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It's part of the "new normal": Does a global pandemic change employees' perception of teleworking?

Nisreen Ameen [a,*], Savvas Papagiannidis [b], A. R. Shaheen Hosany [c], Elodie Gentina [d]

[a] Department: School of Business and Management, University/Institution: Royal Holloway, University of London, London, United Kingdom
[b] Newcastle University Business School, 5 Barack Road, Newcastle Upon Tyne NE1 4SE, United Kingdom
[c] Goldsmiths, University of London, New Cross, London SE14 6NW, United Kingdom
[d] IESEG School of Management, Univ. Lille, CNRS, UMR 9221 - LEM - Lille Economie Management, F-59000 Lille, France

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ABSTRACT

This paper fills an important gap related to employee perceptions of teleworking during and after the COVID-19 pandemic. Drawing on the work/family border and task-technology fit theories, we propose and empirically test a new model using data collected from 483 employees. Our findings suggest that social well-being, work-family balance and task-technology fit during the pandemic are positively related to teleworking performance. In addition, teleworking performance during the pandemic affects employees' intention to continue to telework and career engagement after the pandemic. Also, we offer evidence of the impact of the moderating effect of factors contributing to the digital divide in this context. Our findings contribute to the teleworking literature, by proposing a model which provides insights into employees' perceptions of teleworking during the pandemic and how this affects their intention to telework and career engagement after the pandemic. Our research has multiple implications for employers, policy makers and technology developers.

1. Introduction

Teleworking includes working away from a traditional office, from home or a virtual work office, using information and communication technologies (Coenen & Kok, 2014; Daniels et al. 2001). Interest in teleworking initially began in the 1970s, when the term telecommuting was used to denote working away from the office, primarily using telephone communication as a substitute for physical proximity (Nilles et al., 1976). In the 1980s, interest in teleworking continued to grow, including among workers, employers, transport planners, communities, and the telecommunications industry (Handy & Mokhtarian, 1996).

The 1990s saw a proliferation of teleworking, with recent reports indicating that teleworking is one of the most prevalent bases of flexibility programs (de Vries et al., 2019). Accordingly, the body of literature on teleworking has increased, with studies focusing on various aspects of teleworking and its implications for employees and firms (e.g., Hilbrecht et al., 2008; Smith et al., 2018; Ruiller et al., 2018). Existing literature focuses on various areas of teleworking prior to the pandemic, including: the use of technologies (e.g. bring your own devices – BYOD, while working remotely) (Ameen et al., 2021), planning behaviour including time management, work-life conflict and job satisfaction while teleworking (Azar et al., 2018), teleworking and job satisfaction among employees in the public sector (De Vries et al., 2019), workplace flexibility and firm performance when employees telework (Martinez Sanchez et al., 2007), dimensions of teleworking communication channel satisfaction, job satisfaction, and personality (Smith et al., 2018), teleworking mothers and work-life balance (Hilbrecht et al., 2008); and perceived proximity and teleworking success (Ruiller et al., 2018). To date, most knowledge on remote working was generated at a time when remote working was not common practice, and only considered by some, rather than most, employees.

Such studies typically consider teleworking as a planned alternative to working from the office. While teleworking during the pandemic may be seen as a temporary situation, employees can learn key lessons from this experience and build resilience during this emergency situation, which could affect their teleworking behaviour after the pandemic. Before the pandemic, only a fraction of the workforce worked from home occasionally. The COVID-19 pandemic disrupted all aspects of human life and challenged our way of thinking about teleworking. Measures were taken in various parts of the world, where governments

* Corresponding author.
E-mail addresses: nisreen.ameen@rhul.ac.uk (N. Ameen), savvas.papagiannidis@ncl.ac.uk (S. Papagiannidis), s.hosany@gold.ac.uk (A.R.S. Hosany), e.gentina@ieseg.fr (E. Gentina).

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urged employers to embrace teleworking to reduce commuter density in large cities and thus contribute to physical distancing. The restrictions introduced by governments to curtail the spread of the virus meant that many employees had to work from home, in the presence of other family members. The unprecedented outbreak of COVID-19 unexpectedly converted millions of people across the world into remote workers (Kniffin et al., 2021). Many were forced to socially isolate and physically distance themselves, to limit the spread of the pathogen. Nations went into an economic recession, and millions lost their jobs (Ruh, 2022). Beyond effectively forcing individuals to adopt digital technologies for teleworking purposes, working from home (while the pandemic restrictions were in force in most countries) resulted in a significant disruption of existing work practices. At the same time, teleworking blurred work and non-work roles, involving issues of work-life balance, or increased productivity and family integration (Allen et al., 2014; Choudrie et al., 2020). However, such changes have also had a potentially positive effect and should not solely be seen as disruptive, as they can improve employees' knowledge of teleworking and resilience after the pandemic. Since the beginning of the pandemic, the pace of digitalisation has rapidly increased (Feliciano-Cestero et al., 2023), leading many organisations to consider the wider adoption of flexible modes of working, often with a heavy reliance on teleworking.

Research during the pandemic revealed positive and negative experiences of working from home (Cartmill, 2020). For instance, teleworking can improve the work-family balance by providing workers with greater control over their schedules (Lyttelton et al., 2020). Teleworking can also increase work intensity, work-home interference and the impact of the digital divide, leading to adverse effects on the well-being and stress of teleworkers (Bouziri et al., 2020; Fana et al., 2020). Such findings are not surprising. From a technological point of view, improved information and communication technologies have made remote or teleworking a viable alternative to working from an office. From an organisational point of view, managers have started to appreciate the broader context of employee lives, increasingly recognising teleworking as an important determinant of employee work performance (Timms et al., 2015).

The novelty and unique demands of the situation call for additional research on the issues of work-life balance and social well-being. Willingness to work from home may depend on various factors, such as the nature of the work, personal or family circumstances. It may also depend on the experience that one had during the pandemic. If the experience has been positive, some people may be willing to continue teleworking beyond the pandemic and vice versa. While teleworking was optional pre-pandemic, it became a widely accepted way of working due to COVID-19. Recognising that teleworking could potentially be a viable alternative fuels debate regarding whether the approach is set to remain post-pandemic (Guyot & Sawhill, 2020). To this end, there is a gap in research on: how technology and non-technology related factors can affect employee teleworking performance, namely a subjective assessment of one's job performance while working remotely during a pandemic; how this is likely to change after restrictions are relaxed; employee intention to telework in the long term and career engagement while teleworking.

Given the aforementioned gap in research, this study examines employees' perceptions of teleworking during the pandemic and when the pandemic restrictions are relaxed (i.e. the "new normal" of work environments), career engagement and intention to pursue teleworking. In addition, this research analyses the impact of factors related to the digital divide, such as age, gender, location and availability of an office space, on employees' perceptions of teleworking during the pandemic and when the pandemic-related restrictions are relaxed. Our work makes two important theoretical contributions. First, we capture employee perceptions of teleworking related to the pandemic and the impact of factors related to the digital divide. Second, we provide insights into the impact of teleworking on employees' work-life balance and social well-being during the pandemic, and how this is likely to affect their teleworking perceptions once the pandemic restrictions are relaxed. We propose a conceptual model, which provides an assessment of employee perceptions of teleworking during the pandemic and their intentions for when the pandemic restrictions are relaxed. In addition to theoretical contributions, this study has a number of managerial implications for companies planning to pursue teleworking post-pandemic. Our findings can inform teleworking policies that consider work related dimensions such as productivity, and individual ones such as well-being.

