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ABSTRACT
The practice of remote e-working, which involves work conducted at anyplace, anytime, using technology, is on the increase. The aim of this systematic literature review is to gain a deeper understanding of the association between remote e-working, within knowledge workers, and the five dimensions of well-being at work: affective, cognitive, social, professional, and psychosomatic. Sixty-three studies employing quantitative, qualitative and mixed-method designs have been included in the review. Findings indicate that we know more about remote e-workers' affective state and their social and professional life than we know about their cognitive functioning and psychosomatic conditions. Whilst the research indicates a positive focus there are some negative aspects of this way of working which are highlighted within this review; such as social and professional isolation, and perceived threats in professional advancement. This review may be of great importance for academics, to continue the theoretical advancement of research into remote e-working, and practitioners, to implement and manage remote e-working attitudes and policies more effectively.

Introduction

The practice of employees working remotely, away from the conventional workplace, has become a varied and fast-changing phenomenon (Eurofound and the International Labour Office, 2017). This practice is enabled by an explosion in the technological means available to individuals and employed by organizations (Ter Hoeven & Van Zoonen, 2015). The rapid development of information and communication technology (ICT) has caused several shifts in working life (Allen, Golden, & Shockley, 2015). Specifically, individuals involved in knowledge work can now access their work from anywhere and anytime through their laptops, tablets and smartphones (Maitland & Thomson, 2014).

However, existing empirical evidence on the association between flexible working practices (including remote e-working) and employee well-being are not conclusive (De Menezes & Kelliher, 2011). For instance, Ter Hoeven and Van Zoonen (2015) claimed that the more flexibility individuals had around their work location, the greater work-life balance, job autonomy and effective communication they experienced, thus increasing their well-being. Nevertheless, further research has suggested that individuals who use remote e-working practices may frequently experience feelings of guilt (Moe & &Shandy, 2010) and may overwork to reciprocate the permitted flexibility (Chesley, 2010). Consequently, remote e-working may become more unfavourable since individuals, in fact, intensify their work activity (Kelliher & Anderson, 2010). For example, remote e-workers may engage in behaviours such as exchanging emails during non-working hours,

a practice that has been linked to stress (Chesley, 2014) and blurred home-work boundaries (Tietze & Musson, 2005).

Overall, organizations, employers and managers cannot yet rely on clear evidence that remote e-working is indeed beneficial for employees' well-being. Due to the lack of agreement on whether remote e-working benefits well-being at work or not, the review is guided by the following generic research question: Does e-working remotely link to knowledge workers' work-related well-being, and if so, how is this link different to each of the work-related well-being's dimensions (i.e., affective, social, cognitive, professional and psychosomatic)? A more up-to-date systematic review of the literature about remotely accessed work which embeds technology and its relation to employees' outcomes is currently not available (McDowall & Kinman, 2017). This study is therefore valuable as it provides a critical overview of qualitative, quantitative and mixed-method research to shed light on how the increasingly prevalent remote e-working can link to well-being at work. To provide a better framework for studying remote e-working, the next sections discuss: (1) terms and definitions of knowledge working, (2) alternative terms of the remote e-working arrangement, (3) prevalence statistics, (4) related literature about remote e-working and work-related well-being, and (5) a multidimensional model of well-being at work which has been used as a theoretical framework to organize and guide the discussion of the literature (Van Horn, Taris, Schaufeli, & Schreurs, 2004).

Knowledge workers: terms and definitions

Knowledge workers are defined as employees who have to acquire, create and apply knowledge for the purposes of their

work (Davenport, Jarvenpaa, & Beers, 1996). Their work is characterised by abstract production (El-Farr, 2009), and a low level of standardisation (Pyöriä, 2005). It should be noted that the differentiation between knowledge workers and non-knowledge workers is debatable, as researchers suggest that all types of work involve some level of "knowledge" (Alvesson, 2001). However, many researchers "agree that knowledge work is less tangible than manual work and that workers' brain comprises the means of production" (Ramírez & Nembhard, 2004, p. 605). Likewise, Frenkel, Korczynski, Donoghue, and Shire (1995) suggested that knowledge workers use more theoretical or abstract knowledge (e.g., employees working in IT, finance, and research) whereas routine workers rely on more contextual, less intellectual and less creative knowledge (e.g., manual labour workers). Additionally, knowledge workers are often autonomous, having freedom around their working methods and practices (Pyöriä, 2005). They tend to use ICT which allows checking emails, taking business calls, and generally working on their job tasks while being away from the office (Hislop, 2013). Lastly, knowledge workers are gradually working in a more flexible way to both increase work efficiency (Parasuraman & Greenhaus, 2002), and to enable a better balance of work and life demands (Bentley & Yoong, 2000).

Remote e-working terms and definitions

One of the first terms introduced to refer to the remote working arrangement was telecommuting (Nilles, 1975). In particular, it was used to describe individuals working from home using technology to communicate back to their workplace. Since then, it has been extensively used along with "telework" in the US (Madsen, 2001), to refer to all types of work performed outside a head office but still linked to it (e.g., Bailey & Kurland, 2002; Golden & Veiga, 2005). In Europe, the term "e-work" has been generally used to describe work that is conducted virtually. Kirk and Belovics (2006) defined e-workers as full-time, home-based telecommuters who work and communicate mainly through electronic mediums (e.g., corporate intranets and e-mails), having very little face-to-face interaction with their head office location or their colleagues and supervisors. Although home-based telework has traditionally been the most common type of remote working (Halford, 2005), in most recent years there has been an increase in the number of people who work in more than one location (Eurofound and the International Labour Office, 2017). "Remote e-working" is a broader term, used to describe "work being completed anywhere and at any time regardless of location and to the widening use of technology to aid flexible working practices" (Grant, Wallace, & Spurgeon, 2013, p. 3). According to this definition, work can be conducted from home, company sites, hotels, and airports. The current study will, thus, employ "remote e-worker" as an umbrella term, including any employee who first spends time away from the traditional office, and second uses ICTs to access work (Grant et al., 2013). Remote e-working was chosen over the well-used term of telecommuting, as telecommuting does not include employees who are very mobile (e.g., employees working mainly from customer sites; Allen et al. 2015). This

review will specifically focus on knowledge workers who, as described below, are most likely to be influenced by remote e-working; excluding, for example, manual labour workers.

