

1. Dictionary

Teleworking

By Anne Aguiléra (Public works civil engineer)
06 March 2019

The remote performance of a salaried activity outside of the company's premises, at home or in a third place during normal working hours and requiring access to telecommunication tools.

Short definition

The remote performance of a salaried activity outside of the company's premises, at home or in a third place during normal working hours and requiring access to telecommunication tools.

Long definition

Telework is a way for an employee to perform all or part of a given professional activity outside of the company's premises and by means of telecommunication tools. These tools ensure that the worker is able to access all required resources to perform their job (both internal and external to the company), but also that they can be contacted and that their employers can implement ways of remotely supervise their activity.

While telework is commonly associated with working from home, the very broad framework defining this form of activity gives rise, in the academic literature, to many interpretations and typologies. They reflect more or less extensive conceptions of this form of work according to various criteria, from the frequency and place(s) of telework to the inclusion (or not) of self-employed workers ¹.

Working remotely, somewhere other than on the company's premises, can take various forms. For a long time, telework was only possible from home (so that people commonly assume that telework means working from home) or from a place near home that is equipped for remote working, that may be owned or rented by the employer and may be shared with other companies: remote/satellite offices, telecentres (internal or external to the company), coworking spaces (however these are far more regularly used by freelancers than by salaried employees), etc. But in recent years, the rise of mobile or nomadic work, supported by the development of portable communication devices with Internet access, has led people to consider new forms of telework which are varied in nature but which all occur in third places ² that were not originally or exclusively designed for professional activity: coffee shops, airport lounges, trains, hotel rooms, etc. ³ Some researchers explicitly exclude these forms of remote working from the term telework, reserving this term for work performed remotely in fixed locations (home, telecentres, etc.), but the confusion remains. There is still debate as to whether these definitions of telework should include freelance work (freelancers are still the main users of coworking spaces ⁴), one off telework, informal telework (the type of work which is not written into employment contracts), work performed outside of legal working hours (evenings and weekends, for example), or digital nomadism, that blends remote work and frequent travel ⁵. More rarely, some typologies include tele-management (when employees and managers within the same company are in two different locations) and itinerant work (work performed on the customers' premises). The telework considered here concerns salaried telework performed at home or in a dedicated third place (telecentres, offices rented by the employer, coworking spaces).

Telework was not well developed before the pandemic, especially regular telework (at least one day a week), but it has since progressed significantly. This evolution has created new expectations and questions for organisations (labour productivity, recruitment policies, real estate strategies), employees (work-life balance, lower transport costs, residential choices) and public authorities (energy and environmental impacts, land use planning).

Development

Telework in the law

Policy-makers are mainly interested in telework that refers to work performed in fixed private places (notably at home). This kind of telework dates back to the early 1970s, a time when the development of ICTs was beginning to be viewed as a way of reducing physical travel⁶. The goal was (already) to address the recurrent problems of rush hour congestion in major cities caused by commuter routes (this is where the term telecommuting, which is often used as a synonym for teleworking, comes from). Telework was also considered as a means by which to fight the “desertification” of low-density areas, which were too far removed from major employment areas to attract working individuals⁷. In France, the government⁸ actually supported several programs to establish telecentres in rural areas in the early 2000s.

With the development of digital tools⁹ and especially the Covid-19 pandemic, during which it very quickly became a tool to limit the spread of the virus, telework once again entered the public debate. While up to half of all employees teleworked at some point during the lockdowns (such as in Australia, France and the United Kingdom), numbers then fell. However, telework is expected to remain at a significantly higher level than before March 2020 in many countries around the world¹⁰. While the goals of improving transport conditions and reducing traffic nuisances (pollution, accidents, noise, etc.) still form part of the rationale, the emphasis is now also (perhaps even mainly) on benefits in terms of quality of life (fewer commutes, more flexibility in accommodating private and professional activities), productivity (reduced stress, fatigue, time wasted in transport and absenteeism) and energy savings for companies.

1. Around the world

Prior to the pandemic, many countries had already implemented laws in favour of telework, sometimes with financial incentives, as in Germany. In the United States, the government created a federal agency to encourage telework in the public sector. In Europe, the implementation of telework within companies is provided for by the framework agreement of 16 July 2002, but which allows each Member State to choose whether or not to adopt this. In most cases, the legal framework applies only to teleworking in fixed locations and sometimes only to home-based telework.

2. In France

In France, the European framework agreement of 2002 was enshrined by the national interprofessional agreement (ANI) of 19 July 2005, signed at the time only by the social partners of the private sector. In 2012, teleworking was included in the Labour Code as part of the Law on the Simplification of the Legislation and Reduction of Administrative Procedures. In the 2005 agreement, as in 2012, the principles of telework were twofold: telework must be voluntary (the employee can request to work remotely and the employer – public or private – has the right to refuse) and reversible (the employee can choose to stop teleworking at any time).

