Working Paper Series – Socially Innovative Knowledge Work

A systematic review of risk and protective factors associated with flexibility

By Sabina Pultz & Katia Dupret

Colophon

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Abstract

This systematic review summarizes the evidence from studies examining risk and protective factors associated with three types of employment flexibilities among knowledge workers. Data included 38 peer-reviewed studies. In order to gain an overview of the identified risk and protective factors, an ecological model was used to structure the findings. At the individual level, risk factors included work intensification and (techno)stress and self-responsibility in relation to autonomy versus control. At the organizational and family level, unclear management, work/life conflict and external demands were identified. At the societal level, working conditions and reduced bargaining power were identified. Cultural-level risk includes gender differences. Protective factors at the individual level are coping strategies and self-management and devotion/commitment to work. At the organizational and family level, clear (e) management and collective identity were identified. The findings suggest flexibilities entail great potential for improving work life however, only true if risk factors are mitigated.

Introduction

Labour markets have undergone a significant reshaping as a result of technological developments, such as mobile and information technology devices (MITD) (Fonner and Stache, 2012). These technological advances have brought about various types of flexibilities. As a result the boundary between work and non-work has been gradually eroded (Gadeyne *et al.*, 2018). Technolog plays a key role when it comes to the organizing of labour both in terms of when, where and how you work. Recent literature suggests that new technologies have facilitated new ways of contracting also referred to as atypical, contingent or flexible labour (Menger, 2017) as well as of technologies have been associated with an intensification of work. Technologies reconfigure flexibility in terms of how and when work is done (temporal), where work is done (spatial) and with what kind of employment work is done (occupational). We limit the scope here to investigating to knowledge workers. By 'knowledge work' we refer to work that mainly builds on and or produce knowledge (Drucker, 1959; Pyoeriae, 2009). In order to safeguard mental health among knowledge workers, it is necessary to gather systematic information about the consequences of these changes and to enhance our understanding of the potentials and pitfalls of these flexibilities. In the following, we elaborate and define the three types of flexibilities. We assess the literature in relation to these types of flexibilities in order to make clear how research so far has contributed insights and we also aim to identify areas which have only been given scarce attention.

Temporal flexibility

The various changes relating to the ways we work entail that working schedules have gone from being rather fixed to increasingly flexible ones. This gives employees more autonomy regarding organizing their workdays (Jarrahi and Nelson, 2018; Schultze and Orlikowski, 2010). The employee can decide for him or self what to first, how much time to spend on a task, and some can even decide when they come in and when they leave the office. We refer to this type of flexibility as 'temporal flexibility'. Temporal flexibility is associated with a sense of freedom but it has also been pointed out that such freedom does not exist in a societal or social vacuum. On the contrary, it is controlled by normative expectations through self-management. Du Gay (1996) noted that the normative idea about 'enterprising' subjects frames work in various ways as normative pressures encourage employees to conduct themselves in ways aligned with efficiency and productivity. This composes a powerful management strategy shaping how people should feel about how they work (Blok et al., 2012; Twiname et al., 2006).

Spatial flexibility

In addition to temporal flexibility, employees have more options for where they do their work. Knowledge work today is characterized by not necessarily being constricted to the spatial confinements of an office. MITDs such as e-mails, smartphones, and virtual private networks have put a pressure on the traditional separation between work and private life established in industrial modernism(Gerdenitsch *et al.*, 2015; Nippert-Eng, 1995). Knowledge workers can work 'anytime, anywhere' – on the train, on the bus, in the park, at a café, in co-working spaces or simply at home, reducing or eliminating all transport as a consequence (Byrne and Canato, 2017).

Occupational flexibility

How knowledge workers manage their temporal and spatial flexibility is also related to another defining flexibility, namely, what we here term 'occupational flexibility', referring to the employment status of the knowledge worker as non-standard, atypical or precarious, or short-term employed as opposed to long-term employed. We choose to differentiate between short-term and long-term employments as our main categories. Mediated by technology we witness a shift from traditional or 'bounded' careers towards 'boundaryless' careers composed of multiple temporary employments (short-term) (Loogma, 2004). Here, digitalized network relationships and online piecework are important features (Howe, 2009). Atkinson (1984) used the term 'numerical flexibility' to describe how organizations need to constantly hire or fire employees in order to respond to the rapid developments in an accelerated and global market. The flexibility in relation to the number of employees required in a given point in time is often attained by taking on casualised workers for a temporary period. Atkinson (1984, p. 3) also referred to this phenomenon as 'atypical' employment and he speculated that these employment practices might become generalized. The literature of the past couple of decades confirms this prediction, as we see a rise in atypical, nonstandard or precarious workers (Kalleberg, 2012; Standing, 2016) while national and sector-based variations occur. From a negative perspective, this occupational flexibility is associated with a higher risk and less safety which again leads to negative psychological as well as physiological effects (Sennett, 1998; Standing, 2016). However, knowledge

workers also praise the flexibility in an untraditional work life, among other advantages because it allows them to balance paid work and caregiving responsibilities.

Aim

Existing research suggests that various types of flexibilities facilitated by technological developments affect the everyday life of knowledge workers today. However as far as we know there has not been carried out a systematic review exploring the risk and protective factors associated with flexibilities among knowledge workers. This systematic review aims to contribute with knowledge that might result in improving work conditions as well as enhance wellbeing among knowledge workers. Thus, the aim of the article is on the basis of a literature analysis to serve as a resource for HR staff and organizational practitioners who develop, select and implement interventions and programmes to improve the work environment.

Method

We have carried out searches in the databases PsycINFO, SCOPUS and Web of Science. These were finalized in May 2019. We restricted the publication dates to 1999–2019 and we limited the search to peer-reviewed journal articles in English. We excluded dissertations, reviews, editorials, books and chapters. Initially we carried out a number of text-based searches and we kept records of searches that resulted in the most appropriate findings in relation to the research question. We ended up with following combination: (flexibility OR casualization OR precariat or nonstandard work OR atypical employment) AND (technology) AND (work or employment or job). This search yielded 807 articles. We then did a screening of the 807 articles resulting in an identification of 72 potentially relevant articles. We assessed these 72 articles by reading them in ful-length and by imposing a set of criteria addressing the eligibility of each study. The following eligibility criteria were imposed, retaining 38 articles:

a. *Study methods:* We have included qualitative, quantitative and mixed methods studies.
b. *Participants:* Only articles studying knowledge workers were included. Studies of i.e. students or workers in vocational training were excluded.
c. *Context*: Articles on knowledge workers in western countries were included, such as Europe, US and Canada, whereas studies of knowledge workers in non-Western countries were excluded.
   Flexibilities: Articles on knowledge workers with flexible working conditions in relation to what, when and where were included. Studies addressing the use of information and communication technologies (ICTs) in traditional employment conditions were excluded.
d. *Technology*: Articles focusing on the role of technology, such as information and communication technologies, were included. Studies focusing on other materialities, such as ergonomic technology, were excluded.

