Knowledge about the impact of telework on management and business: A conceptual study

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A B S T R A C T

The need remains for a review of the literature devoted to telework, due to the exponential growth of this work format, as well as to the consequent increase in the number of publications about it. For this reason, the aim sought with this study consists in analysing the literature on telework from a Management and Business perspective. For that purpose, we examined 156 articles taken from the Social Science Citation database of the Web of Science. A content analysis about the articles in question was likewise performed in order to determine the topics underlying the telework phenomenon as a whole. The journals related to Organisation, Psychology, Technological Innovation, Gender and even Ethics also discussed these themes, revealing the transversal nature and the manifold implications of this labour modality. The main limitation faced in this research has to do with the way to select the papers under study, which can leave aside important publications dealing with telework, insofar as books, papers presented at conferences and other types of non-academic works have not been considered. The model proposed from the literature review makes it possible to see that the implementation of teleworking has had both clearly positive consequences —e.g. staff retention, innovation and flexibility— and negative ones, among them loss of privacy, higher discrimination, stress or the isolation of the teleworker, along with variables that present ambiguous values suggesting positive as well as negative effects, such as the relationships between telework and performance, or between the former and the work/life balance, or also between teleworking and the satisfaction/well-being of the individuals who carry out this activity. The model, which can be utilised and tested in future research works, includes effects which, due to their ambiguity, require further research and deeper understanding.

Introduction

Two of the most influential forces in the twenty-first century are digitalization and sustainability. Digitalisation in the field of work has resulted, among other things, in the generalisation of telework. The latter appears as a desirable alternative for numerous workers who see it as a bonus or a non-monetary pay, which affects their decision when it comes to choosing an employer (Choudhury et al., 2021). Sustainability additionally points at telework as a way to reduce mobility and favour more sustainable cities. Even though telework entered our lives long ago —in the 1980s (Johns & Gratton, 2013; Skyrme, 1994)— the truth is that it has grown exponentially and become widespread during the last few years, especially driven by the COVID-19 pandemic.

Both the volume of research dedicated to telework and the number of reviews focused on the literature related to it have increased in parallel to the spread of this phenomenon. While literature on telework is nearly half-a-decade-old, the reviews devoted to this topic began to appear much later. Thus, De Menezes & Kelliher (2011) analysed the link between flexible work and performance through a systematic literature review. More recently, Raghuram et al. (2019) undertook a thorough investigation of virtual work which comprised telework, virtual teams and computer-mediated work. The study authored by Santana & Cobo (2020) dealt with the "Future of Work," concentrating on the extent to which technologies impact on jobs. In turn, Soga et al. (2022) addressed flexible work practices, trying to discover the cheats and weaknesses that they involve —hitherto outshined by the potential advantages. Schäfer et al. (2023) examined 344 academic publications about the *future of work*, using a qualitative content analysis. For their part, Presti & Costa Mendes (2023) performed a comprehensive review of the literature aimed at studying how the COVID-19 pandemic influenced Human Resource Management, work and organisations. Telework arose as one of the most relevant issues when it comes to work and workers.

Furthermore, a bibliometric analysis allowed Petcu & Cişmaşu (2023) to centre on the economic consequences derived from implementing work-outside-the-office. As for De Lucas Ancillo et al. (2023), they discussed the new normal, i.e. the changes in the workplace triggered by COVID-19. Aleem et al. (2023) used Artificial Intelligence (AI) to peruse 198 papers whose main topic was remote work during the COVID-19 pandemic. The recent study carried out by Hill et al. (2024) focused on the effects caused by virtual work on employee well-being. Finally, Yao et al. (2024) performed a meta-analysis of 52 studies revolving around COVID-19 and its technological and socioeconomic aftermaths, among which stood out the proliferation of remote and flexible work practices.

Despite the significant contributions made by the aforementioned publications, a clear gap in the literature still exists –as highlighted by Santana & Cobo (2020)– concerning what the relationships between employees and supervisors should be like, as well as in terms of awareness about the consequences with regard to life-work balance or stress, to quote but two issues. Presti & Costa Mendes (2023) likewise recommended continuing to analyse teleworking during this post-pandemic period, thus stressing the compelling need to bridge this gap. Hence the objective of this paper: carrying out a review of the literature devoted to telework from the perspective of the Management and Business area, for which purpose we will examine the articles published in prestigious journals such as those included on the Social Science Citation Index database of WoS. Our examination of the papers is meant to answer the following research questions:

When were the articles on telework published?

Which are the most prolific journals in this area?

What designations serve to describe this phenomenon?

What types of teleworkers are analysed in the articles?

What methods and statistical techniques are used in this research?

What geographical areas or countries are most frequently examined in this context?

We will consequently follow categories resembling those used in previous literature reviews about the Information and Communication Technology –ICT– area (Gonzalez et al., 2019, 2020, 2022). However, our key contribution will lie in addressing the topics which arise at a macro-environment level, as well as at those of the organisation and the workers themselves within the teleworking phenomenon, since we will be able to provide a model which permits to analyse the connections between different telework variables. After this introduction, attention will be paid to the methodology employed, concerning not only the selection of articles under study but also the way to analyse them, and subsequently, to the results obtained, highlighting the descriptive findings as well as the outcome of the content analysis conducted. A summary of the conclusions reached, along with the interpretation of results, the theoretical and managerial implications, the limitations and potential directions for future research, will bring the paper to an end.

Methodology

A decision was firstly made to base the literature review on articles published in journals characterised by their academic prestige, which is why we did not analyse books, papers presented at conferences, editors' notes or press releases. The articles had to be published by journals included on the WoS (Web of Science) database, recognised for its excellent scientific and academic reputation (Itam & Warrier, 2024). This database, which stands out as one of the most prestigious used in the field of Business and Organisation (Zupic & Čater, 2015), has been resorted to in preceding studies dedicated to the context of teleworking (Santana & Cobo, 2020). The following search was carried out inside WoS:

(TS=(telecommut) OR TS=(telework) OR TS=(work from home) OR TS=(remote work) OR TS=(virtual work)) AND (DT==("ARTICLE" OR "REVIEW") AND TASCA==("MANAGEMENT" OR "BUSINESS") AND EDN==("WOS.SSCI") AND LA==("ENGLISH"))

During that search, we focused on journals belonging to the categories of Management or Business, and within them, on Papers and Review Articles published in English on the Social Science Citation Index database of WoS, with the themes (title, abstract and author's keywords) that can be seen in parentheses. The topics searched –"telecommut," "telework," "work from home," "remote work," or "virtual work"– were considered relevant in the area at hand by previous studies about telework (Itam & Warrier, 2024; Siha & Monroe, 2006; Gohoungodji et al., 2023; Mele et al., 2023; Kanellopoulos, 2011). Although the term 'smart working' emerged as a common expression from the subsequent analysis of the articles, it did not form part of this initial list because the previous authors had not considered it. Those topics were additionally debated upon during a brainstorming session between the authors of this work.

The search, conducted on July 15, 2024, had no time restrictions and yielded an initial set of 957 documents, from which we removed the articles that were not complete –e.g. editorials or research notes– as well as those whose title or abstract did not fit the telework theme, or the ones where telework was not addressed from a business or management perspective. The additional elimination of articles dealing with telework only tangentially left us with 149 articles from the initial list, to which were added 7 titles coming from a manual search among the references included in the previous papers. Therefore, as shown in Fig. 1, the final number of papers to be analysed amounted to 156.

More precisely, the following criteria guided the inclusion or exclusion of articles to be studied:

a) Inclusion criteria
  - Full academic articles including review articles
  - Articles published in journals listed on the Social Science Citation Index database of WoS in the categories of Management and Business
  - Articles whose title, abstract and author's keywords included the terms "telecommut," "telework," "work from home," "remote work" or "virtual work"
  - Articles without limiting the search date, but published until 15th July, 2024
b) Exclusion criteria
  - Books, papers presented at conferences, works of a non-academic nature, editors' notes, short articles or opinion articles
  - Articles published outside the Management or Business categories of the Social Science Citation Index database of WoS
  - Articles which dealt with the telework theme only in a very tangential manner

Each one of the articles under examination was coded and included on a spreadsheet using the following categories: code of the article; date of publication; title; journal in which it appeared; name utilised to designate telework; individuals or groups analysed; research method; statistical techniques implemented; countries on which the work focuses; and topics addressed. Coding was carried out by two of the researchers independently while the other two acted as judges in cases of dispute, all researchers rotating in the roles of coder and judge. No additional software tools or statistical analysis methods were utilised beyond the spreadsheet, along the lines of the approach adopted in earlier literature reviews (Bailey & Kurland, 2002; De Menezes & Kelliher, 2011; Hill et al., 2024). The information collected was examined through a content analysis of the articles under study.

Results

Descriptive details

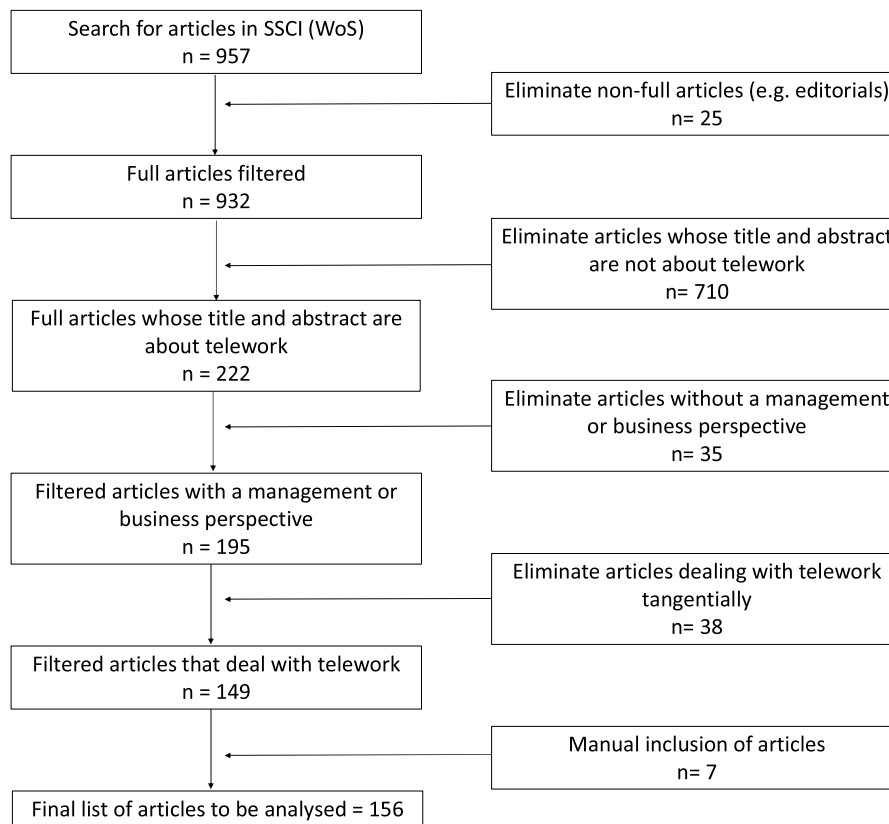Table 1 shows the descriptive information about the analysed

Fig. 1. Search Flow Chart.
Source: Own elaboration

articles. It firstly becomes clear that the publications on telework have grown exponentially since 2020, coinciding in time with the COVID-19 pandemic, the need of lockdown and the alternative of working from home. As a matter of fact, while we only have 50 articles in the sample during the 25-year-period comprised between 1994 and 2019, 106 were published in the last 4 years (from 2020 to 2024/25) —bearing in mind that the search finished in July 2024, which means that, more or less, only half of the articles appeared in that last year are collected (see Table 1). Although the search ended in July 2024, some 2024 online publications were later assigned to 2025 volumes. The table lists the articles which have published the most articles among those analysed (3 or more articles), *Journal of Business Research, Journal of Organizational Behavior, Technological Forecasting & Social Change, Gender in Management* and *Journal of Business and Psychology* standing out as the most prolific ones in the theme of teleworking. One can see that these journals, all of them classified within the areas of Management or Business, additionally address other areas in parallel, such as Organisation, Technological Innovation, Gender, Psychology and, of course, Economy.

Likewise, it becomes important to know the different denominations used to refer to telework in each of the articles under examination. In order to make this classification, although articles could utilise one or various denominations, we chose the one most frequently employed in each one of the works. Remote Work, Telework, Work at home, Telecommuting and Virtual Work turned out to be the most usual names. On the other hand, the types of employees who telework and have been most often studied are ICT Employees, Women, Knowledge Workers, Managers, Academics, Financial Employees and Public Employees. We know that the categories included in this classification are not mutually exclusive (for example, one can be a woman, a knowledge worker and an academic at the same time), but these were the descriptions that the articles gave for the subjects under study.

Concerning research methods, those of an empirical nature prevailed over the theoretical ones, and among the former stand out fieldworks based on surveys with quantitative information, followed by qualitative works with interviews and case studies, and in third place, those combining quantitative analyses with qualitative ones and literature reviews. The statistical techniques implemented to analyse the data contained in the articles showed a predominance of the diverse Regression Analyses, Structural Equations or Path Analyses, along with a variety of other multivariate methods. Nevertheless, more than 40 % of the studies examined (64 to be precise) did not use statistical techniques, but merely qualitative analysis, to develop the research.

