during the pandemic	
Emotional exhaustion	Chong et al., 2020 Mihalca et al., 2021 Miglioretti et al., 2022
Isolation (social and professional)	Carillo et al., 2021 Ficapal-Cusí et al., 2023
Increased workload	Park et al., 2023 Carillo et al., 2021
Fatigue	Ficapal-Cusí et al., 2023
Stress	Carillo et al., 2021 Ficapal-Cusí et al., 2023 Kapoor et al., 2021 Magnier-Watanabe et al., 2023
Lack of psychological well-being	Dandalt, 2021 Kapoor et al., 2021
Work-family conflict	Andrade and Lousa, 2021 Çoban, 2022 Kapoor et al., 2021
Lack of a telework-friendly work environment	Magnier-Watanabe et al., 2023 Okubo et al., 2021
Positive effects of teleworking during the pandemic	
Facilitation of business continuity	Khan et al., 2021
Higher efficiency and lower risk of burnout	Moens et al., 2022
Improved working environments: richer IT communication tools, digitalization of offices, more flexible working hours	Okubo, 2022 Okubo et al., 2021
Reduction of work overload, reduction of emotional exhaustion, and increase of task performance	Silva et al., 2022
Enhancement of employees' creative performance	Tønnessen et al., 2021
According to managers, improved work-life balance	Dandalt, 2021

(Source: Author's elaboration.)

life balance and recruitment processes. Table 1 summarizes the advantages and disadvantages of teleworking during the pandemic.

2.3. Teleworking in the post-COVID-19 era

The pros and cons of post-pandemic teleworking have yet to be further developed to determine whether the experience gained from the COVID-19 pandemic has been positive (Gohoungodji et al., 2023). Although it is still early to draw definitive conclusions, some post-pandemic lessons derived from recent studies can be learned.

First, although telework has existed since the 1970s, its usage level has traditionally remained low (Godefroid et al., 2024). However, during the pandemic, it became necessary because of confinement and restrictions, and employees were forced to telework. This compelled teleworking helped people overcome their fear or reduce their aversion to working at home (Asmussen et al., 2024; Godefroid et al., 2024). Related with this, another finding regarding teleworking in the wake of COVID is the increasingly popular possibility of working in hybrid environments, that is, the ability to combine work based on both clock time and process time (Williamson et al., 2023). Finally, note that the lessons learned about teleworking after COVID apply not only to this area of study, but also to the increasingly widespread “work-from-everywhere” (Itam and Warriar, 2023), which has gained popularity and accessibility after COVID-19 pandemic (Itam and Warriar, 2023).

Second, telework has demonstrated the potential to reduce gender inequalities in the workplace. Using a sample of almost 5000 Australian employees during the pandemic, Williamson et al. (2023) showed that a significant percentage of women worked in a manner more aligned with the norm of the ideal worker (i.e., male who works long hours, is always available, and is highly productive) compared to the pre-COVID era. In line with this result, Hou et al. (2023) showed that information technologies can mitigate gender inequality because, in a crisis, female workers are expected to be more affected because they tend to take on more family and household responsibilities. Finally, Nguyen and Armoogum (2021) showed that for Vietnamese women, teleworking would be considered a solution post-COVID-19 to alleviate the family-related burden that existed pre-COVID-19.

Third, several studies have examined employees' desire to continue teleworking after the end of the pandemic (Asmussen et al., 2024; Georgescu et al., 2021; Godefroid et al., 2024; Okubo et al., 2021; Weber et al., 2022). Indeed, the pandemic has made it possible to study and identify employees' profiles (more or less) suitable for telework (Han et al., 2023). For instance, Han et al. (2023) found that young people with higher education and whose work is less constrained by job characteristics have a more desirable profile for teleworking than older people who are more dependent on firm-provided facilities. In a similar vein, using a sample of 377 employees living in Bucharest, Georgescu et al. (2021) showed that the probability of the desire to continue teleworking after the pandemic is higher for jobs in the IT field and when employees are young. In contrast, if the experience of teleworking during the pandemic has been unpleasant, the probability is drastically reduced. Using a sample of Japanese employees, Magnier-Watanabe et al. (2023) found that most respondents wanted to continue teleworking after the pandemic, at least partially, and that the most important determinant of this perception was having a suitable workspace at home. Similarly, Weber et al. (2022) found that job demands and a workspace that fulfills work privacy needs when considering distractions and interruptions, were positively associated with employees' future teleworking inclinations beyond the pandemic. Finally, Miglioretti et al. (2022) found that teleworkers with high-quality profiles had significantly higher levels of work engagement during a pandemic. Thus, one of the post-pandemic lessons might be that effective telework adoption must be configured when teleworkers are committed to the company (Miglioretti et al., 2022), have good mental health (Okubo et al., 2021), and have adequate telework spaces (Magnier-Watanabe et al., 2023; Okubo et al., 2021; Weber et al., 2022).