2. Literature review

2.1. Teleworking prior to and during COVID-19

Teleworking is a practice whereby an employee fulfils his or her work duties from any location, at any time, using digital technologies (Baruch, 2000). In such a setting, the technical profile and self-discipline of the employees are critical for meeting expectations efficiently and effectively (Smith et al., 2018). Literature prior to the pandemic explained that teleworking makes it possible for employees to work from home, in shared spaces, at customer sites, or via any platform with the required technologies (Hilbrecht al., 2008; Ruiller et al., 2018; Smith et al., 2018). The facilities used (e.g., technology) and location can determine the effectiveness of teleworking (Ruiller et al., 2018; Belzunegui-Eraso & Erro-Garcés, 2020). Similarly, the role employees perform within an organisation and the expectations of the role require appropriate access to technology, infrastructure, network connection and digital skills (Sánchez et al., 2007; Milasi et al.,2021).

Organisations' and employees' lack of familiarity with digital technologies, and prior experience with remote working arrangements, may limit uptake and effectiveness (Milasi et al., 2021). Hence, teleworking implementations typically take place in a planned manner, in line with organisational policies. Yet during the pandemic many organisations were caught unprepared and had to act hastily, due to the pressure imposed by the emergency measures. As a result, the pandemic has transformed the work lives of many individuals, often even accelerating the on-going digital transformation of organisations (Papagiannidis et al., 2020). During the pandemic, working from home in response to the COVID-19 pandemic was enforced, which was found to differ from working from home through choice (Anderson & Kelliher, 2020). Many firms relied on digital technologies to engage with their employees through virtual meetings and team building activities (Camilleri, 2021).

2.2. Work-family balance during the pandemic

Back in the 1970s, Kanter (1977) pointed out that work and non-work (e.g. family, home) domains are closely linked. In normal, non-pandemic times, guided by boundary theory, people manage the boundaries between work and personal life through processes of separating and/or consolidating the domains (Bulger et al., 2007). In essence, the theory focuses on the different meanings that people assign to home and work, and the ease and frequency of transitioning between roles (Zerubavel, 1996). Border theory emphasises the boundaries that divide the times, places, and people associated with work from the family roles (Allen et al., 2014). Work-family balance is a core part of this theory, which states that it covers "*satisfaction and good functioning at work and at home, with a minimum of role conflict*" (Clark, 2000, p. 751). Work-life balance refers to "*the ability to experience a sense of control and stay productive and competitive at work while maintaining a happy, healthy home life with sufficient leisure*" (Bharathi & Mala, 2016, p. 666).

The COVID-19 pandemic was challenging. To cope with the health and safety threats the pandemic imposed, teleworking became mandatory. As a newly enforced work practice during a time of crisis, teleworking redefined work–home boundaries and the experiences of work-family balance (Adisa et al., 2022; Battur & Kandagal, 2022; Hu & Subramony, 2020). According to Hu and Subramony (2020, p. 808),

COVID-19 was a dynamic environmental event accompanied by various work and life changes that disrupted the adaptation process, including readjusting the ways in which telecommuters regulated the demands of work and family life balance. Studies conducted across the world show that most people did not improve their work–life balance during the emergency situation of COVID-19. Rather, it was a time of stress caused by multiple factors, including the long-term use of new technologies, the need to take care of children whilst working due to a lack of childcare, and the uncertainty about employment (Lonska et al. 2021). Covid-19 forced a transition to new ways of either fully remote or hybrid practices. Given the emergency of COVID-19, new telecommuters need more time to reconfigure work and family practices. Thus, studies carried out during the pandemic focused on the negative impact of teleworking on work-life balance, as the boundaries between work and family life blurred and this resulted in an imbalance between the two (Campo, Avolio & Carlier, 2021). However, with time, the benefits of telecommuting are likely to emerge. Telecommuting provides individuals with the opportunity to attain a work–life balance, by enabling the scheduling of various work activities to make room for essential family commitments (Zhang et al., 2021).

2.3. Teleworking conditions and the digital divide

Due to work practices implemented as a result of COVID-19, many businesses are planning on more remote work now and in the future. In 2022, 16 % of companies worldwide were 100 % remote and 40 % were operating hybrid models (mixing in-office and remote work), while 44 % of companies did not allow remote work (Square Talk, 2023). The onset of the COVID-19 pandemic meant that home became the new workplace across many professions. This new "home" work environment, feelings of isolation and restrictions on leaving homes made teleworking significantly more challenging than before COVID-19. Employees experienced online fatigue due to spending long hours on screens, switching between meetings on different platforms (Hacker et al., 2020; Laato et al., 2020). Recent research highlights the major issues related to employee well-being and mental health, while coping with this unique situation through anxiety, work stress and depression (Yu et al., 2021; Sahoo et al., 2023). In addition to teleworking, many families were faced with the situation of helping their children, who, being similarly confined at home, started online home schooling (Tavares et al., 2020).

3. Proposed model and hypothesis development

To better understand how teleworking was introduced, adopted and considered as an option beyond the pandemic, we propose a conceptual model relating to during- and post-effects of the COVID-19 pandemic on teleworking (Fig. 1). The proposed model focuses on employee perceptions of teleworking during the pandemic, their intention to pursue teleworking and the impact on career engagement post-pandemic. The following sections provide the theoretical basis of our proposed model along with development of the hypotheses.

The widespread application of digitalisation in work processes, (e.g., instant access to emails via mobiles) and flexible work practices with regards to the time and location at which work is carried out, caused considerable overlap between work and home lives. In this respect, border theory (Clark, 2000) helps conceptualise how employees navigate permeable work and family boundaries. Border theory (Clark, 2000) suggests that work-life balance can be attained depending on the strength of the demarcations between work and the family, and it fosters social well-being. Work family balance is an assessment of satisfaction with and effectiveness in different life roles. As such, work family balance is an indicator of satisfaction with life (Wepfer et al., 2018).

During the pandemic, maintaining work-life balance by successfully dealing with the blurred boundaries between work and personal life events, such as home schooling while completing work-related tasks, has