Finally, with respect to the geographical areas covered in the different works, North America followed by Europe appeared as the most frequently analysed, Africa and Oceania being underrepresented in the various publications, and focusing on the countries that have received the most attention, United States stands out as a centre of analysis, with Great Britain, India and China at a great distance. It deserves to be highlighted that 57 articles (36.5 %) do not mention the country or specific area on which the research was based.

Levels and topics

The 156 papers examined can be classified into three levels and 23 topics. The three levels are: a) MACRO: the macroenvironment in which the enterprises or organisations are located; b) MESO: the actual enterprises or organisations; and c) MICRO: the individuals, i.e. teleworkers. A mixed level also exists between the MESO and MICRO levels, a grey area where we placed 3 topics that affect both businesses and organisations, as well as the teleworkers themselves. Table 2 shows the number of studies per topic and relevant references. We will elaborate on these levels and topics below.

Table 1
Descriptive Details.

YEAR OF PUBLICATION	N.	RESEARCH METHOD	N.
1994–2019	50	*EMPIRICAL*	136
2020	12	Field Study/Surveys	72
2021	15	Case Study/Interviews	29
2022	19	Quan/Qual	12
2023	35	Literature Review	12
2024–2025	25	Content Analysis	5
TOTAL	156	Experiment	4
		Content Analyses/ Interviews	2
JOURNALS	N.	*THEORETICAL*	20
Journal of Business Research	19	TOTAL	156
Journal of Organizational Behavior	13		
Technological Forecasting & Social Change	12	STATISTICAL TECHNIQUE	N.
Gender in Management: An International Journal	10	Regression	42
Journal of Business and Psychology	10	SEM/Path	37
Organizational Dynamics	6	Multivariate	7
European Management Journal	5	Univariate	5
Journal of Management	5	Econometric	1
British Journal of Management	4	N/A	64
Business Horizons	4	TOTAL	156
Asia Pacific Business Review	3		
Internet Research	3	GEOGRAPHICAL FOCUS	N.
Journal of Business Ethics	3	North America	32
Journal of Innovation & Knowledge	3	Europe	30
Transformations in Business & Economics	3	Asia	21
Others	53	Latin America	7
TOTAL	156	Africa	4
		Oceania	2
DESIGNATIONS	N.	Miscellaneous	3
Remote work	45	N/A	57
Telework	45	TOTAL	156
Work at home	28		
Telecommuting	16	NATIONAL CONTEXT	N.
Virtual work	15	United States	31
Flexible work	3	United Kingdom	9
Digital work	2	India	7
Smart work	2	China	5
TOTAL	156	Others/Miscellaneous	47
		N/A	57
TELEWORKERS ANALYSED	N.	TOTAL	156
ICT Employees	10		
Women	6		
Knowledge Workers	5		
Managers	4		
Academics	4		
Financial Employees	3		
Public Employees	3		
Others/Miscellaneous	121		
TOTAL	156		

Source: Own elaboration

Macro level: macroenvironment

COVID-19 crisis. Such an important health crisis triggered a series of technological and socioeconomic changes (Yao et al., 2024) on a global scale (Loh et al., 2023), because of the need to avoid contact with other people and the forced lockdown (Jaiswal & Arun, 2024). This drastic change in the labour world took place in enterprises of all sizes (Zhang et al., 2022) and in every sector, such as the public one (Todisco et al., 2023), the field of education (Adisa et al., 2022; Dassel & Klein, 2023) and even healthcare (Ferguson et al., 2022), proving that, if a service which typically requires direct contact could be delivered remotely, almost any business can be carried out online. The prevalence of telework continues and seems to have become the new normal (Dhir et al., 2024). From now on, the job will be focused on the employee and on the customer (De Lucas Ancillo et al., 2023). This work format, which originated some time ago but became widespread due to the pandemic, has had positive effects, demonstrating the resilience of workers and

enterprises (Todisco et al., 2023), the maintenance and even an increase not only of productivity (Toniolo-Barrios & Pitt, 2021) but also of the satisfaction level among employees, who can spend more time with their loved ones (Beigi et al., 2024).

Nonetheless, the adoption of unplanned teleworking because of the lockdown was quickly hailed as a success, even though this process caused numerous problems (Mallett et al., 2020), since it occurred in a forceful manner, and under extraordinary circumstances, with no other labour alternatives available (Calderwood et al., 2023), which implied lack of flexibility (Adisa et al., 2022) –precisely one of the advantages that telework has. In addition to being compulsory, telework was implemented without any planning for tasks that were not always appropriate, which meant that people had to remain permanently connected and available online throughout their work schedule (Li et al., 2023). Many workers did not have a suitable technological infrastructure at their disposal (Atiku et al., 2020). In this regard, teleworking impacted negatively on workers' finances, insofar as the costs related to electricity, gas, hardware, software, licences, and the income that the teleworker stops receiving (e.g. travelling expenses) does not compensate for the lower or non-existent transport-related costs (Battisti et al., 2022). Moreover, during the lockdown months, workers had to telework with no support whatsoever, and quite a few of them reclaimed their home as a private, non-work-related space (Anderson & Kelliher, 2020). Matters were complicated even further when both parents teleworked, with schools closed, all of which resulted in very tense situations (Feng & Savani, 2020).

We should add the vulnerability of workers in those moments (Gong & Sims, 2023), misinformation faced with unknown, unprecedented situations, a high degree of uncertainty as well as the disinformation and misinformation caused by the untruthful news disseminated from many media sources, the fear of the actual disease, and even the anxiety aroused by the possibility of losing their jobs (Khan, 2021). The excessive use of screens, not only for work purposes but also at a personal level, did not help for the spread of telework to be welcomed (Singh et al., 2022).

Macroeconomic changes. The macroenvironment within which teleworking is framed has experienced changes in comparison to the economic and labour models of the past. Schweitzer & Duxbury (2006) analysed the situation of telework in Canada from 1999 to 2001. The concept was not highly developed there, but these researchers were able to verify its growth during those years as well as its connection to knowledge workers. Evidence was found that it mostly operated as an informal arrangement between teleworkers and their bosses, aimed at improving the labour conditions of the former (flexibility, quality of life). More recently, Zhang et al. (2022) studied the spread of telework across several US states during the pandemic and observed a change of economic paradigm that took place on a permanent basis ("Schumpeterian creative destruction") and impacts on both the work life and the industrial structure. In this sense, De Lucas Ancillo et al. (2023) stated that the traditional model was displaced by hot-desk-based co-working spaces which can be almost anywhere. Similarly, Fortuna et al. (2023) pointed out that teleworking led to reduce the need for offices and resulted in lower property-related costs for firms. This work format influences society; by way of example, teleworkers spend less money on clothes as well as on eating out in restaurants during their working hours.

By means of a bibliometric analysis, Petcu & Cişmaşu (2023) identified divergent macroeconomic effects; on the one hand, an upside associated with a potential reduction of employment during the COVID-19 pandemic, when telework became necessary not only to ensure the continuity of enterprises but also for survival, and it provided an alternative to unemployment and to the plummeting business productivity worldwide. With regard to this, Avram et al. (2021) claimed that, at a macro level, greater access to the Internet together with the

Table 2

Levels and Topics.

MACRO LEVEL: *Macroenvironment*

COVID-19 Crisis (n=44)

Adisa et al. (2022), Aleem et al. (2023), Alvarez-Torres & Schiuma (2022), Ameen et al. (2023), Anderson & Kelliher (2020), Atiku et al. (2020), Battisti et al. (2022), Beigi et al. (2024), Bhumika (2020), Calderwood et al. (2023), Dassel & Klein (2023), De Lucas Ancillo et al. (2023), Dhir et al. (2024), Feng & Savani (2020), Ferguson et al. (2022), Gaan et al. (2024), Gong & Sims (2023), Jaiswal & Arun (2024), Jooss et al. (2022), Khan (2021), Klaser et al. (2023), Li et al. (2023), Loh et al. (2023), Mallett et al. (2020), Mucharraz y Cano et al. (2023), Navickas et al. (2022), Oh et al. (2025), Petcu & Cişmaşu (2023), Posey & Shoss (2024), Powell (2020), Presbitero & Aruta (2024), Presti & Costa Mendes (2023), Purang et al. (2024), Rangarajan et al. (2022), Reizer et al. (2022), Singh et al. (2022), Steenkamp & Dhanesh (2023), Takahashi et al. (2023), Todisco et al. (2023), Toniolo-Barrios & Pitt (2021), Tønnessen et al. (2021), Yao et al. (2024), Zhang et al. (2022), Zheng et al. (2023).

Macroeconomic Changes (n=9)

Aleem et al. (2023), Anwar & Graham (2021), Avram et al. (2021), De Lucas Ancillo et al. (2023), Fortuna et al. (2023), 78, Kumpikaite-Valiuniene et al. (2022), Petcu & Cişmaşu (2023), Schweitzer & Duxbury (2006), Zhang et al. (2022).

Sustainability (n=7)

Kurland & Bailey (1999), Fortuna et al. (2023), Hopkins & McKay (2019), Jooss et al. (2022), Marz & Şen (2022), Petcu & Cişmaşu (2023), Saura et al. (2022).

Gender Roles (n=14)

Aleem et al. (2023), Anderson & Kelliher (2020), Bhumika (2020), Campos García et al. (2024), Feng & Savani (2020), Gálvez et al. (2020), Imhanrenialena et al. (2023), Imhanrenialena et al. (2021), Lashitew (2023), Da Costa Lemos et al. (2020), Mannering & Mokhtarian (1995), Powell (2020), Riordan & Glikson (2020), Yang et al. (2024).

MESO LEVEL: *Business and Organisations*

Teleworking Types (n=6)

Kurland & Bailey (1999), Daniels et al. (2001), Davenport & Pearlson (1998), Henry et al. (2021), Raghuram et al. (2019), Schäfer et al. (2023).

Communication (n=24)

Artar & Erdil (2024), Kurland & Bailey (1999), Barsness et al. (2005), Burleson et al. (2023), Calderwood et al. (2023), Coenen & Kok (2014), Davenport & Pearlson (1998), Davis et al. (2023), De la Torre-Ruiz & Ferrón-Vílchez (2024), Dhir et al. (2024), Duxbury & Neufeld (1999), Fayard et al. (2021), George et al. (2022), Gibson et al. (2023), Golden & Raghuram (2010), Levin & Kurtzberg (2020), Makarius & Larson (2017), Obal et al. (2024), Presti & Costa Mendes (2023), Qin (2024), Ruppel et al. (2013), Skyrme (1994), Steenkamp & Dhanesh (2023), Tønnessen et al. (2021).

Control (n=11)

Adisa et al. (2022), Bailey & Kurland (2002), Birkinshaw et al. (2021), Biron & Van Veldhoven (2016), Downes et al. (2023), Gong & Sims (2023), Groen et al. (2018), Hsu et al. (2021), Schäfer et al. (2023), Taskin & Devos (2005), Zheng et al. (2023).

Leadership (n=30)

Bhumika (2020), Birkinshaw et al. (2021), Bouchard & Meunier (2023), Chatterjee et al. (2022), Davenport & Pearlson (1998), De la Torre-Ruiz & Ferrón-Vílchez (2024), Dhir et al. (2024), Dittes et al. (2019), Gaan et al. (2024), Gong & Sims (2023), Groen et al. (2018), Higa et al. (2000), Illegems & Verbeke (2004), Imhanrenialena et al. (2023), Kaplan et al. (2018), Lautsch & Kossek (2011), Leclercq-Vandelannoitte (2021), Leonardelli (2022), Levin & Kurtzberg (2020), Mucharraz y Cano et al. (2023), Orlandi et al. (2024), Presbitero & Aruta (2024), Presti & Costa Mendes (2023), Ressi et al. (2024), Riordan & Glikson (2020), Op 't Roodt et al. (2025), Sandoval-Reyes et al. (2023), Skyrme (1994), Steenkamp & Dhanesh (2023), Takahashi et al. (2023).

Organisation (n=15)

Aleem et al. (2023), Birkinshaw et al. (2021), Davenport & Daellenbach (2011), Davenport & Pearlson (1998), De Lucas Ancillo et al. (2023), Ferguson et al. (2022), Gibson et al. (2023), Johns & Gratton (2013), Klaser et al. (2023), Reunamäki & Fey (2023), Todisco et al. (2023), Watad & DiSanzo (2000), Yang et al. (2024), Yao et al. (2024), Zamani & Spanaki (2023).

Support (n=12)

Artar & Erdil (2024), Atiku et al. (2020), Kurland & Bailey (1999), De la Torre-Ruiz & Ferrón-Vílchez (2024), Khedhaouria et al. (2024), Li et al. (2023), Makarius & Larson (2017), Mallett et al. (2020), Mannering & Mokhtarian (1995), Navickas et al. (2022), Skyrme (1994), Wiesenfeld et al. (2001).