2.1. Quality appraisal

As can we seen in figure 1 we have assessed the quality of the studies in relation to 1) appropriateness in relation the research questions, 2) the quality of investigation as thorough or superficial, 3) sample size as small (< 100 participants) or large (>100 participants).
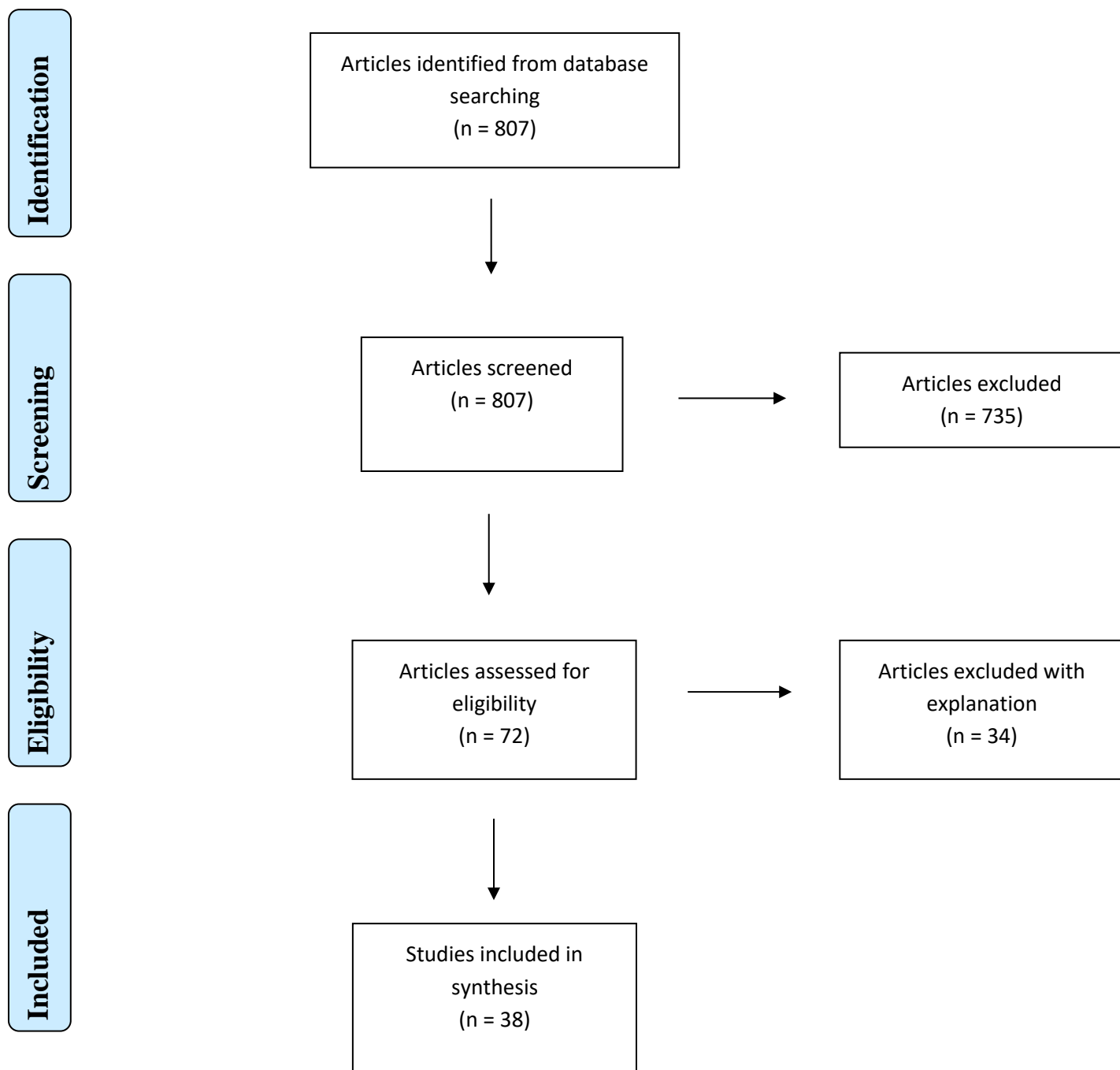
Figure 1. Overview of research strategy based on the PRISMA 2009 flow diagram (Moher *et al.*, 2009).

Results

Table 1: Identified risk and protective factors

Risk factors associated with temporal, spatial and occupational flexibility among knowledge workers

Individual factors (micro): work intensification and (techno)stress, self-responsibility in relation to autonomy and control

Organizational and family factors (meso): work/life conflict, unclear management, lack of management and external demands

Societal risk factors: working conditions and reduced bargaining power

Cultural factors (macro): gender differences

Protective factors associated with temporal, spatial and occupational flexibility among knowledge workers

Individual factors (micro): freedom and self-management, commitment/devotion

Organizational and family factors (meso): boundary management, person-organization fit, collective identity

The review included 38 studies and we have summarized the results from each of these studies in Table 2. The review covers 10 quantitative studies employing surveys, standardised measures and/or rating scales. Eleven used a mixed-methods design consisting of rating scales and interviews and/or field observations. 15 studies were based on qualitative methods such as interviews with either groups or with individuals, and/or observations.

We have used Bronfenbrenner's ecological model of human development to structure the findings in regards to the risk and protective factors (Bronfenbrenner, 1979; author, 2016; Timshel el., 2017). The ecological model is a solid framework for a multi-levelled analysis as it entails four different systems considered important to human life. According to Bronfenbrenner it necessary to understand the human beings as embedded in various contexts

that all interact. He describes the immediate surrounding such as the home as a microsystem. The meso-system is the interaction between more than one micro-system such as home and work. We concur with author (2016) when they highlight that Bronfenbrenner's contribution was to conceptualise development as a process that has to take into account institutional settings, that the person is not necessarily in immediate contact with but that non the less have an impact on human development. He defines the exo-level as mass media and agencies of government, while the macro-level is defined as (Bronfrenbrenner, 1979, p. 515): "overarching institutional patterns of the culture or subculture, such as the economic, social, educational, legal, and political systems, of which micro-, meso-, exo- are the concrete manifestations." Importantly, Bronfenbrenner view these systems as mutually co-constituting and developing with changes in one system having impacts in others.

