RESEARCH ARTICLE

Telework in public organizations: A systematic review and research agenda

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Abstract

After a relatively slow policy intervention and scholarly take-up, recent developments created the urgency for massive efforts to implement and regulate *telework in public organizations*. We contribute to this debate through a systematic review of 120 studies across disciplines. Findings from our analysis reveal a few established antecedents of telework, including individual characteristics like family responsibilities and expected productivity, but also organizational aspects like supportive leadership, and contextual features like natural disasters. Self-reported productivity and work-life balance stand out as telework's most widely studied outcomes, although evidence is often conflicting when coming to the effects of telework. We present our results by distinguishing pre- and post-pandemic findings. Complementing our systematic review, we engage in a generative exercise by identifying emerging debates on telework in public bureaucracies. We conclude by indicating future research directions.

Evidence for practice

- Telework adoption is predicted by individual characteristics, such as family responsibilities and expected productivity; professional and organizational characteristics, like job control and supportive leadership; and contextual inputs, such as natural disasters, environmental protection efforts, and legal reforms.
- Telework is associated with a decrease in turnover intention and higher job satisfaction, but also consistently appears to be a predictor of professional isolation.
- In order to maintain their capacity to attract skilled workers, public organizations should be prepared to transition from a monolithic, administrative-focused telework model to more flexible telework configurations that can accommodate the diverse characteristics and needs of their employees.

INTRODUCTION

Over the last decades, governments worldwide have explored and often promoted the adoption of telework, that is, an alternative arrangement whereby employees work physically away from their usual workplace using information and communication technologies (ICTs). The concept of telework has been around since the mid-70s, when it was first introduced as telecommuting (Nilles et al., 1976). However, until 2020, its take-up had been relatively slow, with occasional impetus primarily due to policy interventions.

The pandemic has accelerated tremendously the scaling-up of telework in governments, turning it into a mainstream practice, creating the urgency for massive efforts of design and implementation, as well as for the formalization of the rules of the game through regulation and governance (Eurofund, 2022).

Our contribution to such a key priority for governments worldwide is to *map and assess what we know and do not know about telework in public organizations, offering a much-needed baseline*.

By focusing on telework in the public sector, we follow the lead of the well-established strand of scholarship

that, since the seminal article of Rainey et al. ([1976](#)), has argued and demonstrated that there are distinctive features of public organizations that call for caution when importing managerial theories, principles, and techniques from the private sector. The differences between the two sectors should not be overstated. However, there is consensus that at least in specific areas that seem relevant when exploring telework, such as the formalization of personnel procedures (Boyne, [2002](#)), and also the use of information technology (Bozeman & Bretschneider, [1986](#); Rocheleau & Wu, [2002](#)) the two sectors diverge remarkably. This point is corroborated by the research on telework that explicitly compares public and private organizations, concluding that sector matters. Studies show, for example, that it accounts for the extent of the increase in satisfaction (Gastearena-Balda et al., [2021](#)) and well-being (Boulet & Parent-Lamarche, [2022](#); Parent-Lamarche & Boulet, [2021](#)) associated with telework, and the sector moderates the impact of personality traits on work alienation due to remote work (Doberstein & Charbonneau, [2022](#)).

Taken together, these reasons indicate the opportunity to chart a scholarly territory, that is, telework in public organization, that does justice to the differences between sectors and addresses the call for a better understanding of the interplay between contextual features and the way in which telework is implemented (Hartner-Tiefenthaler et al., [2021](#); Taskin & Edwards, [2007](#)), without precluding a fruitful academic dialogue with sector-neutral reviews on telework (Gohoungodji et al., [2023](#); Teiusan & Deaconu, [2022](#)), as well as flexible work solutions (De Menezes & Kelliher, [2011](#)). While these reviews offer precious inputs to advance our research agenda, some of their core assumptions need to be adjusted to public settings. For example, they lump together official and non-official employees (Gohoungodji et al., [2023](#)), or formal and informal working arrangements (De Menezes & Kelliher, [2011](#)), while it can be argued that the boundaries between these solutions are more demarcated in government, and that the workforce has a predominantly official nature.

Another recent scholarly effort has offered a precious contribution in this direction, by way of a bibliometric analysis of studies on smart work in government (Palumbo et al., [2022](#)). We also detect some emerging themes in our discussion, but our review is as encompassing as possible and traces the literature on this topic back to its roots (Callahan, [2010](#)). Therefore, we cast a net wide enough to include studies based on research conducted in public organizations, irrespective of the journals where those studies were published, and without imposing any temporal constraints. Further, unlike previous studies, we engaged in the effort to analyze systematically the main components of telework in public organizations.

In the following section, we account for our methodological choices when designing and carrying out our systematic review aimed at maximizing inclusivity and transparency (Breslin & Gatrell, [2023](#)). We provide an overview of this corpus of literature and its main findings, organized around the main correlates of telework in the public sector, that is, antecedents, effects, telework as a moderator and mediator, and dynamics. Next, considering that this unprecedented acceleration and spread of telework has determined a "sea change" in the public labor market (United States Office for Personnel Management, [2022](#)), we discuss our findings highlighting the pre- and post-pandemic implications of telework and we engage in a generative exercise (Pandey et al., [2023](#)) by identifying emerging debates on telework in public bureaucracies. Finally, we set out our vision for a research agenda and we conclude.
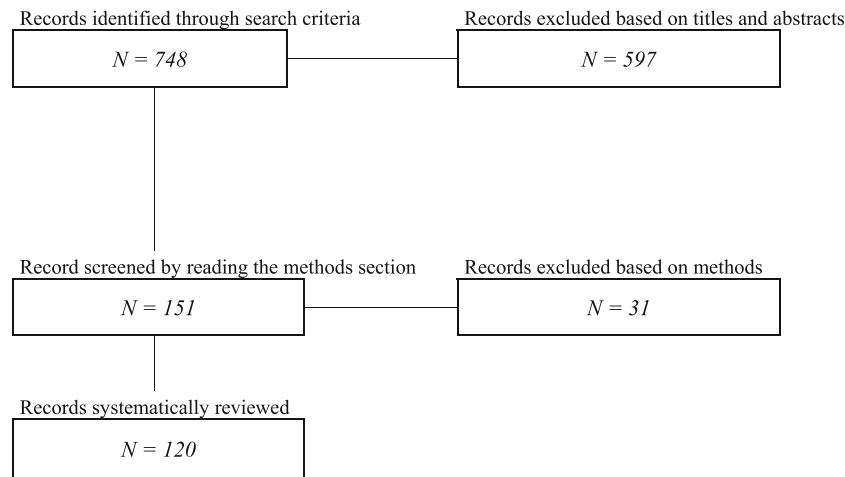
METHODOLOGICAL APPROACH

The scope of our systematic review is to study telework in the context of public organizations to explore relationships with other individual variables, identify missing pieces of information on this phenomenon, and, based on these, set a research agenda. Our systematic review is then broadly driven by the following research question: *how does introducing telework change public organizations?*

We performed and reported our systematic review following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) (Liberati et al., [2009](#)). The checklist is reported in Table [A1](#) of the Appendix. We engaged in a round of consultation with six experts who met at least two of the following criteria: (i) they had already studied telework in public organizations; (ii) they are familiar with HR practices in public organizations; (iii) they are experts of systematic reviews and meta-analyses. We submitted the keywords selection to them, as well as information about the scope of our systematic review, asking for their validation and advice.