Culture (n=7)

Dhir et al. (2024), Dittes et al. (2019), Gibson et al. (2023), Lautsch & Kossek (2011), Oh et al. (2025), Ruppel et al. (2013), Watad & DiSanzo (2000).

Retention (n=7)

Imhanrenialena et al. (2023), Kumpikaite-Valiuniene et al. (2022), Stavrou & Kilaniotis (2010).

Innovation (n=8)

Artar & Erdil (2024), Burleson et al. (2023), Coenen & Kok (2014), Gibson et al. (2023), Jaiswal & Arun (2024), Tønnessen et al. (2021), Vega et al. (2015), Zamani & Spanaki (2023).

Performance (n=22)

Ameen et al. (2023), Atiku et al. (2020), Avram et al. (2021), Bailey & Kurland (2002), Kurland & Bailey (1999), Chatterjee et al. (2022), Choudhury, et al. (2021), Coenen & Kok (2014), De Menezes & Kelliher (2011), Feng & Savani (2020), George et al. (2022), Golden & Gajendran (2019), Gupta et al. (1995), Loh et al. (2023), Marikyan et al. (2024), Martins et al. (2023), Navickas et al. (2022), Petcu & Cişmaşu (2023), Prodanova & Kocarev (2022), Toniolo-Barrios & Pitt (2021), Vega et al. (2015), 209, Zhang et al. (2022).

MESO AND MICRO LEVEL: *Organisations and Teleworkers*

Telework Acceptance (n=7)

Godefroid et al. (2024), Jentjens & Cherbib (2023), Lashitew (2023), Marikyan et al. (2024), Prodanova & Kocarev (2022), Sahut & Lissillour (2023), Xiong et al. (2023).

Flexibility (n=20)

Adisa et al. (2022), Anderson & Kelliher (2020), Kurland & Bailey (1999), Biron & Van Veldhoven (2016), Bouchard & Meunier (2023), Burleson et al. (2023), Chatterjee et al. (2022), Choudhury, et al. (2021), Hsu et al. (2021), Hwang et al. (2024), Karacsony et al. (2021), Klaser et al. (2023), Kossek et al. (2015), Müller & Niessen (2019), Presti & Costa Mendes (2023), Gupta et al. (1995), Skyrme (1994), Suh & Lee (2017), Taskin & Devos (2005), Trzebiatowski & Henle (2023).

Privacy (n=7)

Dassel & Klein (2023), Duxbury & Neufeld (1999), Fairweather (1999), Harms et al. (2024), Posey & Shoss (2024), Saura et al. (2022), Suh & Lee (2017).

MICRO: *Teleworkers*

Profile (n=10)

Bailey & Kurland (2002), Harms et al. (2024), Hwang et al. (2024), Khan (2021), Le et al. (2024), Makarius & Larson (2017), Oh et al. (2025), Parra et al. (2022), Raghuram et al. (2001), Stanek & Mokhtarian (1998).

Discrimination (n=15)

Anwar & Graham (2021), Bachrach et al. (2023), Barsness et al. (2005), Bathini & Kandathil (2019), Battisti et al. (2022), Brosi & Gerpott (2023), Davis et al. (2023), Gálvez et al. (2020), Illegems & Verbeke (2004), Kossek et al. (2015), Long et al. (2013), Martins et al. (2023), Petcu & Cişmaşu (2023), Soga et al. (2022), Takahashi et al. (2023)

Isolation (n=11)

Illegems & Verbeke (2004), Imhanrenialena et al. (2023), Jaiswal & Arun (2024), Karacsony et al. (2021), Marshall et al. (2007), Oh et al. (2025), Santana & Cobo (2020), Schinoff et al. (2020), Soga et al. (2022), Toniolo-Barrios & Pitt (2021), Trzebiatowski & Henle (2023)

Stress (n=34)

Bathini & Kandathil (2019), Battisti et al. (2022), Bhumika (2020), Biron & Van Veldhoven (2016), Burleson et al. (2023), Calderwood et al. (2023), De Menezes & Kelliher (2011), Dittes et al. (2019), Fortuna et al. (2023), George et al. (2022), Golden (2012), Jaiswal & Arun (2024), Khan (2021), Khedhaouria et al. (2024), Lapierre et al. (2016), Li et al. (2023), Loh et al. (2023), Mucharraz y Cano et al. (2023), Orlandi et al. (2024), Parra et al. (2022), Perry et al. (2023), Presbitero & Aruta (2024), Prodanova & Kocarev (2022), Rangarajan et al. (2022), Reizer et al. (2022), Sandoval-Reyes et al. (2023), Saura et al. (2022), Singh et al. (2022), Soga et al. (2022), Suh & Lee (2017), Trzebiatowski & Henle (2023), Windeler et al. (2017), Yun et al. (2012), Zheng et al. (2023).

Table 2 (*continued*)

MACRO LEVEL: *Macroenvironment*
Work/Life (n=35)
Adisa et al. (2022), Aleem et al. (2023), Alvarez-Torres & Schiuma (2022), Ameen et al. (2023), Anderson & Kelliher (2020), Beigi et al. (2024), Bhumika (2020), Campos García et al. (2024), Dittes et al. (2019), Fortuna et al. (2023), Gálvez et al. (2020), Golden (2006), Golden (2012), Golden (2021), Gong & Sims (2023), Hecht & Allen (2009), Imhanrenialena et al. (2021), Kossek et al. (2015), Lapierre et al. (2016), Le et al. (2024), Da Costa Lemos et al. (2020), Li et al. (2023), Mallett et al. (2020), Mannering & Mokhtarian (1995), Perry et al. (2023), Posey & Shoss (2024), Powell (2020), Purang et al. (2024), Rangarajan et al. (2022), Ruppel et al. (2013), Santana & Cobo (2020), Soga et al. (2022), Salazar Solís (2016), Stavrou & Ierodiakonou (2011), Yun et al. (2012).
Satisfaction/Well-being (n=33)
Alvarez-Torres & Schiuma (2022), Artar & Erdil (2024), Bailey & Kurland (2002), Kurland & Bailey (1999), Battisti et al. (2022), Bouchard & Meunier (2023), Chatterjee et al. (2022), De Menezes & Kelliher (2011), Feng & Savani (2020), George et al. (2022), Golden (2006), Golden & Veiga (2005), Hill et al. (2024), Hwang et al. (2024), Illegems & Verbeke (2004), Imhanrenialena et al. (2021), Karacsony et al. (2021), Khedhaouria et al. (2024), Le et al. (2024), Da Costa Lemos et al. (2020), Marikyan et al. (2024), Müller & Niessen (2019), Prodanova & Kocarev (2022), Purang et al. (2024), Qin (2024), Sandoval-Reyes et al. (2023), Santana & Cobo (2020), Singh et al. (2022), Suh & Lee (2017), Toniolo-Barrios & Pitt (2021), Vega et al. (2015), Windeler et al. (2017), Zheng et al. (2023).

Source: Own elaboration

higher degree of interest in organising training programmes for employability had a direct impact on the proportion of teleworkers. A virtuous circle thus arises, insofar as an increased number of teleworkers results in a greater need both for additional training and for internet access on a regular basis.

There is also a negative effect (Petcu & Cişmaşu, 2023), though, which derives from the differences in the implementation of telework in various geographical areas, where its limited dissemination due to the poor technological infrastructure enlarged the digital divide between more developed economies and less developed ones. More specifically, Anwar & Graham (2021) examined the so-called "gig economy" in African countries characterised by a low level of development (Kenya, Nigeria, Ghana, Uganda). This gig economy (which relies on small jobs and freelancers –Harms et al., 2024) has grown to a large extent thanks to technology, being closely related to teleworking. And, despite bringing advantages to workers (flexibility and more convenient schedules), it has drawbacks too (precariousness, vulnerability), which is why the gig economy should be more strictly regulated.

Finally, Kumpikaite-Valiuniene et al. (2022) took advantage of a study performed with Lithuanian emigrants to check how virtual work can represent a way to bring back emigrants who have the chance to return to their country of origin as teleworkers, thus achieving a brain gain for this Baltic state.

Sustainability. Telework, along with ICTs in general, can be linked to a lower pollution associated with the reduction or elimination of journeys from home to the habitual work centres (Petcu & Cişmaşu 2023; Kurland & Bailey, 1999). The concept of smart city goes hand in hand with teleworking, since it means that ICTs favour sustainability by offering services digitally (Hopkins & McKay, 2019). The removal or decrease of mobility becomes especially important in global firms, where a large number of international trips have been replaced by virtual work meetings (Jooss et al., 2022). To which must be added that telework makes it possible to relocate teleworkers in rural areas, thus doubly contributing to build sustainable communities (Saura et al., 2022),

As opposed to a lower traffic volume, however, the expenses related to electricity, air conditioning and technical equipment have increased for the teleworker, who needs more hardware devices as well; therefore, no clear results are available as to whether teleworking has a positive or negative impact on the environment (Fortuna et al., 2023). Telework is also likely to entail higher CO_2 emissions into the atmosphere (Marz & Şen, 2022), the reason lying in the fact that, although it diminishes the number of work-related journeys in the long run, in the medium term, this means that teleworkers may choose to have less efficient, and consequently more polluting vehicles. Furthermore, on a medium- and long-term basis, teleworkers are encouraged to live outside cities because they need not travel to work. Thus, the expansion of cities eventually entails a higher number of journeys (for reasons other than work), which leads us to conclude that the reduction of emissions supposedly brought by the implementation of telework is far from clear.

Gender roles. Women find themselves at a disadvantageous position compared to their male counterparts in what regards the adoption of remote work (Aleem et al., 2023). Even though the degree to which their working hours interfere with personal life has increased for men and women alike, the volume of family-related tasks has grown to a considerable extent in the case of women, who often need to take care of children or their elderly parents or carry out domestic chores too. Especially women and mothers endured a work overload throughout the lockdown (Anderson & Kelligher, 2020) and suffered from higher emotional fatigue than men, as a result of the conflicts between work and family caused by teleworking (Bhumika, 2020). Furthermore, women were more likely to experience interruptions unrelated to work (e.g. intrusions or distractions) while working from home. This situation is not the same in every demographic segment, though; for instance, women face even more challenging situations in collectivist societies where they must look after members of the extended family (Aleem et al., 2023). Another drawback for women lies in the fact that, being carried out from home, telework is not perceived as a real job; Gálvez et al. (2020) concluded in their study referred to Catalonia (Spain) that female teleworkers are not only questioned but also penalised and blamed by their social environment. Spain's typical labour model implies long hours of presential work outside the home; a cultural change should take place that permits to avoid masculine models and reduce the relevance of gender-based differences in the work context.

Nevertheless, several studies have highlighted the potential positive effect of teleworking on females who develop this activity. Thus, Imhanrenialena et al. (2021) did not find any conflicts regarding the work-family interface in the case of women who work remotely in Nigeria. Furthermore, these women felt satisfied with their virtual job and received greater help in internal household chores than in the external ones, female domestic employees constituting the main source of support for such tasks. Within a patriarchal society like that of Nigeria, virtual work environments do not lead to conflict but rather become a means for women to achieve a higher level of job satisfaction. Along these same lines, Da Costa Lemos et al. (2020), observed that although female teleworkers underwent a work overload during the lockdown caused by COVID-19, that overload did not intensify the clash between family and work. This was so because working at home brought them closer to their partners or children and gave them more time for recreational or sports activities.

Another positive effect linked to teleworking for women has to do with the fact that, the same as other flexible work formats, it helps to increase the presence of women in managerial posts (Yang et al., 2024). In any case, both the confinement due to the COVID-19 pandemic and telework implied numerous conflicts between work and family as well as gender-related issues. We should ponder the need to provide help to teleworkers, regardless of their gender, in such situations, and especially to those who have more responsibilities associated with the family, additionally striving to reduce the degree of inequality between women and men in labour contexts (Powell, 2020). Finally, it is worth highlighting that the justification to classify the topic of gender within the

macroenvironment area relates to its transversal importance, as attested by the fact that this theme constitutes the basis for SDG No. 5 (Gender Equality).

Meso level: enterprises and organisations

Telework types. Numerous authors have attempted to clarify the different forms that telework may adopt. Thus, Davenport & Pearlson (1998) distinguished occasional teleworking, in which workers with a fixed office carry out their activity from home at times, from "hoteling", which describes a situation where, instead of having at their disposal a fixed space reserved for their job, teleworkers need to reserve or may rotate. Also worthy of mention are employees "tied" to the office, or expressed differently, the ones who, despite teleworking, must clock in and out at their offices regularly; then we have those workers who perform their tasks from home, and finally the ones who work on a completely mobile basis. According to the place where the professional activity was carried out, Kurland & Bailey (1999) drew a distinction between: (a) home-based teleworking which, despite being frequently performed at home does not necessarily have to be done there every day; (b) "satellite office," one belonging to the same firm that avoids the long journeys of workers to the head office; (c) "neighbourhood work centre," meant to welcome workers from different enterprises; and (d) mobile teleworking, which can be performed from any location.