Prevalence and statistics

In an online worldwide poll conducted by Reuters/Ipsos in 2012 across 24 countries, including the U.K., Australia, South Africa, and U.S., approximately one in five employees reported e-working remotely regularly (Reaney, 2012). According to the American Community Survey (ACM) the largest American companies around the world (Fortune 1000) have mobile workers who spend 50–60% of their time away from their desks (Lister, 2016). Additionally, a recent report by Eurofound and the International Labour Office (2017) presented that, in 2015, 3% of employees were mainly working from home, 10% occasionally worked away from their company premises and made high use of ICTs, and finally, about 5% worked predominantly away and made high use of ICTs. Statistics and prevalence rates provided by the Eurofound and International Office report (2017) clearly show that remote e-working is increasing at a rapid pace across Europe. A few representative examples are: France, where remote e-workers increased from 7% in 2007 to 12.4% in 2012; and Sweden where remote e-workers' increased from 36% in 2003 to 51% in 2014. Felstead and Henseke's (2017) review of the 2015 Labour Force Survey (UK) suggested that working away from a traditional office, at least one day a week, increased from 13.3% in 1997 to 17.1% in 2014. They also highlighted that high skilled (14%) and middle-skilled workers (16%) are the most likely to work away, as opposed to factory-based workers (about 8%).

Remote e-working and well-being at work for knowledge workers

Remote e-working may potentially link to knowledge workers' well-being at work in opposing ways. Knowledge workers can benefit by working away from a traditional office environment as the nature of their work requires concentration on individually-based tasks, eliminating interruptions (Mazzi, 1996). It is, thus, not surprising that research showed that when knowledge workers were able to e-work remotely, they are more satisfied with their job, more committed to their organizations, experiencing less stress linked to day-to-day demands of the office and commute (Kelliher & Anderson, 2010). However, knowledge workers' jobs often require some level of interaction with their colleagues (e.g., when working on group projects; Mazzi, 1996) which may be challenged by physical and temporal separation (Lautsch, Kossek, & Eaton, 2009). Individuals thus claimed that they missed office interactions (Grant et al., 2013), and felt isolated as they could not share concerns they had with colleagues (Mann & Holdsworth, 2003). This may then lead to limited access to social support that is crucial in increasing employee engagement (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009), and well-being (Rothmann, 2008). Additionally, remote e-working is an arrangement which enables an autonomous way of working (Suh & Lee, 2017), which is aligned with the nature

of knowledge work (Newell, Robertson, Scarbrough, & Swan, 2009). Nevertheless, knowledge workers need to seek information, opinions and guidance from their supervisors or colleagues, working through issues together and sharing ideas (Bentley & Yoong, 2000). In order to maintain contact and meet their job expectations, knowledge workers heavily rely on ICTs which allow them to stay connected when working from different locations (Middleton, 2007). Consequently, they reported working long hours (Grant et al., 2013) something that made it harder to switch off from work (Kossek, Lautsch, & Eaton, 2009). This is a phenomenon that intensifies in an "always on culture", where individuals are expected by their supervisors to be constantly available, feeling obliged to follow the strong norms set by their colleagues who are also connected (Derks, Duin, Tims, & Bakker, 2015, p. 170). These behaviours can impair individuals' ability to switch off from work, translating into poor well-being and health problems (Kompier, Taris, & Van Veldhoven, 2012). Hence, this systematic review aims to collate all relevant studies and any equivocal findings, to elucidate how remote e-working relates to knowledge workers' well-being at work.

Conceptualization of well-being at work in the current review

Taris and Schaufeli (2015) in their theoretical overview underlined that conceptualizations of well-being at individual levels can be categorized on two dimensions: 1) whether they consider well-being as a context-free (e.g., general quality of life) or as a domain-specific concept (e.g., work-related well-being) and 2) whether they operationalize well-being mainly as an affective state or as a multi-dimensional construct. Following their overview, the authors suggested that a domain specific and multidimensional conceptualization of well-being is preferable (Taris & Schaufeli, 2015). First, when well-being is examined as a domain-specific concept, the associations with its antecedents are stronger (Warr, 1987, 1994). Hence, conceptualizing work well-being as a domain-specific phenomenon may provide a better understanding of the role that specific work characteristics plays on employees' well-being (Warr, 1994). Second, widespread empirical support has evidenced well-being as a multidimensional concept and various models have been proposed. For instance, Warr (1987, 1994) proposed that well-being consists of the affective state of individuals, their aspirations, the degree of their autonomy, and how competent they perceive themselves. Alternatively, Ryff (1989; Ryff & Keyes, 1995) suggested that well-being comprises of self-acceptance, autonomy, environmental mastery, positive relations with others, personal growth, and purpose in life. Following Taris and Schaufeli (2015) recommendation, a multidimensional work-related theoretical model of well-being was adopted to frame the present literature review, and to synthesise and interpret relevant research.

In particular, we referred to Van Horn et al.'s (2004) model that is rooted in Ryff's and Warr's models. Specifically, although Van Horn and colleagues recognized the affective dimension as central for workers' well-being, they contended that other dimensions are similarly relevant. Hence, they proposed that work-related well-being includes five correlated dimensions: affective, professional, social, cognitive, and psychosomatic,

supporting the adoption of a multidimensional approach. Their theoretical model was supported by analyses conducted on a large sample of Dutch teachers.