We searched for primary studies on the Web of Science, which provides access to multiple databases. In this way, we included both public administration journals and journals from other disciplines. Only papers written in English were considered to be eligible for our systematic review. Keywords were selected to identify manuscripts focused on telework in public organizations. In particular, to be as inclusive as possible in terms of different conceptualizations of telework encountered in the literature, we conducted a preliminary search for articles using not only "telework,*" but also "remote work,*" "telecommuting," "smart work,*" "work from home," "agile work,*" and "hybrid work,*" to be found as a topic term in at least one of the following fields of the article: title, abstract and keywords. In addition, to narrow down the scope of our search, we added "public," "government," and "agenc*" to our keywords. The algorithm adopted is the following:

> (TS = ((telework* OR "remote work*" OR telecommuting OR "smart work*" OR "work from home" OR "agile work*" OR "hybrid work*") AND (public OR government OR agenc*)))

Records identified through search criteria

N = 748

Records excluded based on titles and abstracts

N = 597

Record screened by reading the methods section

N = 151

Records excluded based on methods

N = 31

Records systematically reviewed

N = 120

FIGURE 1 PRISMA flowchart.

AND **LANGUAGE:** (English) AND **DOCUMENT TYPES**: (Article)

In a nutshell, this algorithm returned articles written in English whose title, abstract, or keywords comprised at least one of the labels for telework and related practices and at least one term defining the context as a public organization. This ensured the inclusion of articles focusing on telework (or closely related practices) in a public context. No time restrictions were applied. The last update of this search dates back to May 2023. This process identified 748 primary studies worth considering for an in-depth analysis.

Primary studies were judged as eligible for our systematic review if they met the following criteria: (i) telework or some similar practice, like remote working or telecommuting, was the main object of the study; (ii) public organizations or public employees were the unit of analysis of (at least part of) the study; (iii) the main text (in addition to the title, abstract, or keywords) was in English; (iv) the study had been published in an academic journal at the time of the search. This last criterion was consistent with the strategy of not including any gray literature, which has both advantages and disadvantages that we make explicit in the Discussion section of this article.

For 51 studies, we felt the need for further discussion to ensure consistency in the systematic application of our criteria. Just by way of example, ambiguous cases included empirical studies conflating data from private and public organizations, which we finally opted to exclude because it was impossible to disentangle the data, and authors were not discussing specific results related to public organizations separately. Instead, empirical studies focused on public organizations (e.g., universities) that did not seem to be concerned by the publicness of the context were included because they nevertheless met our criteria.

Following this procedure, we ended up with a final sample of 120 primary studies, 39 of which were from PA journals (i.e., Journal Citation Reports 2021, Clarivate). Figure 1 reports the PRISMA flowchart.

We built a dataset to record relevant information for each of the 120 primary studies. For each study included in the review, we recorded the author(s), year of publication, journal, methods adopted, empirical context, level of government, policy area, and whether data collection was conducted before or after the pandemic outbreak. In addition, we identified the focus of the inquiry of telework in public organizations in each primary study based on the following categories: antecedents, effects, moderator/mediator, and dynamics. For the sake of synthesis, we aggregated results across studies in addition to the in-depth analysis of every single article. As is the case with any research synthesis, especially in emerging and multidisciplinary areas where there is hardly a univocal terminology, reconciling different labels may require judgment calls. To minimize subjectivity, we systematically aggregated variables based on their conceptual closeness. For example, we grouped under family responsibilities such variables as family duties, caring responsibility, and the need to support a family. Furthermore, we offered an explicit illustration of the rationale behind our choice of aggregating separately by antecedents and effects of telework.

SYSTEMATIC LITERATURE REVIEW

Defining telework in public organizations: Terminology and dimensions

We start our journey into this scholarship by offering a terminological clarification of the unit of analysis of our study. We found that most of the studies employ the term telework (84/120). Of these, 30 studies refer exclusively to telework. The remaining 54 employ interchangeably related terms, especially telecommuting, working from home, and working remotely, but also smart work, agile

work, and flexible work, often stating upfront that they will be used as synonyms. However, a few scholars specify how telework does not completely overlap with similar terms, such as telecommuting.[1] This variation of labels does not result in an agreed-upon taxonomy of the different forms of telework. Rather, the studies represent a fairly coherent corpus of literature concerned with a specific phenomenon, that is, forms of work occurring outside the conventional workplace, typically at home or satellite offices (Kim & Lee, 2020). To offer a more rounded understanding of the unit of analysis, we identified four key dimensions that are inevitably impacted by this form of work and that are explicitly addressed or looming in the studies we analyzed. Clearly, space alteration is one key dimension of this form of work, and more specifically, the traditional bureau is the venue from which the remoteness of telework is envisioned. Another dimension, often connected to space alteration, is *time*, that is, the extent to which teleworkers deviate from the typical office hours. The remote arrangements vary from a few hours a week to full-time (Caillier, 2013; Collins et al., 2016), and so does their predictability, with telework performed periodically, regularly, or exclusively (Bae & Kim, 2016). As for the third dimension, *technological medium*, most studies refer to the enabling role of ICTs, which allow teleworkers to perform their activities remotely but still connected to their office. Time, space, and ICTs pose significant logistical and functional challenges in public organizations. They are also intermingled with issues of *autonomy*. While telework is often associated with flexibility and portrayed as an arrangement that "brings work to workers" (Taskin & Edwards, 2007, p. 195), it involves authorization (Bae et al., 2019; Choi, 2018) and agreement (Caillier, 2012). Accordingly, decisions regarding exactly which, where, or when civil servants can telework are based on negotiations (Caillier, 2016).

Evolution and outlets of articles on telework in public organizations

Figure 2 reports the number of publications by year (panel 1) and by distinguishing the same trend between articles published in PA journals and others (panel 2). We observe a sharp increase, less pronounced for PA journals, in the number of publications after the pandemic outbreak, such that two-thirds of the studies included in our sample were published after 2019, although only half of them included data collected after the pandemic outbreak.

Table 1 reports the number of studies by country and by the level of government analyzed. North America and Europe together account for 65% of the studies. The United States is by far the most represented country, with 37 studies (31%). Such concentration of studies raises concerns about the generalizability of findings beyond these geographical areas, even more so within PA journals, in which 20 out of 39 studies (51%) are carried out in the United States. Another potential threat to the validity

of inference stems from the reliance of 13 US studies on the same data source, that is, the Federal Employees Viewpoint Survey (FEVS).

As for the level of government, about 29% of the studies focus on the national level, and the sub-national government level accounts for 26%. For example, these studies include empirical analyses focused on state or municipal government. Other public institutions, including public universities or hospitals, were explored in 25% of the studies. While the level of government was not specified in 10% of the studies, a small group of studies (10%) analyzed telework in public organizations at multiple levels of government.