TABLE 2. Results of systematic literature review

Study	Participants	Country of origin	General description	Method	Type of flexibility	Results	Quality of the study
Towers, I., Duxbury, L., Higgins, C. & Thomas, J. (2006)	845 survey respondents 61 interviewees	Canada, a governmental department	The study investigates how technologies are being used in a way that increasingly erodes boundaries between home and work.	Mixed methods consisting of survey using self-report data with employees and interviews conducted by telephone	Temporal and spatial flexibility	Based on both surveys and interview data, the study finds that work-extending technology increases spatial flexibility. The study also finds that the feeling of increased control over where and when they work may be used by work extenders to support an identity which can make some claim to autonomy; by choosing to be work-extenders, employees are (re)creating an identity which has elements of independence from the perceived normal bureaucratic way of working.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large
Adisa, T., Gbadamosi, G. & Osabutey, E. (2017)	42 respondents (21 university lecturers and 21 bankers)	London, UK, in a bank and at a university	The study examines the role of mobile information technology devices (MITDs) on employees' work/life balance (WLB).	The method is qualitative, consisting of semi-structured interviews	Temporal and spatial flexibility	Based on the interviews, findings reveal that the positive impacts of MITDs on employee WLB include flexibility, attending to work and nonwork issues in a timely manner, and potential health benefits. On the other hand, extended working hours, intrusion into family life and other non-work activities, and a potential threat to good health were common concerns mentioned by respondents and these	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small

						considerably prevent them from achieving WLB.	
Nam, T. (2014)	850 fulltime workers	USA	This study examines the impact of Internet and mobile technology use on work/life balance.	Quantitative analysis of secondary data from the Networked Workers Survey conducted by the Pew Internet and American Life Project.	Temporal and spatial flexibility	Based on the secondary data, regression analyses show that the dimensions, types, and consequences of WLB are significantly predicted by the use of ICTs. Flexibility and permeability have a reciprocal relationship: those who are more flexible in work-at-life are willing to allow for the intrusion of work into life, and permeability of life-at-work would lead to less flexibility of work-at-life. Flexibility and permeability, however, have different effects on job satisfaction, job stress and workload.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large
Rose, E. (2015)	25 participants, 14 working as engineers and 11 in managerial roles	Australia, multi-national telecommuting company	This study examines how environments of constrained autonomy affect employees' ability to use temporal flexibly.	Qualitative case study based on interviews and data on ICT use. In addition, the author conducted informal direct observation (N=25).	Temporal flexibility	Findings reveal two overall patterns. Firstly, environments of constrained autonomy limit when during the working day employees can engage in personal mediated communications. Secondly, when personal time is inserted into such contexts, the quantitative and qualitative character of this time is affected. The particular temporal moment in the work context is important. Participants make an assessment about the appropriateness or not of using time flexibly in relation to that moment.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small
Loogma, K.(2004)	70 participants, 20 higher and intermediate management positions	Estonia, Germany, the UK and the Czech Republic	The study investigates work-related identity formation of IT specialists in the new economy with boundaryless career paths.	The study is based on qualitative data generated in the 5th EU framework project Vocational Identity, Flexibility and Mobility in the European Labour Market.	Occupational flexibility	The study finds an 'entrepreneurial' employment model that transfers responsibilities for skills acquisition, professional development and risk management to the individual. The absence of pre-structured career paths in the IT field increases instability. IT specialists had very different career paths as well as work identities and attitudes	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small

						towards flexibility and mobility requirements at work. Both vertical and horizontal mobility strategies were represented.	
Twiname, L., Humphries, M. & Kearins, K. (2006)	29 core workers in the firm	New Zealand, European-owned manufacturing firm	The study examines the application of flexible work arrangements through the experiences of core workers in a process by which a firm lets go of a number of core workers to hire peripheral workers.	A qualitative study based on a participatory action research approach. Focus group interviews were conducted.	Occupational flexibility	Flexible employment arrangements utilized in this firm did not afford protection to core workers (long-term employed). Core workers perceived that peripheral workers had low levels of organizational commitment and required high levels of supervision and training. Therefore, the use of peripheral workers resulted in additional frustration for core workers and contributed to production losses compensated by core workers' tendency to work extended hours. Core workers felt pressure to work extended hours out of their commitment to the firm and each other, and to keep their jobs.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small
Gerdenitsch, C., Kubicek, B. & Korunka, C. (2015)	45 employees: 27 men and 18 women	Austria	The aim of this exploratory study was to gain an understanding of what makes digital natives feel good and bad about temporal and spatial flexible situations.	Mixed methods study based on semi-structured interviews and TA-EG questionnaire addressing technological affinity	Temporal and spatial flexibility	Temporal flexibility is appraised positively as often as negatively, which supports the assumption of a two-dimensional concept of temporal flexibility (Kattenbach *et al.*, 2010). Thus, temporal flexibility can be perceived as supportive and demanding. Spatial flexibility is more frequently perceived positively than negatively by digital natives. Positive situations were perceived as autonomous rather than externally controlled. Results showed that work/non-work conflicts are indeed an issue for digital natives requiring self-management.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small
MacEachen, E., Polzer, J. & Clarke, J. (2008)	30 software industry managers	Canada, Ontario	The study investigates how managers in the computer software industry situate workplace flexibility and approach worker health.	Qualitative study based on in-depth interviews conducted with managers and some workers	Temporal flexibility	The authors suggest that the discourse of temporal flexibility, and the work practices it fosters, makes possible and reinforces an increased intensity of work that is driven by the demands of technological pace and change. They propose that flexible knowledge work has led to a reframing of occupational health management involving a focus on 'strategies of resilience'. These are focused on how to stretch workers *far*	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small