The affective dimension according to Van Horn et al. (2004) comprises emotions, job satisfaction, organizational commitment, and emotional exhaustion. Alternative theoretical models (e.g., subjective well-being, Diener, 1984; Diener, Oishi, & Lucas, 2003) considered job satisfaction as a cognitive component of well-being. Previous research (Brief & Weiss, 2002) suggested that job satisfaction has not only an emotional aspect (i.e., how people feel about their jobs) but also a cognitive aspect (i.e., how they evaluate their jobs). Nevertheless, Van Horn et al. (2004) provided empirical support for their theoretical model showing that the aforementioned constructs loaded onto the same overarching factor they identified as affective well-being. Warr (1987); Warr (1999)) also suggested that workplace well-being should be considered according to three main axes: pleasure-displeasure, anxiety-comfort, and depression-enthusiasm. In this model, the first axis is considered of central importance and, as claimed by the same author, "its positive pole (…) is often examined in terms of satisfaction or happiness" (Warr, 1999, p. 393). Daniels (2000), capitalizing on Warr's (1999) theory and integrating further contributions from the organisational literature, provided empirical support for a five-factor model of work-related affective well-being (i.e., anxiety-comfort, depression-pleasure, bored-enthusiastic, tiredness-vigour, and angry-placid). Overall, this theoretical and empirical evidence seems to support Van Horn et al. (2004)'s model.

The remainder of the well-being dimensions considered in Van Horn et al. (2004) model are unequivocal. The second dimension is the cognitive well-being which comprises cognitive weariness, that is, individuals' difficulty taking up new information and concentrating. The third dimension is the social well-being which comprises the degree to which individuals function well in their social relationships at work. The fourth dimension is the professional well-being which comprises autonomy, aspiration, and competence. Lastly, the fifth dimension is the psychosomatic well-being which comprises any health complaints that individuals may have such as headaches, stomach aches, and musculoskeletal issues.

This review construes these dimensions as suggested. However, some adjustments were made in regards to the cognitive dimension, given the specific focus on remote e-working. In particular, switching-off from work is added by authors of this review as a complementary element to cognitive weariness. This decision was based on the fact that remote e-workers heavily depend on ICT use (Leonardi, Treem, & Jackson, 2010), which often makes it difficult for individuals to stop thinking about work and psychologically detach from it (Kinnunen et al., 2017). Therefore, being unable to switch off from work is expected to indicate how cognitively weary individuals are, making its inclusion in the cognitive well-being dimension justifiable.

Summing up, this systematic review uses this revised Van Horn et al.'s (2004) model, as a theoretical framework, to gain a broader understanding of the association between remote e-working and work related-well-being.

Method

The current systematic review provides a narrative synthesis of quantitative, qualitative, and mixed methods research (Petticrew & Roberts, 2006). This type of review is particularly valuable when systematically collating and reviewing all the evidence around a growing topic, which has been given sparse or ambivalent evidence (Petticrew & Roberts, 2006). Due to the heterogeneity of the studies included in this review (e.g., slightly different definitions, well-being constructs, and type of evidence) a statistical summary and thus a meta-analysis was not feasible. The authors will attempt to interpret the qualitative evidence and examine the quantitative evidence obtained. A robust systematic review protocol was drafted and registered with the PROSPERO database, in February 2016. The protocol followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses for Protocols 2015 (PRISMA-P 2015) guidelines checklist (Moher et al., 2015).

Searches

A search strategy was created after an initial literature review, a collection of keywords from relevant studies, and discussion between the review team. Based on the established search protocol, scientific journals from psychological, social, management, health, and technological fields of study were searched. Relevant literature was identified by searching seven electronic databases, namely: PsycINFO, PsycARTICLES, PubMed, Academic Search Complete, Applied Social Sciences Index and Abstracts (ASSIA), Business Source Complete, and CINAHL. To ensure literature saturation, reference lists of included studies or relevant reviews that were identified through the search were also scanned. Additionally, the authors' personal files were searched to warrant that all relevant material had been captured. There were some limits imposed on the search, particularly studies had to be published between 1995 and 2017, be in the English language, and peer-reviewed. The selection of 1995 as a cut-off year was based on an increased interest in remote e-working in the mid 1990´s (Rognes, 2002) and the National Telecommuting Initiative Action Plan that was established in the US in 1996 to promote this way of working (Harrington & Walker, 2004). Appendix A presents the PsycINFO search strategy, which was adapted, respectively, to the syntax and subject headings of the other bibliographic databases.

Participants/population

The current review has included studies conducted within knowledge employees, as defined previously in the introduction section, who are e-working remotely. Consequently, workers who predominantly rely on contextual knowledge, or use action-centred skills, and are in some way uncreative, as a result of having to follow standard procedures (e.g., manual labour workers; Frenkel et al., 1995) were excluded. When it comes to the remote e-working aspect this review included employees who are: (1) spending at least one day of their working time away from their office (e.g., home, another company site, hotel or train), and (2) making use of ICTs to enable them to perform their working tasks. This definition excluded home-based work such as farming or piecework which does not encompass ICT use to enable performance during work activities (Sullivan, 2003). Studies were excluded if they had not explicitly presented findings on remote e-working but reported findings of flexible working in general instead (e.g., including flexitime). Due to the large number of studies returned by the search, extra exclusion criteria were imposed on the initial protocol. Specifically, self-employed remote e-workers, and freelancers were excluded. The reason is that these employees often do not have a concise long-term belonging to a specific organization (Fersch, 2012), and no formal colleagues to interact with (Hislop et al., 2015). Disabled employees were also excluded to make sure that none of the health issues identified was related to employees' disability.

Type of included studies

The review has sought a broad range of studies including: cross-sectional studies, longitudinal studies, qualitative research, case reports, and quasi-experimental research. Three meta-analyses were also included, whereas narrative literature reviews were not due to their subjective nature, and potential lack of data (Petticrew & Roberts, 2006). There are three points to note with regards the three meta-analyses included. First, not all of the studies they comprised were aligned with this review's purpose; therefore, only specific findings were presented. Second, they included studies conducted before 1995, as well as grey literature and dissertations. It is acknowledged that this was not in line with this review's criteria. However, an exemption was made as meta-analyses can provide strong evidence (Petticrew & Roberts, 2006), which can bring insightful information into this review's content. Thirdly, none of the meta-analyses examined all of the discussed work-related well-being dimensions, nor they have included studies conducted in the same year range. Therefore, the present review contributes beyond these meta-analyses, offering a broader, and a more up-to-date understanding of remote e-workers' well-being at work.

Data extraction (selection and coding)

Selection of studies

As outlined in the search flow-chart in Figure 1, retrieved articles (N= 3082) were exported into RefWorks database and duplicated articles were removed (N = 63). The lead review researcher did an initial assessment of the identified papers by screening the studies' titles, keywords, and abstracts against the inclusion and exclusion criteria described above (see Table 1 for a summary).