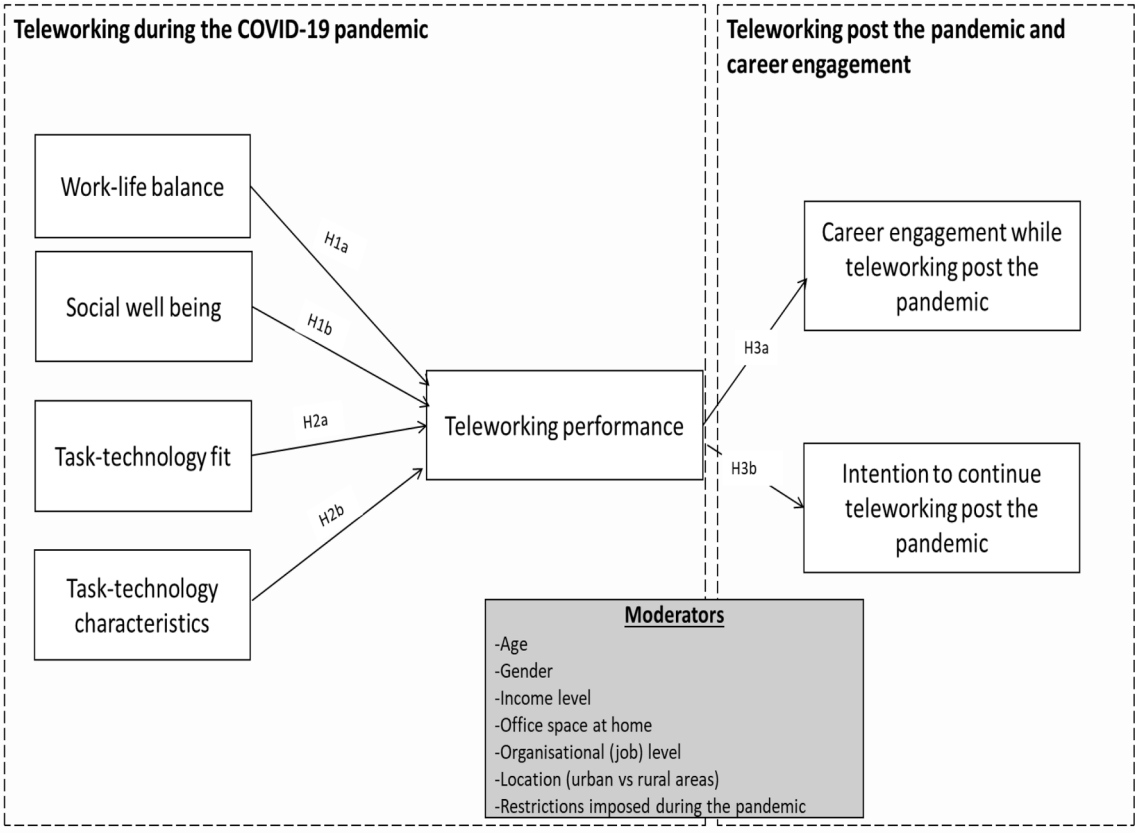

Fig. 1. Proposed teleworking model during and post the pandemic.

proved to be important (Hjálmsdóttir & Bjarnadóttir, 2021). Moreover, urging people to stay at home during the pandemic of COVID-19 has contributed to a substantial reduction in social interactions, leading to declines in social well-being (Zsido et al., 2022). All such physical and social distancing practices counteract "our profoundly human and evolutionarily hard-wired impulses for connection" (Christakis, 2020). Social well-being refers to the individual evaluation of one's standing in life, with positive well-being indicating the "*absence of negative conditions and feelings*" (Keyes, 1998, p. 121). A substantial body of literature points to the plethora of determinants of telework performance. These include job satisfaction (Caillier, 2014; Masuda et al., 2012), firm performance (Martínez-Sánchez et al., 2008), turnover intentions (Caillier, 2013), or improvements in teleworkers' productivity, due to the flexibility in scheduling individual tasks (Tremblay & Darchen, 2010).

We next review how the teleworking experience during the pandemic has influenced individual work performance and whether the perceived performance of teleworking would encourage teleworking beyond the pandemic. We posit that during the pandemic, work-life balance and social well-being as well as factors related to technology acceptance and fit may have affected individual perceptions of telework performance.

3.1. Work-life balance, social well-being and teleworking performance

Prior research has shown a positive direct relationship between work-life balance and job performance (Guest, 2002; Naithani, 2010). This could be due to several factors identified in research on teleworking prior to and during the pandemic, for example: higher levels of job autonomy, increased flexibility, possibly better time management, completing tasks related to work and family simultaneously and therefore increased availability to handle personal and family matters (Akbari & Hopkins, 2019; Campo et al., 2021; Dima et al., 2019; Thulin et al., 2019). During the pandemic, it might also have been expected that work-life balance while teleworking could lead to a positive attitude, which could energise employees to be engaged in their work and perform better (Niessen et al., 2018).

In the context of teleworking, relationship-oriented behaviours, communication, trust (Baker et al., 2006) and social support (Bentley et al., 2019) are critical success factors for telework effectiveness, impacting on job performance (Baker et al., 2006). Several theoretical perspectives explain work performance as a result of social well-being. For instance, according to Lucas and Diener (2002), happy workers, a result of higher social well-being, are likely to perform better. Similarly, according to Hockey (1997) and Geurts et al. (2014), sufficient rest, an important factor contributing to social well-being, counters the daily tiredness which occurs due to work demands and makes it possible for employees to perform better. Hence, we propose:

H1. During the pandemic (a) work-life balance (b) social well-being are positively related to teleworking performance.

3.2. Teleworking-technology fit, characteristic and teleworking performance

Since its development, task-technology fit theory (Goodhue & Thompson, 1995) has been applied across an array of contexts to understand the relation between tasks, technologies, utilisation, user reactions, and performance (Howard & Rose, 2019; Khan et al., 2018). The task-technology fit theory is a widely used theoretical model for evaluating how information technology leads to performance, assessing usage impacts, and judging the match between task and technology characteristics (Wu & Chen, 2017). Both task characteristics and technology characteristics can affect the task-technology fit, which in turn determines users' performance and utilisation (Furneaux, 2012; Zigurs & Buckland, 1998). In order for employees to successfully deliver tasks while teleworking, the range of technologies they use must fit the purpose intended in order to perform as expected.

Goodhue and Thompson (1995, p.216) defined task-technology fit as "*the degree to which a technology assists an individual in performing his or her portfolio of tasks*". The effect of task-technology fit on performance has been highlighted in previous studies (Goodhue & Thompson, 1995; Zhou et al., 2010). Performance impact results from task-technology fit, when a technology provides features and support that fit the requirements of a task. Good fit is required before technology can positively impact task and/or technology performance (Parkes, 2013). In the context of teleworking during the pandemic, employees relied heavily on technology for communicating or collaborating with colleagues. In order for an employee to be able to perform well while teleworking, more specifically communicating or collaborating with colleagues, the various technologies used at home, such as Zoom, Microsoft Teams, Skype, among many others, should fit the purpose of teleworking well. We focus on communicating and collaborating with colleagues as this is a broad task that affects all teleworking irrespective of what the nature of the job is. In addition, meetings and collaboration often require quiet spaces and periods of attention.

Technology characteristics are defined as "*the characteristics of the devices that individuals use to perform their tasks*" (Lin et al., 2020, p. 2679). Previous studies showed that certain task and technology characteristics interact to predict outcomes, and the effects are ascribed to task-technology fit (Kerr & Murthy, 2004; Zhou et al., 2008). Design affects how, and the level to which, a technology is used (Fildes et al., 2006). As such, design choices should be deliberate and purposeful. Poor or unintended design choices can create suboptimal fit and result in a technology being ignored or overridden (Goodwin, 2002; Goodwin & Fildes, 1999). Some of the technology characteristics that enable employees to perform well in teleworking, specifically communicating or collaborating with colleagues, provide (1) a real-time service with no delays (2) a secure and reliable service with no breakdowns and (3) a comprehensive service suited for teleworking. These technology characteristics have been examined in previous studies on task-technology fit (Zhou et al., 2010). Based on the above we postulate that:

H2. (a) Task-technology fit and (b) Task-technology characteristics are positively related to teleworking performance.