However, despite the number of studies considering the factors influencing employees' intentions to continue teleworking, studies analyzing managers' perceptions on this issue are scarcer. Considering the inconclusive results obtained in the literature regarding the effect of teleworking on organizational performance (Park et al., 2023), it is difficult to anticipate how managers perceive the impact that teleworking has had on their organizations during the pandemic. Given the importance of these perceptions for the maintenance of teleworking and its effectiveness, this study analyzed some factors that influence such perceptions.

3. Factors influencing managers' perceptions of the effectiveness of teleworking

Research on teleworking has primarily focused on employees' perceptions, but the study of managers in the teleworking context, and specifically the consideration of managerial perceptions of teleworking success, has been a relatively neglected area of study (Park and Cho, 2022). For example, Park and Jae (2022) found that work similarity, telework frequency, accessibility of technologies, and the quality of performance management positively affected employees' perceptions of the organizational impact of teleworking.

The limited development of this area is surprising when we consider the critical importance that managerial support for telework has in the success of telework and the satisfaction of teleworkers (Bentley et al., 2016; Lautsch and Kossek, 2011; Putnam et al., 2014). For teleworking to be successful, managers must learn about and be convinced of the positive effects of telework (Mello, 2007). Additionally, most previous studies considering managerial perceptions of teleworking have regarded ICT as the main factor that can explain teleworking adoption and have neglected other important factors (Park and Cho, 2022). Therefore, this study aims to address this gap by focusing on managers and analyzing additional factors that can affect their perception of the organizational impact of teleworking.

The adoption and diffusion of teleworking have been less than expected, mainly because of managerial resistance (Bailey and Kurland, 2002; Pérez et al., 2003; Peters and Heusinkveld, 2010). Alternative work arrangements such as teleworking increase the complexity of a manager's job by placing demands on them above and beyond those traditionally associated with their position (Powell and Mainiero, 1999).

The job demands-resources model might explain how teleworking challenges can influence managers' perceptions of their impact on organizational performance (Park and Cho, 2022). This model argues that the balance or imbalance of job demands and resources causes motivation and stress (Bakker and Demerouti, 2007). Job demands, a source of stress, are defined as a job's physical, psychological, social, and organizational costs (Bakker and Demerouti, 2007). Managers relate teleworking demands to remotely controlling, coordinating, training, evaluating, and communicating with teleworkers using ICTs (Cascio, 2000; Maruyama and Tietze, 2012). Some managers worry that teleworking may reduce their control over employees, change supervision practices, and reduce feedback from subordinates (Dambrin, 2004). Managerial concerns regarding teleworking have been confirmed in previous studies (e.g., Bailey and Kurland, 2002; Scholefield and Peel, 2009). In their literature review, Bailey and Kurland (2002) concluded that concerns about cost and control and low perceived need were the main reasons for managerial reluctance to adopt teleworking. Similarly, Scholefield and Peel (2009) showed that another significant concern is the reliability and usability of ICTs.

On the other hand, job resources refer to “the physical, psychological, social, or organizational aspects of the job that are either/or functional in achieving work goals; reduce job demands and the associated physiological and psychological costs; stimulate personal growth, learning, and development” (Bakker and Demerouti, 2007, p.312). Job resources can buffer the negative impact of job demands on job strain (Bakker and Demerouti, 2007) by modifying the perceptions evoked by

such stressors or reducing the damaging consequences of such responses (Kahn and Byosserie, 1992).

Based on the results of previous studies on managerial reluctance to implement teleworking, we analyze three job resources that could influence managers' perceptions of teleworking effectiveness, with particular attention paid to the specific context of the pandemic: ICT support, frequency of communication between managers and teleworkers, and managerial trust in employees working at home. Furthermore, we believe that managerial perceptions of the appropriateness of implementing teleworking may be determined by two intermediate variables: the ability of teleworking to ensure effective communication and the promotion of good working relations within the organization.

3.1. ICT support and managers' perceptions of telework effectiveness

While an appropriate ICT infrastructure has been related to home-based telework (Ollo-López et al., 2021), poor access to technology and documents is a barrier (Pérez et al., 2003; Scholefield and Peel, 2009). When organizations provide teleworkers with appropriate technology, teleworking is more effective because it can increase employee productivity and satisfaction with telework (Bélanger et al., 2001).