In cases where the decision to include one article or not could not be made by just the title, keywords and abstract (e.g., when flexible working was not clearly defined) then the article was retrieved and skim-read before making a decision. References were grouped into two categories, namely: 1) "eligible" or 2) "not eligible" for inclusion. Once the first screening was finished, full texts of "eligible" articles (N= 215) were retrieved, and inclusion and exclusion criteria were again
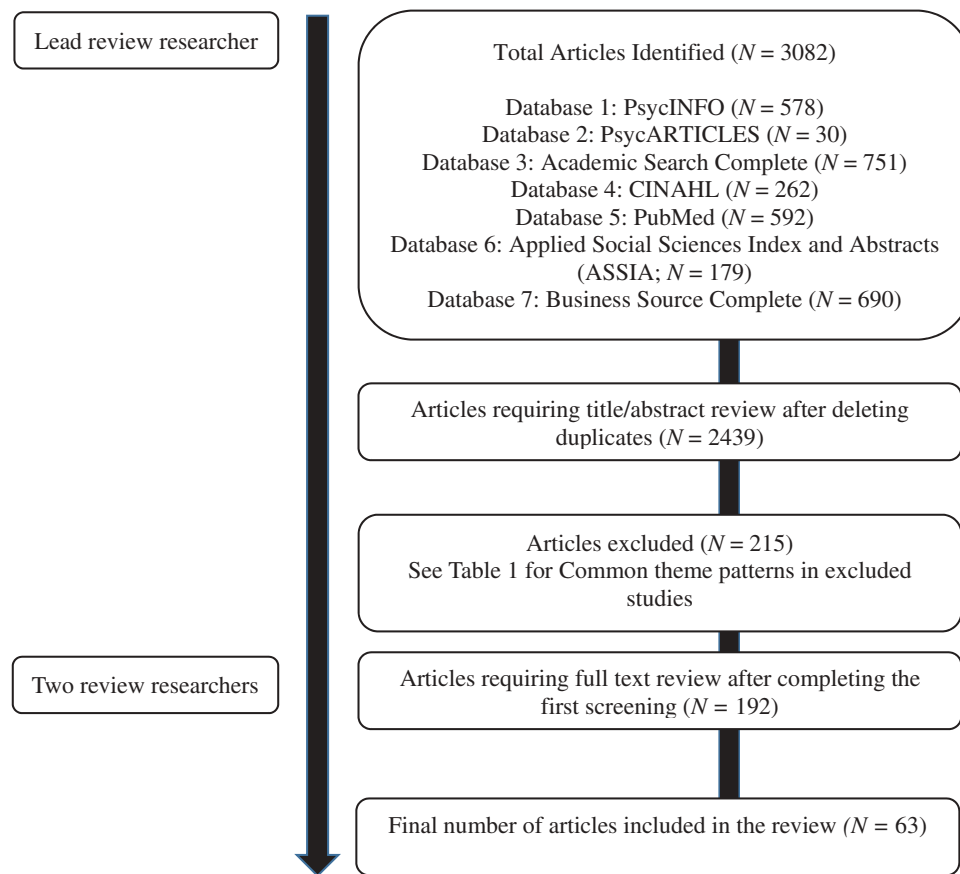
Figure 1. Systematic review flow chart.

reapplied. The articles that did not meet the inclusion criteria were excluded. The rest of the research team were advised throughout the whole process, and any uncertainties were resolved. Finally, a total number of 63 studies were set as eligible to be included. Table 2 presents the common theme patterns in excluded studies.

Data extraction and management

The lead review researcher and a second review researcher extracted data from included studies into a predefined data extraction form, and the review team provided assistance, support, and advice when necessary

Risk of bias (quality) assessment

In order to eliminate the risk of bias, the Mixed Methods Appraisal Tool (MMAT) was used, assessing the methodological quality of the included articles. The MMAT tool provides researchers with certain criteria to assess the methodological quality of diverse studies (i.e., quantitative, qualitative, and mixed methods; Pluye, Gagnon, Griffiths, & Johnson-Lafleur, 2009). This tool was chosen over others due to a lack of validated appraisal tools for mixed methods studies or reviews outside MMAT (Crowe & Sheppard, 2011; O'Cathain, 2010). The MMAT tool includes two initial and general screening questions which have to be answered positively for further appraisal to be appropriate. Following the screening stage, there are four criteria upon which studies are evaluated. The criteria for

quantitative evidence are concerned with a relevant sampling strategy, appropriate measurements, representative sample, and acceptable response rate (60% or above). The criteria for qualitative evidence are concerned with relevant sources of data used, relevant process of analysing data, and consideration of the findings in relation to the context and researchers' influence. Each study can achieve a lower score of 25% (*) when one criterion is met and a higher score of 100% (****) when all criteria are met. For the purposes of this review, both the lead researcher and a second researcher independently assessed the methodological quality of all studies included. Discrepancies were resolved through discussion between the two researchers, and the rest of the authors were consulted when further arbitration was needed. All included studies met at least two of four criteria which resulted in them attaining a MMAT "quality score" of 50% and above. Considering the final and manageable number of studies (N= 63) researchers decided not to exclude any of them. However, the researchers interpreted with caution studies with lower quality, placing more emphasis on studies with higher quality. MMAT scores for each study are available upon request from the researchers.

Results

The results presented below are a narrative synthesis of all included studies. The final sample is made up of 63 studies involving 37,553 working individuals from single studies, added to individuals included in the three meta-analyses. It

Table 1. Inclusion and exclusion criteria.