3.3. Teleworking performance, career engagement and intention to continue teleworking when the pandemic restrictions are relaxed

The COVID-19 global pandemic had a severe negative impact on individuals' career engagement (Akkermans et al., 2020). Although teleworking is increasingly important in the current work environment, not many research projects have attempted to explain how it may impact career engagement. Career engagement is defined "*as the degree to which somebody is proactively developing his or her career as expressed by diverse career behaviours*" (Hirschi et al., 2014, p.578). It involves exhibiting behaviours such as career planning, career self-exploration, training, environmental career exploration, networking, voluntary human capital/skill development, and positioning behaviour (Hirschi et al., 2014). Career engagement is regarded as having a positive influence on vocational development and exploration (Neault & Pickerell, 2011; Upadyaya & Salmela-Aro, 2015). In addition, employees' career engagement, including career management and employment skills development, may have been affected by teleworking during the pandemic due to a change in their performance. This may also have an impact on how employees perceive career engagement when teleworking once the pandemic restrictions are relaxed. In addition, it is possible that when employees perform well in teleworking, they have more time to participate in career development activities. Research before the pandemic has shown that the atmosphere in the work environment positively influences career engagement (Hamzah et al., 2021). Going back further, Lee et al. (2016) recommended further research to investigate the factors that promote career engagement, of which teleworking could be one.

To the best of our knowledge, little work has been done on the

relationship between teleworking and career engagement. Instead, prior studies reveal mixed results between work engagement and its relationship with teleworking. Work engagement and career engagement are frequently used interchangeably by researchers to explain individuals' relationship with their work / employer (Hamzah et al., 2021). Work engagement refers to the relationship between the employee and his or her work (Schaufeli & Salanova, 2011). On one hand, teleworking has been found to positively relate to work engagement at the end of the work year through personal work goals (Masuda et al., 2017). On the other, research has found a negative relationship between teleworking and work engagement, because teleworking increases role ambiguity and reduces support and feedback (Sardeshmukh, Sharma, & Golden, 2012). Teleworking can open up new possibilities, as individuals get the choice to work away from geographically distant offices. Teleworking can result in flexible arrangements and should ease individuals' use of different tools for career development purposes.

During the pandemic, teleworking became increasingly prevalent after the enforcement of stay-at-home mandates and social distancing measures. Organisations were able to minimise some of the negative effects of teleworking through the use of online communication platforms and appropriate employee socialisation practices. Employees who teleworked during the pandemic may have realised that their work task can be performed outside of their office environment, thus resulting in more personal flexibility (Abulibdeh, 2020). Accordingly, they may have preferred to continue teleworking partially or fully, after physical distancing restrictions were lifted. As habits can have strong effects on intention (Amoroso & Lim, 2017), employees who developed telework habits during the pandemic and effectively performed their tasks remotely will be more willing to pursue teleworking in the future (after the pandemic).

H3. Teleworking performance during the pandemic is positively related to (a) career engagement and (b) intention to continue teleworking when the pandemic restrictions are relaxed.

4. Methods

4.1. Measurement scales, data collection and sample

To test our proposed model, a questionnaire with three main areas was designed. The first two covered the two main periods considered in the research and the third collected demographic data. Appendix A shows the factors, their measurement items and the scales adopted from previous studies. After a pilot study, the online survey was completed by adults recruited via a third-party consumer panel in April 2021.

Given the objectives of this research, we adopted a purposive sampling method. We recruited UK-based, adult employees with teleworking experience during the pandemic. We endeavoured to achieve a representative sample, on key criteria such as gender. We monitored incoming responses in case adjustments were required on respondent demographics. The survey was set on Qualtrics and distributed directly and anonymously to participants. As data collection occurred one year after the start of the pandemic, respondents had sufficient experience of teleworking and the potential impact on their work and personal (family) lives. Our sample consisted of 483 respondents, with more than 80 % having teleworked at least 75 % of the time, and a majority being sole teleworkers. Table 1 shows the full profile of the respondents.

Table 1
Profile of respondents.

Item	Percentage	Item	Percentage
Gender		**Organisation (job) level**	
Male	48	High	5.6
Female	52	Middle	57.4
		Low	37
Age		**Location**	
Under 20–29	38	Urban	89
30–49	49	Rural	11
50–69	12	**Annual income**	
69 and above	1	0-£24,999	14
		£25,000-£49,000	45
		£50,000-£74,999	31
Marital status		£75000 and above	10
Single (never married)	57.2	**Availability of office space at home**	
Married	36.7	Yes	42
Separated	6.1	No	58
Education		**Employment status**	
Some high school or less	0.8	Full-time	83
High school graduate or equivalent	9.9	Part-time	17
Vocational/technical school (two-year program)	2.9		
Some college, but no degree	14.8	**Sector**	
College graduate (four-year program)	23	Education	21.6
Some graduate school, but not degree.	3.3	Utility	3.5
Graduate degree (MSc, MBA, PhD, etc.)	42.1	Construction	3.3
Professional degree (M.D., J. D., etc.)	2.5	Health	12.7
		Finance	12.5
		Transport	1.2
Ethnic background		Automotive	1.9
Arab	1	Manufacturing	5.3
Asian	10.3	Media	3.5
Black	3.9	Other (respondents mostly selected retail)	34.5
Mixed	3.5		
White	79.3		
Other ethnic group	2	**Percentage of time of teleworking during the pandemic**	
		Up to 25 % of my work time	6
Frequency of teleworking before the pandemic		Up to 50 % of my work time	12
Up to 25 % of my work time during the pandemic	6	Up to 75 % of my work time	23
Up to 50 % of my work time during the pandemic	11	100 % of my work time	59
Up to 75 % of my work time during the pandemic	23		
Completely teleworked during the pandemic (100 % of my work time)	60	**Frequency of commuting to the office before the pandemic**	
		Never	2.7
		Once a month	2.5
		2 – 3 times a month	3.7
		Once a week	3.9
		Several times a week	87.2

4.2. Data analysis

We applied partial least squares-structural equation modelling (PLS-SEM) for the empirical analysis. PLS-SEM offers greater flexibility than covariance-based structural equation modelling (CB-SEM) (Hair et al., 2020). For instance, there are fewer strict requirements in larger sample sizes and it allows for the single-item factor and testing more complex models as in our case (Hair et al., 2020). To detect common method bias (CMB), we applied Harman's Single-Factor Test (Podsakoff et al., 2003). The principal component extracted explained <18 % of the variance of all the measured variables in the proposed model. This suggests that common method bias is unlikely to be a concern for this research (Podsakoff et al., 2003). We also assessed the normality of the data distribution based on descriptive statistics including skewness, kurtosis, mean and standard deviation. Kurtosis values ranged between −0.007 and 2.654, and skewness between −1.090 and −1.578. Statistical analysis was performed in two steps. We validated the measurement model, followed by structural model analysis. The hypothesised model was estimated using SmartPLS4, with a bootstrap re-sampling procedure

using 5000 randomly generated sub-samples (Hair et al., 2020).

5. Results

5.1. Assessment of measurement model

We started by assessing the measurement model (Hair et al., 2020). Table 2 shows the results of construct reliability and convergent validity, including the loadings, Cronbach's alpha, and average variance extracted.

Cronbach's alpha values ranged between 0.886 and 0.954. The convergent validity of all the constructs is satisfactory as the average variance extracted values ranged between 0.544 and 0.915, which are over the threshold value of 0.5 (Hair et al., 2017).