Managerial studies have shown that ease of use, a factor that is especially important in a work context where technology needs to be used (Venkatesh, 2000), has a significant positive effect on managers' attitudes toward teleworking (Silva-C et al., 2019), as managers are more likely to grant a teleworking request when the firm has the appropriate ICT to support it (Peters and den Dulk, 2003). Recent studies have shown how to ensure ICT stability and enable teleworkers to access or update an ICT that they need to perform their tasks, allow them to not perceive ICT-related stress, and take advantage of such technologies during the COVID-19 pandemic (Meier et al., 2023). When managers and teleworkers access appropriate ICT, they are provided tools to increase their monitoring capacities (Peters and den Dulk, 2003). Hence, under the job demands-resources model (Bakker and Demerouti, 2007), organizational ICT support can be considered a resource that can reduce managers' job demands and the associated psychological and physiological costs derived from teleworking. Therefore, we expect more ICT support to relate to managerial perceptions of the positive impact of teleworking on organizational performance.

With ICT, teleworkers who work together from a distance can stay in contact with each other in various ways, such as e-mail, phone, instant messaging, and videoconferencing (Smith et al., 2018). These channels enrich communication between teleworkers by combining synchronous and asynchronous communication, allowing them to see another person. The use of all available channels has been shown to be critical for effective internal communication (Heide and Simonsson, 2019) and can be used to provide adequate information support from colleagues to reduce the stress caused by teleworking (Wahl et al., 2023), we expected ICT support to be related to managers' perceptions that teleworking has a positive impact on the effectiveness of organizational communication.

Finally, we suggest that ICT support can lead managers to perceive teleworking positively impacting work relations. Feelings of isolation and loneliness are among the main challenges teleworkers face during the COVID-19 pandemic (World Health Organization, 2022). ICT provides teleworkers with several channels for connecting with co-workers, thus helping them satisfy their need for relating while working from home (Lee, 2023) and reducing the negative impact of professional isolation on job performance (Golden et al., 2008; Sarfraz et al., 2021). Therefore, we hypothesized the following:

H1a. Organizational ICT support is positively related to managerial perceptions of the impact of telework on organizational performance.

H1b. Managerial perception of effective communication derived from teleworking mediates the relationship between ICT support and managerial perceptions of the impact of telework on organizational

performance.

H1c. Managerial perception of good work relations derived from telework mediates the relationship between ICT support and managerial perceptions of the impact of telework on organizational performance.

3.2. Communication frequency and managers' perceptions of telework effectiveness

Interpersonal relations are fundamental to organizational life, and communication is a resource that enables employees to successfully face stressful, anxiety-provoking job situations (Hobfoll and Shirom, 2000). Teleworking may alter such relations because increased spatial distance decreases communication and information exchange rates between supervisors and teleworkers (Allen et al., 2015). Hence, teleworking may be a source of stress for employees and managers, as isolation can deprive them of access to this valuable social resource (Marshall et al., 2007) and negatively influence their job performance (Golden et al., 2008). According to the World Health Organization (2022), during the COVID-19 pandemic, mental health disorders such as depression and anxiety increased significantly, partly due to lockdown, feelings of isolation, and lack of communication (World Health Organization, 2022). In this context, organizational communication benefits the satisfaction of employees who work at home by reducing anxiety (Kay et al., 2022).

For managers, communication is a major challenge in implementing teleworking because it involves developing communication skills to prevent teleworkers from feeling isolated (Cascio, 2000). Communication has been considered an important factor in deciding whether to adopt teleworking (Lebopo et al., 2020). The communication rate between supervisors and subordinates is the amount of information exchanged between them; it constitutes the link between the employee and the firm and provides a means for supervisors to influence employee actions (Johlke and Duhan, 2000). Previous research has found that the frequency of communication between supervisors and their subordinates is associated with desirable workplace outcomes, such as reducing the perception of role conflict (Jian and Dalisay, 2018) or increasing employee job performance ratings (Kacmar et al., 2003) and job satisfaction (Johlke and Duhan, 2000). The literature on teleworking has shown that managers should maintain frequent communication with teleworkers and that this communication should focus on sharing information rather than closely monitoring work schedules (Lautsch et al., 2009; Lautsch and Kossek, 2011). Therefore, under the job demands-resources model (Bakker and Demerouti, 2007), frequent communication between managers and teleworkers may be considered a managerial resource that can help overcome the demands derived from teleworking and a buffer offsetting some of the negative effects of distance, such as professional isolation. Thus, we believe there is a positive relationship between more frequent communication by teleworkers and managerial perception of the impact of teleworking on the organization.

Nevertheless, although frequent communication with teleworkers is essential, it is also important to ensure that managers perceive these communications as effective. In other words, when communication is frequent, the message is not properly transmitted, or if the receiver is not satisfied with the information, managers may perceive no improvement in communication effectiveness. In this sense, in some cases, frequent communication with employees could have negative outcomes because it disturbs or distracts employees (Johlke and Duhan, 2000), or they may feel uncomfortable with excessive monitoring (Robbins, 2001). However, in times of high uncertainty and turbulence, employees may positively assess frequent communication with managers. Recent studies have confirmed this idea by showing that frequent communication with managers during the COVID-19 pandemic has been associated with increased employee satisfaction with communication because it allows them to reduce the uncertainty derived from the situation (Kay et al., 2022).