Inclusion criteria	Exclusion criteria
(1) This review included knowledge employees: individuals who acquire, create and apply knowledge for their work purposes. Their daily work tasks should mostly involve some intellective skills and creativity.	Employees who were doing routine jobs, using mostly contextual knowledge or action-centred skills and following standardised procedures (e.g., manual labour workers) were excluded.
(2) This review included employees who were making use of remote e-working. These employees were: (a) spending at least one day of their working time away from their office (e.g., home, another company site, hotel or train), and (b) making use of ICTs to enable them to perform their working tasks.	Home-based work such as farming or piecework which does not encompass ICTs use to enable the performance during work activities was excluded.
(3) A broad range of studies was included: cross sectional studies, longitudinal studies, qualitative research, case reports, quasi-experimental research and meta-analyses.	Narrative literature reviews were excluded.
(4) This review included studies that were published between 1995 and 2017, were peer-reviewed and in English language.	Studies were excluded if they had not explicitly presented findings on remote e-working; but had reported findings of flexible working in general instead (e.g., including flexitime).
(5)	Disabled employees were excluded.
(6)	Self-employed remote e-workers and freelancers were excluded.

Table 2. Common theme patterns in excluded studies.

(1) Articles focusing on care home workers/nurses and service delivery within health care services; as these individuals' work tasks were mainly focusing on domestic aid, as well as supportive and technical nursing care to individuals.

(2) Research on tele-health/e-health, referring to care via online sources (e.g., video house calls, internet delivered cognitive behavioural therapy)

(3) Results on school homeworking instead of working tasks taking place at home

(4) Flexible working arrangement aimed at accommodating employees with different kind of illness

(5) Literature on remote worksites and manual labour employees working to oil, gas and mining industry whose nature of work involves a high level of standardisation

(6) A more generic assessment of flexible working arrangements which may include flexitime, shift working, job sharing, part time work and compressed workweeks. In these studies, flexible working is very broadly conceptualised, something that makes it hard to distinguish differences between arrangements.

(7) Virtual teams in educational contexts or gaming

(8) Investigated concepts and phenomena around virtual teams such as leadership. In these studies the relationship between remote e-working and well-being at work was not the central focus.

(9) Research on topics related to remote e-working other than well-being: such as work-life balance or work-family conflict, management and training

(10) Research focusing on populations other than those in employment (e.g., undergraduate students)

(11) Articles about telecentres or telecottages as places that rural people can visit for educational and social purposes

(12) Engineering literature (e.g., beam finite element, thermodynamics and elasticity, laminated materials)

(13) Book reviews, periodical, and not peer reviewed articles

is worth mentioning that none of the studies included in this systematic review explored all of the five well-being dimensions mentioned above. However, 26 studies explored more

than one dimension and their associations when understanding how remote e-working affects working individuals' well-being. There was an international representation of countries where studies were conducted including, but not limited to: U. K., U.S., Australia, and Germany. This review initially discusses studies which draw upon more than one well-being dimension (i.e., affective, cognitive, social, professional, and psycho-somatic) supporting a multidimensional impact of remote e-working on well-being at work. Subsequently, studies which elaborate on just one well-being dimension are presented. Tables 3 and 4 summarize the included studies.[1]

Studies combining well-being dimensions

Affective and social facets of well-being at work
The affective and social facets of well-being at work have been examined together in ten studies, showing that social support may be detrimental to remote e-workers' affective states. In particular, the extent of working from home increased emotional exhaustion through low social support (Vander Elst et al., 2017). Social support was considered by researchers to be one of the resources that depleted when employees were extensively e-working remotely; something that increased their emotional exhaustion levels (Sardeshmukh, Sharma, & Golden, 2012). In contrast, when organizational support was present, individuals felt less socially isolated which, in turn, increased their job satisfaction levels (Bentley et al., 2016). Similarly, developing and maintaining good relationships was found to be extremely important to remote e-workers' job satisfaction levels (Fay & Kline, 2012; Golden & Veiga, 2008; Staples, 2001), and organisational commitment (Golden & Veiga, 2008). Having compatible co-workers, with whom individuals informally communicated, was associated with increased commitment to the organisation regardless of any experience with exclusion messages (Fay & Kline, 2011).

Cognitive and social facets of well-being at work
Vander Elst et al.'s (2017) was the only study which assessed cognitive along with social facets; highlighting again the importance of social support from colleagues. In particular, the cognitive stress complaints individuals experienced were linked to the low social support.

Affective and professional facets of well-being at work
Ten of the included studies have focused on both the affective and professional characteristics of well-being at work, suggesting that the impact of remote e-working on professional well-being can be bilateral. More explicitly, autonomy was supported to play an eminent role in remote e-workers' job satisfaction levels. For instance, job autonomy was related to a reduction in strain, through the less perceived invasion of privacy (Suh & Lee, 2017). Included studies generally suggested that autonomy mediated the positive relationship between remote e-working and job satisfaction (Gajendran & Harrison, 2007; Hornung & Glaser, 2009). Autonomy was also found to be a job resource through which emotional exhaustion could lessen (Sardeshmukh et al., 2012). Whereas autonomy may ameliorate feelings of emotional exhaustion (Sardeshmukh et al., 2012), time spent away from the office

Table 3. Studies assessing multiple well-being dimensions.