A new legal framework was established in the law of 29 March 2018. The goal was to encourage greater use of telework by loosening its conditions, which were deemed too cumbersome and hindered

its development. Telework can now be occasional, depending on professional and personal needs. Finally, the reason for basing telework on a collective document that is negotiated with unions or the Social and Economic Committee (Comité social et économique, or CSE) was to legitimise or even “normalise” this kind of work and change the existing work cultures that tend to value “presenteeism.” The three main changes made in 2018 were as follows:

- Defining the conditions for telework, which are now expressed by a collective agreement negotiated with the unions or a specific charter after consultation with the Social and Economic Committee. They are no longer included in the employment contract or in an addendum to it.
- Occasional telework can be recognised by collective agreement or a charter, or even by a simple written formalisation between the employer and the employee (which is adapted for VSEs and SMEs).
- The employer's refusal must now be justified. As such, while telework can theoretically be applied to all professional categories, the company can decide which positions cannot be performed remotely.

All employers have obligations towards their employees. They must:

- Provide information on the uses and restrictions of IT equipment and tools made available to teleworkers.
- Establish time slots during which teleworkers must be available.
- Organise annual reviews on working conditions.
- Provide information on non-teleworking positions within a teleworker's field of competence and prioritise that employee's application if they wish to resume a non-teleworking position.

It is not mandatory for an employer to meet the costs of teleworking, unless of course the company has an agreement or a charter that provides for it. There are therefore two options: the employer can reimburse actual expenses or pay a fixed teleworking allowance. Companies benefit from a tax exemption for these expenses. A bill is currently being discussed to create a voucher scheme that would give teleworkers access to coworking spaces and third places near their home. Finally, the Labour Code does not define places where telework is practiced. However, this is a sensitive subject, as the employer is required to ensure the health and safety of his or her employees during teleworking hours.

In the public sector, teleworking was introduced later, in the law of 12 March 2012. The conditions of its implementation in the various administrative departments of the three public services were specified in a framework agreement signed on 13 July 2021. It provides for a flat-rate allowance, set at €2.50 per teleworking day (recently increased by 15% to account for the increase in energy costs), without a trigger threshold, and with an annual limit of €220. This measure does not prevent employers from taking further steps to improve the teleworking conditions of civil servants, such as through the ergonomics of their home workstation.

An unexpected and rapid development due to the pandemic

To fight the spread of the Covid-19 pandemic in 2020, many countries around the world implemented lockdowns of varying lengths and degrees, during which a large part of economic activity was maintained through telework. In most European countries, over half of all employees who worked from home during the pandemic had never teleworked before ¹¹.

In France, before the pandemic, even though nearly two-thirds of employees with office jobs had said that they were in favour of teleworking ¹², only 3% of employees regularly practiced it ¹³ (i.e. at least one day a week) and just 4% did so occasionally. The situation was similar in Europe

Notes

14 in 2019, around 5% of employees teleworked regularly from home (stable since 2009), and 9% did so occasionally (+4 points since 2009). However, there were differences between Member States relating to the proportion of jobs that were considered suitable for telework (mainly within knowledge-intensive sectors), to the restrictions of the rules in place (for example, in some countries, public sector jobs were not eligible), to differences in managerial cultures, but also to how telework is defined (sometimes including occasional telework or nomadic workers ¹⁵).

The response to the Covid-19 pandemic gave rise to a large-scale experiment in teleworking from home, often performed 5 days a week. Although it was experienced differently depending on the employees and the organisations, this unprecedented experiment clearly revealed many advantages to this form of work organisation ¹⁶. Very quickly, it became obvious that there would be no going back, and that employees would demand the possibility of teleworking one or more days a week (although not the whole week), which would therefore represent a major challenge for many organisations, both private and public, in the years to come. Except during a pandemic or other exceptional circumstances however, the employer may not impose telework on an employee if this is not provided for in their employment contract. The refusal to telework therefore does not constitute grounds for dismissal.

Although it is still too early to draw definitive conclusions, many surveys show a very significant increase in telework since March 2020 in Europe and many countries around the world compared to pre-pandemic times ¹⁷. In France, a DARES ¹⁸ report indicates that ten times more company agreements on telework were signed in 2021 than in 2017, with a noticeable expansion in small companies. These agreements specify in particular the accessibility conditions of telework, which may be technical or linked to the nature of the position or employment contract.

Hybrid work, which involves alternating between being present on company premises and remote work, is likely to continue beyond the pandemic and become firmly entrenched in organisations, involving changes in many areas such as recruitment, management, and the location and layout of office spaces ¹⁹.

Since the pandemic, in addition to the significant increase in the proportion of employees performing telework, the rhythm of telework has also become more intense, with a decline in occasional telework and informal telework (which is not included in the employment contract or provided for in a company agreement). Telework has also spread to new business sectors, and to functions within organisations and territories that rarely used it before the pandemic, even though significant differences still persist between countries, as well as between large cities and other regions.