Furthermore, when the context enables members of the organization to communicate well with one another, they can learn about each other's personal lives and identities and eliminate stereotyping and biases (Ensari and Miller, 2006). It has been demonstrated that teleworkers who share information in close contact with their supervisors are more likely to help co-workers (Lautsch et al., 2009) and create a positive workplace climate (Yang and Lin, 2023). Hence, promoting effective communication channels is essential to develop positive working relationships (Roberge et al., 2021). Thus, we hypothesize:

H2a. Frequency of communication with teleworkers is positively related to managerial perceptions of the impact of telework on organizational performance.

H2b. Managerial perception of effective communication derived from telework mediates the relationship between frequency of communication with teleworkers and managerial perceptions of the impact of telework on organizational performance.

H2c. Managerial perception of good working relations derived from telework mediates the relationship between the frequency of telework with teleworkers and managerial perceptions about the impact of telework on organizational performance.

3.3. Trust in teleworkers and managers' perceptions of telework effectiveness

One of the main concerns of teleworking managers is a lack of confidence in their employees (Kaplan et al., 2018). This lack of confidence may occur because supervisors are unsure that teleworkers perform their jobs in alternative locations without supervision (Newman and Mathews, 1999). Managers must emphasize controlling output to the extent that they cannot monitor teleworkers (Felstead et al., 2003).

According to job-demand theory (Bakker and Demerouti, 2007), trust between managers and teleworkers may alleviate the influence of job demands (e.g., less control) on job strain, as managers' trust puts this demand from another perspective. If managers trust their co-workers, they may feel less in need of strict control, thus reducing anxiety and stress. Indeed, managers with high-quality relationships with their employees, characterized by high trust, are more likely to allow telework (Beham et al., 2015; Kaplan et al., 2018). Furthermore, Kim et al. (2021) found a positive association between supervisors' trust-building behavior and employees' perceived job and organizational performance. Hence, we suggest that when managers are confident in teleworking, they will likely identify its positive consequences on organizational performance.

We further suggest that the influence of trust on managers' perceptions of the positive impact of teleworking on organizational performance is mediated by their perceptions of improvements in communication and working relations. Communication between supervisors and employees is usually more effective when based on relationships of trust (Willemyns et al., 2003). In this sense, when managers trust employees in a teleworking context, communication can be more effective because it focuses on sharing information instead of monitoring employees, which results in better employee productivity (Lautsch et al., 2009; Lautsch and Kossek, 2011).

In addition, managers' trust can improve their perceptions of working relations, leading employees to reciprocate by disciplining themselves or showing appreciation and loyalty (Morganson et al., 2010). Teleworkers perceiving managers' trust has been shown to increase creativity, job satisfaction, job performance, resource sharing, prosocial behavior, engagement, and retention (Chen and Sriphon, 2022; Ficapal-Cusí et al., 2023; Skiba and Wildman, 2019). If teleworking employees earn the trust of their supervisors, they and their supervisors will experience high-quality leader-member exchange (LMX), which in turn enhances their organizational commitment (De Vries et al., 2019). Hence:

H3a. Managers' trust in teleworkers is positively related to their perception of the impact of telework on organizational performance.

H3b. Managerial perception of effective communication derived from telework mediates the relationship between managers' trust in teleworkers and managerial perception of the impact of telework on organizational performance.

H3c. Managerial perception of good working relations derived from telework mediates the relationship between managers' trust in teleworkers and managerial perception of the impact of telework on organizational performance.

4. Methods

4.1. Sample and data

Our hypotheses were empirically corroborated using data from a survey sent to managers of small- and medium-sized enterprises (SMEs)¹ operating in various industries in Andalusia (southern Spain). Our research focused exclusively on Andalusian firms to avoid the bias that different national and regional COVID-19 labor regulations could cause managers' perceptions. Managers' contact information was acquired from the SABI database, which provides financial and economic information on >940,000 Spanish and 100,000 Portuguese companies. Our final sample comprised 170 SME managers contacted using computer-assisted interviewing technology in November 2020 while the COVID-19 crisis was still ongoing. The inclusion criterion for determining the appropriate sample size was to assume that companies operating in Andalusia had an infinite population, 95 % confidence interval, and sampling error proportions of 50 % (i.e., $p = q = 50\%$). With this information, the sampling error found was 7.52 for 170 Andalusian SMEs. The SMEs sampled had an average of 53 employees; 56.47 % were women, and 68.82 % had over five years of experience in the company.