Among the primary studies included in our synthesis, the most common policy area analyzed is education and research, which accounts for 15%. Other common policy areas include health care and taxation, accounting for 13% and 5% of the studies, respectively. Nonetheless, 20% of the studies focus on multiple types of agencies dealing with different policy areas. This is the case, for example, of studies using FEVS data from different departments of the US Federal Government.

Regarding the types of publications in our dataset (Table 2), we found that 33% of the studies were published in PA journals (i.e., Journal Citation Reports 2021, Clarivate). The remaining 68% of the studies were published in 68 journals (e.g., Sustainability, and New Technology, Work and Employment). These journals span several disciplines, including business, management, education, psychology, and public policy, indicating that public organizations also represent the empirical context in which scholars from various disciplines analyze telework.

All studies in our sample use methods that fall into the four categories reported in Table 2. These studies are empirical; the only two exceptions are given by Dahlstrom (2013), which provides a theoretical study based on a literature review, and Williamson, Pearce, et al. (2022), who develop a review of the non-peer reviewed literature to identify emerging trends in public organizations adopting telework, with a specific focus on the effects of telework on productivity. More than half of the studies (63%) are based on quantitative designs, almost exclusively in the form of observational surveys. We also found 10 mixed-methods studies (8%), most of which use quanti-qualitative designs with a survey followed by interviews or a focus group. The 32 qualitative studies (27% of the total) reveal various methods and approaches, ranging from ethnography to case-study design, based on data from interviews, documents, or observation.

The antecedents of telework

A significant portion of the studies in our sample has focused on the antecedents, that is, the factors that predict, determine, are associated with, or have an impact on telework or its sub-dimensions. Common to these studies
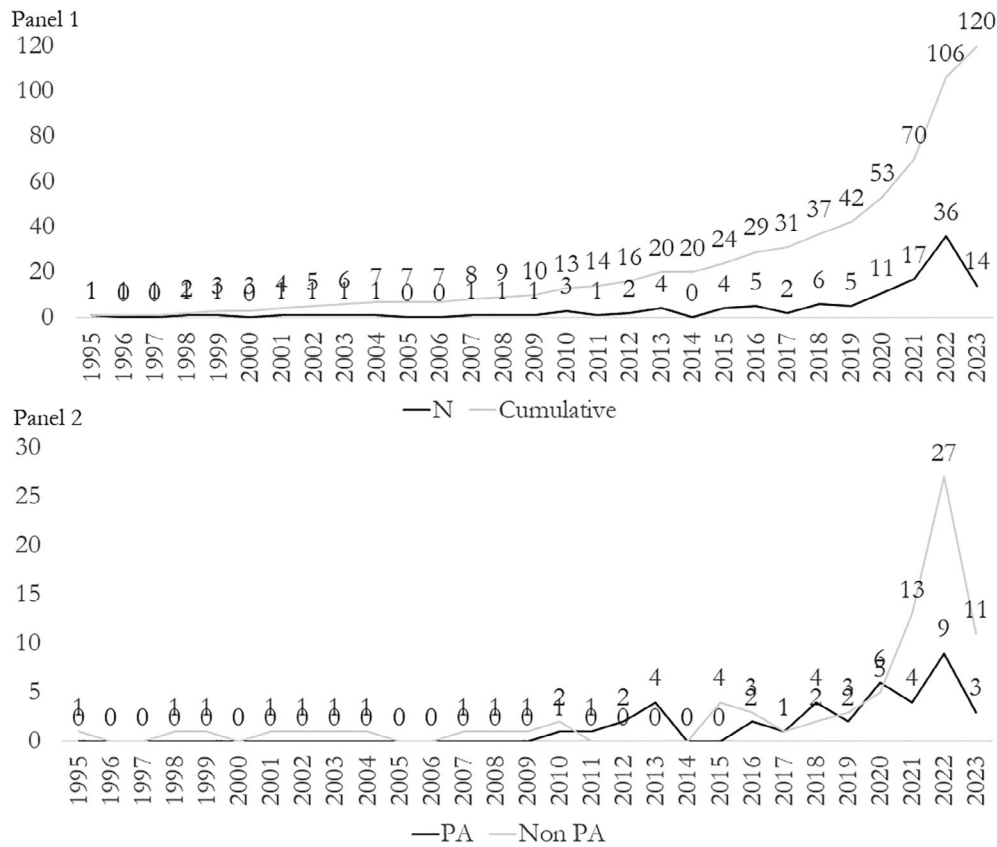
F I G U R E 2   Panel 1: articles over time (cumulative); Panel 2: articles over time (PA vs. Non-PA journals).

is the fact that telework is conceived and operationalized as a dependent variable. As we pointed out in the Methodological section, we aggregated results from studies that use alternative operations for the same construct. To avoid losing information, it is worth pointing out that the dependent variable has been operationalized as participation and abandonment, usage, intention, and satisfaction. One study captures a variation of telework in the form of "regularly taking work home" (Cortis & Powell, 2018). Moreover, two studies examined a leader's authorization of telework as an outcome (Kwon & Jeon, 2017). Table 3 shows the most investigated antecedents and, for each association, reports the total number of estimates alongside details about effect direction. Table A2 in the Appendix includes a complete list of references for each investigated antecedent.

Through our review, we identified 31 antecedents of telework for a total of 141 estimated relationships. The antecedents' variables most frequently investigated are family responsibilities and expected productivity (13 coefficients). The former turns out to be positively associated with telework in seven out of 13 estimates and negatively associated in one. In comparison, five coefficients are not statistically significant. As for the latter, the evidence seems to suggest a positive association (11/13), with one null (Eom et al., 2016) and one negative association (Williamson, Colley, & Foley, 2022). Interestingly, the only study reporting a negative association

includes a comparison between pre- and post-pandemic time, pointing out that concerns about expected lower productivity disappeared after the pandemic experience (Williamson, Colley, & Foley, 2022). It is worth noting that the two most studied antecedents refer to individual characteristics.

In addition to individual features, several frequently studied antecedents pertain to the job or organizational dimensions. For example, the third most investigated antecedent is supportive leadership, which is positively associated with telework in eight out of 12 estimates while insignificant in the remaining four studies. Moving to the job level, job control is another highly investigated antecedent, with 10 estimated coefficients, eight of which are positive, one negative, and one statistically insignificant. It is worth mentioning that some investigated relationships show a remarkable level of consistency across studies. For instance, COVID-19 measures, legal support, environmental protection efforts, and home office space availability are antecedents for which estimates are consistently positive and significant across studies in our sample. At the same time, job unsuitability and marital status are the only variables among our antecedents for which estimates of the association with telework are consistently negative. For some variables, evidence is conflicting, such as tenure and minority. The former refers to years of experience in public

TABLE 1 Number of studies by countries and by level of government.