In France, figures from 2021 show that on average, 22% of employees reported performing at least one day of telework per week. This proportion is highest among executives: 55% compared to 17% among qualified employees. There are also significant differences between sectors, with business services leading the way (46%), followed by public administration (32%) and education (22%). The share of regular teleworking (at least one day a week) increases along with the size of the company, from 9% in companies with fewer than 10 employees to 36% in those with more than 250 employees. As before the health crisis, telework is more widespread among employees living in Paris (56%) and the rest of Île-de-France (36%) than in the country's other regions, where the practice of telework decreases along with the density of the hometown (10% in very sparsely populated municipalities). Regarding weekly schedules, 44% of employees reported teleworking 5 days a week, 20% between 3 and 5 days, 18% between 2 and 3 days (a figure that rises above 50% for employees living in Île-de-France) and finally 18% less than 2 days. Since then, the number of employees teleworking 5 days a week has likely fallen dramatically, and the next survey will provide updated figures.

The places where telework is performed are poorly documented, except in Île-de-France where two recent surveys show a strong prevalence of homes (and, in Île-de-France, of second homes ²⁰), which is where 90% of employees in question mainly telework ²¹.

The desire to telework in third places in the future is also not fully understood. A recent survey shows that 45% of people teleworking from home in the Paris region are in favour of teleworking in a coworking space near their home, especially if the employer finances the associated cost²². Other surveys are more measured in their assessment and predict that coworking spaces in France will continue to be mainly used by freelancers²³.

New perspectives and challenges

1. For organisations

The long-term implementation of hybrid forms of work, that alternate between remote work and presence on the employer's premises, poses many challenges for organisations,²⁴ especially when it comes to decisions on the modalities of telework: job categories concerned, number of teleworking days per week, level of flexibility (i.e. are teleworking days set for a given period or up to the employee?), financial compensation for home-based telework or to support teleworking in third places. In France, the latest agreements on regular telework reveal that the most common formula is two teleworking days per week, generally with one fixed and the other flexible²⁵. Last but not least, implications in terms of sensitive data protection and liability issues in the event of accidents during teleworking hours pose significant challenges for employers.

Most importantly, entrenching hybrid work as a viable long-term practice implies adapting how work is organised and especially how it is managed. The challenge here is to maintain team cohesion and employees' ability to work together and innovate, while guaranteeing the right to disconnect, integrating new employees, maintaining a common culture, and preventing psychosocial risks (isolation, burn-out, etc.) and disengagement. The development of telework also poses new challenges in terms of maintaining (or even increasing) productivity²⁶. Telework can open up new opportunities to widen the employee recruitment pool, in a context where some professional fields have more positions to fill than workers to hire.

Finally, the challenges of developing hybrid work intersect, in the medium and long term, with those related to workspace management. Indeed, the expansion of telework may give rise to questions concerning how many square meters of office space are needed to carry out a given activity and accessibility needs. Large monofunctional business districts (such as La Défense) seem to have lost much of their attractiveness. Ultimately, certain business categories may have to reconsider their choice of location (urban versus peri-urban, centre versus periphery), although it is not possible to identify a particular trend at this stage. The development of desk sharing (flex office) and open spaces should also be seen as a possible consequence of the rise of telework, especially since these are pre-pandemic trends. More broadly, the organisation of hybrid work will necessarily require questions to be asked about the suitability of the company premises for the tasks performed there: in a hybrid system, presence at the workplace often involves more time spent in formal or informal exchanges between employees than previously. In this context, telework might speed up the development of collaborative workspaces and other convivial areas, with the goal of also encouraging some employees - those who wish to remotely work entirely from home²⁷ - to "come back to the office." Finally, the growth of telework raises the question of whether companies should authorise (or even finance) teleworking in third places (such as coworking spaces). The share of employees regularly teleworking and the practical modalities of remote work make these various issues more or less complex depending on the organisation, and have an impact on the responses they provide.

2. For employees

The recent pandemic, suddenly forcing millions of employees to work remotely from home, generally strengthened people's adherence to new lifestyles that comply with the desire to lower their uses of

carbon-emitting mobilities and allow them to better balance their private and professional lives, as shown by surveys conducted in several countries during the strictest phase of the lockdown ²⁸.

Even before the pandemic, employees who teleworked regularly (at least one day a week) appreciated the time they saved by not commuting, the lower stress they felt as a result (for instance, not being worried about missing their bus), and the greater organisational flexibility they enjoyed between private and professional activities ²⁹. Teleworking can also allow workers to slow down their pace of life and live more locally, which are desires that were more or less diffusely expressed even before the pandemic ³⁰. These arguments in favour of telework are especially espoused by people with long commutes or young dependent children, and among these two categories, women highlight them more often than men because of persistent inequalities in the distribution of domestic and family chores within couples, including in two income households ³¹. Telework, when performed for several days a week, can also enable some workers to fulfil plans to move further away from their workplace ³². The exodus from large cities, although still without real grounds, is a fear expressed by many actors, especially in the Paris region.