Finally, we controlled for common method variance (CMV), social desirability, and biases that may arise when using the questionnaires. The CMV refers to the amount of spurious covariance shared by items. This bias is typically evaluated using Harman's single-factor test (Podsakoff and Organ, 1986). When a single common factor emerges, the CMV exists. We used this test to check all our variables, and no single common factor emerged, demonstrating that CMV is not a concern. However, we attempted to minimize social desirability bias by ensuring respondent anonymity and beginning each section of the survey with a header informing the purpose of those items and the definition of the concept to improve clarity and avoid confusion.

4.2. Variables

4.2.1. Dependent variable

4.2.1.1. Perceived organizational impact of telework. As reporting measures may be the most valid method for measuring individuals' perceptions (Spector, 1987), managers' perceptions of the impact of teleworking on the organization were measured using subjective self-reported measures. This is consistent with previous studies analyzing managers' perceptions of and attitudes toward teleworking (e.g., Pérez et al., 2003; Peters and Heusinkveld, 2010; Silva-C et al., 2019).

We used the measure proposed by Park and Cho (2022) adapted to the COVID-19 crisis scenario. Managers were asked to indicate the impact of teleworking on productivity and organizational performance

¹ Firms were labeled as SMEs following the official standards of the European Commission: companies with <250 employees, with either an annual turnover of <€40 million or a total annual balance sheet of <€27 million and those that were independent with <25 % of the capital owned by one enterprise or jointly by several enterprises.

during the COVID-19 crisis. Participants answered on a seven-point Likert scale, with options ranging from *very negative impact* (1) to *very positive impact* (7).

4.2.2. Independent variables

4.2.2.1. Job resources influencing managers' perceptions. We considered three explanatory variables related to managerial perceptions of teleworking's impact in the specific case of COVID-19: ICT support, frequency of communication with teleworkers, and managerial trust in teleworkers.

First, regarding organizational ICT support, managers were asked, "Please indicate how much you agree with this statement: My organization is providing all the necessary technical and technological support for employees to work from home during the COVID-19 pandemic." Second, concerning communication frequency with teleworkers, managers were asked to: "Please indicate how much you agree with this statement: Communication with teleworkers has been frequent during the COVID-19 pandemic." Finally, regarding the managers' trust in teleworkers, they were asked to indicate how much they agree with the statement: "The organization's managers do not doubt that its employees are performing their job effectively from home during the COVID-19 pandemic." The three items were answered on a seven-point Likert scale, with options ranging from *completely disagree* (1) to *fully agree* (7).

4.2.3. Mediating and control variables

Mediating variables were measured using items proposed by Park and Cho (2022) and adapted to the COVID-19 scenario. Concerning communication effectiveness, managers were asked to indicate the impact of teleworking on the organization's ability to ensure effective internal communication during the COVID-19 crisis. Managers were asked to indicate the impact of teleworking on their ability to support effective working relationships during the COVID-19 crisis. Both items were answered on a seven-point Likert scale, with options ranging from *very negative impact* (1) to *very positive impact* (7).

Finally, our empirical model considers the percentage of teleworking in an organization as a control variable. Managers were asked to: "Please indicate the percentage of employees in your organization who have had to telework since the pandemic started," with answer choices: 100 % (1), 99 %–75 % (2), 74 %–50 % (3), 49 %–25 % (4), 24 %–1 % (5), or 0 % (6).

4.3. Data analysis procedure

We empirically tested our hypotheses using path analysis—a form of multiple regression analysis used to evaluate causal models—by examining the relationships between a dependent variable and two or more independent variables. Path analysis was used to decompose the influence of one variable on another into direct and indirect effects. In this sense, while the direct effects are influences unmediated by any other variable in the model, the indirect effects are mediated by at least one intervening variable (Bollen and Stine, 1990).

The path model was estimated using the Lavaan package (Rosseel, 2012), an R package for structural equation modeling (R Core Teams, 2018). First, we checked whether the multivariate normality of the data could be assumed using the multivariate normality (MVN) test in R (Korkmaz et al., 2014). Since the multivariate normality hypothesis was rejected, there were no missing observations in our data, and the sample size was not small (i.e., $n > 100$ cases); our model was estimated using the maximum likelihood method (MLM), as recommended in the specialized literature (Gana and Broc, 2019). In the Lavaan package (Rosseel, 2012), this estimator is a robust version of the MLM that incorporates the Satorra-Bentler Chi-square correction (Satorra and Bentler, 1994) and is recommended in cases where the data violate normality (Gana and Broc, 2019). This approach enables us to test the statistical significance of the direct and indirect effects of the

relationships tested using the proposed model.