As far as the results of Heterotrait-Monotrait ratio (HTMT) testing are concerned, the values are lower than the suggested value, 0.85 (Henseler et al., 2015), indicating satisfactory discriminant validity. In addition, we assessed collinearity in the data and the analysis showed that the inner variance inflation factor values were lower than the threshold value of 3.3 (Petter et al., 2007).

5.2. Assessment of structural model

We assessed the structural model using standardised path coefficients (β-value), significance level (t statistic) and p value. Fig. 2 shows the proposed model with the final results. The path loadings (interpreted as standardised regression coefficients) indicated the strength of the relationship between the independent and dependent variables (Hair et al., 2017). As shown in Table 3, all the hypothesised relationships were supported, except for H2a (task-technology fit -> Teleworking performance, t value = 0.740).

5.3. Post-hoc moderation analysis

Assessing the moderating effects and their impact on employees' perceptions of teleworking can provide many useful insights related to the impact of the digital divide (Choudrie et al., 2020). Recent research highlights the impact of the digital divide on employees during the pandemic (Iansiti & Richards, 2020). For example, traditionally, women have often performed or been responsible for most of the housework (Barr, 2019). Theoretically, having both parents working at home during a family lockdown provides the opportunity for a more equitable (i.e. less gendered) division of household labour in dual career, heterosexual households. However, if children require parental attention, while both parents are working at home, the father's work is likely to be prioritised and the mother's work is likely to be interrupted (Medina & Lerer, 2020). In addition, the lack of an office space at home can have a significant impact on how employees perform while teleworking (Vyas & Butakhieo, 2021). This is a factor which could also be linked to income level (Bonacini, Gallo & Scicchitano, 2021). Similarly, research prior to the pandemic highlights the challenges older individuals face when adopting different technologies for work purposes (Choudrie et al., 2020). Hence, adopting collaborative platforms during the pandemic could possibly be more challenging for such user groups. Also, employees' location in terms of being in an urban or a rural area can impact their connectivity due to differences in network strength (Esteban-Navarro et al., 2020). Together, these issues could affect employees' performance and perceptions while teleworking during and after the pandemic and their perceptions of teleworking post pandemic.

In addition to the direct effects in our proposed model, we assessed the effects of a number of moderators, namely: (1) the availability of an office space at home (2) gender (3) organisational (job) level (junior vs senior staff) (4) location (urban vs rural areas) (5) income level (6) age (7) restrictions imposed during the pandemic. In terms of assessing the moderating effects of employees' perceptions of restrictions imposed during the pandemic, three statements were used, namely '*There were restrictions on leaving the house in my area of residence*', '*Local public transport was restricted*' and '*There were restrictions on public life in my area of residence*'. Prior to conducting the multigroup analysis, the sample was first separated into two subgroups according to the median score for each of the three statements (above median value and below median value).

The differences between the groups were tested using PLS-MGA (Hair et al., 2017; Henseler et al., 2009). A PLS-MGA test assesses the observed distribution of the bootstrap outcomes instead of making distributional assumptions (Henseler, 2012). Prior to multigroup analysis (PLS-MGA), the measurement invariance of a composite models (MICOM) procedure was used to assess the configural and compositional invariance and the equality of the means and variances across the two groups of each factor (Henseler et al., 2016). The results of the MICOM procedure validated full measurement invariance. Therefore, the next step was to compare the path coefficients between the two groups in each factor. In PLS-MGA, p values of 0.05 or lower or 0.95 or higher indicate significant differences between the paths (Henseler et al., 2009; Ameen et al., 2020).

The results of the PLS-MGA (Table 4 and Table 5) showed that all of the proposed control variables have some significant moderating effects on the proposed relationships in the model. The participants who did not have an office space at home perceived the relationship between work-life balance and teleworking performance as more significant than those who had an office space at home (p value = 0.032). The relationship between task-technology fit and teleworking performance was stronger among male employees (p value = 0.032). The relationship between social well-being and teleworking performance was stronger among participants at the senior level (p value = 0.029). The relationship between task-technology fit and teleworking performance was stronger

Table 2
Assessment of measurement model.

Factor	Reliability	Validity	Heterotrait-Monotrait Ratio (HTMT)						
	Cronbach's Alpha	Average variance extracted	Career engagement	Intention	Social well-being	Task-technology characteristics	Task-technology fit	Teleworking performance	Work-life balance
Career engagement and teleworking	0.939	0.544							
Intention to continue teleworking after the pandemic	0.954	0.915	0.179						
Social well-being	0.913	0.589	0.129	0.394					
Task technology characteristics	0.902	0.774	0.095	0.654	0.674				
Teleworking performance	0.886	0.814	0.041	0.506	0.417	0.640			
Task-Technology Fit	0.913	0.598	0.089	0.568	0.644	0.739	0.584		
Work-life balance	0.939	0.768	0.051	0.487	0.597	0.610	0.514	0.733	

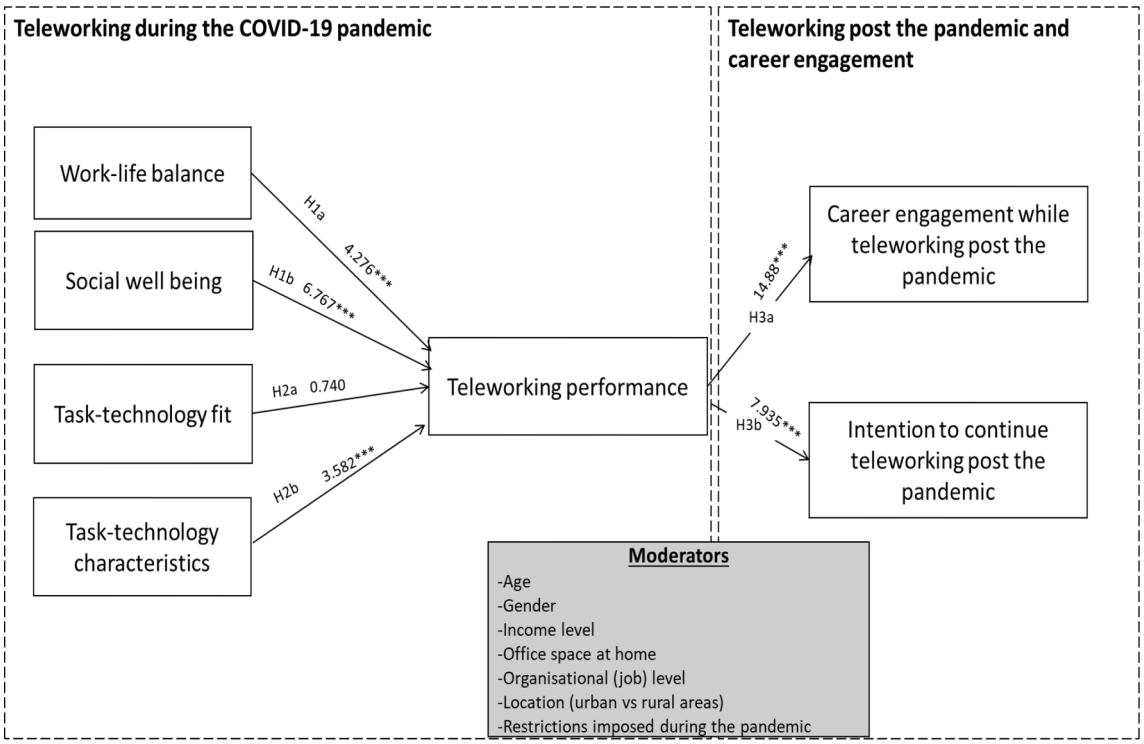

Fig. 2. Proposed teleworking model during and post the pandemic (results).