	N = 120	%
Country		
United States	37	31
Europe	41	34
Italy	7	6
UK	7	6
Germany	6	5
Spain	5	4
Sweden	4	3
Netherlands	3	3
Finland	2	2
Other (Austria, Belgium, Denmark, Estonia, Greece, Switzerland, multi-country[a])	7	6
Australia	9	8
Brazil	7	6
Canada	7	6
Korea	4	3
China	2	2
South Africa	2	2
Other (Costa Rica, Ecuador, India, Indonesia, Iran, New Zeeland, Pakistan, Saudi Arabia, Senegal, Turkey)	10	8
Level of government		
National government level	35	29
Sub-national government level	31	26
Other public institutions	30	25
Multiple levels	12	10
N/A	12	10

[a]This study is based on the Eurofound's European Working Conditions Survey (EWCS). The EWCS is a pan-European survey that provides an overview of working conditions across Europe. Alongside the 27 member countries of the European Union, the following countries are also included: Albania, Montenegro, Norway, Serbia, Switzerland, the Former Yugoslav Republic of Macedonia (FYROM), the United Kingdom, and Turkey.

TABLE 2 Articles by journal and by research method.

	N = 120	%
Journal		
PA journals	39	33
PPM	10	8
ROPPA	9	7
AJPA	4	3
ARPA	3	3
PAR	2	2
PMR	2	2
POR	2	2
PPMR	2	2
Other (CPA, IJPA, IJPSM, IRAS, and JPART)	5	4
Non-PA journals	81	68
Sustainability	6	5
New Technology, Work and Employment	5	4
Frontiers in Psychology	3	3
Other	69	58
Research method		
Quantitative	76	63
Qualitative	32	27
Mixed methods	10	8
Literature review	2	2

organizations and the latter refers to minority status in the US context, as both studies investigating this relationship were conducted in the United States. However, this result should be interpreted with caution in light of the small number.

The effects of telework

Of the 120 studies in our sample, 82 are characterized by a focus on the variables upon which telework has an impact or the variables that depend on or are predicted by telework. To be accurate, as we repeatedly pointed out above, it is essential to specify also how telework has been operationalized as an independent variable. Almost all the studies in our sample use participation as a predictor. Some studies have looked at the

organizational decision to introduce telework, operationalized as "organizational adoption" (Bae & Kim, 2016), "organizational denial" (Caillier, 2013), "eligibility" (Lee & Kim, 2018) when telework is not made available to the whole workforce, or "adopted but not available" (Bae & Kim, 2016), in case the workplace innovation is introduced on paper but not implemented. Other studies employ "satisfaction with telework" (Caillier, 2013, 2016), "telework flexibility," and "standardized technology" (Håkansta, 2022). Importantly, studies conducted during the pandemic deal with "forced telework" (Doberstein & Charbonneau, 2022).

Table 4 shows the most investigated effects and, for each association, reports the total number of estimates alongside details about effect direction. Table A3 in the Appendix includes a complete list of references for each investigated effect.

Through our review, we identified 21 consequences of telework for a total of 149 estimated relationships. The outcome variable most frequently investigated is individual productivity (19 studies), followed by work-life balance (17), turnover intentions (16), job satisfaction (15), stress (10), health (8), and organizational commitment and organizational performance (7). Work-life balance is reported to be positively associated with telework by 11 of the 17 studies investigating this relationship, negative by four studies, and insignificant by two studies.

TABLE 3 Antecedents of telework.

	Positive	Null	Negative
Family responsibilities	7	5	1
Individual productivity	11	1	1
Supportive leadership	8	4	
Cost of commuting	7	2	1
Job control	8	1	1
Female	1	6	
Age	1	5	
COVID measures	6		
Legal/policy support	5		
Technological support	4	1	
Tenure	1	1	3
Subordinates supervision	3		1
Past experience	3		1
Employer relocation	2		1
Environmental protection efforts	3		
Flextime	2	1	
Isolation		1	2
Job unsuitability			3
Cost of business trips	1	1	
Departure time change	1	1	
Education		1	1
Hierarchical culture		1	1
Home office space	2		
Linkage with outside institutions		1	1
Minority	1		1
Marital status			2
Number of vehicles	1	1	
Personal over work priority	1	1	
Self-management	2		
Service orientation		2	
Status		2	

TABLE 4 Effects of telework.

	Positive	Null	Negative
Self-reported individual productivity	12	3	4
Work-life balance	11	2	4
Turnover intentions	1	4	11
Job satisfaction	12	3	
Stress	4	1	4
Health	3	2	3
Organizational commitment	2	5	
Perceived organizational performance	2	3	2
Affective well-being	4	2	
Resilience	6		
Travel costs			6
Professional isolation	5		
Autonomy	3	1	
Organizational communication	1	1	2
Sociability	2		2
Job involvement	2	1	
Managerial challenges	2		1
Perceived fairness	3		
Safety from COVID	3		
Alienation	1	1	
Work engagement		2	

Turnover intention is negatively associated with telework in 11 of the 16 estimates, insignificant in four cases, and positive in one case. Regarding job satisfaction, 12 estimates indicate a positive relationship with telework, whereas three estimates are insignificant. Health appears to be a positive outcome of telework based on three estimated relationships, a negative outcome based on two studies, and unrelated to telework based on three other estimates. In the case of organizational commitment, we find that two estimates are positive and five are null.

For some of the outcome variables, coefficient estimates are convergent across studies. This is the case of travel costs, for which all six estimates indicate a reduction in the presence of telework. Similarly, perceived fairness turns out to be positively associated with telework in all the three analyses of this relationship. On the negative side, telework consistently appears to be a predictor of professional isolation. Turning to the consequences that telework may have on performance, we find conflicting evidence. More precisely, the teleworking status appears to be positively related to individual productivity in 12 out of 19 studies, negatively related to it in four out of 19, and insignificant in the remaining three studies reporting estimates on the same outcome. Concerning organizational performance, two out of seven studies provide a positive estimated effect of telework, other two studies report a negative relationship, and three studies an insignificant relationship.

Telework as a moderator or a mediator

In six studies of our sample, telework acts as a *moderator*. For example, telework can weaken the negative association between family responsibilities discrimination and work satisfaction as well as the intention of leaving the public service (Mullins et al., 2021). Uru et al. (2022) suggest that the positive relationship between work engagement and organizational identification is stronger in public employees working remotely. Telework also moderates the relationship between potential stressors and well-being (Fleming & Brown, 2022; Parent-Lamarche & Boulet, 2021). According to Giauque et al. (2022), telework strengthens the positive association between organizational freedom and employee engagement and perceived

performance. However, the same study also shows that telework exacerbates the negative association between organizational freedom and exhaustion.

Three studies use telework as a *mediator*. Gastearena-Balda et al. (2021) include telework among the mechanisms through which public sector employment status predicts higher job satisfaction. Eom et al. (2016) show that the intention to use smart work has a mediating effect on the relationships between the drivers/constraints and the usage behavior of smart work. Finally, Park and Jae (2022) find that the indirect effect of telework frequency on performance through organizational impact of telework is negative.

The dynamics of telework

We have grouped a final heterogeneous sample of studies that are somewhat concerned with the dynamics of telework. These studies share a broad interest in implementing telework, drawing procedural understandings, enlightening the lived experience in the workplace, and sharing lessons learned. They also have qualitative methods as either exclusive or partial components of the research design.