5. Results

Table 2 shows the descriptive statistics and the correlations between the variables involved in the analysis. The model estimated exhibits a strong fit, meeting the required thresholds (Hair et al., 2014: $\chi^2 = 4.762$, $p = 0.092$; CFI = 0.989; TLI = 0.917; SRMR = 0.024; RMSEA = 0.080).

The results are presented in Table 3 and Fig. 1. First, organizational ICT support does not have a significant direct relationship with the dependent variable (perceived organizational impact of teleworking). Therefore, Hypothesis 1a is not supported. Furthermore, there was no statistically significant mediating effect between it and communication (Hypothesis 1b) or the effectiveness of work relations (Hypothesis 1c). Consequently, in our sample, organizational ICT support had no (direct or indirect) effect on the perceived organizational impact of teleworking.

Second, the frequency of communication with teleworkers did not show any statistically significant direct effect on the dependent variable, which does not support Hypothesis 2a. However, the frequency of communication with teleworkers had a significant effect on the perceived organizational impact of telework through the mediating effect of communication effectiveness ($\beta = 0.223$, $p < 0.05$), which supported Hypothesis 2b. Regarding work relations, the frequency of communication with teleworkers was not indirectly related to the perceived organizational impact of teleworking through the effectiveness of work relations. Hence, Hypothesis 2c was not supported.

Finally, manager trust in teleworkers did not show a statistically significant direct effect on the dependent variable, which does not support Hypothesis 3a. Nevertheless, managers' trust in teleworkers did show a significant indirect effect on the perceived organizational impact of telework through the mediating effect of communication effectiveness ($\beta = 0.126$, $p < 0.05$), which supported Hypothesis 3b. However, managers' trust in teleworkers was not indirectly related to the perceived organizational impact of teleworking through mediation by the effectiveness of working relations. Hence, Hypothesis 3c is not supported. In addition, results show that managers' trust in teleworkers has a significant positive effect on the effectiveness of working relations ($\beta = 0.319$, $p < 0.05$) and also on communication effectiveness ($\beta = 0.249$, $p < 0.05$).

6. Discussion and implications

This study analyzed the job resources that could influence managers' perceptions of the organizational impact of teleworking (i.e., organizational ICT support, frequency of communication with teleworkers, and managers' trust in teleworkers) by considering the mediating effect of their perception of the impact of teleworking on the effectiveness of organizational communication and working relations.

Our results show that frequent communication with employees and managerial trust can make managers perceive the positive impact of teleworking on organizational performance. Additionally, the results indicate that neither factor has a direct relationship with managerial perceptions but has an indirect effect. Specifically, both factors affect managerial perceptions through the mediating effect of managers' perceptions of improved communication effectiveness. Additionally, although not hypothesized, trust in teleworkers has a positive influence on managers' perceptions of an improvement in working relations during teleworking.

6.1. Theoretical implications

Our results contribute to the literature on teleworking by answering the call for more studies that focus on managers' perceptions of the impact of teleworking in the context of the COVID-19 pandemic crisis (Park and Cho, 2022). We also contribute to developing the job

Table 2
Descriptive statistics, and observed variable intercorrelations.

	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)
1. Perceived organizational impact of telework	5.147	1.732						
2. Organizational ICT support	6.076	1.439	0.358					
3. Frequency of communication with teleworkers	6.223	1.064	0.234	0.545				
4. Managers' trust on teleworkers	6.100	1.097	0.234	0.385	0.330			
5. Communicational effectiveness	5.494	1.512	0.526	0.455	0.416	0.334		
6. Work relation effectiveness	5.406	1.445	0.411	0.348	0.266	0.360	0.686	
7. Percentage of telework	4.318	1.063	-0.216	-0.180	-0.106	-0.038	-0.186	-0.099

Table 3
Model results.

Relationships	Direct effects			Indirect effects through communication effectiveness			Indirect effects through work relationships effectiveness		
	β	SE	5 % CI	β	SE	95 % CI	β	SE	95 % CI
Frequency of communication with teleworkers → Perceived organizational impact of telework	0.013	0.188	[-0.355, 0.381]	0.223*	0.098	[0.031, 0.415]	0.020	0.025	[-0.028, 0.069]
Organizational ICT support → Perceived organizational impact of telework	0.133	0.125	[-0.112, 0.378]	0.052	0.055	[-0.056, 0.159]	0.016	0.027	[-0.036, 0.069]
Managers' trust on teleworkers → Perceived organizational impact of telework	-0.040	0.139	[-0.312, 0.233]	0.126*	0.055	[0.018, 0.235]	0.037	0.043	[-0.047, 0.121]
Communicational effectiveness → Perceived organizational impact of telework	0.507***	0.145	[0.224, 0.791]						
Work relation effectiveness → Perceived organizational impact of telework	0.117	0.125	[-0.128, 0.361]						
Percentage of telework → Perceived organizational impact of telework	-0.177*	0.087	[-0.348, -0.006]						
Frequency of communication with teleworkers → Communicational effectiveness	0.439**	0.146	[0.152, 0.726]						
Organizational ICT support → Communicational effectiveness	0.102	0.088	[-0.071, 0.274]						
Managers' trust on teleworkers → Communicational effectiveness	0.249*	0.113	[0.027, 0.471]						
Frequency of communication with teleworkers → Effectiveness of working relations	0.174	0.164	[-0.146, 0.495]						
Organizational ICT support → Effectiveness of working relations	0.141	0.114	[-0.082, 0.363]						
Managers' trust on teleworkers → Effectiveness of working relations	0.319*	0.137	[0.051, 0.587]						