Table 3
Assessment of structural model.

Hypothesis	Relationship	β-value	*t* statistics	Results
H1a	Work-life balance → Teleworking performance	0.186	4.276***	Supported
H1b	Social well-being → Teleworking performance	0.306	6.767***	Supported
H2a	Task-Technology fit → Teleworking performance	−0.104	0.740	Not supported
H2b	Task-technology characteristics → Teleworking performance	0.122	3.582***	Supported
H3a	Teleworking performance → Career engagement and teleworking	0.543	14.88***	Supported
H3b	Teleworking performance → Intention to continue teleworking post the pandemic	0.35	7.935***	Supported

Note: *p < 0.05; **p < 0.01; ***p < 0.001.

among the employees living in urban areas (p value = 0.015).

Income and age were among the most significant moderators. Income moderated the relationships between task-technology characteristics and teleworking performance (p value = 0.013), teleworking performance and career engagement and teleworking (p value = 0.021); teleworking performance and intention to continue teleworking when the pandemic restrictions are relaxed (p value = 0.022) – with the three relationships being stronger among individuals with a lower income level. Finally, age moderated three of the hypothesised relationships, namely between: social well-being and teleworking performance (p value = 0.031), task-technology characteristics and teleworking performance (p value = 0.044) and teleworking performance and career engagement (p value = 0.020). All relationships were more significant among younger employees.

In addition, we assessed the effects of COVID-19 related restrictions. Our findings show that these restrictions moderate some of the relationships in our proposed model. Employees' perceptions on restrictions on leaving the house in their area of residence moderated the relationships between work-life balance and teleworking performance (p value = 0.012) and task-technology fit and teleworking performance (p value = 0.971). Furthermore, employees' perceptions on restrictions on local public transport moderated two relationships, namely social well-being and teleworking performance (p value = 0.021). Finally, restrictions on public life in the employees' area of residence moderated the relationship between work-life balance and teleworking performance (p value = 0.981), and social well-being and teleworking performance (p value = 0.031).

6. Discussion and theoretical contributions

This research examines employees' perceptions of teleworking during the pandemic and their expectations of teleworking and career engagement once the COVID-19 restrictions are relaxed. While teleworking existed before the pandemic, it was not adopted as extensively. Analysing employees' perceptions of teleworking during such challenging times provides valuable findings, making tangible theoretical and practical contributions. Accordingly, we proposed and tested a conceptual model which examined employees' perceptions of teleworking during the pandemic period and their expectations to continue teleworking and career engagement post-pandemic.

Our study makes several contributions. We contribute to the literature on teleworking prior to and during the pandemic (e.g., Ameen et al., 2021; Smith et al., 2018; Ruiller et al., 2018; Sánchez et al., 2007; Hilbrecht et al., 2008; Azar et al., 2018; Bouziri et al., 2020; Fana et al., 2020), by showing the impact of personal, social and technology-related factors on employee teleworking performance. We also demonstrate the impact of teleworking performance on intention to continue to work and engage in career development while teleworking in the long term. In particular, researchers have encouraged the investigation of how teleworking can impact employees' experience at work during the pandemic and when the COVID-19 restrictions are relaxed (Brunnel & Fortin, 2021). Our study responds to this call by proposing a conceptual model

Table 4
Assessment of moderating effects (availability of office space, gender, organisational (job) level, location, income level, age).

		Availability of office space at home		Gender		Organisational (job) level		Location (Urban vs rural areas)		Income level (low vs high)		Age (younger vs older)	
	Relationship	Path coefficient difference	p-value	Path coefficient Difference	p-value	Path coefficient difference	p-value	Path coefficient difference	p-value	Path coefficient difference	p-value	Path coefficient Difference	p-value
H1a	Work-life balance -> Teleworking performance	0.352	**0.032***	0.012	0.526	0.031	0.871	0.129	0.741	0.013	0.192	0.022	0.064
H1b	Social well-being -> Teleworking performance	0.024	0.654	0.025	0.221	0.238	**0.029**	0.041	0.371	0.021	0.213	0.014	**0.031**
H2a	Task-technology fit -> Teleworking performance	0.036	0.293	0.204	**0.032**	0.031	0.213	0.270	**0.015**	0.023	0.241	0.014	0.213
H2b	Task-technology characteristics -> Teleworking performance	0.089	0.779	0.021	0.251	0.021	0.241	0.006	0.813	0.105	**0.013**	0.142	**0.044**
H3a	Teleworking performance -> Career engagement	0.032	0.213	0.022	0.531	0.091	0.312	0.017	0.522	0.105	**0.021**	0.174	**0.020**
H3b	Teleworking performance -> Intention to continue teleworking after the pandemic	0.082	0.721	0.021	0.731	0.024	0.714	0.029	0.761	0.314	**0.022**	0.041	0.132

Note: PLS groups information.
-Availability of office space at home: no (n = 205), yes (n = 278).
-Gender: male (n = 232), female (n = 251).
-Organisational (job level): senior (n = 305), junior (n = 178).
-Location (urban vs rural areas): urban (n = 430) rural (n = 53).
-Income level (low vs high): low (≤£49,000, n = 283) vs high (≥£50,000, n = 200).
-Age (older vs younger employees): younger (≤29, n = 188) vs older (≥30, n = 295).
*Figures highlighted in bold indicate a significant difference between the groups.

Table 5
Assessment of moderating effects (employees' perceptions of restrictions during the pandemic).

		Restrictions on leaving the house in area of residence (higher vs lower)		Restrictions on local public transport (higher vs lower)		Restrictions on public life in my area of residence (higher vs lower)	
	Relationship	Path coefficient difference	p-value	Path coefficient Difference	p-value	Path coefficient Difference	p-value
H1a	Work-life balance -> Teleworking performance	0.281	**0.012**	0.005	0.321	**0.381**	**0.981**
H1b	Social well-being -> Teleworking performance	0.326	0.158	0.418	**0.021**	0.281	**0.031**
H2a	Task-technology fit -> Teleworking performance	0.419	**0.971**	0.012	0.452	0.125	0.083
H2b	Task-technology characteristics -> Teleworking performance	0.013	0.912	0.061	0.117	0.121	0.012
H3a	Teleworking performance -> Career engagement	0.014	0.081	0.061	0.128	0.015	0.211
H3b	Teleworking performance -> Intention to continue teleworking after the pandemic	0.032	0.542	0.019	0.221	0.151	0.074

Note: PLS groups information.
- Restrictions on leaving the house in area of residence: higher (n = 370), lower (n = 113).
--Restrictions on local public transport: higher (n = 390), lower (n = 93).
--Restrictions on public life in my area of residence: higher (n = 230), lower (n = 253).
*Figures highlighted in bold indicate a significant difference between the groups.

drawing on border theory (Clark, 2000) and task-technology fit theory (Goodhue & Thompson, 1995).