						enough so that they are optimally productive, but *not so far* that they cannot spring back into shape after intense bouts of work.	
Golden, T., Veiga, J., Simsek, Z. & Zedeck, S. (2006)	454 telecommuting employees 65% men, 35% women	Data gathered in the USA	The authors examined how extensive working impacts work-to-family conflict and family-to-work conflict, as well as the contextual impact of job autonomy, scheduling flexibility and household size.	Quantitative study based on surveys	Temporal and spatial flexibility	The findings suggest that telecommuting has a differential impact on work/family conflict, such that the more extensively individuals work in this mode, the lower their work-to-family conflict, but the higher their family-to-work conflict. Additionally, job autonomy and scheduling flexibility were found to positively moderate telecommuting's impact on work-to-family conflict, but household size was found to negatively moderate telecommuting's impact on family-to-work conflict, suggesting that contextual factors may be domain-specific.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large
MacCormick, J., Dery, K. & Kolb, D. (2012)	21 senior managers: 16 men 5 women	Australia, banks and offices	The case study explores the relationship between connectivity and engagement, and how connectivity can be managed to optimize outcomes for the individual and the organization.	Qualitative study based on 21 semi-structured interviews and two focus groups. Follow-up interviews with five participants.	Temporal and spatial flexibility	Findings suggest that the use of smartphones appears to amplify work engagement behaviour, both functional and dysfunctional. Overall, the majority of smartphone users in our study felt that the technology enhanced their ability to engage with the workplace, while enjoying increased flexibility and mobility. Notwithstanding the downsides, it was difficult to find an executive who would give up her or his smartphone and the connectivity that it afforded.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small
Arlinghaus, A. & Nachreiner, F. (2014)	34,399 employed workers	European Union	The study investigates the association between (1) work-related contacts outside regular work hours and (2) working in free time with self-reported work-related health impairments.	Quantitative study based on the fourth and fifth European Working Conditions Surveys (2005, 2010) using weighted logistic regression analyses	Temporal flexibility	The results showed an increased risk of reporting at least one health problem for employees who had been contacted by their employer or worked in their free time to meet work demands in the previous 12 months, compared to those reporting no supplemental work or work-related contacts during free time. The findings indicate that even a small amount of supplemental work beyond	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large

						contractually agreed work hours may increase the risk of work-related health impairments.	
Barley, S., Meyerson, D. & Grodal, S. (2011)	79 participants (logs and surveys) 40 were interviewed	USA	The study examines whether and how communication technologies evoke feelings of stress among users from a socio-material vantage point.	Mixed methods using a combination of communication logs/surveys and interview data	Temporal and spatial flexibility	The more time people spent handling e-mail, the greater was their sense of being overloaded, and the more e-mail they processed, the greater their perceived ability to cope. In short, e-mail was not just a source but also a symbol of overload.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small
Grote, G. & Raeder, S. (2009)	596 employees Interviews with 59 individuals	Switzerland	The study explores the relationship between personal identity and the experience of individual career change and flexible working.	Mixed methods study based on cluster analyses with survey data and 14 narrative interviews	Occupational flexibility	Results revealed four types of identity, namely, the critical-flexible, self-determined, continuous, and job-centred type. The study indicates, on the one hand, that there are individuals who have developed a sound personal identity based on more discontinuous and flexible work arrangements, but on the other, that individuals with more traditional continuity-based orientations may succeed more in their careers even	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large

						in flexible work organizations.	
Kattenbach, R., Demerouti, E. & Nachreiner, F. (2010)	167 employees 71 participants involved in peer evaluation	Germany	The study examines the relationships between flexible working times and employees' wellbeing and peer ratings of performance.	Quantitative study based on self-reported questionnaires as well as peer evaluations	Temporal flexibility	The data support a two-factor structure of flexibility. The time restriction factor adds to the degree of exhaustion and the work/non-work conflict, while time autonomy diminishes these outcome variables. However, the flexibility dimensions are unrelated to performance. Time autonomy is able to improve the employee's situation but it is even more important to avoid time restrictions, if possible.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large
Vaag, J., Giæver, F. & Bjerkeset, O. (2015)	12 in-depth interviews	Norway	The study investigates the qualities of freelance musicians' psychosocial work environment, as well as possible protective factors for maintaining good mental health.	Qualitative study based on in-depth interviews	Occupational, temporal and spatial flexibility	The authors found that musicians' psychosocial work environment and health seem to be related to the three overarching protective factors against uncertain careers also described in resilience research: namely, personal dispositions such as having adequate personal resources (e.g. entrepreneurial skills, value-anchored flexibility, tolerance for ambiguity and dedication to music-	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small

						making), family coherence and social resources.	
Polanyi, M. & Tompa, E. (2004)	120 American gig workers	USA	The study identifies aspects of work affecting the quality of workers' experiences.	Qualitative study based on interviews from published book entitled *Gig: Americans Talk About Their Jobs*	Occupational flexibility	The authors find that the quality of work experiences among these gig workers (or short-term employed) is partly determined by the objective characteristics of the work environment, but also by the fit of the work environment with the worker's needs, interests, desires and personality, something not adequately captured in current models.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large
Nurmi, N. (2011)	97 participants	USA and Finland	The study explores context-specific job stressors and coping in ten geographically distributed work teams.	Qualitative study using a multiple-case study method based on interviews	Temporal flexibility	Results show the complex and dynamic nature of the stress-coping process and how coping strategies, adapted to manage stress-evoking uncertainty and ambiguity in distributed work, created secondary sources of psychological strain for individuals. These were extensive e-mailing, travelling to face-to-face meetings, and extending workdays to collaborate simultaneously across time zones. These coping strategies created work overload and strain. Experienced workers, who	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large

						had good self-management skills, succeeded in coping with these secondary sources of strain by prioritizing and setting clear limits for workload. Less-experienced workers were overloaded and needed more social support from their leaders and teammates.	
Porter, S. & Ayman, R. (2010)	243 participants	USA, Midwestern, health care organization	The study examines the mediating effect of work flexibility on the relationship between work/family conflict and intention to quit one's job.	Quantitative study based on surveys consisting mainly of standardized scales	Temporal flexibility	Findings support the idea that allowing employees increased control and autonomy over when, what, and where their work is carried out will decrease negative outcomes, such as work-to-family interference and intention to quit.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large
Damarin, A. (2006)	61 participants	USA	This article addresses the structure of occupations in flexible work settings by examining the case of website production.	Mixed methods study consisting of in-depth interviews and questionnaires	Occupational flexibility	The authors conclude that fluid jobs allow workers some autonomy in production, but little control over the wider organization of work. Furthermore, workers identify less with particular specialties than with Web production as a whole.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small
Fleetwood, S. (2007)	Over 1 million	UK	The study investigates why there is a focus on work/life balance (WLB) in organizations now.	Quantitative study based on secondary survey data	Temporal and spatial flexibility	The authors conclude that discourses of WLB have increased markedly because they have been useful in legitimizing the employee-unfriendly working	Appropriate for exploring the research question: yes Depth of