Several studies point to how telework changes the relational dynamics in the workplace by modifying the spatial and temporal dimensions of work. They warn us about the risk of social disconnection between teleworkers and non-teleworkers (Collins et al., 2016; Mele et al., 2021), as well as with their own families (Jeyasingham, 2020). In parallel, they demonstrate the importance of relationship-oriented behaviors of leaders (Dahlstrom, 2013) and of personal contact and trust as critical factors for team cohesiveness (Green & Roberts, 2010). Finally, while experts often advocate that the introduction of telework is paired with disruptive managerial practices, empirical evidence suggests caution in introducing new control principles in stark conflict with the prevailing conventions, as they may trigger resistance and lead to adoption failure (Taskin & Edwards, 2007). The studies conducted during the pandemic unveil, through procedural analysis, how tacit and hidden practices of managerial control evolve (Hartner-Tiefenthaler et al., 2021), how civil servants reconceptualize workspaces, redefine time and emotions (Morea et al., 2023), and end up employing different heuristics. For example, social caseworkers' reliance on physical cues is offset by documentary analysis (Flügge & Møller, 2023).

Telework after the outbreak of the COVID-19 pandemic

Of the 120 studies included in our review, 60 use data collected prior to the pandemic, 54 studies use data collected after its outbreak, and six of them compare data from pre- and post-pandemic (Lewis et al., 2023; Todisco

et al., 2023; Williamson, Colley, & Foley, 2022). In this section, we focus on all the 60 studies whose data (or part of them) were collected after the outbreak of the pandemic. Tables A4 and A5 in the Appendix report antecedents and effects of telework as identified by these studies, including a complete list of references for each variable. After the outbreak of the pandemic, scholars have primarily focused on the effects of telework, as we report 69 estimated effects compared to 15 estimated antecedents. As for the latter, COVID-19 measures and expected productivity are the most frequently identified antecedents of telework, each accounting for six positive estimates. These are followed by supportive leadership, which has been found to be a positive predictor of telework in three studies.

Turning to the effects of telework in the study conducted during the pandemic or referring to the period of the pandemic, work-life balance is the most investigated variable, and the studies assessing this relationship found a predominantly positive effect of telework (nine out of 12). Six studies investigate the relationship between telework and resilience, finding that the former can facilitate the latter. When focusing on performance, which has been studied at both the individual and the organizational level (in 11 and five studies, respectively), we observe conflicting evidence, which calls for further research. Notably, only a few studies gauge the effect of telework on those outcomes that were widely investigated before the pandemic, that is, job satisfaction (two positive effects) and turnover intentions (two negative effects).

DISCUSSION

The early 1990s marked the beginning of empirical research on telework in government. For the last three decades, policy and academic debates have cast this conduct of work as instrumental to increasing work-life balance for civil servants, innovating and gaining efficiency, and, to a much lesser extent, ensuring administrative resilience. Over time, they offered a view on telework that, far from being naïve, also acknowledged its perils and dark sides (Palumbo et al., 2022). Despite being broadly discussed and promoted, telework did not gain the status of mainstream practice in public organizations until the recent pandemic, which triggered fundamental debates on the nature of telework, on the permanent or temporary nature of its spread, and on how we conceive this workplace practice and its implications.

First, several scholars have recognized the exceptional nature of the accelerated and coercive introduction of full-time mandatory remote work from home, referring to it as COVID-work (see, e.g., Boulet & Parent-Lamarche, 2022; Carillo et al., 2021; Todisco et al., 2023), which needs to be "judged separately from conventional telework" (Kim, 2023, p. 559). We agree with this caveat and highlight that some recent consequences of telework also derive from its

interplay with the pandemic measures. For example, the feeling of safety (Monsey et al., 2023), but also the extreme loss of sociability, exhaustion, increased sense of alienation (Doberstein & Charbonneau, 2022), or the higher level of stress for dependent care associated with remote work should also be gauged in the context of the lockdown and of the government measures enacted to slow down the pandemic curve (Cellini et al., 2021). This point leads us to the question of what comes next.

There is no unanimous consensus on whether the changes brought about by the massive take-up of telework will become the "new normal" in government, and some scholars challenge this widespread conjecture (see Williamson et al., 2020), observing that some organizations may refrain from adopting a working approach that has not been formalized as the regular modus operandi (Cellini et al., 2021). However, elements emerging from the studies conducted after the outbreak and already published, lead us to believe that, in spite of hitches and complications, once telework has been experienced, going back is highly unlikely. Surveys and interviews, confirmed by the analysis of gray literature (Williamson, Pearce, et al., 2022), demonstrate the strong preference of civil servants to sustain this workplace practice (Chow et al., 2022; Singh et al., 2021), which gets as far as to influence their intention to stay (Fleming & Brown, 2022). While pre-pandemic studies often reported a priori resistance to telework of superiors, assumed to be the effect of fears of losing sight and control of their subordinates, original insights come from studies based on the experience of forced remoteness. For example, Williamson, Colley, and Foley (2022) report that superiors experienced an "epiphany" once realizing that, differently from their expectations, employees were as or more productive working from home than in the office. Also at the macro level, from a measure of resilience both in developed (Rivera-Macias & Casselden, 2022) and in developing economies (Singh et al., 2021), telework became an established routine, making its undoing more complex (Ridde et al., 2022).

Finally, we argue that recent scholarship is emerging with a less monolithic conception of telework in government. Moving beyond administrative roles and eligibility (Caillier, 2013, 2016; Lee & Kim, 2018), current debates have started to bring in the individual dimension (Fischer et al., 2023). They did so by adopting a gendered perspective on telework (Monsey et al., 2023), by distinguishing which groups of civil servants "gained or lost" from telework (Williamson et al., 2023), by focusing on personality traits (Doberstein & Charbonneau, 2022), and on the preference to segment or integrate work-life boundaries (Boulet & Parent-Lamarche, 2022). Together with new empirical strategies and more varied sources of data, scholars are also starting to acknowledge some nuances in telework arrangements (Uru et al., 2022; Williamson et al., 2023). These include, for example, the combination of location and frequency of remote work (Williamson et al., 2022), as well as the technological and organizational selection of surveillance technologies that need to strike a balance between intrusiveness and reasonableness (Charbonneau & Doberstein, 2020).

Next, we offer our recommendations to advance further these promising developments.

RESEARCH AGENDA

Most empirical studies are rooted in their historical moment. As countries transition out from COVID-19 related measures, it is essential to generate new insights based on research projects focused on telework per se, that is, conceived and operationalized as an opportunity for public organizations to improve how they function and adapt to societal changes rather than as the epiphenomenon of coercive attempts to preserve the population from a pandemic. At the same time, we cannot simply revamp pre-pandemic research designs. We do not mean to argue that previous findings are to be considered outdated, but it is essential to craft new projects on the basis of the different premises we are and will be likely facing; that is to say, telework will not be mandatory but cannot be relegated to a pilot initiative, either. Fresh research should be based on the assumption that the massive shift toward remote arrangements has altered the attitudes and the skills of individuals—including civil servants and the citizens they serve. Therefore, we call for sustained academic efforts along three main trajectories.