Our proposed model provides insights into employees' perceptions of teleworking in terms of their social well-being and work-life balance as well as their intention to continue to telework once the pandemic restrictions are relaxed. We further contribute to the debate regarding employees' teleworking behaviour and antecedents (Elsbach & Cable, 2012; Masuda et al., 2017). Our findings show the positive impact of social and personal factors on employees' teleworking performance during the pandemic. We show the significant impact of employees' work-life balance on their teleworking performance, despite issues in maintaining boundary conditions between work and family during the

pandemic. Hence, our results extend the line of research on teleworking and work-life balance prior to the pandemic (e.g., Dima et al., 2019; Akbari & Hopkins, 2019; Thulin et al., 2019), by showing that the work-life balance improves employees' teleworking performance. Furthermore, our findings show that social well-being, in terms of positive conditions and feelings (Keyes, 1998; Hockey, 1997; Geurts et al., 2014), has a positive impact on teleworking performance during the pandemic. Specifically, we show how employee social well-being while teleworking during the pandemic, in terms of being part of work, communicating and obtaining support from colleagues and team members in their organisations, has a positive impact on their performance. In addition, our research extends the findings of previous studies on career engagement (e.g., Neault & Pickerell, 2011; Upadyaya & Salmela-Aro, 2015) by uncovering the relationship between teleworking performance and career engagement of employees once the pandemic restrictions are relaxed.

Surprisingly, our results reveal that task-technology fit does not have a significant positive effect on teleworking performance, thus contradicting the findings of earlier studies on task-technology fit (e.g., Khan et al., 2018). Such a finding could be interpreted in different ways. For instance, it may be that as employees had to use the same technologies and systems as they did when they were in the office, they did not consider technology to make a significant difference to their working experience. Alternatively, it may indicate that task-technology fit was not considered significant when it came to teleworking because users were already familiar with many of the technologies used (e.g., collaboration platforms). We contribute to earlier work in this area (e.g., Hilbrecht et al., 2008; Goodhue & Thompson, 1995; Zhou et al., 2010; Parkes, 2013) by studying task-technology fit in the context of teleworking during a major global exogenous shock, COVID-19. While previous studies explained the significance of task-technology fit in various contexts (e.g., Furneaux, 2012; Khan et al., 2018; Zigurs & Buckland, 1998), our findings show that it does not have a significant positive effect on teleworking performance. However, the characteristics of the technology used in terms of comprehensive, reliable and real-time service play an important role in improving teleworking performance. This confirms the findings of previous studies regarding the significance of task-technology characteristics and extends them to the context of teleworking (e.g., Kerr & Murthy, 2004; Zhou et al., 2008; Lin et al., 2021).

Our study provides insights into the impact of various moderating factors on our proposed relationships. We show how employees perceive teleworking during the pandemic and once the pandemic restrictions are relaxed, considering the impact of the availability of an office space at home, income level, location (urban vs rural areas), job level (junior vs senior staff), gender and age. With such insights, we provide a more in-depth understanding of the various conditions that can affect employees' teleworking, thus extending earlier studies on teleworking (e.g., Ameen et al., 2021; Azar et al., 2018; De Vries et al., 2019; Ruiller et al., 2018) by revealing how our proposed relationships work for employees from different categories of employees.

Our results show that the availability of an office space at home moderated the effects of work-life balance on teleworking performance. As such it confirmed the findings of previous studies on the impact of the lack of an office space at home and employees' telework performance (Vyas & Butakhieo, 2021). Task-technology fit had a more significant effect on teleworking performance among male employees. Social well-being had a more significant effect on social well-being among employees in junior level jobs in their organisations. Task-technology fit had a more significant effect on teleworking performance among employees in urban areas. Employees in urban areas could possibly have more access to teleworking due to higher network connectivity (Esteban-Navarro et al., 2020). They are more aware of the significance of task-technology fit. For employees on a low-income level, task-technology characteristics have a significant effect on teleworking performance. Teleworking performance during the pandemic has significant effects on career engagement and intention to continue teleworking once the pandemic restrictions are relaxed. Previous studies highlighted the impact of income level (Bonacini et al., 2021). For younger employees, social well-being and task-technology characteristics have significant effects on teleworking performance.

Our findings also show the moderating effects of employees' perceptions of COVID-19 related restrictions on the relationships proposed in our model. The relationships between task-technology fit and teleworking performance were stronger among employees who perceive restrictions on leaving the house in their area of residence to be higher than others. This extends the findings of previous research on how employees perceive the fitness of the technologies they use for tasks related to teleworking (e.g., Parkes, 2013) by showing the boundaries of these relationships. However, the relationship between work-life balance and teleworking performance is stronger among employees who perceive restrictions on leaving the house in their area of residence to be lower than others. The relationship between social well-being and teleworking performance is stronger among employees who perceive restrictions on local public transport to be low. Previous research found that employee social well-being is about connecting to and obtaining support from others (Geurts et al., 2014). Our findings show that even for teleworking purposes, employees still prefer to have the freedom to travel and connect to others in their organisations. This is also confirmed through our findings on the relationship between social well-being and teleworking performance, which is stronger among employees who perceived restrictions on public life in their area of residence to be lower than others.

6.1. Managerial implications

Our research has multiple implications for employers, policy makers and technology developers with respect to teleworking. Although teleworking was adopted out of necessity and in very challenging circumstances, the opportunity to experience a different approach to working may have led many to maintain a positive outlook towards adopting it even when the pandemic restrictions are relaxed. Organisations and managers who were reluctant to adopt teleworking and other flexible modes of working could be encouraged to try them out, given the likely win – win situation (e.g., less office space and better work life balance). They could set up policies that aim to balance the demands of roles, and organisational culture with employees' willingness to work in a way that is conducive to their own preferences and personal circumstances. Teleworking policies should actively take into consideration the necessary infrastructure needed to make such arrangements viable. Similarly, organisations could design and offer training programmes to support employees who opt to telework. Such training programmes should not just cover the technical aspects of teleworking, but also health and safety and the wellbeing of home-based employees. More holistic initiatives could enhance work engagement and help employees achieve a work-life balance and career progression in a way that is appealing to them.

7. Limitations and future research

Our research provides interesting and novel insights into employee perceptions of teleworking during the COVID-19 pandemic and when the restrictions are relaxed. While this study offers important findings about employee perceptions of telework during the pandemic, it has limitations, which can be addressed in future research. First, we examined employees' perceptions of teleworking based on data collected at one point in time. Employee perceptions of teleworking as a viable post-pandemic option could be further shaped while the pandemic remains an ongoing challenge. Future research can conduct longitudinal studies with data collected over a longer period of time to gain a more accurate understanding of remote working in general, and productivity specifically. Second, our study aimed to provide a holistic approach considering key factors such as employee work-life balance, social well-being

and task-technology fit factors. Future studies could focus on and cover more in-depth factors, such as social inclusion and gender issues in relation to remote working. Third, our data was collected from employees without considering the attributes of the organisations in which they work. Future research could compare differences in employee perceptions of teleworking based on company size, industry type and employee position/role. This will help academics and practitioners gain a deeper understanding of teleworking in different contexts. Fourth, our research is missing a measure of how much employees were using the same technologies (i.e., technologies used for coordinating and collaborating with colleagues) before the pandemic. Future studies should collect data on this when studying teleworking before and during the pandemic. Finally, future studies could analyse the impact of cutting-edge technologies such as artificial intelligence and robotics on employees' willingness and ability to telework.