Authors	Sample (Demographics and remote e-working definition used[3])	Type of evidence and Findings	Well-being construct(s)	MMAT score
Suh and Lee (2017)	South Korea, IT companies (n = 258) **Low intensity teleworkers** (n = 154) working less than 2.5 days a week and **high intensity teleworkers** (n = 104) working more than 2.5 days outside a central work location	Quantitative, cross sectional. **Findings:** Technology-induced stressors were linked to increased strain, and strain was associated with teleworkers' job satisfaction. Job autonomy negatively linked to teleworkers' strain, through less perceived invasion of privacy.	Job satisfaction (*Affective*) Job autonomy (*Professional*)	100% (****)
Vander Elst et al. (2017)	Belgium, telecommuting company, (n= 878) **Extent of telecommuting:** Days per week individuals worked from home (67.9% worked more than a day from home)	Quantitative, cross sectional. **Findings:** The extent of telecommuting: (a) positively linked to emotional exhaustion through low social support, (b) was associated with increased cognitive stress complaints (such as having problems to concentrate) through low social support,(c) negatively linked to social support, and (d) was not related to job autonomy.	Emotional exhaustion (*Affective*) Cognitive stress complaints (*Cognitive*) Social Support (*Social*) Job autonomy (*Professional*)	100% (****)
Bentley et al. (2016)	New Zealand, 28 organizations, (n = 804) **Low intensity teleworkers** (n = 509) working 1 to 7 hours away from their central office; **Hybrid teleworkers** (n = 295) working above 8 hours away.	Quantitative, cross sectional. **Findings:** Organisational social support and teleworker support positively linked to job satisfaction. Social isolation mediated the relationship between organisational support and job satisfaction.	Job satisfaction (*Affective*) Social Isolation (*Social*)	75% ***
Nijp, Beckers, van de Voorde, Geurts, and Kompier (2016)	Denmark, financial and insurance company, (n = 361 intervention group; n = 80 reference group) **New Ways of Working (NWW):** working minimum two days from home and two days from the office.	Quantitative, quasi-experimental design. **Findings:** NWW (a) linked to increased satisfaction with work location but was not related to (b) job satisfaction, (c) satisfaction with work-time control, (d) organisational commitment, (e) social support and (f) autonomy.	Job satisfaction Organisational commitment (*Affective*) Social support (*Social*) Job autonomy (*Professional*)	75% ***
Sewell and Taskin (2015)	Belgium, biopharmaceutical company, (n = 31) **Home-based teleworkers:** working from home one or two days per week.	Qualitative, longitudinal case study (semi-structured interviews, participant observation). **Findings:** Remote e-workers felt more isolated, 'apart' and invisible, when working from home; where their autonomy and self-determination constrained them. The well-established trusted relationships were strained once the pilot started.	Social Isolation/Trusting relationships (*Social*) Autonomy/Control (*Professional*)	75% ***
Richardson and McKenna (2014)	Canada, high-tech industry (n = 80) **Flexworkers:** working from home two or more days per week.	Qualitative, semi-structured in-depth interviews. **Findings:** remote e-workers worked harder to show their trustworthiness and managers put a greater effort to trust them. Individuals re-ordered and re-spaced boundaries between work and home life (e.g., focused on time management, maintained connections with colleagues, made their achievements public).	Social relationships (*Social*) Skills (*Professional*) Career advancement (*Professional*)	75% ***
Gajendran et al. (2014)	US, over 100 industries, (n= 323: n = 120 telecommuted) **Telecommuting:** working from remote locations (e.g., home or virtual office)	Quantitative, cross sectional **Findings:** LMX was positively, but not significantly correlated to remote e-working and its intensity. Perceived autonomy was positively and significantly associated with remote e-working (yes/no) and its intensity.	Leader member exchange (LMX) (*Social*) Perceived Autonomy (*Professional*)	75% ***
Grant et al. (2013)	UK, five organizations, (n = 11). **Remote e-workers:** worked in different locations, at any given time using technology to aid flexible working practices	Qualitative study, semi-structured interviews **Findings:** Building and maintaining relationships was essential for individuals' psychological well-being, with trust being a key component to remote e-working success. The degree of autonomy varied between clerical/administrative roles and managerial professional employees.	Working Relationships (*Social*) Autonomy (*Professional*)	75% ***

(Continued)

Table 3. (Continued).

Authors	Sample (Demographics and remote e-working definition used[3])	Type of evidence and Findings	Well-being construct(s)	MMAT score
Sardeshmukh et al. (2012)	US, supply management company, ($n = 417$). **Telework:** employees allocating their work time between office and home.	Quantitative, cross sectional. **Findings:** Remote e-working was (a) negatively associated with exhaustion (b) negatively associated with social support (c) positively associated with autonomy. Remote e-working was also linked to lower exhaustion through job demands (i.e., time pressure, role ambiguity and role conflict) and job resources (i.e., job autonomy, feedback and job support)	Exhaustion (*Affective*) Social support (*Social*) Autonomy (*Professional*)	75% ***
Fay and Kline (2012)	Midwestern US, 12 companies, ($n = 100$). **High intensity teleworkers:** employees working remotely at least three business days each week.	Quantitative, cross sectional. **Findings:** Remote e-workers' informal communication and social support accounted for 20% of organisational commitment's variance.	Organisational Commitment (*Affective*) Co-worker relationship quality (*Social*)	75% ***
Fay and Kline (2011)	Midwestern US, 12 companies, ($n = 100$). **High intensity teleworkers:** employees working remotely at least three business days each week.	Quantitative, cross sectional. **Findings:** Informal workplace relationships (i.e. co-worker liking) was associated with remote e-workers' organizational commitment and job satisfaction.	Job Satisfaction Organisational Commitment (*Affective*) Co-worker Liking (*Social*)	75% ***
Morganson et al. (2010)	US, engineering and technology research organisation, ($n = 578$). **Location** employees spent the majority of their work time **(i)** Main office, **(ii)** Company-provided satellite location, **(iii)** Client location, **(iv)** Home.	Quantitative, quasi-experimental design. **Findings:** Employees working from home indicated: (a) similar levels of job satisfaction as employees working from the main office (b) and satellite-based workers, and (c) greater levels of job satisfaction compared to client-based workers and (d) the highest degree of inclusion.	Job Satisfaction (*Affective*) Workplace Inclusion (an opposite to professional isolation)/(*Professional*)	75% ***
Ten Brummelhuis et al. (2010)	Netherlands, 30 organizations, ($n = 1017$). **Telecommuting:** employees worked at home at least once a week.	Quantitative, cross sectional. **Findings:** No relationship was confirmed between remote e-working, and employee collegiality, or supervisory support. After controlling for autonomy, a significant and positive relationship between remote e-working and job autonomy was indicated.	Supervisory Support Collegiality (*Social*) Autonomy (*Professional*)	75% ***
Redman et al. (2009)	UK, professional employees, ($n = 749$) **Working from home:** Measured in hours.	Quantitative, cross-sectional. **Findings:** After controlling for total hours worked, working from home was: (a) positively associated with positive affect, (b) positively associated with job satisfaction, (c) negatively associated with emotional exhaustion, (d) negatively associated with perceived career development opportunities, (e) not associated with organizational commitment.	Positive affectivity Job satisfaction Emotional exhaustion Organisational Commitment (*Affective*) Organisational support for career development (*Professional*)	75% ***
Hornung and Glaser (2009)	German, public employees ($n = 1008$; 62,6% telecommuters) **Telecommuting:** work from home between one and four days a week	Quantitative, cross-sectional. **Findings:** Job satisfaction was positively associated with remote e-working through increased job autonomy.	Job satisfaction (*Affective*) Autonomy (*Professional*)	100% (****)
O'Neill, Hambley, Greidanus, MacDonnell, and Kline (2009)	Western Canada, eight organizations, ($n = 156$: $n = 78$ teleworkers, $n = 78$ non-teleworkers). **Telework:** working away from the traditional workplace.	Quantitative, cross sectional. **Findings:** There was a slightly higher score of satisfaction and greater levels of job autonomy within remote e-workers than non-remote e-workers.	Job Satisfaction (*Affective*) Job autonomy (*Professional*)	75% (***)
Golden and Veiga (2008)	US, high-tech industry, ($n = 375$). **Virtual work:** the proportion of an average workweek employees spent away from the office.	Quantitative, cross sectional. **Findings:** LMX negatively linked to remote e-working intensity. Remote e-working intensity moderated the LMX-organisational commitment relationship and the LMX-job satisfaction relationship. The better the quality the more committed and satisfied remote e-workers were.	Job Satisfaction Organisational commitment (*Affective*) LMX quality Superior – subordinate relationships (*Social*)	75% (***)
Gajendran and Harrison (2007)[4]	46 studies in natural settings, ($n = 12,883$). **Telecommuting:** work tasks performed in locations other than the central workplace.	Meta-analysis. **Findings:** Remote e-working positively linked to: a) job satisfaction, b) employee–supervisor relationship, c) autonomy, and was negatively linked to d) perceived career prospects.	Job satisfaction (*Affective*) Autonomy and Career prospects (*Professional*) Quality of supervisor and co-worker relationship (*Social*)	