Teleworking on a regular basis has several disadvantages: there are fewer barriers between the teleworker's private and professional lives; teleworkers can feel some spatial and temporal confusion as a result of not leaving home all day; and they can struggle to set boundaries to their work. Many surveys have also found that teleworking often leads to an increase the number of hours worked each week. The loss of contact with management and colleagues and, more generally, of social ties, or even the lack of physical activity from less commuting, are also mentioned ³³.

These different effects, both positive and negative, vary according to characteristics such as age, gender, income, household composition and residential characteristics, but also to the practical modalities of telework, in particular in terms of weekly frequency ³⁴.

3. For public authorities

On a collective level, we need to properly assess the socio-economic benefits of telework, so that we can determine how and when to implement measures that help organisations and employees to practise it.

These questions also intersect with wider issues of spatial planning. They cover multiple aspects, ranging from the "desertification" of monofunctional neighbourhoods (such as business districts) which has significant consequences on local trade, to new opportunities to develop towns that were formerly commuter towns or mainly comprised of second homes, which are now revived during the day (or at certain times of the week or year) by teleworkers. Telework can also help revitalise territories that are far away from urban centres by restoring some residential attractiveness, with consequences for real estate prices that will have to be carefully considered, bearing in mind the risk of making it even harder for low-income workers to access housing. Finally, there is renewed interest in the opportunity to finance or contribute to the financing of third places, which provide teleworkers with a workstation near home ³⁵. Although this is still quite rare, employees and companies in France are beginning to show some interest ³⁶, as third places can be a way to overcome some of the pitfalls associated with home-based telework (isolation and data protection, in particular).

For public authorities, pushing the development of telework can also have environmental benefits. Yet on this point, the scientific literature is extremely cautious, even sceptical, which means a renewed examination is needed given the new post-pandemic context. The effects on the energy consumption of buildings, which would decrease with smaller office spaces, are likely to be modest or even non-existent. On the one hand, any decrease remains theoretical at this stage, at least in the very short term, even though the sharp increase in energy costs, if it continues, could lead organisations to reconsider the issue. On the other hand, the overall energy balance of teleworking must take into account the

growth in consumption stemming from working remotely from home. Recent estimates in the United States and Japan already found very modest energy savings, amounting to less than 0.4% and only reaching 1% at best in the case of an employee teleworking four days a week³⁷. A synthesis of several dozen academic studies on the matter also concluded in 2020 that energy gains related to home-based telework were low³⁸.

The effects on mobility are another major aspect, with high expectations in terms of reduced traffic and transport congestion at rush hours³⁹. However, the scientific literature has long warned that the processes at work are complex, and that such effects are modest due to numerous rebound effects on the mobility of teleworkers and non-teleworkers alike⁴⁰. While the debate is ongoing, with renewed interest given how the current context is redefining telework and mobility (especially in ecological and economic terms), research prior to the pandemic as well as the few works that have since taken it into account, invite us to consider several dimensions. First, the extent to which telework decreases commuting depends directly on the volume of teleworkers who are teleworking full days and the number of full days of telework performed per week.

Second, the impacts on congestion also depend on these parameters, but here, unlike with the number of trips, half-day teleworkers can help mitigate this problem, as they are often able to adapt their schedules in order to travel outside of rush hours. Other aspects must also be taken into account. On the one hand, the effects on traffic will vary depending on which days of the week are teleworked, and on the regularity of this distribution from one week to the next. Yet, for now, this distribution is unbalanced: we know, for example, that telework is more often practised on Fridays than on other days. Furthermore, teleworking days vary in many organisations, depending on the employees' professional and personal contexts. On the other hand, the effects on congestion may be different depending on the transportation network, and whether or not teleworkers maintain their previous modal practices. Overall, most of the post-pandemic literature simultaneously envisages an increase in car use by suburban teleworkers, and an increase in active modes (walking, cycling) in urban centres⁴¹. Fewer commuting trips or less congestion are not the only reasons given for this evolution of transport modes. The arguments also focus on new habits created by the pandemic, which favoured cars and active modes due to fears of infection and the deterioration of public transport services. The question of modal change, and in particular the switch to private cars, also arises for non-teleworkers, who upon seeing the reduced traffic on certain networks may come to reconsider their transport choices, at least on certain days of the week. For example, there have been documented cases of single-car two worker households in which one partner will start driving to work on days when the other is teleworking (as the car is not being used).

Thirdly, and more broadly, when questioning mobilities, we cannot ignore the effects of telework on family mobility and on non-work-related trips (shopping, leisure, etc.). While the former remains poorly documented, the latter is not. Empirical work shows that, on average, teleworkers travel more for non-work-related reasons than non-teleworkers, in some cases cancelling out the gains made by not commuting, especially for those who have several regular teleworking days per week. Indeed, the time saved from not commuting is partly reinvested in personal or family activities, some of which involve travel (for example, going to the gym). As a result, on average, teleworkers perform more trips outside of work on a daily basis than non-teleworkers. And even if these trips are generally short because they are close to home, many studies carried out before and since the beginning of the pandemic have found that the environmental gains made by reducing the number of commuting trips are strongly counteracted or even cancelled out by this increase in mobility for non-professional reasons. In fact, the balance may even be negative if telework encourages the use of more polluting modes of transport than those previously used. The characteristics of individual and family situations, particularly in terms of place of residence (density, presence of shops and services) and travel conditions (public transport, cycle paths, walkability, etc.), are decisive and produce significant differences between teleworkers.