In turn, Daniels et al. (2001) likewise classified this activity, depending on where it takes place, into three types: teleworking from home; teleworking from remote offices; and mobile teleworking. However, they added that a classification of telework can also be made according to whether the teleworker carries out a professional, managerial or technical task, i.e. depending on whether the job is more or less knowledge-intensive. An additional differentiation of telework formats should be made, based not only on the range of ICTs used but also on the frequency of both intra- and extraorganisational contacts.

More recently, Raghuram et al. (2019), in a review of the literature on virtual work, observed three clusters: telework; virtual teams; and computer-mediated work. However, all of them have in common that they address the dependence on technology and geographical dispersion. On the other hand, the approaches to the study of these three clusters differ in the level of analysis (the individual or the team), the context, the temporariness, the location, and the value of technology, as well as the type thereof.

Furthermore, Henry et al. (2021) identified many ways of working within a distributed scheme which resemble each other, on an individual basis –such as telework, remote work, telecommuting, distributed work and virtual work– or in a team format –e.g. virtual teams, virtual organisations and distributed ones. These authors proposed a classification of telework according to four factors: the interdependence of tasks; the nature of work (requiring a physical place or not); the technological environment (the degree to which technology supports communication and coordination or not); and the time lag (the extent to which synchronous communication is needed or not). Finally, Schäfer et al. (2023) tried to shed light on the complex terminology that exists around teleworking, listing 7 different types: Telework; Telecommuting; Remote Work; Distributed Work; Work from Home; Virtual Work; and Smart Work. These categories differ with regard to their level of flexibility, both geographically and in terms of time, the relevance of technologies, and the degree of autonomy or control, to quote but a few variables.

Communication. One of the key challenges for telework consists in achieving a fluent as well as efficient communication between teleworkers, their partners, their heads and the organisation as a whole, above all due to the greater difficulty that informal interactions present. For this reason, different communication channels ought to be used that can facilitate informal communication, team collaboration and knowledge sharing (Artar & Erdil, 2024). It becomes equally necessary to establish ways of formal and informal communication between teleworkers and their superiors, so that the specific contribution to work of the former can be better understood (Barsness et al., 2005). The management must improve communication, building new information flows meant to replace informal communication, educating workers for the latter to generate and consume information effectively, and allowing them to return to the physical office when necessary (Davenport & Pearlson, 1998).

Other authors mention the theme of presentiality in a physical office as a key point to maintain and improve communication when teleworking (Kurland & Bailey, 1999), since the ties with physical offices should not be cut and meetings ought to be planned; furthermore, when it comes to global projects, due to the great complexity derived from the various time slots and the culture shock, although face-to-face encounters might seem expensive, they would actually prove cost-efficient, because communication problems could be solved more easily (Ruppel et al., 2013). People need a face-to-face contact which provides opportunities to clarify and align expectations, as well as to update norms and work practices (Fayard et al., 2021). In a world that permits and exploits work from home on a large scale, it becomes even more relevant to bring people together in offices for those human necessities to be met. In the absence of networking, the chances for invention and reinvention turn out to be basically non-existent (Burleson et al., 2023). In addition to this, at a group level, teamwork and collaboration relationships must be developed in order to share knowledge (Dhir et al., 2024). While explicit knowledge can be shared online, the depth of knowledge, i.e. tacit knowledge, is more difficult to share in projects where people are teleworking (Obal et al., 2024).

Communication becomes necessary not only to share knowledge but also to improve social connection and satisfy the need for relationships (Qin, 2024). Implementing team building actions will prove basic in those organisations where hybrid work exists, with workers located in the office and others teleworking (Davis et al., 2023). Communication will make it possible to reinforce the feeling of connection between team members (Levin & Kurtzberg, 2020) as well as the sense of trust from the organisation towards teleworkers (De la Torre-Ruiz & Ferrón-Vílchez, 2024).

Control. Managers' desire to control work frequently inhibits the creation of teleworking programmes (Bailey & Kurland (2002). Telework is thought to reduce the viability of monitoring employee behaviour, which is why a follow-up of teleworkers' performance is suggested as the only possible form of control (Groen et al., 2018; Birkinshaw et al., 2021). Nonetheless, in addition to monitoring performance, it becomes necessary to check inputs (which types of workers are suitable), behaviours and even attitudes, all of them essential for knowledge exchange and teamwork (Downes et al., 2023). Rather than specifying outputs and letting employees abide by that, executives ought to adopt a more personalised and connected approach when leading their work teams.

A curious paradox additionally seems to arise between autonomy and control because, a priori, teleworking implies an increased autonomy of workers, who have greater responsibility over their own work, with more personalised goals. Controls may grow, though; these are technology-assisted mechanisms which permit to monitor results in real time, for example, or check whether the worker is connected or not (Taskin & Devos, 2005). During the COVID-19 lockdown, numerous managers focused on a narrow-minded, controlling vision of work, laying emphasis on analytical activities, with little attention to personal development (Birkinshaw et al., 2021). This can provoke a rejection of teleworking and deprive it of all its appeal (Biron & Van Veldhoven, 2016), since when workers are strictly monitored (e.g. in relation to the times when they must start and finish teleworking or have breaks, etc.), telework stops being more relaxed than office work. Likewise, Adisa et al. (2022) concluded that the control over online presence reduced the

perception of flexibility among academics during the COVID-19 pandemic. Academics' willingness to embrace teleworking is likely to decrease if they feel that tight control will be imposed upon them, exactly as if they were working in their offices.

Besides, excessive control ends up being counterproductive if it undermines teleworkers' morale (Gong & Sims, 2023); these employees may have the impression that executives' trust towards them has changed, with too much monitoring and supervision. The feeling of mistrust experienced by the teleworker will probably change if the employer moves away from a mere observation of work to engaging in conversations of a casual nature. Building protocols to report results sometimes represents a good way to reduce that need for supervision. Zheng et al. (2023) reached similar conclusions, providing evidence that managers' supervision led workers to believe that they were not trusted, which made them feel more tired and proved detrimental to their well-being.

Leadership. Executives with experience in the adoption of teleworking not only recognise a wide range of strategic and long-term impacts that telework is bound to have on their organisation's resources but also see it as a tool at the service of Human Resoource Management (Illegems & Verbeke, 2004). However, managing teleworkers poses a challenge; the traditional leadership style may not be feasible in virtual environments (Takahashi et al., 2023). The management style applied in virtual environments needs to prioritise empowerment instead of control (Skyrme, 1994); the people in charge must create opportunities for the professional growth of teleworkers (Leonardelli, 2022; Birkinshaw et al., 2021), including their prospective employability (Dhir et al., 2024). It all turns out to be highly challenging, since addressing teleworkers' empowerment makes it necessary for managers to justify their own *raison d'être*, for which purpose they must become visible to justify their authority (Leclercq-Vandelannoitte, 2021).

Furthermore, numerous authors advocate a participative leadership style (Orlandi et al., 2024; Bhumika, 2020), able to reduce teleworkers' stress and improve their welfare. In this regard, Steenkamp & Dhanesh (2023) suggested that executives should not only allow access to the opinions and needs of teleworkers but also communicate with them in an honest and open way. It likewise becomes essential to earn voluntary commitment on the part of teleworkers, which is feasible through the creation of a common social identity (Leonardelli, 2022). Reinforcing the bonding between workers can be achieved by cultivating solidarity and shared-mission feelings (Levin & Kurtzberg, 2020). This proves very delicate when those in charge have to deal with presential workers and teleworkers; managing a mixed workforce poses challenges related to the coordination, equity and social integration of different groups (Lautsch & Kossek, 2011). Even though helping teleworkers to identify with the organisation is far from easy (Presbitero & Aruta, 2024), problems can be solved when managers communicate with teleworkers frequently, seeking to generate a feeling of trust among them (De la Torre-Ruiz & Ferrón-Vílchez, 2024). Those executives who have allowed and even fostered teleworking are the ones who really believe in workers (Kaplan et al., 2018).

Most of the managerial practices which serve to promote the psychological welfare of "in-person" employees can also be used within a context of remote workers; above all, showing consideration and empathy towards employees becomes a must (Bouchard & Meunier, 2023). It would be equivalent to what Gaan et al. (2024) called resonant leadership, which is based on Hinduism and revolves around concepts such as hope, sympathy, altruism and mindfulness, all of them regarded as essential for workers to stay empowered and obtain the autonomy required to perform their remote work.

Managers should also serve as role models worthy of imitation when it comes to technology adoption; they need to embrace new technologies and show their willingness to promote this opening among employees (Op 't Roodt et al., 2025). To set a good example in the pioneering utilisation of technologies often proves challenging when, on some occasions, the managers themselves must learn to use them first (Dittes et al., 2019).

Organisation. Davenport & Pearlson (1998) warned that the virtual office had come to stay and gave advice on how executives ought to adapt their organisations to this new form of labour. According to Johns & Gratton (2013), virtual work has gone through three waves, the third one of which arises after understanding that the distribution of work compromises collaboration and fearing that tacit knowledge might be lost. Therefore, the approach of this third wave lies in making teleworkers understand that, even if they are teleworking, they will find themselves within a shared environment where a sense of belonging to the enterprise must be created (Davenport & Daellenbach, 2011). In turn, the study about the implementation of telework in a pharmaceutical firm carried out by Watad & DiSanzo (2000) allowed them to check that changes took place at every organisational level. However, what matters most is the cultural change: teleworking entails a rapid adoption of ICTs that would have occurred more slowly otherwise.

As already highlighted above, the COVID-19 crisis rushed the digital transformation of many organisations and an abrupt introduction of telework (Yao et al., 2024). The smart working experience of Italian civil servants at the time of confinement made it possible to verify the positive effect on organisational flexibility and the improved resilience of public organisations; furthermore, specific objectives were set by the heads of the different departments (Todisco et al., 2023). Ferguson et al. (2022) analysed the change in telehealth services caused by the pandemic and deduced that, if these services can largely be delivered remotely despite typically requiring contact, almost any business could be done online. Telework is framed within a sociotechnical system (Gibson et al., 2023) and while during its introduction, organisations were concerned about implementing the technology and focused on that, it subsequently became clear that such an implementation could not be successful without changing the social and organisational part. A similar conclusion was reached by Klaser et al. (2023), according to whom the first stage of lockdown was based on technology, the second one focused on improving communication, the third one revolved around the adaptation of tasks to remote work, and the fourth placed the emphasis on introducing changes in the structure, through the design of new functions, e.g. the role played by the "head of agile work," work/life balance policies or psychological support services. In a similar vein, Aleem et al. (2023) came to the conclusion that the changes in job structures operated due to teleworking mainly sought to provide remote employees with the necessary support and meet their personal as well as professional demands.

The new agile organisations imply less hierarchy and more flexibility, two objectives for which remote work may constitute a handicap; however, there are ways to solve the potential problems (Reunamäki & Fey, 2023): when faced with lesser opportunities for interaction, a proposal is made to create smaller work teams; if the lack of commitment is likely to appear, efforts should centre on encouraging it by means of digital meetings; as a solution to the "overload" of meetings, it is suggested that some hours be blocked as "meeting-free" in order to avoid saturation; and finally, the lower degree of interaction that prevents knowledge sharing is combatted through the adoption of software solutions and new roles aimed at fostering information exchange. The challenge when teleworking no longer lies in a mere change of workplace, but has to do with time too, since the temporal dimension stays as an inmovable aspect of work. Many workers perceive time as a "sentence"; working remotely, with few interruptions, has given rise to a perpetual present, causing a sensation of monotony and boredom. And yet, ICTs and telework can lead to reinvention, or to put in another way, to use these technologies to do the work better, to reinvent oneself, and to ensure ongoing learning (Zamani & Spanaki, 2023).

Support. Telework cannot possibly succeed without support being offered by organisations to their teleworkers. In this sense, a need exists to supply an appropriate technological infrastructure, as was already underlined three decades ago by Skyrme (1994) or Mannering & Mokhtarian (1995), who pointed out that, among the most influential factors for a worker to choose this labour modality was the possibility to borrow a computer from the workplace if necessary. Evidence has been found in various locations around the world of the need to provide help to workers as far as IT infrastructure is concerned. Thus, Navickas et al. (2022) checked that Slovakia needs to make an effort to equip its companies and workers with sufficient ICT resources, so that they can benefit from the advantages that working from home brings. Likewise, Atiku et al. (2020) stressed the need not only for support to workers –to look after their health during the COVID-19 pandemic– but also for a technological infrastructure suited to favour the use of flexible work and telework in African countries. It must be borne in mind that not everybody has a spare room which can be dedicated to telework; the teleworker very often negotiates with other family members for a time slot to use a certain space or a specific computer. Neither do all households have enough technology or a satisfactory access to broadband Internet, or even the right kind of furniture. Organisational help becomes essential to alleviate these problems and their negative effect on workers' well-being and productivity (Mallett et al., 2020).