(Continued)

Table 3. (Continued).

Authors	Sample (Demographics and remote e-working definition used[3])	Type of evidence and Findings	Well-being construct(s)	MMAT score
Golden (2006b)	US telecommunications industry, (n = 294). **Virtual work:** working in a virtual mode, away from the office.	Quantitative, cross sectional. **Findings:** Whilst satisfaction initially increased, when e-working became more intense, satisfaction dropped, indicating a curvilinear relationship. This was mediated by the LMX relationship, and team member exchange quality.	Job Satisfaction (*Affective*) LMX and team member exchange quality (*Social*)	75% (***)
Lapierre and Allen (2006)	US, Ontario University alumni (n = 230). **Telecommuting:** employees working from home.	Quantitative, cross sectional. **Findings:** Remote e-working was not found to be a conflict avoiding method that influences employees' affective and psychosomatic well-being through work-family conflict.	Emotions (*Affective*) General somatic complaints (*Psychosomatic*)	75% (***)
Golden and Veiga (2005)	US, high-tech firm, (n = 321). **Telecommuting:** number of hours per week employees spent away from an office environment.	Quantitative, cross-sectional. **Findings:** A curvilinear relationship between remote e-working and job satisfaction was indicated. Remote e-workers with lower levels of task interdependence and/or higher levels of job discretion experienced greater levels of job satisfaction.	Job satisfaction (*Affective*) Job discretion – Autonomy (*Professional*)	100% (****)
Mann and Holdsworth (2003)	UK, journalism company. 1st study: (n= 12: n = 6 teleworkers, n = 6 office-based workers). 2nd study: (n= 62: n= 30 teleworkers, n= 32 office-based workers). **Teleworkers:** working from home at least 3 days a week.	Mixed methods, 1st study: qualitative, semi-structured interviews; 2nd study: quantitative, cross-sectional. **Findings:** Teleworkers experienced a greater range of negative emotions (e.g., loneliness, irritability and guilt) in comparison to office-based workers. No difference between psychosomatic health of office-based and teleworkers was found.	(1st study) Psychological impact/emotions (*Affective*) (2nd study) Mental ill health (*Affective*) Physical stress symptoms (*Psychosomatic*)	75% (***)
Dambrin (2004)	France, manufacturing electronic company, (n = 15) **Home-based teleworkers:** employees spent at least 75% of their time away from their employer's main premises (home, remote office, travel)	Qualitative, case study (semi-structured interviews and emails, contract, schedules, and observation of one worker). **Findings:** Communications between employees and managers became harder, but easier between colleagues and customers. Autonomy concerning problem solving and self-management increased.	Manager-employee relationship/relationship between superior and subordinates (*Social*) Autonomy (*Professional*)	75% (***)
Montreuil and Lippel (2003)	Canada, public and private sectors, (n = 63). **Telework:** employees working from home (either full time or between 3 or 4 days a week).	Qualitative, interviews. **Findings:** Remote e-workers' indications of social isolation were rare and not intense. Strategies were implemented to prevent solitude. Remote e-workers reported overall health benefits. However, computer use suggested to be associated with musculoskeletal problems (e.g., pain in their upper limbs, back or neck).	Social Isolation (*Social*) Musculoskeletal symptoms (*Psychosomatic*)	50% (**)
Vittersø et al. (2003)	Fourteen European companies (including Norway, UK, Iceland) 1st study: (n = 217 teleworkers). 2nd study: (n = 42 both home-workers and non-home workers). **Home-based telework:** working from home.	Mixed methods; 1st study: quantitative, cross sectional; 2nd study: qualitative, in-depth interviews. **Findings:** A significant relationship between days working from home and concentration or control/ autonomy was not supported. In contrast, narratives suggested that home workers were more likely to concentrate at home and that the greater control over their working situation was one of the greatest motivations to work in this way.	Concentration (*Cognitive*) Control/Autonomy (*Professional*)	75% (***)
Staples (2001)	US, 18 organizations, (n= 631: 376 remotely managed). **Remote workers:** employees working in a remote location from their managers (e.g., another company cite, home).	Quantitative, cross-sectional. **Findings:** No differences between remote e-workers and their colleagues were revealed. For both remote workers and their colleague: a trusting relationship between the manager and employee was linked to greater job satisfaction.	Job Satisfaction (*Affective*) Trusting relationships (*Social*)	75% (***)

Table 4. Studies assessing a single well-being dimension.