These findings raise the question of the long-term effects of telework on the residential strategies of households with at least one teleworker⁴². While talk of an urban exodus seems inappropriate⁴³ at

this stage, the literature points towards intensified peri-urbanisation, for two main reasons: on the one hand, teleworkers may want more spacious housing to better suit the needs of home-based telework, and on the other, they may wish to have greater access to services and activities around their home if their presence at the workplace is only required a few days a week⁴⁴. However, the well-known corollary of peri-urbanisation is a greater dependence on private cars, both for work and non-work purposes. Several studies have already found that the average home-to-work distance of those who telework one or more days a week is higher than that of other workers⁴⁵. The national survey on Mobility and Lifestyles presented before the lockdown in 2020 by the Mobile Lives Forum⁴⁶ confirms that when telework is practised less than two days a week, it significantly increases the distances and travel times of French workers, both for their professional activities and for other purposes. The increase in the number of inter-urban employees - i.e. those whose urban area of work differs from their urban area of residence - cannot be ruled out either, especially since it is part of a dynamic that began several decades ago. The effects are potentially positive if commuting is by train. But there is room for doubt, as current figures highlight strong car use in France, which was reinforced by negative perceptions of public transport during the pandemic.

4. For research

The new post-pandemic context calls for us to look at how regular teleworking is integrated into organisations, as well as its social, economic and environmental effects. First of all, this practice is growing significantly and will probably become permanent, even though the vast majority of employees do not telework, or at least not regularly. Secondly, compared to pre-pandemic times, new categories of employees (less qualified, belonging to smaller companies, but also outside of Île-de-France) are now using it. While overlooked in previous research, they now form a significant proportion of regular teleworkers. Thirdly, during the pandemic's peaks, teleworking allowed many employees to discover whether or not teleworking is for them, but also to gain experience on how to integrate it into their professional practices and family organisation, especially for those who had never experienced it before. In other words, the large-scale experiment of the pandemic likely led to employees and families integrating telework into their lifestyles much quicker than would otherwise have been the case. Adaptations have already taken place or are under consideration. Others will follow, particularly in terms of residential choices. Finally, and fourthly, many other factors (climate change awareness, the war in Ukraine, rising energy prices, etc.) have made the post-pandemic context a novel one, also from the standpoint of the prevailing social norms regarding work-life balance and travel practices. The links with teleworking still need to be studied.

From the standpoint of mobility, it is now accepted that telework does not simply eliminate all commuting trips. But interdisciplinary studies need to rethink how the different contexts (individual, professional, residential) and conditions for implementing telework within companies (such as the number of days and their flexibility) interact with the spatial and temporal organisation of activities and with their associated mobilities (non-work-related, work-related, modal choice, etc.) of teleworkers and the members of their household (the scale of which is poorly documented). Gender disparities and the links between peri-urbanisation and mobility must be reconsidered in light of this new context. Also, the links between telework and the mobility practices of non-teleworkers (including modal choice) remain a blind spot in current knowledge.

Finally, spatial issues, which are relatively absent from the pre-pandemic literature on telework, need more attention. New questions are emerging about the impacts on residential choices, and therefore on urban, peri-urban and rural territories. But research must also better consider the effects of hybrid work on workplaces: not only the traditional office space but also third places. In this respect, the health crisis may have initiated (or accelerated) a thought process within companies on the financial benefits that could be derived from significantly expanding telework. In theory, companies could make substantial land and real estate savings by reducing their office space or relocating to less central areas. We should also consider how office spaces will be redesigned, following (or not) trends that began several years ago (with the concepts of open spaces and flex offices, in particular). All these transformations,

and their consequences on residential choices and employee mobility, are challenges for research to address in the coming years.

The lessons gleaned from future works on these different topics will provide useful data for modelling the effects of telework on mobility and will inform the debates on what measures public officials in transport and planning should use to encourage businesses and individuals to behave in a more sustainable way. In particular, the effects of regular and frequent telework on the reorganisation of non-professional activities around and nearby the home could serve as a lever to launch, in sparsely populated areas, transport and planning policies that favour a tightening of living zones and the development of low-carbon mobility. The Mobile Lives Forum has already launched a research project on the new challenges of decarbonising work-related mobility ⁴⁷.