* p < 0.05.
** p < 0.01.
*** p < 0.001.

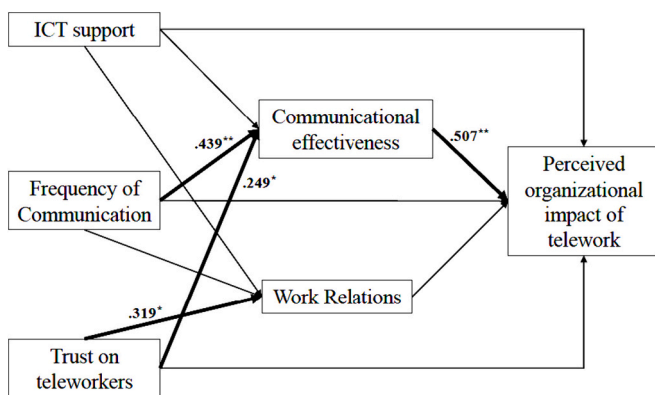


Fig. 1. Direct effects of analyzed variables.

demands-resources model (Bakker and Demerouti, 2007) by identifying how job resources can buffer some of the challenges that telework implies for managers, especially in the problematic context of a health and economic crisis. We further contribute to this model by analyzing intermediate variables that help explain how these resources impact managers' positive perceptions.

First, the results show that organizational ICT support has neither a

direct nor an indirect effect on managers' perceptions of the impact of teleworking. Although unexpected, this absence of a relationship is in line with previous studies that have not found that media richness has any impact on managers' telework allowance (Kaplan et al., 2018) or that having adequate ICT resources is not linked with a positive perception of the influence of teleworking on firms (de Andres-Sanchez et al., 2023) or with the job performance of teleworkers (Park and Jae, 2022). One reason for this may be the job demands-resources model. Although ICT may be seen as a resource that can improve teleworkers' job experiences, it can also increase job demands (Day et al., 2010). For example, technology can make co-workers, supervisors, and even clients expect teleworkers to be available and accessible all day, and it can also lead to information and work overload, which could increase job stress (Ayyagari et al., 2011). In such cases, the effectiveness of working relationships can deteriorate. Similarly, although ICT support can improve organizational communication, previous studies have found that computer-mediated communication can produce miscommunication (Rainey, 2000). Hence, this ambivalent effect of ICT on teleworkers' job experience might explain why some managers attribute the positive effects of ICT support to telework effectiveness and others negatively. These opposing perceptions could explain the nonsignificant relationship between ICT support and teleworking effectiveness.

Second, the frequency of communication with teleworkers is positively related to managers' perceptions of the organizational impact of

teleworking, although not in a direct relationship but indirectly through the perceived effect of organizational communication effectiveness. This result implies that for managers who perceive that frequent contact with teleworkers has a positive impact on organizational performance, teleworking also positively impacts an organization's communication effectiveness. This confirms our hypothesis that despite the negative effect that frequent communication can have on employees' attitudes and performance (e.g., [Johlke and Duhan, 2000](#); [Robbins, 2001](#)), in the context of the COVID-19 pandemic, managers perceive that its positive effects in reducing employees' uncertainty overcome the negative effects. However, contrary to our expectations, managers did not perceive frequent communication as positively influencing the effectiveness of working relations. In this case, how communication has been carried out during the COVID-19 crisis could explain this result. The lack of physical interaction and face-to-face communication has been considered a challenge in managing employees working in different locations ([Cascio, 2000](#)) because building relationships among them can be challenging ([Powell et al., 2004](#)). Although communication tools such as video-conferencing help mitigate the physical distance of teleworkers, they do not fully compensate for face-to-face relationships by limiting the spontaneity of exchange, thus altering collaboration among employees ([Maillot et al., 2022](#)). Recent studies have highlighted the absence of a relationship between the frequency of these types of synchronous communication and job satisfaction (e.g., [Coun et al., 2023](#)), a phenomenon that has received the name "zoom fatigue" ([Nesher Shoshan and Wehrt, 2022](#)). This may also be why managers do not perceive that such computer-mediated communication improves working relationships.