Building on the encouraging signs that emerged from the last wave of studies we reviewed, we invite a more fine-grained understanding of telework and its impacts. We believe that this could be achieved by designing studies that, on the one hand, differentiate among segments of employees, with their needs, situations, and preferences, and on the other hand thoroughly explore configurations, that is, variation and combination, of the main components of telework. Variations of *place and time* determine varying levels of intensity and flexibility, often referred to as hybrid arrangements. These could lead to entirely different responses and preferences of workers and organizations we do not know enough about. This challenges existing knowledge but also assists decision makers dealing with brand-new options and pondering their repercussions, such as the possibility of hiring global public workers in governmental and intergovernmental organizations. *Technological choices* have typically been relegated to debates among practitioners or highly specialized academic communities. While there might be barriers to appreciating the technical details, we call for PA research that engages at least with the implications of adopting different technological arrangements. We submit that this could help us to address also some big questions of public administration. Those include, for example, the boundaries of the private sphere for civil servants when administrations juggle between the accountability

of remote workers and their privacy, or the interaction between governments and transformative digital developments. In this area, artificial intelligence is currently acting as a tremendous connector among remote workers if applied to information sharing, but it is also expected to redefine the meaning of work in ways we do not know yet.

Studies could also zoom out from the mere conduct of work in public bureaucracies to broader governance themes. We need to better understand the implications of telework for service delivery, and, in turn, how the *interaction with citizens* shapes remoteness. Additional studies that look at the differences between *public and private*, but also public and nonprofit organizations when implementing telework, could inform policies that are context-specific. We could also investigate how telework can act as a measure for leapfrogging and *capacity building* in the numerous institutional settings, both in developed and developing countries, where resources and expertise to serve their citizens adequately are scarce. Moreover, our multidisciplinary review included studies that examined in-depth elements of telework that are, and should be, outside the scholarly compass of public administration, such as specific health implications, travel behaviors of civil servants, or energy consumption in public buildings. We invite PA scholars not to fully ignore these findings, which could help in achieving a multidimensional analysis of telework, considering that governments worldwide are expected not only to be efficient but also to orchestrate a sustainable society.

Finally, we would like to share some methodological recommendations that cut across the three trajectories. The review of existing scholarship revealed conflicting evidence on telework antecedents and effects, and we posit that at least in part, this could be attenuated with specific precautions. Internal validity concerns arise from the prevalence of correlational designs, which are prone to omitted variable bias, reverse causality, and history threats, with the latter generated by events—such as COVID-19 in our case—occurring concurrently with the treatment of interest. Greater diversification in data sources, currently dominated by a limited number of surveys (e.g., FEVS), would bolster external validity and mitigate the risk of common source bias. To strengthen construct validity, scholarship should overcome excessive fragmentation in conceptualization and operationalization, and rely increasingly on objective measures rather than self-reports. Such advancements in research practices, together with complementing the high number of observational quantitative studies with both qualitative and experimental approaches, would greatly improve the validity of inference. They would also facilitate the mainstreaming of telework in parallel academic conversations, including—but not limited to—HR, motivation, performance management, accountability, learning, digital government, and administrative burden in PA.

CONCLUSIONS

We started our journey addressing the broad question of how telework changes public organizations. Considering that this is an emerging topic, we decided to pursue a broad and inclusive review without imposing temporal or disciplinary constraints.

Our stocktaking exercise clarified terminology and defined essential dimensions, namely alterations in space, time, technological medium, and autonomy. It allowed us to map the evolution and define the scope of this multidisciplinary scholarship, systematically ascertaining the individual, organizational, and contextual features conducive to adopting telework in government, positive and negative consequences, and dynamics connected to its implementation, before and after the pandemic. We discussed the current and more promising academic debates triggered by the exceptional take-up of telework since the COVID-19 outbreak, trying to disentangle permanent from contingent elements, and sharing our vision on a research agenda on telework in public organizations that, besides methodological recommendations, calls for an exploration of its different configurations and its potential bearing on society.

DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available online in the Harvard Dataverse, at https://doi.org/10.7910/DVN/INZJ9R.

ENDNOTE
[1] Taskin and Edwards (2007) and Kwon and Jeon (2017) acknowledge that telework and telecommuting are used interchangeably but argue that telework provides not only workplace but also time flexibility, thus being "a more evolved and broader family-friendly program than telecommuting" (Kwon & Jeon, 2017, p. 240). In a similar vein, Simpson et al. (2003) clarify that in the empirical setting they explore telework is not a substitute for (tele)commuting: "it is undertaking work that has been made available through new communication technologies, and for which commuting to a traditional workplace is not an option" (2003, p. 115).

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APPENDIX

TABLE A1 PRISMA checklist.

Section/topic	#	Checklist item	Reported on page #
Title			
Title	1	Identify the report as a systematic review, meta-analysis, or both	p. 1
Abstract			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number	p. 1
Introduction			
Rationale	3	Describe the rationale for the review in the context of what is already known	pp. 1–2
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS)	pp. 1–2
Methods			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number	n.a.
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale	pp. 2–3
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched	pp. 2–3
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated	pp. 2–3
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis)	pp. 2–3
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators	n.a.
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made	p. 3
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis	n.a.
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means)	n.a.
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis	n.a.
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies)	n.a.
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified	n.a.
Results			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram	p. 3
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations	pp. 3–8
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12)	n.a.

TABLE A1 (Continued)

Section/topic	#	Checklist item	Reported on page #
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot	n.a.
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency	n.a.
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15)	n.a.
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16])	n.a.
Discussion			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., health care providers, users, and policy makers)	pp. 8–9
Limitations	25	Discuss limitations at study and outcome levels (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias)	pp. 8–9
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research	pp. 8–9
Funding			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review	n.a.

TABLE A2 Antecedents of telework, with references.