Not only aid oriented to solve practical issues is required, though; there are social and psychological concerns which need to be addressed too. For this reason, Li et al. (2023) suggested that the utilisation of different technological tools allows workers to collaborate with others and maintain their relationships, helps them to mitigate the harmful impacts of the "obligatory" telework –as well as to feel less tired mentally– and prevents them from focusing exclusively on the most negative aspects of their activity. In addition to providing teleworkers with support of a technological nature, it becomes necessary to promote communication and trust (De la Torre-Ruiz & Ferrón-Vílchez, 2024). Social and emotional support measures soften the effects of the technostress that teleworkers suffer from, for example, with the figure of a voluntary teleworker or "digital ambassador" entrusted with fostering a culture of remote collaboration, or establishing social virtual events such as the "virtual coffee break" (Khedhaouria et al., 2024). Social support becomes key even to achieve the identification of teleworkers with the enterprise, which arises as one of the greatest challenges of telework (Wiesenfeld et al., 2001). Since virtual work occurs outside the habitual work contexts, a clear need exists to determine which factors are required for an individual worker to succeed in this virtual environment, or expressed differently, to prepare individuals for teleworking. In this respect, one should consider both fixed success factors and other which can be modelled through training and personal development. A firm has the potential to favour teleworkers' success by means of organisational help, building social structures able to facilitate encounters between teleworkers, not only clarifying the expected results and supplying an adequate technological infrastructure but also offering enough training (Artar & Erdil, 2024; Makarius & Larson, 2017).

Culture. The most significant change derived from implementing telework in an enterprise is of a cultural nature (Watad & DiSanzo, 2000). The right culture for teleworking must be an inclusive one (Dhir et al., 2024) which can achieve an attitude of learning and tolerance of ambiguity at an individual level and facilitate, from a group perspective, the construction of relationships, teamwork and collaboration with the aim of making knowledge sharing possible. Building such an inclusive culture requires developing solidarity and mutual trust. Dittes et al. (2019) described the culture suited to teleworking an open, collaborative one, since communication and knowledge exchange would be impossible otherwise. Lautsch & Kossek (2011) highlighted the need for a group culture which rewards help-oriented behaviours between teleworkers and "non-teleworkers." Oh et al. (2025), reached the same

conclusion, stating that a labour culture characterised by a great distance from power and strict rules at the workplace (as it happens in China) turns out to be counterproductive, since it worsens the teleworker's feeling of isolation and loneliness. On the other hand, Gibson et al. (2023) concluded that telework does not cause harmful effects, neither when it comes to forging an organisational culture nor for the connection between team members.

A separate case study makes it necessary to examine the approach of teleworkers when they form part of distant teams who carry out their activity with different time zones and involving several countries. A strong cultural shock is bound to occur in such cases (Ruppel et al., 2013) which should be addressed and softened through an organisational culture that, apart from encouraging face-to-face encounters, is characterised for its focus on inclusiveness, communication and open-mindedness.

Retention. One of the advantages brought by teleworking lies in the fact that it can be seen as a bonus for workers and serve as a tool to avoid staff turnover and retain talent. It was categorised in that fashion by Imhanrenialena et al. (2023) when they claimed that the sympathetic leadership exerted by female managers helps to create a feeling of trust in virtual environments and leads to reduce the job-abandonment- or turnover-related intentions of virtual workers. Within an analysis carried out in different countries, Stavrou & Kilaniotis (2010) observed that, as telework grew in Nordic countries, job turnover decreased. Furthermore, Kumpikaite-Valiuniene et al. (2022) used a study performed with Lithuanian emigrants to examine how virtual work can provide a way to bring back emigrants, who have the chance of returning to their country of origin as teleworkers. This results in a brain gain for the Baltic state.

Innovation. Creativity and innovation are among the variables reinforced by teleworking. Telework has the potential to offer opportunities for innovation, insofar as employees can reimagine the use of technology, discovering not only new technologies but also hitherto unknown uses of the existing ones. However, this will only be possible if they enjoy autonomy (grace), can do networking (place) and do not suffer from work overload (space) (Burleson et al., 2023). Studies carried out prior to the COVID-19 crisis showed that workers were more creative during the days on which they worked at home than when they did so in the office (Vega et al., 2015). In fact, ICTs and telework often favour reinvention, that is, the implementation of these technologies to improve work, to reinvent oneself, and to achieve continuous learning (Zamani & Spanaki, 2023). During the pandemic, knowledge exchange both inside and outside the organisation helped to develop creativity. The internal motivation of workers themselves contributed not only to improve both internal and external knowledge but also to enhance creativity (Tønnessen et al., 2021). Creativity also had to do essentially with solving pending work-related problems or with the actual employees' self-training. Most importantly, this creativity arose on their own initiative (Jaiswal & Arun, 2024). In this regard, Gibson et al. (2023) concluded that innovation, at the most, slightly correlates with the location where work is carried out. It does not matter if it takes place in the office, or we are dealing with hybrid work or telework, this "local" component cannot be considered in an isolated manner, it becomes necessary to undertake an integrated analysis of the sociotechnical system in which employees find themselves. Therefore, teleworking does not slow down innovation, quite the opposite. Finally, Artar & Erdil (2024) are convinced that promoting teleworkers' creativity proves key to ensure their satisfaction.

Performance. Numerous authors have claimed that telework improves business performance (Petcu & Cişmaşu, 2023), others point in the opposite direction (Bailey & Kurland, 2002) and some insist on the non-existence of clear results (De Menezes & Kelliher, 2011), due to the

disparity of approaches, theories and methodologies adopted. Concerning the former, Gupta et al. (1995) argued that this happens because more possibilities than problems exist in teleworking; Coenen & Kok (2014) highlighted the role played by telework in new product development, which in turn influences productivity; Watad & DiSanzo (2000) referred to the fact that salespeople can be more focused on customers thanks to telework, which positively affects their performance; Vega et al. (2015) stressed that telework enhances creativity and consequently productivity, an opinion shared by George et al. (2022) or Choudhury et al. (2021). Likewise, Zhang et al. (2022) checked how, in the course of the COVID-19 health crisis, the small firms which resorted to teleworking improved their results (with a lower likelihood of closing down, better cashflow positions, fewer interruptions due to lack of supply or lesser drops in incomes, to quote but a few), Martins et al. (2023) came to the conclusion that distributive justice, referred to a fair distribution of resources, services, promotions or salaries among other things, has a positive impact on teleworkers' performance, and Prodanova & Kocarev (2022) verified that it is the possibility of conciliation that really makes productivity grow when teleworking. Along these same lines, Ameen et al. (2023) said that achieving a balance between work and family favourably impacts on teleworkers' performance, and Chatterjee et al. (2022) insisted on the fact that what really allows telework to have an impact on productivity is its flexibility.

On the contrary, most of the studies according to which telework does not exert a positive influence on productivity refer to the forced activity carried out during the COVID-19 period, when teleworkers had to face challenges caused by uncertainties, blurred lines between work and private life, the care of their family, and a lesser job motivation which largely reduced their productivity (Toniolo-Barrios & Pitt, 2021); situations took place for which neither workers nor their country were prepared, since they lacked a suitable technological infrastructure (Atiku et al., 2020; Navickas et al. 2022); in these environments, technostress acted as a performance inhibitor (Loh et al., 2023); and, at a macroeconomic level, despite the growth of teleworking, other forces negatively affected productivity due to lockdowns (Avram et al., 2021).

Meso and micro levels: organisations and teleworkers

Telework acceptance. It is interesting to ascertain what factors determine the acceptance of telework both by the enterprise and from the worker's point of view. As for the former, it was already mentioned above that the advent of COVID-19 meant a revolution in this context; Godefroid et al. (2024) argued in this respect that many organisations did not resort to teleworking simply because they had not even thought of it until then. Thus, exploring different technologies and rethinking new forms of work appear as the only ways to remain open to the incorporation of these innovations into the enterprise's habitual practice. Furthermore, CEOs' features may relate to telework acceptance; after analysing a sample of over 20,000 firms in more than 42 countries, Lashitew (2023) concluded that, unlike gender, which is not relevant, the CEO's age does show an inverted-U relationship with the adoption of telework, which means that executives with a moderate level of experience (seniority) tend to be more prone to embracing this labour modality.

As for workers, according to Xiong et al. (2023), women accept remote work to a greater extent than men, and employees with a deeper technological knowledge will exhibit a higher degree of acceptance than those less conversant with technology. In relation to gender, it turns out that the acceptance of remote work by women is not due to the typical division of household chores; rather, it has to do with the fact that psychological differences exist between female workers and their male counterparts, especially as regards the tendency of the former to avoid face-to-face interaction. On the other hand, Sahut & Lissillour (2023) claimed that the reason for women to embrace teleworking lies in the ease to learn how to use the new platforms; instead, men assign more importance to knowing which platforms will have a satisfactory

performance. In addition to the above, for the oldest employees (digital immigrants), it becomes essential to provide social support so that they can find it easier to adopt telework.

Flexibility. This is one of the most outstanding advantages offered by teleworking (Santana & Cobo, 2020; Skyrme, 1994), not only from the enterprise's standpoint –since flexibility can enhance its performance (Chatterjee et al., 2022; Choudhury et al., 2021)– but also, and especially, for the workers –because a higher level of flexibility and autonomy will most probably have a positive impact on their well-being or satisfaction (Kurland & Bailey, 1999; Bouchard & Meunier, 2023; Müller & Niessen, 2019).Hwang et al. (2024) also showed this link in the opposite direction, that is, telework satisfaction favours teleworkers' ability to model their own job, altering its context or changing the way in which they carry it out. This happens because that satisfaction makes workers more resilient, endowing them with a greater capability to assume further changes, which ultimately enables them to become more autonomous and flexible.

Telework can be a source of innovation, though in order to achieve this aim, the worker needs to count on sufficient autonomy (Burleson et al., 2023). Work flexibility has likewise been related to a higher degree of commitment by employees (Trzebiatowski & Henle, 2023) and similarly, one of the few positive effects detected by workers in the COVID-19 pandemic was that the adoption of teleworking gave them more autonomy and freedom (Karacsony et al., 2021).

Several research studies have proved that depriving workers of flexibility and autonomy through an increased control over them and less freedom removes a large part of telework's incentives. Those days on which one works at home are less stressful than the ones spent in the office, but when teleworkers have a high degree of responsibility over what they do, the activity proves equally stressful in both environments (Biron & Van Veldhoven, 2016). While telework implies more autonomy, controls increase too (Taskin & Devos, 2005). During the pandemic, it became clear that an abrupt imposition of telework sometimes took place without giving any flexibility whatsoever to workers (Anderson & Kelliher, 2020); this was the case of academics, who suffered with the supervision of their online presence, which reduced their perception of flexibility (Adisa et al. 2022).

Finally, it would be advisable to bear in mind that an imbalanced flexibility culture is the one that proves detrimental either for the worker (for example, being forced to have "unusual" work schedules) or for the firm (for instance, by respecting flexibility so much that contact with the teleworker ends up being impossible). Implementing flexibility must be understood as a systemic agreement aimed at empowering both individuals and organisations (Kossek et al., 2015).

Privacy. Telework is likely to cause trouble in terms of privacy as well as regarding information security, both with respect to the enterprise and as far as the employee is concerned. In this regard, Fairweather (1999) raised potential problems related to the privacy of teleworkers or the surveillance over them that reaches their homes and even their communications, all of which might turn teleworkers, as well as potential teleworkers and trade unions, against teleworking. Saura et al. (2022) and Suh & Lee (2017) also warned about the harmful impacts that telework has on employees' privacy.

Concerning the enterprise, its privacy and information security can be placed at risk as well; during the confinement, security breaches were deliberately committed by employees (Posey & Shoss, 2024). Lockdown forced academics to use Zoom despite the security issues, three types of lecturers being identified during this period (Dassel & Klein, 2023): Agnostics (who do not recognise any problems); Pragmatists (who, despite believing that security or privacy problems may arise, resort to Zoom because they find it useful); and Sceptics (mostly lecturers trained in ICT security who saw clear security risks on Zoom and used this tool only when it was absolutely necessary). Finally, Harms et al. (2024)

alerted to the fact that, in the context of telework, workers have to use many new technologies, such as AI, which generate legal loopholes and recreate the "Wild West." All these shortcomings must be addressed in order to avoid privacy and security problems.

Micro level: teleworkers

Profile. Individuals who want to telework are the ones who seek to avoid distractions and dress comfortably; employees with a strong work ethic or a desire to carry out their activity efficiently, although more weight is assigned to family benefits, such as a better care of dependants or the possibility to manage domestic responsibilities (Stanek & Mokhtarian, 1998). For Bailey & Kurland (2002), they were mostly male professionals and women who performed administrative work.

In turn, Parra et al. (2022) examined the five key factors of personality (Neuroticism; Extroversion; Openness to Experience; Kindness; and Responsibility) with respect to the exhaustion that a person can feel due to teleworking. Evidence was found that neurotic individuals experience severe tiredness because of telework; kinder and more responsible individuals do not, and no direct connection can be established between the exhaustion associated with teleworking and factors such as extroversion and openness to experience. Accordingly, the suitable profiles for a teleworker match kinder and more responsible individuals. Nonetheless, Makarius & Larson (2017) highlighted as personality features which could help teleworkers: their need of affiliation; their individualism; and their high tolerance of ambiguity. And among the behaviours of a successful virtual worker they included: being able to engage in virtual social interactions, developing online trust, coordinating information and using various technologies fluently. Another essential feature of teleworkers is their resilience, insofar as they have to face an environment where loneliness and isolation prevail, one characterised by ambiguity and uncertainty; the most resilient workers are capable of overcoming these problems and show commitment to their job (Khan, 2021; Oh et al., 2025). Companies can perform activities such as mindfulness sessions to develop resilience (Le et al., 2024). Lastly, it is worth highlighting the curious conclusions reached by Harms et al. (2024); according to them, telework may seem attractive to individuals with dark features (psychopaths and Machiavellian people).