Bibliography

- Aguiléra A., Lethiais V., Rallet A. et Proulhac L. (2016a). Le télétravail, un objet sans désir ? *Revue d'Économie Régionale & Urbaine*, (1), p. 245-266.
- Aguiléra, A., Lethiais, V., Rallet, A., & Proulhac, L. (2016b). Home-based telework in France: Characteristics, barriers and perspectives. *Transportation Research Part A: Policy and Practice*, 92, 1-11.
- Aguiléra A., Guillot C. et Rallet A. (2012). Mobile ICTs and physical mobility: Review and research agenda. *Transportation Research. Part A: Policy and Practice*, 46(4), 664-672.
- Aguiléra, A., & Terral, L. (2021). Le télétravail réduit-il les déplacements? *Urbanisme*, (419), 36-37.
- Ajzen, M., & Taskin, L. (2021). The re-regulation of working communities and relationships in the context of flexwork: A spacing identity approach. *Information and Organization*, 31(4), 100364.
- Antolín, M. L., Rodríguez-Ruiz, Ó., & Menéndez, J. F. (2022). A time after time effect in telework: an explanation of willingness to telework and self-reported productivity. *International Journal of Manpower*, forthcoming.
- Athanasiadou, C., & Theriou, G. (2021). Telework: Systematic literature review and future research agenda. *Heliyon*, 7(10).
- Bailey D. E. et Kurland N. B. (2002). A review of telework research: Findings, new directions, and lessons for the study of modern work. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 23(4), p. 383-400.
- Bozzi, A. (2022). Space and mobility of digital nomads. A literature review. *Proceedings of the European Transport Conference*.
- Cerqueira, E. D. V., Motte-Baumvol, B., Chevallier, L. B., et Bonin, O. (2020). Does working from home reduce CO2 emissions? An analysis of travel patterns as dictated by workplaces. *Transportation Research Part D: Transport and Environment*, 83, 102338.
- Chambel, M. J., Carvalho, V. S., & Carvalho, A. (2022). Reinventing the Workplace: The Adoption of Telework in Post-COVID Times. In *Organizational Management in Post Pandemic Crisis* (pp. 53-63). Springer, Cham.
- Cohen, M., Stanik, L. (2022). Digital Nomads, Mobile Lives Forum
- Cohen-Blankshtain G. et Rotem-Mindali O. (2016). Key research themes on ICT and sustainable urban mobility. *International Journal of Sustainable Transportation*, 10(1), p. 9-17.
- Criscuolo, C., Gal, P., Leidecker, T., Losma, F., & Nicoletti, G. (2021). The role of telework for productivity during and post-COVID-19: Results from an OECD survey among managers and workers.
- DARES (2019). Quels sont les salariés concernés par le télétravail ? *DARES Analyses n°51*, 11 p.
- DARES (2022). Les accords d'entreprise portant sur le télétravail : quels usages durant la crise sanitaire ? *DARES Analyses n°57*, novembre, 8 p.
- E Silva J. D. A. et Melo P. C. (2018). Does home-based telework reduce household total travel? A path analysis using single and two worker British households. *Journal of Transport Geography*,

73, p. 148-162.