						practices central to neoliberalism.	investigation: thorough Sample size: large
Ringdal, K. (2009)	630 participants	Norway	The purpose of the study is to test whether the use of numerical and functional flexibility practices in firms affects their performance.	Quantitative study based on questionnaire for Norwegian work organizations. In addition, secondary register data from Statistics Norway are used.	Occupational flexibility	Numerical flexibility measures are negatively associated with wages and productivity per employee, although the association is stronger with wages than with productivity. This supports the idea that numerical flexibility fits in with a low-cost strategy. The idea that high-commitment human resource (HR) management has positive effects on wages and productivity was confirmed by other indicators of HR management.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large
Golden, T. D. (2006)	393 teleworkers	USA	The study investigates the intervening role of work exhaustion in determining commitment and turnover intentions.	Quantitative study based on surveys with 393 respondents	Spatial flexibility	Results indicate that telework is positively related to commitment and negatively related to turnover intentions, such that a higher degree of teleworking is associated with more commitment to the organization and weakened turnover intentions. Moreover, work exhaustion is found to	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large

						mediate the relationships between teleworking and both commitment and turnover intentions.	
Lundberg, U. & Lindfors, P. (2002)	26 participant white-collar teleworkers: 12 men and 14 women	Sweden, a government office	The study investigates psychophysiological arousal in 26 highly educated white-collar workers	Mixed methods study based on psychophysiological data measured at the office, teleworking at home and relaxing at home	Temporal and spatial flexibility	Blood pressure was significantly higher during work at the office than when teleworking at home, and men had significantly elevated epinephrine levels in the evening after teleworking at home. It was assumed that the lower cardiovascular arousal when teleworking is due to different work tasks and that elevated epinephrine levels in men after teleworking are caused by continued work after normal working hours.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small
Smithson, J., Lewis, S., Cooper, C. & Dyer, J. (2004)	50 participants	UK, accounting firm	The study investigates the relationship among flexible working arrangements. The gender pay gap is explored.	Qualitative study based on interviews. The study is part of a larger mixed methods research design with questionnaires answered by 670 accountants.	Temporal and spatial flexibility	The study highlighted gendered patterns of flexible working. Women who worked flexibly or part-time typically did so to combine working with caring commitments, in ways that damaged their career prospects. In contrast, men typically deferred working flexibly to a later stage when their	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small

						career had progressed further. In this context, the promotion of flexible working arrangements is reinforcing the gender pay gap.	
Blok, M. M., Groenesteijn, L., Schelvis, R. & Vink, P. (2012)	73 employees	Holland	This article describes a case study of three departments that changed from a traditional to a new way of working.	Quantitative study based on questionnaires used to measure changes in work behaviour	Temporal and spatial flexibility	The results of this study showed that the participants were aware of the increased possibility of working at different locations, and they experienced an increase in availability of ICT facilities and better remote access to business networks. However, after half a year a number of employees were still not used to it. New Ways of Working measures did not have an effect on selected business objectives such as productivity.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small
Tremblay, D. & Genin, E. (2010)	116 participants, 82% men and 18% women	Canada, Quebec, IT sector	The study focuses on the degree of work autonomy that IT self-employed workers enjoy.	Mixed methods based on survey data and 10 semi-structured interviews	Occupational, temporal and spatial flexibility	For a majority of respondents, the ideal distribution of work locations would be 50–50 between the client's office and teleworking. Yet our results indicated that IT self-employed workers performed only a few hours	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large

						work per week from their home, even if they would have liked to do more. Telework is often restricted in this group of workers.	
Salaff, J. W. (2008)	94 participants	Canada, Toronto	The study looks at how a teleworking sales force organized their work processes after transferring their office to their homes through 'boundary work'.	Mixed methods longitudinal study based on on-site observation, focus groups, time budget studies, and in-depth interviews	Temporal and spatial flexibility	The study finds that teleworkers do hidden work, putting effort into balancing job and family spheres. At the same time, mechanisms through which telework extracts more from employees, their families, and home are identified. The author concludes that, through telework, capital penetrates the home in new ways, as teleworkers openly contribute money and time to production at home.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small
Perrons, D. (2002)	55 interview participants 100 questionnaires 25 follow-up interviews	UK	The study investigates social divisions and their gendered form to different degrees within the European Union.	Mixed methods study composed of a qualitative study based on 55 in-depth interviews and 100 structured questionnaires together with 25 follow-up in-depth interviews	Occupational, temporal and spatial flexibility	The study finds that gender divisions remain in the new economy characterized by more short-term employments. In the new media sector, women are quantitatively underrepresented and, when present, earn less than men. Nevertheless, ICT has widened the temporal and spatial boundaries of work and enabled people to combine	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large

						relatively well-paid work with caring responsibilities. This widening of the scope for work, however, undermines collective norms and expectations about working patterns.	
Ruiller, C., van der Heijden, B., Chedotel, F. & Dumas, M. (2019)	22 participants	France	The study investigates the possible role that management plays in terms of influencing perceived proximity in dispersed teams.	Qualitative study based on 22 interviews with human resources directors, managers and teleworkers.	Spatial flexibility	The results of this propose nuances, highlighting the importance of the interpersonal relationship to expand the perceived proximity and stressing the need for both distant and face-to-face exchanges. In particular, they help to understand the role of communication and collective identity and support the importance of the e-leader. More specifically, such a configuration depends on sound management practices.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small
Zafari, S., Hartner-Tiefenthaler, M. & Koeszegi, S. (2019)	481 participants	Austria and Spain	The study analyses the role of perceived organizational alignment as a conditional factor in terms of an organization's success in improving work-related outcomes.	Quantitative online survey	Temporal and spatial flexibility	The study finds that the perceived organizational alignment (also termed fit) moderates the positive effect of autonomy on work-related outcomes in the context of flexible work. For employees who	Appropriate for exploring the research question: yes Depth of investigation: thorough

						perceive organizational alignment to be high, the positive relationships are strengthened for work engagement and organizational identification, but attenuated for job satisfaction.	Sample size: large
Gadeyne, N., Verbruggen, M., Delanoeije, J. & De Cooman, R. (2018)	467 participant white collar workers and parents	Belgium	The study investigates the moderating role of integration preference in relation to work environment.	Quantitative survey study	Temporal and spatial flexibility	Findings indicate that only work-related PC/laptop use – and not smartphone use – outside working hours is positively related to work-to-home conflict. This effect is attenuated for people who have a preference for integrating work and personal life, but only when their work environment is characterized by low organizational integration norms and/or low work demands. This indicates that for employees with integration preferences, work-related ICT-use outside working hours may facilitate finding work/home compatibility.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large
Lehdonvirta, V. (2018)	30 short-term workers	unknown	The study explores how gig economy platforms provide temporal	Qualitative interviews with 30 workers employed	Occupational, temporal and	The study finds that structural constraints (availability of work and	Appropriate for exploring the research