Discrimination. The possibility exists of telework having harmful consequences for teleworkers, including discrimination, social exclusion, precariousness and vulnerability, lesser chances of promotion and lack of visibility. In some countries, among them China, telework is not usually conceived as a true job; however, younger workers such as millennials not only legitimize this labour format but also see it as an alternative which allows them to attain higher levels of autonomy, flexibility, efficiency and professional development (Long et al., 2013). In Spain, some studies reveal that teleworkers are questioned by their social environment; teleworking is far from being regarded as a natural or genuine kind of job, and does not have the status of a respected work model, since the cultural value assigned to physical presence or presenteeism prevails (Gálvez et al., 2020). The study authored by Anwar & Graham (2021) dedicated to the gig economy in Africa showed that teleworkers are actually self-employed workers or freelancers who have to fight against precariousness and vulnerability in their jobs, which clearly require far more legal regulation. A research work carried out in the context of India's ICT industries (Bathini & Kandathil, 2019) evidenced that telework is a trap that results in having long work schedules, with shifts that, in addition to lasting many hours, vary to a large extent, being often at night in order to adapt to international projects around the world. Consequently, on some occasions, telework offers flexibility only to companies, but not to workers. In a similar vein, Kossek et al. (2015) pointed out that teleworking can become a trap in three possible ways: 1) because of its negative effects on social interaction and career projection; 2) due to the issue of equity, based on a possible perception

that some workers are arbitrarily allowed to telework while others are not; and 3) an imbalanced flexibility culture exists, which means that the business culture needs to go hand in hand with flexible jobs, without that entailing drawbacks for the employee (for example, obliging them to telework at "unusual" or inconvenient hours).

The culture of presenteeism, or expressed differently, the need to turn up at the workplace, has led to negative behaviours on the part of teleworkers, who feel guilty for being at home. That is why some practice the so-called "workathomeism" (Brosi & Gerpott, 2023), defined as staying at home teleworking when one is ill. Many workers prefer presenteeism or workathomeism to resting despite being ill, simply because they feel guilty if they do not work, since that causes negative repercussions for their workmates. The study carried out by Bachrach et al. (2023) reflected that black employees tend to be more worried about the link between the decision to work at home and the progress of their career than their white counterparts. This finding suggests that the systematic discrimination suffered by black employees is likely to be aggravated by the option of carrying out their professional activity from home. This relates to the fact that teleworkers have fewer opportunities to show their contribution to the firm, since their lack of presence makes them less visible (Barsness et al., 2005); thus, teleworkers fear that their low visibility will result in lesser chances of promotion (Martins et al., 2023; Illegems & Verbeke, 2004). Evidence has also been found of relationships based on inequality, for example, in the impression by those who stay in the office that teleworkers fail to do some tasks which they eventually have to assume (Davis et al., 2023). A compelling need exists to establish a distributive justice strategy within the enterprise oriented towards a fair distribution of resources, services, promotions or salaries, to quote but a few aspects, between both presential workers and teleworkers (Martins et al. 2023).

Isolation. Teleworkers' isolation is one of the key themes worth discussing (Santana & Cobo, 2020). Hence why Marshall et al. (2007) devised a scale to measure the isolation of virtual workers, dividing it into two facets: (a) with respect to colleagues, which represents the perception of isolation regarding interaction, socialisation and comradeship; and (b) with regard to the company, linked to the perception of a lack of support by supervisors and the organisation as such. Isolation implies the non-existence of opportunities for social and emotional interaction which are very important, since they serve to assimilate the business culture, as well as to enhance communication and cooperation; within virtual environments, the teleworker feels like a solitary entity, rather than someone forming part of an organisation (Jaiswal & Arun, 2024). The feeling of social isolation means an absence of informal interaction, and professional isolation can be considered an obstacle for career development. Furthermore, the teleworker has limited possibilities of making friends in the labour context, insofar as colleagues do not see each other face to face, which may impact on their job satisfaction and result in a desire to leave the organisation (Schinoff et al., 2020). Teleworkers who feel professionally isolated end up extremely tired; that is due to the fact that they need to manage too many problems by themselves, which eventually results in lower commitment to their job (Trzebiatowski & Henle, 2023). Therefore, it comes as no surprise to check that those workers who have not adopted teleworking tend to see above all its negative side, referred to their social isolation, the lack of contact with other professionals and the limitation in the chances of promotion (Illegems & Verbeke, 2004).

Work at home in the pandemic period led to a feeling of loneliness and isolation (Oh et al., 2025) worsened by the insecurity in relation to the disease and the impossibility to leave one's home; nonetheless, according to Karacsony et al. (2021), the impacts to which workers in Hungary assigned the least importance included the degradation of human relationships and the solitude derived from having to telework during the health crisis.

Stress. In order to facilitate teleworking, it becomes necessary to address work overload, stress in general, and technostress in particular (Dittes et al., 2019), as was confirmed by Saura et al. (2022) through an examination of teleworkers' posts on Twitter, where these authors found out that the most relevant problem associated with teleworking was stress management.

Telework-related stress may have multiple causes, such as the anxiety derived from using technologies without having enough support or technostress (Prodanova & Kocarev, 2022), the constant interruptions at home and the conflict between work and life, or between work and family, which hinder concentration (Rangarajan et al., 2022; Perry et al., 2023; Golden, 2012), the invasion of privacy (Suh & Lee, 2017), the ambiguity concerning the work to be performed (Rangarajan et al., 2022), the constant supervision which means that the teleworker may have the impression of not being trusted (Zheng et al., 2023), the lack of contact with colleagues (Fortuna et al., 2023), work overload or work carried out on night shifts or at weekends due to the need to adapt to international projects (Bathini & Kandathil, 2019), the manifold external interactions to connect with colleagues or customers (Windeler et al., 2017), the change of roles (Sandoval-Reyes et al., 2023), or the status of telework as an involuntary activity (Lapierre et al., 2016). The COVID-19 pandemic provided even more reasons to suffer from stress, because telework was compulsorily and suddenly imposed for tasks unsuited to it (Li et al., 2023), very often with hardly any information (Rangarajan et al., 2022), or what is even worse, with misinformation or disinformation originated on social media and the fear of the disease (Khan, 2021), the excessive use of digital platforms both at work and for personal and social purposes (Singh et al., 2022), the obligation to stay permanently connected or to work with the children inside the house (Li et al., 2023), or the anxiety about the future (Jaiswal & Arun, 2024).

Stress must be dealt with; otherwise, it will end up having harmful impacts on both the teleworker and the enterprise, among them a lower level of satisfaction (Suh & Lee, 2017; Khedhaouria et al., 2024) and well-being at work (Singh et al., 2022), a decrease in productivity (Prodanova & Kocarev, 2022) and a reduction of the intention to telework in the future (Loh et al., 2023). It can even cause "cyberloafing" or digital laziness, which consists in using computer devices for issues unrelated to one's job during the working hours (Reizer et al., 2022). What is more, being unable to set limits between work and family in the household even prevents teleworkers from enjoying family activities (Lapierre et al., 2016).

When faced with the aforesaid problems, organisations should apply measures to alleviate stress, work overload and technostress: for example, allowing more autonomy (Suh & Lee, 2017). The quality of relationships with managers becomes very important because it helps the teleworker not only to identify with the firm but also to reduce the burnout syndrome, as well as to introduce a participatory leadership style able to establish well-defined objectives (Orlandi et al., 2024). Support should also be given in the acquisition of hardware, offering technological resources for remote help and promoting the utilisation of technology to foster relationships (Li et al., 2023); providing the necessary training both regarding technology and as far as the organisation of one's own activity is concerned, information that will help teleworkers to know how to fix boundaries between work and life (Khedhaouria et al., 2024); explaining to teleworkers that, if they take advantage of the interruptions to achieve their most personal aims or those linked to self-care, that will surely prove rewarding to them, additionally recharging their energy (Perry et al., 2023); allowing and encouraging contact between partners, making sure that, instead of being adopted on an exclusive basis, teleworking is compatible with work in the office (George et al., 2022; Mucharraz y Cano et al., 2023). Other desirable measures include consolidating an organisational culture which respects the limits between work and life (Yun et al., 2012), along with a policy that provides support and attends to mental health, even through psychological and psychiatric help oriented to guaranteeing teleworkers' welfare (Reizer et al., 2022; Khan, 2021).

Work/Life. The balance or conflict between work and life, work and home or work and family, acquires great relevance in the context of teleworking (Santana & Cobo, 2020). In short, does telework allow conciliation?

Numerous studies have analysed the negative part, i.e. the conflict between work and life, as well as the extent to which it results in higher stress levels (Yun et al., 2012). The interruptions caused by the family during remote work may prove stressful for teleworkers, who do not have all the attention that they need to perform their activity (Perry et al., 2023). Furthermore, the blurred limits between work and home (Adisa et al., 2022), are likely to result in lower satisfaction with teleworking. Conflicts between work and family have even triggered problems associated with business information security (Posey & Shoss, 2024). Thus, Mallett et al. (2020) concluded that not everybody has a spare room that can be dedicated to telework; on many occasions, the teleworker negotiates with other family members for a time slot to use a certain space. Neither do all households have enough technology or a satisfactory access to broadband Internet, or even the right kind of furniture. Rangarajan et al. (2022) described how, in addition to causing anxiety, the conflict between work and home undermined the employee's engagement with the organisation, both affectively and in regulatory terms. Bhumika (2020) stressed that the work-family issues triggered by teleworking cause more emotional fatigue on women than on men; similarly, Campos García et al. (2024) claimed that the interferences related to family and work are suffered to a greater extent by women, and especially those with younger children. In short, many employees want to reclaim their home as a private space, at least during a part of the week, rather than as a place full of work and study in addition to being a home (Anderson & Kelliher, 2020).

Notwithstanding the above, a number of studies have insisted on the benefits resulting from the work-life balance (Ameen et al., 2023). Thus, in a society characterised by very traditional values and highly consolidated gender roles, women exhibit a positive attitude towards teleworking, since they believe that it will help them conciliate their job with looking after their home and their families (Stavrou & Ierodiakonou, 2011). Purang et al. (2024) came to a similar conclusion, showing that, during the early days of forced confinement, telework aroused favourable feelings among women because they could have their loved ones near them. Da Costa Lemos et al. (2020) likewise concluded that female teleworkers were able to remain closer to their partners and children; not having to travel to work provided them with more time both for recreational and sports activities and for conciliation. Along these same lines, Imhanrenialena et al. (2021) referred to the absence of conflict in the interface between work and family among the women who worked remotely in Nigeria, telework actually becoming a source of job satisfaction and conciliation.

In any case, strategies must be put in place to cope with the possible conflicts between work and family. Some of these strategies rely on fostering an organisational culture which sets clear limits between work and life (Yun et al., 2012), helping teleworkers with family obligations to a greater extent (Powell, 2020), organising mindfulness courses to increase resilience (Le et al., 2024), improving communication policies to reduce stress (Rangarajan et al., 2022), establishing flexible work schedules and limiting synchronised collaboration at certain times of day (Gong & Sims, 2023).

Teleworking requires well-defined boundaries between work and "non-work" so that the family does not interrupt the activity and vice versa and a work-life balance can be ensured (Hecht & Allen, 2009). These boundaries may be physical, for example, a separate place at home dedicated to teleworking (Salazar Solís, 2016), or associated with behaviour, such as wearing specific clothes when teleworking, using different phones for work and for personal purposes, and avoiding interruptions, either by the family or from work, whenever and wherever possible. It is also advisable to "build" barriers linked to time, among them establishing periods exclusively dedicated to work or family; and, finally, there are communication tactics which consist, above all, in

applying protocols with the family for them to know in which circumstances they are allowed to interrupt during working hours (Golden, 2021).

Satisfaction/Well-being. We join these two topics because, despite being different variables, without a doubt, they are closely related. No conclusive results have been obtained by research studies as to whether telework influences satisfaction positively or negatively, since contradictory arguments and results can be found in them (Kurland & Bailey, 1999). In this regard, Bailey & Kurland (2002) reached the conclusion that little evidence exists about the supposedly increased satisfaction of teleworkers with their professional activity that had often been taken for granted. For Suh & Lee (2017), the characteristics of technology as well as those of the job itself (labour autonomy and task interdependence) jointly act as technostressors of teleworkers; and, in turn, technostress reduces satisfaction with telework. Khedhaouria et al. (2024) equally had the chance to verify that, in the course of the pandemic, technostress proved detrimental to job satisfaction. However, social and emotional support measures mitigate the effects of technostress and improve satisfaction at work. Teleworkers should be helped by the top management, as well as by the ICT team and the organisation as a whole, so that telework can be truly flexible, insofar as that would increase satisfaction levels (Chatterjee et al., 2022). Artar & Erdil (2024) also checked that promoting creativity becomes essential to achieve worker satisfaction. Hence the need to facilitate different communication channels able to favour informal communication, since communication in all its formats contributes to an identification with the firm, as well as to satisfaction with the work carried out (Qin, 2024). Enhancing satisfaction levels acquires great importance because, even if workers perceive that their productivity increases with telework, unless they feel satisfied, they will refuse to continue working remotely in the future (Prodanova & Kocarev, 2022).