- EU Joint Research Center (2020). Telework in the EU before and after the COVID-19: where we were, where we head to, 8 p.
- Feildel, B., Le Nadant, A. L., & Krauss, G. (2021). Le coworking, une vraie révolution pour la mobilité des travailleurs? The Conversation.
- Figueira, A., Costa, S.R.R. (2022). Flexible arrangements as a trend on the future of work: a systematic literature review. *Revista S&G* 17, 2.
- France tiers-lieux (2021). Nos territoires en action, 13 p.
- Gabrielli, L., & Fiorentino, S. (2022). Guest editorial: Co-working spaces after COVID-19. The differences between sharing office spaces in urban cores and peripheral locations. *Journal of Property Investment & Finance*, 40(5), 445-447.
- Guerin, T. F. (2021). Policies to minimise environmental and rebound effects from telework: A study for Australia. *Environmental Innovation and Societal Transitions*, 39, 18-33.
- Hook, A., Sovacool, B., et Sorrell, S. (2020). A systematic review of the energy and climate impacts of teleworking. *Environmental Research Letters*, vol. 15, n° 9.
- Hostettler Macias, L., Ravalet, E., & Rérat, P. (2022). Potential rebound effects of teleworking on residential and daily mobility. *Geography Compass*, 17 p.
- Hynes M. (2014). Telework isn't working: a policy review. *The Economic and Social Review*, 45(4, Winter), p. 579-602.
- IPR (2022). Le télétravail s'installe durablement. Note rapide n° 930, 6 p.
- Kitou E., et Horvath A. (2008). External air pollution costs of telework. *The International Journal of Life Cycle Assessment*, 13(2), p. 155.
- Larson W. et Zhao W. (2017). Telework: Urban form, energy consumption, and greenhouse gas implications. *Economic Inquiry*, 55(2), p. 714-735.
- Larson W. et Zhao W. (2017). Telework: Urban form, energy consumption, and greenhouse gas implications. *Economic Inquiry*, 55(2), p. 714-735.
- Lila P. C. et Anjaneyulu M. V. L. R. (2017). Networkwide Impact of Telework in Urban Areas: Case Study of Bangalore, India. *Journal of Transportation Engineering. Part A: Systems*, 143(8), 05017004.
- Matthews H. S. et Williams E. (2005). Telework adoption and energy use in building and transport sectors in the United States and Japan. *Journal of infrastructure systems*, 11(1), p. 21-30.
- Melo, P. C. (2022). Will COVID-19 hinder or aid the transition to sustainable urban mobility? Spotlight on Portugal's largest urban agglomeration. *Regional Science Policy & Practice*.
- Melo P. C. et E Silva J. D. A. (2017). Home telework and household commuting patterns in Great Britain. *Transportation Research Part A: Policy and Practice*, 103, p. 1-24.
- Mettling B. (2015). "Transformation numérique et vie au travail", Rapport à l'attention de Madame la ministre du Travail, de l'Emploi, de la Formation professionnelle et du Dialogue social, septembre.
- Mobile Lives Forum (2020a). Survey on the impacts of the lockdown on French people's mobility and lifestyles, April
- Mobile Lives Forum (2020b). National Survey on « Mobility and Lifestyles », 48p.
- Mobile Lives Forum and Obsoco (2022). Does teleworking allow people to leave Île-de-France ?
- Munch, E., Belton-Chevallier, L. et Simon, G. (2022). Politiques de mobilité durable et décélération. Rapport pour le compte de l'ADEME.
- Naor, M., Pinto, G. D., Hakakian, A. I., & Jacobs, A. (2021). The impact of COVID-19 on office space utilization and real-estate: a case study about teleworking in Israel as new normal. *Journal of Facilities Management*, vol. 20, n°1, pp. 32-58.
- Nikolaeva, A., Lin, Y. T., Nello-Deakin, S., Rubin, O., & von Schönfeld, K. C. (2022). Living without commuting: experiences of a less mobile life under COVID-19. *Mobilities*, 1-20.
- OECD (2021). Teleworking in the Covid-19 pandemic : Trends and prospects, 21 septembre, 12 p.
- Oldenburg R. (1991). *The great good place*, New York, Marlowe and Company.
- Perrin, J., Aguiléra, A. et Terral, L. (2022). Workplace diversification, workspace flexibilisation and company strategies post pandemic. Lessons from a Paris Region case study. *Proceedings of the TWR Conference (Milan)*, pp. 226-236.

- Perrin J. et Aguiléra, A. (2017). Stratégies et enjeux de la localisation d'espaces de travail temporaires dans six grandes gares françaises. *Territoire en mouvement. Revue de Géographie et d'Aménagement*, (34).
- Pew Research Center (2022). Covid-19 pandemic continues to reshape work in America, february, 26 p.
- POPSU Territoires (2022). Exode urbain? Petits flux, grands effets. Rapport pour le Réseau Rural Français et le PUCA, 12 p.
- Rubin, O., Nikolaeva, A., Nello-Deakin, S., et te Brömmelstroet, M. (2020). What can we learn from the COVID-19 pandemic about how people experience working from home and commuting? Centre for Urban Studies, University of Amsterdam. Available at: <https://urbanstudies.uva.nl/content/blog-series/covid-19-pandemic-working-from-home-and-commuting.html>
- Salgueiro L., Puel G. et Fernandez V. (2017). Localisation et effets des télécentres dans les territoires ruraux : le cas du Cantal (France). *Cybergeog: European Journal of Geography*.
- Storhaye P. et Bouvard P. (2013). *Le travail à distance : Télétravail et nomadisme, leviers de transformation des entreprises*, Dunod.
- Tahlyan, D., Said, M., Mahmassani, H., Stathopoulos, A., Walker, J., & Shaheen, S. (2022). For whom did telework not work during the pandemic? understanding the factors impacting telework satisfaction in the US using a multiple indicator multiple cause (MIMIC) model. *Transportation Research Part A: Policy and Practice*, 155, 387-402.
- Taskin, L. (2021). *Télétravail, organisation et management : enjeux et perspectives post-Covid*. Regards Economiques (Université Catholique de Louvain), 8 p.
- Wöhner, F. (2022). Work flexibly, travel less? The impact of telework and flextime on mobility behavior in Switzerland. *Journal of transport geography*, 102, 103390.