			flexibility to workers, giving them full control over how to spend time and it explores the constraints.	by companies running online piecework platforms	spatial flexibility	degree of worker dependence on the work) as well as cultural-cognitive constraints limit worker control over scheduling in practice. The severity of these constraints varies significantly between platforms. They also find that workers have developed informal practices, tools, and communities to address these constraints.	question: yes Depth of investigation: thorough Sample size: small
Blair-Loy, M. & Cech, E. (2017)	305 science and technology employees	USA	The study investigates the effects of employees' adherence to the 'work devotion schema' – a cultural model that valorizes intense career commitment and organizational dedication – on their sense of 'overload'.	Quantitative study based on survey	Temporal flexibility	The authors conclude that by cognitively, morally, and emotionally framing work as a valued end, the work devotion schema reduces feelings of overload – an experience that includes feeling exhausted and overloaded by all one's roles, regardless of actual hours spent on the paid job and family responsibilities. The authors find that those who embrace devotion to work feel less overloaded than those who reject it, regardless of work and family conditions. However, this effect is curtailed for mothers of young and school-aged children.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large
Sayah, S. (2013)	20 independent contractors from the IT and media sectors	Germany	The study examines how individuals manage their work–life boundaries by using ICTs.	Qualitative study based on semi-structured interviews	Occupational, temporal and spatial flexibility	The findings show that individuals actively use multiple ICT-mediated tactics to shape their temporal, spatial and psychological work-life boundaries. Furthermore, findings suggest that individuals cannot simply be classified as 'integrators' or 'segmentors', as they may have diverse preferences with regard to both the dimension (temporal, spatial or psychological) and direction (work-to-life or life-to-work) of boundary permeability.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small
Mazmanian, M., Orlikowski, W. & Yates, J. (2013)	48 knowledge workers	USA	The study examines how knowledge professionals use mobile e-mail devices and the implications of such use for their autonomy to control the location, timing, and performance.	Qualitative study based on interviews conducted in 2004 and 2005	Temporal and spatial flexibility	The study concludes that although individual use of mobile e-mail devices offered these professionals flexibility, peace of mind, and control over interactions in the short term, it also intensified collective expectations of their availability, escalating their engagement and thus reducing their ability to disconnect from work – for	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small

						which the authors coined the term 'autonomy paradox'.	
Fonner, K. & Stache, L. (2012)	142 teleworkers	USA	The study analysed the cues and rituals home-based teleworkers use to facilitate transitions between work and home roles.	Mixed methods consisting of a survey with closed-ended and open-ended survey items	Temporal and spatial flexibility	Teleworkers appeared to grapple with the tension between the desire for flexibility and the need for structure, and used cues and rites of passage in order to facilitate this balance. Female teleworkers were more likely to use segmenting cues relative to male teleworkers. Teleworkers with children living in the home were less likely to integrate work and home roles.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large
Whittle, A. & Mueller, F. (2009)	10 participants	European firm of telework consultants	This study examines the 'gap' between the visions produced by telework consultants in contact with colleagues compared to with clients.	Qualitative study based on ethnographic data consisting of non-participant observation and semi-structured interviews	Temporal and spatial flexibility	Findings suggest that the consultants were critical of, and cynical about, the organizational visions they sell to clients. However, the visions were reproduced in spite of the cynicism and criticism they also generated, leaving clients with a one-sided view of the realities of telework.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: small
Voudouris, I. (2007)	450 participants	Greece	This study explores the relationship flexibility and the moderating effects of information and communication technology use and networking.	Mixed methods based on questionnaires as well as interviews with managers	Occupational, temporal and spatial flexibility	The study finds that the use of both independent contractors and subcontractors is positively related to functional flexibility, whereas the use of temporary employees is found to be negatively related to functional flexibility.	Appropriate for exploring the research question: yes Depth of investigation: thorough Sample size: large

Table 3. Types of flexibility reported in included studies

Study	occupational	temporal	spatial
Towers, I., Duxbury, L., Higgins, C. & Thomas, J. (2006)		x	x
Adisa, T., Gbadamosi, G. & Osabutey, E. (2017)		x	x
Nam, T. (2014)		x	x
Rose, E. (2015)		x	
Loogma, K. (2004)	x		
Twiname, L., Humphries, M. & Kearins, K. (2006)	x		
Gerdenitsch, C., Kubicek, B. & Korunka, C. (2015)		x	x
MacEachen, E., Polzer, J. & Clarke, J. (2008)		x	
Golden, T., Veiga, J., Simsek, Z. & Zedeck, S. (2006)		x	x
MacCormick, J., Dery, K. & Kolb, D. (2012)		x	x
Arlinghaus, A. & Nachreiner, F. (2014)		x	
Barley, S., Meyerson, D. & Grodal, S. (2011)		x	x
Grote, G. & Raeder, S. (2009)	x		
Kattenbach, R., Demerouti, E. & Nachreiner, F. (2010)		x	
Vaag, J., Giæver, F & Bjerkeset, O. (2015)	x	x	x
Polanyi, M. & Tompa, E. (2004)	x		
Nurmi, N. (2011)		x	
Porter, S. & Ayman, R. (2010)		x	
Damarin, A. (2006)	x		
Fleetwood, S. (2007)		x	x
Ringdal, K. (2009)	x		
Golden, T. D. (2006)			x
Lundberg, U. & Lindfors, P. (2002)		x	x
Smithson, J., Lewis, S., Cooper, C. & Dyer, J. (2004)		x	x
Blok, M. M., Groenesteijn, L., Schelvis, R. & Vink, P. (2012)		x	x
Tremblay, D. & Genin, E. (2010)	x	x	x
Salaff, J. W. (2008)		x	x

Perrons, D. (2002)	x		
Ruiller, C., van der Heijden, B., Chedotel, F. & Dumas, M. (2019)			x
Zafari, S., Hartner-Tiefenthaler, M. & Koeszegi, S. (2019)		x	x
Gadeyne, N., Verbruggen, M., Delanoeije, J. & De Cooman, R. (2018)		x	x
Lehdonvirta, V. (2018)	x	x	x
Blair-Loy, M. & Cech, E. (2017)		x	
Sayah, S. (2013)	x	x	x
Mazmanian, M., Orlikowski, W. & Yates, J. (2013)		x	x
Fonner, K. & Stache, L. (2012)		x	x
Whittle, A. & Mueller, F. (2009)		x	x
Voudouris, I. (2007)	x	x	x

Discussion

In the discussion we identify both risk and protective factors related to temporal, spatial and occupational flexibilities that characterize today's labour markets. MITD technologies have had an enormous impact on the everyday life of knowledge workers and, in many ways, the entanglements of subjects and materialities have transformed how people work. The use of technology can surely enhance productivity and flexibility. However, technological tools can also have negative effects on individuals constituting risk factors in relation to psychological and physical health, as well as in relation to organizations such as lowered employee satisfaction (Atanasoff and Venable, 2017). Accordingly stress is a globally recognized health risk facing knowledge workers today. Organizing the results within Bronfenbrenner's ecological model makes clear that the potentials and pitfalls associated with various types of flexibilities among knowledge workers is an interplay between the various levels. Consequently, the wellbeing among knowledge workers in the new economy should be understood in relation to the personal, familial, organizational and societal level as well as we should pay attention to the dynamics among and between the the various systems.