Finally, trust in teleworkers is also positively related to managers' perception of the organizational impact of teleworking, not directly but indirectly, through the mediation of the managerial perception of organizational communication effectiveness. This result confirms that managers who trust their employees perceive communication as more effective because they only need to monitor their employees to share information with them ([Lautsch et al., 2009](#); [Lautsch and Kossek, 2011](#)). However, the effect of trust on managers' perceptions of the impact of teleworking on organizational performance was not mediated by their perception of improvement in working relations. Additionally, our results show that when managers trust teleworkers, they are more likely to perceive teleworking as improving their working relations. This could imply that managers who trust their employees perceive the positive effect of trust on teleworkers' attitudes and behavior toward the organization (e.g., [Morganson et al., 2010](#); [Skiba and Wildman, 2019](#)), but this improvement in working relations is not transferred to organizational performance.

6.2. Practical implications

This study has several important implications for practitioners. Some management referents, such as Facebook or Twitter CEOs, encourage employees to continue working remotely. However, not all managers have the same positive predisposition toward the widespread adoption of teleworking in their organizations.

In this sense, doubts about the positive or negative effects that teleworking can have on organizational performance, which have been highlighted in previous studies ([Park et al., 2023](#)), can make it difficult to ensure the unanimous perception of managers about the impact of teleworking on their organizations. Considering the importance of managers in adopting and consolidating teleworking ([Bentley et al., 2016](#); [Lautsch and Kossek, 2011](#)), the factors influencing their perceptions of teleworking's impact on organizations must be known.

This study contributes to management by highlighting the factors that can lead managers to perceive the positive impact of teleworking on organizational performance. Specifically, according to our results, if organizations aim to institutionalize telework rather than viewing it as an exception arising from the COVID-19 pandemic, they must ensure

that managers can maintain frequent communication with teleworkers and develop a sense of trust in those employees. However, merely having appropriate ICT support for teleworking does not seem to influence managers' perceptions of the impact of teleworking on the organization. Thus, if organizations rely solely on technological support and neglect the importance of fostering a context that enhances communication between managers and teleworkers and helps managers build trust in such employees, the consolidation of teleworking may be jeopardized because managers will not perceive any positive influence on organizational performance. Organizations wishing to increase or accelerate the use of teleworking must enhance communication between managers and teleworkers and directly address manager distrust of teleworkers as an underlying factor that makes managers not perceive the positive impact of teleworking.

6.3. Limitations and future research

This study was conducted in the extraordinary and specific context of the COVID-19 pandemic. Therefore, once the pandemic has been overcome, future studies should confirm the results or determine whether they are only the consequence of this unique moment.

The second limitation was the use of a cross-sectional design. Although we tested whether common method bias was present in our data, future researchers could consider conducting longitudinal studies that could leverage the possibility of generalizing our findings.

Third, this study focuses on Spain to prevent other conditions from influencing managers' perceptions. However, as managers' attitudes toward teleworking are contingent on some institutional pressures ([Peters and Heusinkveld, 2010](#)), future studies could analyze whether factors such as the particular industry or nationality modify our results.

Fourth, future studies could consider whether these relationships are stronger or weaker for specific managers, thus considering individual characteristics as moderators of the analyzed relationships. For example, previous studies have found that favorable managers' attitudes and support for teleworking increased when there was already experience in teleworking (e.g., [Silva-C et al., 2019](#)) and that CEOs' industry experience has an inverted U-shaped relationship with the adoption and utilization of remote work technologies ([Lashitew, 2023](#)), future studies might analyze whether Spanish managers' perceptions vary as they spend more time teleworking.

Finally, a possible extension of our study would be to analyze the organizational factors that moderate the relationship between the analyzed factors and managerial perceptions of the positive impact of teleworking.

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Ethics approval

This study was prescreened for [this information is omitted to ensure the blind review process] to determine whether it required ethics approval or not. This study did not fulfill the conditions to require approval and was therefore declared exempt.

Informed consent

Informed consent was obtained from all individual participants included in the study.

CRedit authorship contribution statement

José Manuel de la Torre-Ruiz: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Vera Ferrón-Vilchez:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Resources, Project administration, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of generative AI and AI-assisted technologies in the writing process

The authors confirm that they did not use nor generative AI neither AI-assisted technologies in the writing process of this work.

Declaration of competing interest

The authors confirm that there are not any financial and personal relationships with other people or organizations that could inappropriately influence this work. The authors declare no competing interest.

Data availability

Data will be made available on request.

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