On the other hand, several articles showed a positive link between teleworking and job satisfaction (Vega et al., 2015; Battisti et al., 2022; Illegems & Verbeke, 2004), since teleworkers feel more creative at home than in the office, which in turn increases the degree of satisfaction with their job. According to Golden (2006), telework and satisfaction correlate positively, although there is a point in which, if telework increases, satisfaction decreases, which leads this author to advocate hybrid work. A similar conclusion was reached by Golden & Veiga (2005), for whom teleworking and satisfaction have a U-shaped relationship, or expressed differently, neither no telework at all nor 100 % telework are satisfactory; part-time telework does provide satisfaction, though. Müller & Niessen (2019) also highlighted the virtues of teleworking on a part-time basis, and Windeler et al. (2017) discovered that the exhaustion that working in the office implies due to the multiple social interactions and the difficulty to concentrate can be solved thanks to part-time telework.

Quite a few research works have likewise related satisfaction at telework with women, both in a negative sense for satisfaction (Feng & Savani, 2020), and in positive terms (Imhanrenialena et al., 2021; Da Costa Lemos et al., 2020; Purang et al., 2024).

The same holds true for well-being; the results about the correlation between telework and employee welfare are contradictory: sometimes positive, and on other occasions, negative. Hill et al. (2024) tried to identify which job characteristics were likely to impact on hedonic well-being (e.g. job satisfaction, stress or exhaustion) or on the eudaimonic one (for example, commitment to work, satisfaction with life or work/life balance) and concluded that the connections between virtual work and well-being may be both positive and negative. According to Sandoval-Reyes et al. (2023), teleworking causes stress, which negatively affects middle managers. For Singh et al. (2022), the excessive utilisation of digital platforms induces technostress, increases technological burnout and decreases subjective well-being. Zheng et al. (2023) pointed out that a higher degree of supervision by managers made workers believe that they were not trusted, which in turn led them to feel

more tired and reduced their welfare levels. When faced with such situations, numerous authors propose measures aimed at an enhancement of well-being. Thus, Alvarez-Torres & Schiuma (2022) claimed that, in order to achieve well-being, one must be resilient and adapt to digitalization; that is why Innovative Emotion Management arises as a necessary tool in the process towards dynamic work environments. Toniolo-Barrios & Pitt (2021) recommended "mindfulness" as a means to make it easier to unwind from work, to improve attention at work being focused on tasks, and to enable workers to handle their fatigue. Marikyan et al. (2024) found evidence that smart technology at home favours teleworkers' welfare. George et al. (2022) insisted on the need for organisations to permit frequent contact between employees; if they feel supported, that will improve the sense and interest in life, stress will decrease, and teleworkers' health and well-being will benefit from it all. Similarly, Bouchard & Meunier (2023) highlighted the convenience of adopting managerial practices oriented to showing consideration and favouring flexibility to foster teleworkers' psychological welfare.

Based on the analysis about the various topics and areas, a proposal is made to study all of them using Fig. 2, which shows the area where each topic is located and specifies their mutual relationships. The following section will be devoted to discussing the results through an explanation of Fig. 1.

Conclusion

Discussion

The macroenvironment within which telework is framed was determined by the COVID-19 crisis, the importance of sustainability, macroeconomic changes and certain gender roles which, well into the 21st century, have unfortunately changed still very little on a global level. The COVID-19 crisis not only spurred telework from 2020 onwards, increasing both the volume of this work modality and the research into it, but also proved that telework had come to stay, becoming the new normal (Dhir et al., 2024). The path not only showed achievements, however; as evidenced in this paper, telework has caused positive impacts as well as negative ones. When it comes to sustainability, teleworking has been linked to lesser mobility and, accordingly, to a lower consumption of fossil fuels (Hopkins & McKay, 2019), although some authors mentioned inefficiencies and a higher emission of gases into the atmosphere due to the expansion of urban areas (Marz & Şen, 2022) or the increased energy consumption in the actual households (Fortuna et al., 2023).

The macroeconomic changes associated with teleworking point at a higher vulnerability of some teleworkers, who are true "freelancers" due to the lack of regulation (Anwar & Graham, 2021), as well as of many geographical areas, among them Africa, where telework is almost symbolic (Atiku et al., 2020), which is why it would be necessary to start bridging this digital divide. Nonetheless, a positive part exists in relation to Schumpeterian "creative destruction," according to which teleworking has led to a new economic paradigm which reduces the needs for office costs (Fortuna et al., 2023) and encourages talent retention and attraction (Kumpikaite-Valiuniene et al., 2022). Women could have been direct beneficiaries of telework since this allows them to combine a better job and family responsibilities (Da Costa Lemos et al., 2020), to stay closer to their families (Purang et al., 2024), and even to access executive posts (Yang et al., 2024); however, it has become clear that this is nothing but a way to perpetuate gender roles, insofar as evidence was found that they experienced more stress due to work overload during the pandemic than their male counterparts (Anderson & Kelliher, 2020).

At a MESO level, in each business or enterprise, telework entails changes in different functions of the management process, including communication (Duxbury & Neufeld (1999), which must be clear and frequent between executives and workers, and between the latter too; control (Downes et al., 2023), which needs to rely on checking results
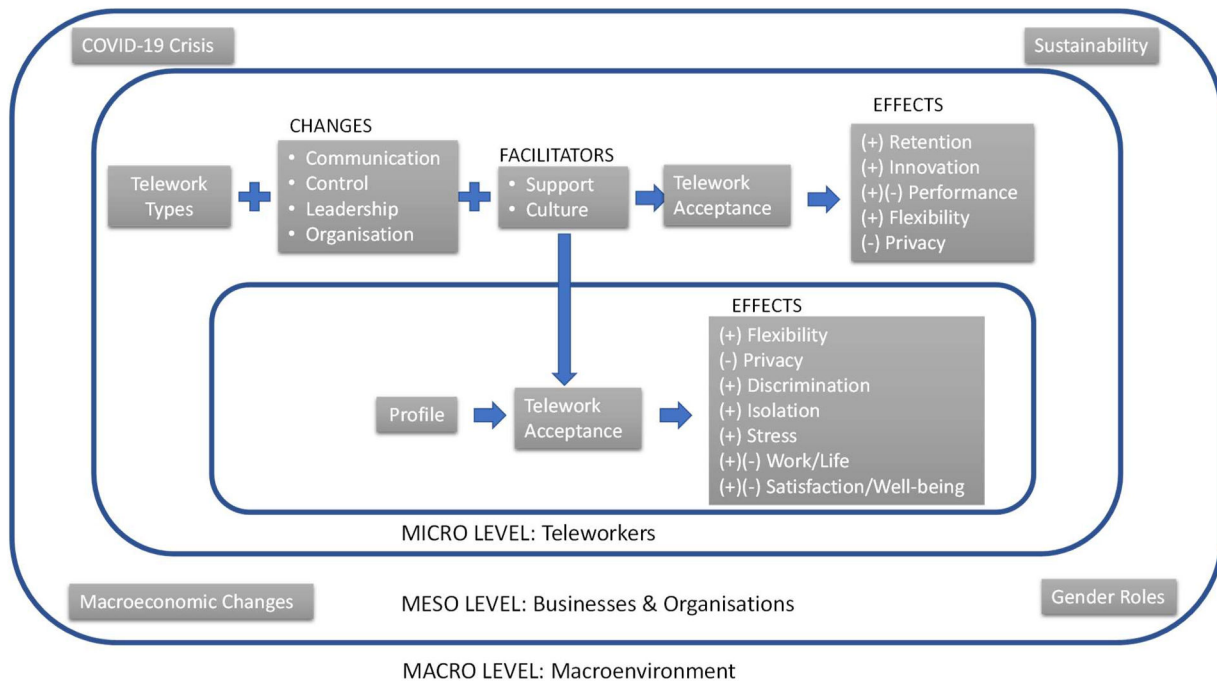
Fig. 2. Telework: Levels, topics and relationships.
Source: Own elaboration

rather than on direct observation; leadership, which has to centre not only on economic performance but also on improving well-being and taking care of teleworkers' mental health and state of mind (Birkinshaw et al., 2021) and the organisational structure, which is evolving towards a digital transformation, and where, especially, a compelling need exists to develop departments or areas entrusted with providing help or support to teleworkers (Klaser et al., 2023). If there is an additional lack of an inclusive, open and collaborative culture (Dhir et al., 2024), problems for the teleworker will arise, among them loneliness and isolation (Oh et al., 2025). Support mechanisms and culture act as facilitators of telework. The acceptance of the latter in the firm may relate to the age of managers, though not to their gender (Lashitew, 2023) and, as explained above, it became widespread during the pandemic, which enabled enterprises and organisations to achieve benefits such as talent retention (Imhanrenialena et al., 2023). It fosters innovation and creativity (Tønnessen et al., 2021), along with flexibility, since it implies, among other things, fewer costs associated with facilities (Fortuna et al., 2023). Nonetheless, the literature has provided ambiguous –positive as well as negative– conclusions (De Menezes & Kelliher, 2011) about the influence exerted by teleworking on organisations' performance, together with clearly negative ones regarding information privacy problems (Posey & Shoss, 2024).

At a MICRO level, with respect to teleworkers themselves, their profile will determine their greater or lesser degree of telework acceptance, resilient individuals who accept ambiguities, responsible employees able to engage in virtual relationships, and even individualistic ones, being those who fit best and show more willingness to embrace this work modality (Khan, 2021; Makarius & Larson, 2017). As explained above, the availability inside the organisation of a structure focused on supporting teleworkers, along with a culture open to teleworking, will favour the acceptance of the latter by employees. Teleworkers can find positive impacts on their activity, among them greater flexibility to choose the place, and on some occasions, even the working hours, or the way in which they carry out their activity (Burleson et al., 2023; Hwang et al., 2024). Nevertheless, telework is likely to increase stress, technostress or work overload (Rangarajan et al., 2022); it may trigger loneliness, isolation and lack of identification with the

organisation (Karacsony et al., 2021), which in turn sometimes leads to a discrimination of telework, reflected, for example, in lesser chances of promotion, or training, due to its low visibility within the enterprise (Bachrach et al., 2023). There are ambiguous consequences as well, since according to some of the examined studies, teleworkers have an opportunity to achieve a better work-life balance (Saura et al., 2022), higher job satisfaction levels and greater well-being (Hill et al., 2024), whereas others refer to potential conflicts between work and their personal or family time (Mallett et al., 2020), in addition to a lower degree of job satisfaction and even health issues (Calderwood et al., 2023).

The model proposed reflects the MACRO factors which surround telework, and just like at the MESO level of enterprises or organisations, teleworking impacts on various management functions, including communication, control, leadership and innovation; furthermore, the firm's culture as well as the existence of support mrchanisms is likely to result in a greater acceptance of telework. As can be seen in Fig. 1, the implementation of teleworking may have both positive and negative effects on organisations. At a MICRO level, the teleworker's profile together with the facilitators, i.e. business culture and support mechanisms, will lead to telework acceptance, which in turn causes beneficial or harmful impacts for the teleworker.

Some of the studies analysed draw upon well-grounded theoretical principles and widely accepted perspectives within the field of business and management to support their hypotheses, objectives, and findings. Many of them apply to our model too, as depicted in Fig. 1. At the MACRO level, Event System Theory helps to explain how events influence organisational behaviour. Jooss et al. (2022), for instance, took advantage of this framework to examine the shift towards remote work among global teleworkers following a critical event—namely, the COVID-19 pandemic. Furthermore, Gender Role Theory, according to which gendered behaviours are socially learned rather than biologically determined, allowed Feng & Savani (2020) to investigate the differing levels of satisfaction experienced by men and women when working from home. Boundary Theory, in turn, was employed by Imhanrenialena et al. (2021) to explore gender roles, suggesting that blurred work/life boundaries may lead to greater conflict for women than for men.

At the MESO level, changes in communication have undergone

examination through the lens of Impression Management Theory (see Barsness et al., 2005), as well as resorting to Organisation-Employee Dialogic Communication Theory –see the study authored by Qin (2024)– which emphasises the importance of two-way, participatory and ethical communication. Social Capital Theory (Tønnessen et al., 2021) has come into play as well. Changes in control systems have likewise been addressed using Impression Management Theory (Barsness et al., 2005), along with Control Theory, which posits that, when remote workers cannot be directly monitored, their outputs become the primary object of control (Groen et al., 2018). Self-Determination Theory (Zhen et al., 2023) has also acquired prominence in this regard. Research on leadership within remote work environments has advocated Participative Leadership (Bhumika, 2020) and Resonant Leadership (Gaan et al., 2024). Leader-Member Exchange Theory (Presbitero & Aruta, 2024) points at leadership being built on individualised, non-uniform relationships whose quality affects performance, satisfaction, and retention levels. Moreover, Klaser et al. (2023) drew on Sociotechnical Systems Theory to show how remote work brings about changes in technology, people, and organisational structures, thereby providing a useful framework to analyse organisational changes derived from teleworking.