CRediT authorship contribution statement

Nisreen Ameen: Writing – review & editing, Writing – original draft, Formal analysis, Project administration, Conceptualization. **Savvas Papagiannidis:** Writing – review & editing, Funding acquisition, Data curation, Conceptualization. **A. R. Shaheen Hosany:** Writing – review & editing, Writing – original draft, Conceptualization. **Elodie Gentina:** Writing – review & editing, Writing – original draft, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A

Measurement items.

Factor/items	Source/description	Mean	Standard deviation
Task-technology fit	Lin and Huang (2008)		
	During the pandemic, when working from home… - The functions of teleworking technologies (such as Zoom, Microsoft Teams, Google meet, Skype) were enough	5.19	1.41
	During the pandemic, when working from home… - The functions of teleworking technologies (such as Zoom, Microsoft Teams, Google meet, Skype) were appropriate	5.39	1.28
	During the pandemic, when working from home… - In general, the functions of technologies used for teleworking (such as Zoom, Microsoft Teams, Google meet, Skype) fully met my needs	5.14	1.49
Task technology characteristics	Zhou et al. (2010)		
	During the pandemic, when working from home, technology has provided me with… - a comprehensive service when it came to teleworking	5.06	1.45
	During the pandemic, when working from home, technology has provided me with… - a real-time service when it came to teleworking	5.69	1.28
	During the pandemic, when working from home, technology has provided me with… - a reliable service when it came to teleworking	5.45	1.38
Work-life balance	Carlson et al. (2009); Cain et al. (2018)		
		5.23	1.30
	Considering your work and personal circumstances: During the pandemic… - I have been able to negotiate and accomplish what is expected of me at work and in my family		
	Considering your work and personal circumstances: During the pandemic… - I have done a good job of meeting the role expectations of critical people in my work and family life	5.35	1.24
	Considering your work and personal circumstances: During the pandemic… - people who are close to me would say that I have done a good job of balancing work and family	5.29	1.40
	Considering your work and personal circumstances: During the pandemic… - I have been able to accomplish the expectations that my supervisors and my family have for me	5.40	1.20
	Considering your work and personal circumstances: During the pandemic… - my co-workers and members of my family would say that I have met their expectations	5.43	1.14
	Considering your work and personal circumstances: During the pandemic… - it is clear to me, based on feedback from co-workers and family members, that I have been accomplishing both my work and family responsibilities	5.40	1.20
Social well-being	Pradhan and Hati (2019)		
	Considering your work circumstances: During the pandemic… - I have been an important part of my team and organization	5.44	1.30
	Considering your work circumstances: During the pandemic… - I have been close to my teammates in my organization	4.53	1.53
	Considering your work circumstances: During the pandemic… - my team has been a great source of social support	4.29	1.62

(*continued on next page*)

(*continued*)

Factor/items	Source/description	Mean	Standard deviation
	Considering your work circumstances:	5.14	1.23
	During the pandemic… - my views have been well accepted by my teammates Considering your work circumstances:	5.15	1.40
	During the pandemic… - people in my team have helped each other in difficult times Considering your work circumstances:	4.98	1.45
	During the pandemic… - I have taken active part in important decision-making activities of my team Considering your work circumstances:	3.86	1.69
	During the pandemic… - I have spent time with my teammates Considering your work circumstances:	4.27	1.68
	During the pandemic… - I have freely shared my problems with my colleagues Considering your work circumstances:	5.10	1.33
	During the pandemic… - my day-to-day activities have contributed towards the benefits of my team		
Intention to telework post the pandemic	Venkatesh et al. (2012)		
	After the pandemic… - I intend to continue teleworking	5.00	1.84
	After the pandemic… - I will always try to adopt teleworking	5.02	1.87
	After the pandemic… - I plan to continue to telework frequently	5.01	1.86
Teleworking performance	Borman and Motowidlo (1993); Yang and Hwang (2014)		
	Considering your work circumstances:	5.05	1.61
	During the pandemic while teleworking… - I have outperformed my colleagues Considering your work circumstances:	5.02	1.63
	During the pandemic while teleworking… - I have handled emergencies well Considering your work circumstances:	5.06	1.61
	During the pandemic while teleworking… - I have achieve objectives that are assigned to me Considering your work circumstances:	4.45	1.45
	During the pandemic while teleworking… - I was never late nor leave early from work Considering your work circumstances:	5.11	1.29
	During the pandemic while teleworking… - I have aimed to attain perfection in my work Considering your work circumstances:	5.50	1.26
	During the pandemic while teleworking… - I have been prudent and seldom made mistakes		
Career engagement post the pandemic	Hirschi et al. (2014)		
	After the pandemic… - I will actively design my professional future to take advantage of teleworking	4.45	1.44
	After the pandemic… - I will consider telework and how it can help achieve my career goals	4.58	1.41
	After the pandemic… - I will care as to whether teleworking can be part of my career's development	4.31	1.61
	After the pandemic… - I will develop teleworking plans and goals for my future career	4.86	1.50
	After the pandemic… - I will sincerely think about how teleworking relates to my personal values, interests, abilities, and weaknesses	4.56	1.54
	After the pandemic… - I will collect information about employers, professional development opportunities, or the job market in my desired area taking teleworking opportunities into consideration	5.20	1.40
	After the pandemic… - I will voluntarily participate in education, training, or other events to support my career when it comes to teleworking	4.94	1.41
	After the pandemic… - I will take teleworking duties or positions that will help me progress professionally	5.05	1.39

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Further reading

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Nisreen Ameen (PhD) a Senior Lecturer in Digital Marketing, Co-Director of the Digital Organisation and Society research centre at Royal Holloway, University of London. Nisreen's research focuses on two main themes: first, consumer interactions with new-age technologies; and second, how organisations can use these technologies to provide better experiences, services and products. Within these main themes, her research interests include digital marketing and entrepreneurship, human-computer interaction consumer behaviour, and organisational use of consumer data. She also focuses on cross-national and cross-cultural research in developing, emerging and developed markets. She has expertise in qualitative and quantitative methods of data analysis; in particular, survey and experimental research.

Savvas Papagiannidis is the David Goldman Professor of Innovation and Enterprise in the Newcastle University Business School, UK. His work has been published in several academic journals and presented at international conferences. His research interests mainly revolve around electronic business and its various sub-domains. More specifically, his research aims to inform our understanding of how e-business technologies affect the social and business environment, organisational strategies and business models, and how these are implemented in terms of functional innovations. His work puts strong emphasis on innovation, new value creation and the exploitation of entrepreneurial opportunities, within the context of different industries.

Asheeabee R Shaheen Hosany is a Lecturer in Marketing at Goldsmiths, University of London. Her core research interests include children consumers, family decision-making, sustainability and resource scarcity. Shaheen has methodological expertise in quantitative and qualitative research. Shaheen's works have been published in leading journals including the Journal of the Academy of Marketing Science and Journal of Business Research. Prior to joining academia, Shaheen worked for 10 years at Procter and Gamble, UK, in Supply Chain and Logistics, holding various positions across several FMCG brands, including Pampers, Fairy, and Gillette.

Elodie Gentina is an Associate Professor of Marketing at IESEG School of Management in France. Her principal research interests lie in Generation Z and consumer behavior/management. Elodie Gentina is the author of three books on Generation Z (Dunod and Emerald). She has published many articles on Generation Z in Journal of Business Research, Journal of Business Ethics, Information and Management, Harvard Business Review (online)… She regularly presents papers at international conferences, including European, U.S. and Asia-Pacific.