4.1. Individual risk factors

4.1.1. Work intensification and (techno)stress

One of the most frequently cited risk factors in relation to knowledge work mediated by MITDs today is the risk of work intensification, overload, work extension or exhaustion (Barley *et al.*, 2011; Blair-Loy and Cech, 2017; MacEachen *et al.*, 2008; Nam, 2014; Nurmi, 2011; Ruiller *et al.*, 2019); Towers *et al.*, 2006). MITDs enable a constant connectivity, and knowledge workers today have to manage this connectivity so that they do not burn out or become stressed. Atanasoff and Venable (2017) call this 'technostress' and they describe how many workers cope with technostress on an individual level, even though it has been consolidated that organizational environments contribute to technostress. Similarly, Barley *et al.* (2011) argue that e-mail is seen as symbol of stress. Work-extending technology increases flexibility with respect to when and where to work. Potentially, this makes it easier to accommodate both work and family. That being stated, work-extension technologies also increase expectations for performance and thus increase work intensity. Thus dealing with both work and family can be described as a double-edged sword. Accordingly, Salaff (2008) identified how teleworking expands production to the family sphere as 'hidden work', making the extra work invisible. Paraphrasing MacEachen *et al.* (2008), strategies of resilience as being focused on how to stretch workers *far enough* that they are optimally productive, but *not so far* that they cannot spring back into shape after intense bouts of work. MacCormick *et al.*, (2012) emphasize that people interact with mobile technologies, but these do not drastically change behaviour. They find that smartphones do not necessarily change work life in a dramatic way, rather they point out that existing work behaviour is escalated in both a functional and dysfunctional way. Nurmi (2011) demonstrated the psychological strain associated with increased work intensity for virtual teamwork and found that experienced workers refrain from adapting dysfunctional coping strategies, such as increasing e-mail overload excessively as a way of dealing with uncertainty and stress.

4.1.2. Self-responsibility in relation to autonomy and control

Flexibility holds the opportunity for autonomy as well as for external control and it is an increasingly common theme to address the issues of autonomy in dynamic relation to either control, constraint or other limitations (e.g. Mazmanian *et al.*, 2013). Mazmanian *et al.* (2013) identify a tension between autonomy and responsibility which they termed 'autonomy paradox'. This refers to the paradox between the upsides of the autonomy and selfdetermination facilitated by MITDs on the one hand and the normative pressures and intensified collective expectations to being available, consequently making it difficult to disconnect from work, on the other. Autonomy is intimately linked to work intensification and increasingly it becomes the knowledge worker's own responsibility to manage autonomy and temporal flexibility in a way that does not lead to burnout, while meeting increased normative expectations that technology-driven constant connectivity has enabled. As a consequence of occupational flexibility and boundary-less careers, the individual is increasingly responsible in terms of career management, which entails developing required skills and thus improving employability.

4.2. Organizational and family risk factors

4.2.1. Work/life conflict

MITDs make it possible for workers to work when and where they feel like it, referred to here as temporal and spatial flexibility. According to Adisa *et al.*, (2017) MITDs can extend work which puts pressure on non-work domains. Unsurprisingly, telework affect work/family conflict differently for different types of employees. If a worker identify as an integrator they experience less conflict with work intruding on family, but they experience more family – to-work conflict compared to workers who prefer segmentating. Temporal flexibility thus comes with the benefit of taking care of home responsibilities; however, it is worth noting that it might accentuate another conflict: the family-to-work conflict. Gadeyne *et al.* (2018) emphasize the importance of investigating the work/life balance in relation to organizational factors, given that flexibility is moderated by the organizational culture. Thus, a strictly individual perspective does not adequately take into account the relevant factors.

4.2.2. Management and customer demands

Lack of management of peer feedback in teamwork constitutes a risk factor among knowledge workers today, as telework often entails working at a distance in relation to both colleagues and management. Nurmi (2011) concluded that team members became stressed and felt uncertain about their jobs when face-to-face meetings were not possible and there was a lack of social support and/or lack of information. A related risk factor at the meso level is the impact of customer demands on temporal as well as spatial flexibility. Even though a knowledge worker might enjoy flexibility in planning work, this might be heavily constrained when attending to customer needs (Tremblay and Genin, 2010). This effect is accentuated when there is a time difference to take into account, as planning becomes even less flexible. Related to the conflict between autonomy and control, Kattenbach *et al.* (2010) differentiate between time autonomy and time restriction. The authors calls is 'time restriction' when an employee who is usually in charge of time management him/herself is asked to work at odd times in a case of emergency. Time autonomy improves employee's wellbeing but results show that avoiding time restrictions if possible has an even bigger effect.

4.3. Societal risk factors

4.3.1. *Working conditions and reduced bargaining power*

According to Twiname *et al.* (2006), flexible employment arrangements do not afford enough protection to long-term employed workers. Long-term employed workers perceived that short-term employed workers held low levels of organizational commitment. They also experienced that they had to extend work due to the required control and supervision with the short-term employees. Occupational flexibility not only affects the organization and short-term employed workers but also the work environment, as the long-term employed workers have to engage in additional hidden work. An associated risk related to working conditions is the reduced bargaining power for short-term employed workers in the gig economy (Lehdonvirta, 2018). Lehdonvirta (2018) argues that worker flexibility is really management flexibility, as there is a huge divergence in bargaining power for workers in the gig economy. MITDs open up for ways of contracting but currently these new ways of working are being used to remove ceilings. To paraphrase Lehdonvirta (2018), in many cases the floors that some people have depended on are unfortunately also pulled away.