The need for telework support mechanisms outlined in our model can be explained through the Job Demands-Resources Model, which suggests that the absence of such mechanisms may result in an imbalance between job demands and resource availability (De la Torre-Ruiz & Ferrón-Vílchez, 2024). As for Telework Acceptance, both the Technology Acceptance Model (Battisti et al., 2022) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Godefroid et al., 2024; Sahut & Lissillour, 2023) will surely prove helpful to deal with this topic.

Regarding the effects of telework at the MESO level, Innovation has been discussed using Social Capital Theory (Tønnessen et al., 2021), while the Flexibility Firm Theory (Chatterjee et al., 2022) made it possible to address Flexibility. The analysis of Privacy has relied on the Theory of Multilevel Information Privacy (TMIP), as demonstrated in the study by Dassel & Klein (2023).

At the MICRO level, teleworker profiles were examined by Parra et al. (2022) by means of the Five-Factor Model of Personality (Neuroticism, Extraversion, Openness to Experience, Agreeableness and Conscientiousness). In turn, Stanek & Mokhtarian (1998) embraced the Social-Psychological Theory of Attitude-Behaviour Relationships —a broad area within social psychology that seeks to explain why individuals do not always act in accordance with their attitudes. Discrimination came under analysis through the Multifoci Fairness Theory (Davis et al., 2023), according to which employees, rather than evaluating fairness in abstract terms, prefer to assess it in relation to multiple foci, such as supervisors, colleagues, or the organisation as a whole. This area has equally been treated via Impression Management Theory (Barsness et al., 2005), where emphasis is laid on the efforts which teleworkers must make so that they can remain visible to others.

Teleworkers' isolation and stress constituted the central topic of the study authored by Trzebiatowski & Henle (2023), in whose opinion, those teleworkers who feel professionally isolated tend to experience burnout. This happens because they need to manage an excessive number of challenges, which ultimately leads to reduced work engagement. These authors claim that the reason can become visible by means of Ego Depletion Theory, according to which self-control or willpower stand out for being limited resources. Stress has also been addressed using the Technostress Model (Battisti et al., 2022) and Boundary Theory, the latter applied by Bhumika (2020) to explain the degree to which blurred boundaries between work and family generate stress and emotional fatigue for teleworkers. Similarly, Khan (2021) implemented the Stress-Strain-Outcome (SSO) model to show how stress levels soared throughout the COVID-19 lockdown period. The Transactional Theory of Stress was additionally resorted to by Loh et al. (2023) and Khedhaouria et al. (2024). Other theoretical frameworks adopted by various authors to analyse stress and technostress in the studies under review include: Social Exchange Theory (Orlandi et al., 2024), the Five-Factor Model of Personality (Parra et al., 2022), Conservation of Resources Theory (Perry et al., 2023; Reizer et al., 2022; Windeler et al., 2017), Leader-Member Exchange Theory (Presbitero & Aruta, 2024), Job Demands-Resources Theory (Sandoval-Reyes et al., 2023), Job Characteristics Theory (Suh & Lee, 2017) and Self-Determination Theory (Zheng et al., 2023).

Work-life conflict or balance was treated by Bhumika (2020) from the perspective of Boundary Theory, seeking to justify why blurred boundaries between work and family life often trigger conflict for teleworkers. In turn, Perry et al. (2023) explored this issue through the lens of Conservation of Resources Theory, while Stavrou & Ierodiakonou (2011) employed the Theory of Planned Behaviour to examine the possibilities for teleworkers to improve their work-life balance, their intentions and behaviours.

Finally, satisfaction and well-being were the main concern in the works of Windeler et al. (2017) —via Conservation of Resources Theory–, Sandoval-Reyes et al. (2023) —based on Job Demands-Resources Theory— and Zheng et al. (2023), who resorted to Self-Determination Theory.

Our review of the literature on telework has clearly demonstrated the growth of this phenomenon as well as of the publications dedicated to it ever since 2020 (COVID-19 crisis), and also shown how from the Management and Business point of view, journals related not only to these two areas but also to Organisation, Psychology, Technological Innovation, Gender and even Ethics have dealt with these themes, thus showing the transversal nature and the manifold implications of this labour format. In addition, telework has been given very different names, although the present study did not deepen into the underlying differences between them. ICT employees, women, knowledge workers, managers and academics, among others, have been subjected to study because they carry out a large part of their professional activity as teleworkers. Research into teleworking has been mostly empirical, quantitative studies based on surveys prevailing over other research modalities. Furthermore, United States, United Kingdom, China and India stand out as the most frequently analysed countries from a telework perspective.

Theoretical implications

The most important theoretical contribution made with this study becomes visible in Fig. 1, where a model is provided that permits to analyse the variables or topics more frequently related to teleworking classified into three levels: MACROLEVEL; ORGANISATION LEVEL, of the enterprise; and INDIVIDUAL LEVEL, of the teleworker. Evidence is found about the existence of a mixed level, since there are variables which can be examined both from the point of view of the actual company of from that of the teleworker, including telework acceptance, flexibility and privacy. This model, devised on the basis of the literature review, allowed us to see that teleworking clearly causes positive impacts, such as staff retention, innovation and flexibility; however, negative impacts for teleworkers also come into play, among them loss of privacy, greater discrimination, stress or isolation, alongside variables with ambiguous values which may result in positive as well as negative consequences, for example, the connections between telework and performance, or between the former and the work/life balance, or even between telework and the level of satisfaction or welfare of the individuals who perform this activity. The model is apt to be used and tested in future research works and includes effects which, because of their ambiguous nature, require much more investigation and comprehension.

A wide range of theories have made it possible to deepen into the various topics incorporated into our model (including Event System Theory, Gender Role Theory, Ego Depletion Theory, Impression Management Theory and Flexibility Firm Theory, among others). This reflects the inherently complex nature of telework, a phenomenon which

encompasses multiple approaches and dimensions within the fields of work, management and business. Consequently, given the breadth and heterogeneity of the factors involved, it seems neither feasible nor appropriate to confine the analysis of telework to a narrow set of theoretical approaches.

The COVID-19 pandemic revolutionised technology adoption and digital transformation. The quick change towards remote work has not only made crisis management easier but also paved the way for innovation and efficiency. This suggests that the pandemic served as a catalyst of technological breakthroughs, with possible long-lasting effects on several economic sectors. Furthermore, world economy faced significant disruptions as a result of the pandemic (Yao et al., 2024), telework implying an alteration of the permanent economic paradigm which affects both work life and industrial structure (Zhang et al., 2022). The COVID-19 crisis has additionally aggravated social inequalities, enlarging the digital divide as well as the economic disparities between the richest segments and the poorest ones, all of which entails the need for inclusive policies and interventionism (Yao et al., 2024). The potential regulations to reduce the inconveniences of flexible work practices might mean eliminating flexibility itself, the main advantage of this labour modality. Despite the numerous arguments in favour of flexible work, we should not forget that it generates vulnerability among individuals, and that it consequently requires protective measures. In any case, a lot still remains to learn about the real price of flexibility, as well as of workers' freedom, in the digital world.

As can be seen, the pandemic did not constitute a necessary requirement for telework; however, it acted as an uninvited guest who rushed the digital transformation of enterprises, and more specifically, the spread of teleworking. It would be advisable to investigate the differences between those employees who embrace telework voluntarily and the ones to whom their company gives no other alternative, since neither every type of work nor all personalities necessarily adapt equally well to this labour modality, and if they do not, it will become necessary to continue delving deeper into support mechanisms that can help to soften the transition.

Analysing the reality of telework in the countries under study enabled us to verify the digital gap that still exists. Telework is absent in numerous countries (or, at least, nobody has examined its presence in them yet), which stresses the need to embark upon further research into this topic, especially when it comes to large regions of Africa and Latin America. Finally, the articles examined did not pay too much attention to the specific technologies used or implemented while studying telework either, with few exceptions: Anwar & Graham (2021) dealt with the Upwork hiring platform; Dassel & Klein (2023) studied Zoom; Higa et al. (2000) focused on e-mails; and Yun et al. (2012) investigated smartphones. Hence the convenience of identifying the types of technologies which are used to a greater or lesser extent, and checking whether they eventually improve or worsen the experience and productivity of teleworking.

Managerial implications

Although this study is a literature review, in our opinion, it has numerous practical implications as well. On the one hand, many of the topics contained in Fig. 1 are unquestionably linked to the Sustainable Development Goals of the 2030 Agenda, and therefore, firms should find ways to implement teleworking so that compliance with those goals is ensured:

- Guaranteeing a healthy life and promoting welfare at all ages. STRESS, TECHNOSTRESS
- Achieving gender equality and empowering all women and girls. GENDER ROLES
- Fostering sustained, inclusive and sustainable economic growth, full and productive employment and decent work for everyone. PERFORMANCE

- Building resilient infrastructures, encouraging inclusive and sustainable industrialisation and enhancing innovation. INNOVATION
- Ensuring the adoption of sustainable consumption and production modalities. SUSTAINABILITY
- Promoting peaceful and inclusive societies for sustainable development, facilitating access to justice for all and creating effective, responsible and inclusive institutions at every level. DISCRIMINATION

Apart from the above, the serious challenges that telework poses for managers concern several stages of the management process, new approaches to control and leadership, widening communication mechanisms and shaping new organisational structures, including support to teleworkers. This study has provided ample evidence of the difficulty involved in achieving a balance between a teleworking format that, in addition to being satisfactory for the teleworker, flexible and efficient, can help enhance innovation and improve business performance. Without a doubt, teleworking is now a more natural way to work among young people —the future professionals and leaders— and consequently, those companies which fail to contemplate its use, at least on a part-time basis, will not only see how their employer brand suffers but also find it very hard to retain their workers or reduce staff turnover levels.

Limitations and future research lines

The most important limitation faced in this study lies in the fact that it is based on a review of the literature about telework from the Management and Business point of view, analysing exclusively academic articles and leaving aside other publication sources such as books or papers presented at conferences. In any case, this limitation is shared by other research works about this theme —among them, those authored by Santana & Cobo (2020) or Soga et al. (2022)— which is why we can say that, at least, the sources examined are characterised by their recognised academic prestige and scientific interest. Important variables in telework such as the need both for employee empowerment and for affiliation, as well the sense of belonging to the enterprise, trust in the teleworker and the engagement of the latter with the firm were not addressed, even though they tacitly underlie the topics seen in this work. To our mind, they can be subjected to examination in order to check their relationship with telework in future literature reviews.

Another limitation has to do with the essentially qualitative nature of our research work, carried out through a content analysis of the articles under study. We did not resort to the software typically utilised in bibliometric studies, and no statistical results are provided either. However, in our view, the depth of our review can compensate for the absence of these other approaches.

The section devoted to theoretical implications mentioned several future research lines, such as focusing on the ambiguous effects collected in Fig. 2 (at the Micro and Meso Levels) to ascertain whether they turn out to be positive or negative for the enterprise or the teleworker (in terms of performance, work/life conflict and satisfaction/well-being, to quote but a few aspects). It would be equally worth considering what organisations and teleworkers themselves can do to ensure that teleworking will always favour performance improvement, acting as a means to strike a balance between work and life, and constituting a source of satisfaction and welfare for the employee. Attention should likewise be paid to identifying both the technologies which are best suited to achieve all that and the countries where telework has not developed so much yet —an undeniable fact— since that will surely help bridge the digital divide on a gradual basis. Hopefully, the necessity to address the connection between teleworking and gender (at the Macro Level) will no longer exist in a few years' time, even though, judging from the contradictory results obtained in the articles examined so far, it seems clear to us that, well into the 21st century, this niche still needs being deepened into.

Conclusion

The main contribution made with this article lies in its proposed comprehensive classification of the most significant telework-related topics structured within a three-level model which encompasses the economic environment, the organisations, and teleworkers themselves. Such an approach enables a nuanced understanding of this phenomenon's complexity across multiple perspectives and impact levels. As shown in this study, it can hardly be denied that telework has become an unavoidable employment mode in the current economic environment –driven by digitalisation and sustainability imperatives– which, however, has certain implications and requires care to ensure that it will eventually prove beneficial to business and management alike.

CRediT authorship contribution statement

Reyes Gonzalez: Writing – review & editing, Writing – original draft, Supervision, Software, Methodology, Investigation, Formal analysis, Conceptualization. **Jose Gasco:** Writing – review & editing, Visualization, Supervision, Software, Methodology, Investigation, Conceptualization. **Juan Llopis:** Writing – review & editing, Software, Methodology, Investigation, Conceptualization. **Susana De Juana-Espinosa:** Writing – review & editing, Visualization, Methodology, Conceptualization.

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