	Positive	Null	Negative
Family responsibilities	7 (Cortis & Powell, 2018; Kwon et al., 2021; Mannering & Mokhtarian, 1995 (x4); Mokhtarian & Bagley, 1998)	5 (Eom et al., 2016 (x2); Kwon et al., 2021; Mannering & Mokhtarian, 1995 (x2))	1 (Mannering & Mokhtarian, 1995)
Individual productivity	11 (Alsulami et al., 2022; Arvola & Kristjuhan, 2015; Brown et al., 2016; Eom et al., 2016; Mannering & Mokhtarian, 1995; Mokhtarian & Bagley, 1998; Ortiz-Lozano et al., 2022; Toscano & Zappala, 2021 (x2)); Wells 2001; Williamson et al., 2022)	1 (Eom et al., 2016)	1 (Williamson et al., 2022)
Supportive leadership	8 (Bae et al., 2019; Brown et al., 2016; Kim, 2022; Kwon et al., 2021; Kwon & Jeon, 2020; Wells et al., 2001; Williamson et al., 2022 (x2))	4 (Cortis & Powell, 2018; Eom et al., 2016 (x2); Kwon et al., 2021)	
Cost of commuting	7 (Arvola & Kristjuhan, 2015; Cortis & Powell, 2018; Eom et al., 2016; Kwon et al., 2021 (x2); Mokhtarian et al., 2004; Wells et al., 2001)	2 (Arvola 2015; Eom et al., 2016)	1 (Mokhtarian & Bagley, 1998)
Job control	8 (Cortis 2018; Kim 2022; Kwon 2021 (x2); Mannering & Mokhtarian, 1995 (x3); Mokhtarian & Bagley, 1998)	1 (Mannering & Mokhtarian, 1995)	1 (Mannering & Mokhtarian, 1995)
Female	1 (Kwon & Jeon, 2020)	6 (Andrade Vargas et al., 2021; Cortis & Powell, 2018; Eom et al., 2016 (x2); Kwon et al., 2021 (x2))	
Age	1 (Andrade Vargas et al., 2021)	5 (Arvola & Kristjuhan, 2015; Bae et al., 2019; Cortis & Powell, 2018; Kwon & Jeon, 2020; Ortiz-Lozano et al., 2022)	
COVID measures	6 (Chow et al., 2022; Liebermann et al., 2021; Matias et al., 2023; Pelizza & Pupo, 2020; Ribeiro et al., 2020; Williamson et al., 2020)		
Legal/policy support	5 (Brown et al., 2016; Kwon & Jeon, 2017; Kwon et al., 2021 (x2); Kwon and Jeon, 2020)		
Technological support	4 (Eom et al., 2016; Mannering & Mokhtarian, 1995 (x2); Simpson et al., 2003)	1 (Eom et al., 2016)	
Tenure	1 (Kwon & Jeon, 2020)	1 (Mannering & Mokhtarian, 1995)	3 (Andrade Vargas et al., 2021; Bae et al., 2019; Cortis & Powell, 2018)
Subordinates supervision	3 (Cortis & Powell, 2018; Kwon & Jeon, 2020; Mannering & Mokhtarian, 1995)		1 (Mannering & Mokhtarian, 1995)
Past experience	3 (Kwon et al., 2021; Mannering & Mokhtarian, 1995; Ortiz-Lozano et al., 2022)		1 (Brown et al., 2016)
Employer relocation	2 (Eom et al., 2016; Mokhtarian & Bagley, 1998)		1 (Eom et al., 2016)
Environmental protection efforts	3 (Kwon and Jeon, 2017; Mannering & Mokhtarian, 1995; Mokhtarian & Bagley, 1998)		
Flextime	2 (Alsulami et al., 2022; Mokhtarian & Bagley, 1998)	1 (Mannering & Mokhtarian, 1995)	
Isolation		1 (Eom et al., 2016)	2 (Eom et al., 2016; Mokhtarian & Bagley, 1998)
Job unsuitability			3 (Eom et al., 2016; Wells et al., 2001)
Cost of business trips	1 (Eom et al., 2016)	1 (Eom et al., 2016)	
Departure time change	1 (Mannering & Mokhtarian, 1995)	1 (Mannering & Mokhtarian, 1995)	
Education		1 (Kwon & Jeon, 2020)	1 (Andrade Vargas et al., 2021)
Hierarchical culture		1 (Kwon et al., 2021)	1 (Kwon et al., 2021)

(Continues)

TABLE A2 (Continued)

	Positive	Null	Negative
Home office space	2 (Arvola & Kristjuhan, 2015; Mannering & Mokhtarian, 1995)		
Linkage with outside institutions		1 (Kwon et al., 2021)	1 (Kwon et al., 2021)
Marital status			2 (Kwon 2021 et al., (x2))
Minority	1 (Kwon & Jeon, 2020)		1 (Bae et al., 2019)
Number of vehicles	1 (Mannering & Mokhtarian, 1995)	1 (Mannering & Mokhtarian, 1995)	
Personal over work priority	1 (Mannering & Mokhtarian, 1995)	1 (Mannering & Mokhtarian, 1995)	
Self-management	2 (Mannering & Mokhtarian, 1995; Mokhtarian & Bagley, 1998)		
Service orientation		2 (Kwon et al., 2021 (x2))	
Status		2 (Eom et al., 2016 (x2))	

Note: The number of estimated effects might be different from the total number of studies included in parentheses. The main reason is that a study can include more than one estimate of the same effect. For example, Williamson and colleagues (2022) estimate two positive relationships between supportive leadership and telework, both before and after the outbreak of the pandemic. That is why the number of positive estimated relationships between supportive leadership and telework is 8, but there are only 7 studies between parentheses. A complete list of references is available online in the Harvard Dataverse, at the link provided in the data availability statement.

TABLE A3 Effects of telework, with references.