4.4. Cultural risk factors

4.4.1. Gender differences
MITDs have affected the work life of men and women differently by ways of gendered expectations in relation to domestic work and caregiving responsibilities (Lehdonvirta, 2018; Perrons, 2002). Flexible working opportunities might be damaging to women's careers because they have a negative impact on career prospects and thus might add to the existing gender pay difference (Smithson *et al.*, 2002); however, prioritizing family over work might be a deliberate and valued choice. Similarly, Perrons (2002) shows that flexible working typically affects men and women differently. Typically, women take on flexible or part time work in order to accommodate caring responsibilities, while men usually deferred this to a later stage in life in which their careers were better consolidated. As a consequence, choosing to work flexible had a damaging impact of future salary and career prospect in general for the women and this was not the case with the men. In this context, flexible working arrangements thus reinforces the existing gender pay gap. Blair-Loy and Cech (2017) found that devotion to work has a mitigating effect on work overload among senior personnel working in the science and technology field. However, this effect is decreased among the participants with younger children still in school. Overall, these result indicate that it is necessary of making explicit the links among flexible working and gender issues such as the pay gap (Perrons, 2002) when trying to understand and mitigate the risks for knowledge workers today.

4.5. Individual protective factors

4.5.1. Autonomy, coping strategies and self-management

Increased autonomy and decision latitude in terms of planning one's work (temporal flexibility) and especially where to work (spatial flexibility) are protective factors when it comes to knowledge workers' mental health. Overall, autonomy and decision latitude are associated with positive outcomes, and control with negative experiences (Gerdenitsch *et al.*, 2015). Porter and Ayman's (2010) findings support the idea that allowing employees increased control and autonomy over when and where their work is carried out will, in turn, decrease negative outcomes, such as work interference with family and intention to quit. Thus, securing autonomy plays a key role in keeping employees. Similarly, Golden (2006) supports this notion, as he concludes that telework is positively linked to employers' commitment to the organisation and negatively in relation to turnover intentions- Related to the question of autonomy is an increased responsibility of the self (Loogma, 2004) and self-management skills (Nurmi, 2011), which have been identified as pivotal resources among knowledge workers today. Nurmi (2011) finds that more experienced knowledge workers are better at coping with increased work demands and refrain from adopting dysfunctional strategies in the face of uncertainty, such as contributing to e-mail overload. In terms of occupational flexibility, it is a protective factor if knowledge workers actively choose short-term employments or boundaryless career paths in order to secure flexibility in the work life as well as in relation to managing paid work and caregiving responsibilities (Grote and Raeder, 2009; Loogma, 2004). IT employees are being encouraged to see themselves as self-employed 'entrepreneurs' who sell their labour to companies and thus they need to become responsible for their own skills and career development (Loogma, 2004). According to Vaag *et al.* (2015), musicians have long dealt with the demands associated with short-term employments and they how various protective factors such as social support from family as well as having adequate personal resources such as entrepreneurial skills, value-anchored flexibility, tolerance for ambiguity and dedication to music making mitigated against the some of the risks identified in that field.

4.6. Family and organizational protective factors

4.6.1. Work/life balance

Both temporal and spatial flexibility allow knowledge workers to accommodate the management of caregiving responsibilities in various ways. First of all, they allow workers to attend to family issues during the working day which overall improves quality of life (Ruiller *et al.*, 2019). Lundberg and Lindfors (2002) found that blood pressure tend to be higher at the office compared to when they work at home, and more so among women than men. Spatial flexibility in particular is thus associated with positive outcomes. Fonner and Stache (2013) show how cues and rites of passage are crucial when facilitating the permeable balance between work and non-work. For knowledge workers with an integration preference, MITDs facilitate home/work compatibility (Gadeyne *et al.*, 2018).

4.6.3. Management, collective identity and person-organization fit:

A protective factor in the organization identified by Ruiller *et al.* (2019) in studying virtual teams is the manager's ability to enhance a feeling of proximity among team members by cultivating a shared collective identity. They stress the importance of leader's ability to simulate a more traditional workplace by personifying e.g. politeness rituals such as sending a mail with 'morning hello' in order to improve felt proximity. Other informal practices such as chatting on

messenger is also identified as fruitful way to enhance a feeling of proximity. Mimicking embodied informal practices are created in order to minimize feelings of isolation that is also reported by teleworkers through communicative strategies. In addition, the authors show that in cases where employees identify with the manager, the better the communication. Related to sharing a collective identity among knowledge workers is what Polanyi and Tompa (2004) term 'meaning and person-organization fit'. They suggest that, in the new economy, the work quality is naturally also affected by the physical work environment but they emphasize the need to take into account how the organisation fits with the personality, values and interests of the employee, something that they argue has not been adequately captured. Gadeyne *et al.* (2018) investigated contextual factors in relation to autonomy and similarly emphasize the importance of organizational alignment. When perceived organizational alignment is high, there is a stronger relationship between job autonomy, which mediates both temporal and spatial flexibility, and work engagement. Employees' work behaviour needs to be perceived as aligned with organizational goals in order for them to feel enthusiastic and dedicated to their work.

4.7. Limitations

The review has a number of limitations, mainly due to the broad research question at hand. We compare studies that are very diverse in terms of design, objectives and scopes, making the findings harder to compare. We limited the review to knowledge workers; however, we are aware that the various types of technology-mediated flexibilities affect different professions in specific ways. The search strategy applied resulted in no studies that touched upon the role of welfare institutions being included. In relation to occupational flexibility in particular, the security offered by welfare states may play a significant role in relation to wellbeing. Also, from an organizational perspective, a flexible work force is a positive asset because it allows organizations to act in agile ways that make them adaptable to rapidly changing technologies as well as customer demands. While the flexibilities identified are global (Standing, 2011), the present review only includes studies from a western labour market context.

4.10. Future research

This review encompasses studies that address temporal, spatial and occupational flexibility. In order to enhance knowledge about risk and protective factors among knowledge workers today, a companion review would benefit from isolating the three types of flexibility and conducting a study on each of them. The protective and risk factors identified in this review should be empirically studied using research designs that take into account the various levels suggested by Bronfenbrenner as well as the dynamic relation between them. Also, there is a need for more knowledge in relation to specific professional fields, as there are variations in terms of how technological development affects specific fields of work. More research should take into account the welfare institutions and their interplay with the other levels.

Conclusion

Findings from this review suggest that wellbeing among knowledge workers is made up a number of key risk and protective factors as well as an interaction between the two. Organizing the results in a within an ecological model makes visible that wellbeing is not just affected by what happens at the work place but in new ways the various systems such as work and home interact, as well as these are dependent on and partly constituted by a wider institutionalized societal and cultural frame. MITDs affect wellbeing tremendously, with the associated flexibilities providing a beneficial short-term effect on personal wellbeing as well as they allow knowledge workers to manage both paid and unpaid work and obligations in a flexible and meaningful way. However, the review also identifies problematic gendered consequences. The review emphasises the need to continue to empirically explore and uncover how knowledge workers engage with, make use of and transform the MITDs in their concrete work lives, as it is impossible to predict how technologies affect complex issues such as risk and protective factors in relation to the well-being of knowledge workers today.

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