1 Aguilera et al., 2016a.

2 Oldenburg, 1991; France Tiers, 2021.

3 Perrin and Aguilera, 2017.

4 Feildel et al., 2021.

5 Bozzi, 2022; Cohen and Stanik, 2022.

6 Aguilera et al., 2012.

7 Salgueiro et al., 2017.

8 Through the Interministerial Delegation for Regional Planning and Regional Attractiveness (In French: Délégation interministérielle à l'aménagement du territoire et à l'attractivité régionale, DATAR)

9 Mettling, 2015.

10 OECD, 2021.

11 EU Joint Research Center, 2020.

12 According to a study by Ipsos and Revolution@Work in 2016 (https://www.ipsos.com/sites/default/files/files-fr-fr/doc_associe/ipsos_pour_hopscotch_revolutionwork_rapport_de_resultats_26102016.pdf)

13 DARES, 2019.

14 EU Joint Research Center, 2020.

15 Aguilera et al., 2016b.

- 16 Chambel et al., 2022; Mobile Lives Forum, 2020a; Tahlyan et al., 2022.
- 17 OECD, 2021; Pew Research Center, 2022.
- 18 DARES, 2022.
- 19 Naor et al., 2021; Perrin et al., 2022.
- 20 Mobile Lives Forum, 2022.
- 21 Mobile Lives Forum and Obsoco, 2022; IPR, 2022.
- 22 IPR, 2022.
- 23 Feildel et al., 2021.
- 24 Ajzen and Taskin, 2021; Figueira and da Costa, 2022; Taskin, 2021.
- 25 DARES, 2022.
- 26 Criscuolo et al., 2021.
- 27 Perrin et al., 2022.
- 28 Mobile Lives Forum, 2020a; Rubin et al., 2020.
- 29 Athanasiadou and Theriou (2021).
- 30 Mobile Lives Forum, 2020a ; Munch et al., 2022.
- 31 Athanasiadou and Theriou, 2021; Nikolaeva et al., 2022.
- 32 Mobile Lives Forum, 2022.
- 33 Nikolaeva et al., 2022.
- 34 Antolin et al., 2022; Kitou and Horvath, 2008; Larson and Zhao, 2017; Lila and Anjaneyulu, 2017.
- 35 Gabrielli and Fiorentino (2022).
- 36 IPR (2022).
- 37 Matthews et Williams, 2005.
- 38 Hook et al., 2020.
- 39 Aguilera and Terral, 2021.
- 40 Guérin, 2021; Hostettler et al., 2022; Wöhner, 2022.
- 41 Hostettler et al., 2022; Melo, 2022.
- 42 Mobile Lives Forum (2022).
- 43 POPSU Territoires, 2022.
- 44 Hostettler et al., 2022; Melo, 2022.

45 Aguilera et al., 2016; Cerqueira et al., 2020; Melo and de Abreu e Silva, 2017; Silva and Melo, 2018.

46 Mobile Lives Forum, 2020b.

47 <https://forumviesmobiles.org/en/project/15673/carbon-rationing-work-related-trips-clarifying-idea-public-policy>

Teleworking

The remote performance of a salaried activity outside of the company's premises, at home or in a third place during normal working hours and requiring access to telecommunication tools.

En savoir plus x

Lockdown

The lockdown measures implemented throughout 2020 in the context of the Covid-19 crisis, while varying from one country to the next, implied a major restriction on people's freedom of movement for a given period. Presented as a solution to the spread of the virus, the lockdown impacted local, interregional and international travel. By transforming the spatial and temporal dimensions of people's lifestyles, the lockdown accelerated a whole series of pre-existing trends, such as the rise of teleworking and teleshopping and the increase in walking and cycling, while also interrupting of long-distance mobility. The ambivalent experiences of the lockdown pave the way for a possible transformation of lifestyles in the future.

En savoir plus x

Mobility

For the Mobile Lives Forum, mobility is understood as the process of how individuals travel across distances in order to deploy through time and space the activities that make up their lifestyles. These travel practices are embedded in socio-technical systems, produced by transport and communication industries and techniques, and by normative discourses on these practices, with considerable social, environmental and spatial impacts.

En savoir plus x

Associated Thematics :

Lifestyles

- Digital technologies
- Work

Policies

- Time policies
- Ecological transition

Theories

- Concepts
-



Anne Aguiléra

Public works civil engineer

Anne Aguiléra is a public works civil engineer who holds a PhD in transportation economics from the University of Lyon 2. She is a senior researcher at the City, Mobility, Transport Lab (LVMT) based at the Université Gustave Eiffel and École des Ponts. Her research focuses on mobility habits and how these are shaped by the growing use of ICTs: telework, e-commerce and digital platform services (self-service bike sharing, on-demand private drivers, meal deliveries, etc.).

To cite this publication :

Anne Aguiléra (06 March 2019), « Teleworking », Préparer la transition mobilière. Consulté le 24 August 2024, URL: <https://forumviesmobiles.org/en/dictionary/12887/teleworking>

Other publications



Being a bicycle delivery rider: passion or exploitation?

Juliette Maulat, Master 2 Aménagement du Territoire et Urbanisme Université Paris 1 2020-2021



Digital Nomads

Maurie Cohen, Laura Stanik



One foot in the city, one foot in the village: the invisible mobility of urban workers in India

Matias Echanove, Rahul Srivastava



When new lifestyles disrupt daily mobility in England

Benjamin Motte-Baumvol, Olivier Bonin, Leslie Belton Chevallier, Eugenia Viana Cerqueira , Julie Fen-Chong