	Positive	Null	Negative
Self-reported individual productivity	12 (Chow et al., 2022; da Silva & da Rosa, 2022; de Velasco et al., 2023; Houghton et al., 2018; Lee & Gasco-Hernandez, 2022; Mahler, 2012; Metselaar et al., 2022; Park & Jae, 2022; Suhariadi et al., 2023; Vega et al., 2015 (x2); Williamson et al., 2023)	3 (da Silva & da Rosa, 2022; Fischer et al., 2022; Solis, 2017)	4 (Kahn et al., 2022; Suhariadi et al., 2023; Varotsis et al., 2022; Williamson et al., 2023)
Work-life balance	11 (Au et al., 2022; Chinyamurindi, 2022; de Velasco et al., 2023; Hornung & Glaser, 2009; Lee & Gasco-Hernandez, 2022; Lopes Junior & Daniel, 2022; Monsey et al., 2023; Morea et al., 2023; Seinsche et al., 2022; Todisco et al., 2023; Williamson et al., 2023)	2 (Heiden et al., 2021; Solis, 2017)	4 (Hall et al., 2022; Ortiz-Lozano et al., 2021; Palumbo, 2020; Williamson et al., 2023)
Turnover intentions	1 (Lee & Gasco-Hernandez, 2022)	4 (Caillier, 2016; Caillier, 2018; Choi, 2018; Lee & Kim, 2018)	11 (Caillier, 2013 (x2); Caillier, 2018; Choi, 2018; Choi, 2020 (x2); Lee & Kim, 2018; Leider et al., 2023; Lewis et al., 2023; Mahler, 2012; Monroe & Haug, 2021)
Job satisfaction	12 (Bae & Kim, 2016 (x2); Caillier, 2013; Fischer et al., 2022; Hornung & Glaser, 2009; Kim & Lee, 2020; Kwon & Kim-Goh, 2022; Lee & Kim, 2018; Lee & Gasco-Hernandez, 2022; Lewis et al., 2023; Mahler, 2012; Vega et al., 2015)	3 (Bae & Kim, 2016; Kim & Lee, 2020; Lee & Kim, 2018)	
Stress	4 (Fischer et al., 2022; Lee & Gasco-Hernandez, 2022; Thulin et al., 2019; Xie, 2023)	1 (Heiden et al., 2020)	4 (Arvola & Kristjuhan, 2015; Mahler, 2012; Seinsche et al., 2022; Xie, 2023)
Health	3 (Arvola & Kristjuhan, 2015; Ortiz-Lozano et al., 2021; Rodríguez-Nogueira et al., 2021)	2 (Arvola & Kristjuhan, 2015; Heiden et al., 2020)	3 (Hall et al., 2022; Houghton et al., 2018; Kahn et al., 2022)
Organizational commitment	2 (Caillier, 2013; Hornung & Glaser, 2010)	5 (Caillier, 2012; de Vries et al., 2019 (x2); Kim & Lee, 2020 (x2))	
Perceived organizational performance	2 (Lee & Gasco-Hernandez, 2022; Zhang & Hu, 2023)	3 (Au et al., 2022; Fischer et al., 2022; Lopes Junior & Daniel, 2022)	2 (Lee & Hong, 2011; Menichelli, 2021)
Affective well-being	4 (Alsulami et al., 2022; Anderson et al., 2015; Boulet & Parent-Lamarche, 2022; Chow et al., 2022)	2 (Boulet & Parent-Lamarche, 2022 (x2))	
Resilience	6 (Hall et al., 2022; Leverton et al., 2022; Mayers et al., 2023; Ridde et al., 2022; Rivera Macias & Casselden, 2022; Todisco et al., 2023)		
Travel costs			6 (Cellini et al., 2021; Houghton et al., 2018 (x2); Todisco et al., 2023; Wells et al., 2001 (x2))
Professional isolation	5 (de Vries et al., 2019 (x2); Håkansta, 2021; Jeyasingham, 2019; Leverton et al., 2022)		
Autonomy	3 (Hornung & Glaser, 2009; Jeyasingham, 2019; Seinsche et al., 2022)	1 (Thulin et al., 2019)	
Organizational communication	1 (Lee & Gasco-Hernandez, 2022)	1 (Fischer et al., 2022)	2 (Hall et al., 2022; Todisco et al., 2023)
Sociability	2 (Hornung & Glaser, 2010; Lee & Gasco-Hernandez, 2022)		2 (Cellini et al., 2021; Rivera Macias & Casselden, 2022)
Job involvement	2 (Caillier, 2012; Morea et al., 2023)	1 (Caillier, 2013)	
Managerial challenges	2 (Chinyamurindi, 2022; Williamson et al., 2023)		1 (Williamson et al., 2023)
Perceived fairness	3 (Lee & Kim, 2018 (x2); Lewis et al., 2023)		
Safety from COVID	3 (Chinyamurindi, 2022; Greene, 2023; Monsey et al., 2023)		
Alienation	1 (Doberstein & Charbonneau, 2022)	1 (Doberstein & Charbonneau, 2022)	
Work engagement		2 (de Vries et al., 2019 (x2))	

Note: The number of estimated effects might be different from the total number of studies included in parentheses. The main reason is that a study can include more than one estimate of the same effect. For example, Bae and Kim (2016) estimate a positive effect of two measures of telework, namely organizational adoption of telework and worker participation in telework, on job satisfaction. That is why the number of positive estimated effects of telework on job satisfaction is 12, but there are only 11 studies between parentheses. A complete list of references is available online in the Harvard Dataverse, at the link provided in the data availability statement.

T A B L E   A 4   Antecedents of telework post-pandemic, with references.

	Positive	Null	Negative
COVID measures	6 (Chow et al., 2022; Liebermann et al., 2021; Matias et al., 2023; Pelizza & Pupo, 2020; Ribeiro et al., 2020; Williamson et al., 2020)		
Individual productivity	5 (Alsulami et al., 2022; Ortiz-Lozano et al., 2022; Toscano & Zappala, 2021 (x2)); Williamson et al., 2022		
Supportive leadership	3 (Kim, 2022; Williamson et al., 2022 (x2))		
Age	1 (Andrade Vargas et al., 2021)		1 (Ortiz-Lozano et al., 2022)

Note: The number of estimated effects might be different from the total number of studies included in parentheses. The main reason is that a study can include more than one estimate of the same effect. For example, Williamson and colleagues (2022) estimate two positive relationships between supportive leadership and telework, both before and after the outbreak of the pandemic. That is why the number of positive estimated relationships between supportive leadership and telework is 3, but there are only 2 studies between parentheses. A complete list of references is available online in the Harvard Dataverse, at the link provided in the data availability statement.

T A B L E   A 5   Effects of telework post-pandemic, with references.

	Positive	Null	Negative
Work-life balance	9 (Au et al., 2022; Chinyamurindi, 2022; de Velasco et al., 2023; Lopes Junior & Daniel, 2022; Monsey et al., 2023; Morea et al., 2023; Seinsche et al., 2022; Todisco et al., 2023; Williamson et al., 2023)		3 (Hall et al., 2022; Ortiz-Lozano et al., 2021; Williamson et al., 2023)
Self-reported individual productivity	5 (Chow et al., 2022; da Silva & da Rosa, 2022; de Velasco et al., 2023; Suhariadi et al., 2023; Williamson et al., 2023)	2 (da Silva & da Rosa, 2022; Fischer et al., 2022)	4 (Kahn et al., 2022; Suhariadi et al., 2023; Varotsis et al., 2022; Williamson et al., 2023)
Resilience	6 (Hall et al., 2022; Leverton et al., 2022; Mayers et al., 2023; Ridde et al., 2022; Rivera Macias & Casselden, 2022; Todisco et al., 2023)		
Affective well-being	3 (Alsulami et al., 2022; Boulet & Parent-Lamarche, 2022; Chow et al., 2022)	2 (Boulet & Parent-Lamarche, 2022 (x2))	
Perceived organizational performance	1 (Zhang & Hu, 2023)	3 (Au et al., 2022; Fischer et al., 2022; Lopes Junior & Daniel, 2022)	1 (Menichelli, 2021)
Health	2 (Ortiz-Lozano et al., 2021; Rodríguez-Nogueira et al., 2021)		2 (Hall et al., 2022; Kahn et al., 2022)
Stress	2 (Fischer et al., 2022; Xie, 2023)		2 (Seinsche et al., 2022; Xie, 2023)
Managerial challenges	2 (Chinyamurindi, 2022; Williamson et al., 2023)		1 (Williamson et al., 2023)
Organizational communication		1 (Fischer et al., 2022)	2 (Hall et al., 2022; Todisco et al., 2023)
Safety from COVID	3 (Chinyamurindi, 2022; Greene, 2023; Monsey et al., 2023)		
Alienation	1 (Doberstein & Charbonneau, 2022)	1 (Doberstein & Charbonneau, 2022)	
Job satisfaction	2 (Fischer et al., 2022, Lewis et al., 2023)		
Sociability			2 (Cellini et al., 2021; Rivera Macias et al., 2022)
Travel costs			2 (Cellini et al., 2021; Todisco et al., 2023)
Turnover intentions			2 (Leider et al., 2023, Lewis et al., 2023)

Note: A complete list of references is available online in the Harvard Dataverse, at the link provided in the data availability statement.