Authors	Sample (Demographics and remote e-working definition used)	Type of evidence and Findings	Well-being construct(s) examined	MMAT score
De Menezes and Kelliher (2017)	United Kingdom, pharmaceutical, utilities, banking, and consulting sectors, (n = 1017). **Remote working** involves discretion over when and where to work, either formally (n = 239) or informally (n = 778).	Quantitative, cross-sectional. **Findings:** Job satisfaction and organisational commitment were positively related to remote working.	Job satisfaction Organisational commitment (*Affective*)	75% (***)
Kröll, Doebler, and Nüesch (2017)	11 studies examining telecommuting and job satisfaction, (n = 6,228). **Telecommuting** involves discretion over when and where employees conduct their work tasks.	Meta-analysis of real experiment, quasi-experiment and field study designed studies. **Findings:** There was no effect found of telecommuting on job satisfaction.	Job satisfaction (*Affective*)	
Windeler, Chudoba, and Sundrup (2017)	Study 1: US, IT organisation, (n = 51 employees before and after PPT). Study 2: US, variety of industries, (n = 98 no regular PTT; n = 160 minimum one per week). **Part-time telework (PTT)** working one/two days per week from home.	Quantitative, cross sectional. **Findings:** PTT: (a) lessened the positive link between interpersonal interaction and work exhaustion, (b) but exacerbated the positive link between external interaction and work exhaustion.	Emotional exhaustion (*Affective*)	100% ****
Collins et al. (2016)	UK, public sector local authority, (n = 33; n = 8 supervisors/managers; n = 12 office-based clerical staff; n = 13 clerical teleworkers). **Teleworkers/Working from home:** working full-time from home.	Qualitative, semi-structure interviews. **Findings:** Social support by office workers was eventually lessened (social disconnection), as stronger social support networks were developed with other colleagues working from home.	Social support (*Social*)	75% (***)
Anderson et al. (2015)	US, government agency, (n= 102). **Employees working from home** at least once per pay period but also working some days in the office.	Quantitative, cross- sectional. **Findings:** Remote e-workers expressed more positive and less negative work-related emotions on days working from home, compared to the ones working in the office.	Emotional experience (*Affective*)	75% (***)
Chen and McDonald (2015)	US, Networked Worker Survey 2008 (n= 703: 17% home workers, 55% onsite workers, 28% mixed workers. **Telework:** employees working full-time from home.	Quantitative, cross- sectional. **Findings:** Home workers mentioned higher levels of job decision latitude, compared to onsite workers, through greater network connectivity (social capital).	Job Decision Latitude: (a) Decision autonomy, (b) skill utilisation and development (*Professional*)	75% (***)
Vega et al. (2015)	US, government agency, (n= 180). **Telework:** working at home or at another location away from the office (e.g., coffee shops).	Quantitative, cross-sectional. **Findings:** Higher levels of job satisfaction were experienced when working at home compared to working in an office location.	Daily job satisfaction (*Affective*)	100% (****)
Troup and Rose (2012)	Australia, public service organisation, (n= 856). **Telework:** Extent to which employees worked at home in the past 12 months.	Quantitative, cross- sectional. **Findings:** Both employees who formally and informally worked from home expressed higher degrees of job satisfaction compared to those who did not have access to it.	Job satisfaction (*Affective*)	75% (***)
Golden (2012)	US, computer company, (n = 316). **Teleworking during traditional hours:** working from home during typical work hours. **Teleworking during non-traditional hours:** Working from home during non-typical work hours.	Quantitative, cross-sectional. **Findings:** There was no significant relationship found between work exhaustion and traditional telework; nor non-traditional telework.	Work exhaustion (*Affective*)	75% (***)
Caillier (2012)	US, federal government, (n = 20,000). **Telecommuting/telework:** ability to perform work from home or another remote location.	Quantitative, cross-sectional. **Findings:** Employees who were not allowed to e-work reported lower levels of work motivation (i.e., job satisfaction and organization commitment), in comparison to both frequent and infrequent remote e-workers.	Job satisfaction Organisational commitment (*Affective*)	75% (***)
Harker Martin and MacDonnell (2012)	19 studies, 32 correlations from empirical studies. **Telecommuting/telework:** working, for at least one day per week from any other location than the main office (e.g, home, satellite offices).	Quantitative, meta-analysis. **Findings:** Meta-analytical data indicated a positive association between remote e-working and organisational commitment.	Organisational commitment (*Affective*)	75% (***)
Gálvez et al. (2011)	Spain, 20 organizations, (n= 72, *solely females). **Teleworking:** employees working from home.	Qualitative, interviews (n= 24) and focus groups (n= 48). **Findings:** In organizations where balance was encouraged women's autonomy (about time, manner & location) and promotion were benefited by remote e-working; in contrast to organizations with none-balance supportive culture.	Autonomy Career advancement (*Professional*)	75% (***)
Mulki and Jaramillo (2011)	US, subsidiary of a pharmaceutical company (n = 344). **Virtual workers:** employees do not work in a traditional office setting and have few FTF meetings with their colleagues or supervisors.	Quantitative, cross sectional. **Findings:** The frequency of face-to-face meetings was not significantly associated with workplace isolation. Support by the leaders was associated with lower turnover intentions through workplace isolation and satisfaction with supervisor.	Workplace isolation (company-related or colleagues-related) Satisfaction with supervisor (*Social*)	100% (****)

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Table 4. (Continued).

Authors	Sample (Demographics and remote e-working definition used)	Type of evidence and Findings	Well-being construct(s) examined	MMAT score
Tietze and Nadin (2011)	UK, local authority, n= 7, all women). **Home-based workers:** full time working from home.	Qualitative, longitudinal case design (assessing a four-month pilot home-working initiative: before, during and after) **Findings:** Contact between colleagues became difficult as office-based colleagues showed resentment towards individuals working from home. Managers showed low trust to home-based individuals by highly monitoring them.	Relationships between employees and their employer, and colleagues. Social Isolation(*Social*)	75% (***)
Hayman (2010)	Australia, administrative and professional university staff, (n = 125). **Flexi-place work schedules:** Employees worked from a home office at least two days per week.	Quantitative, cross- sectional **Findings:** A positive and moderate association between flexi-place work schedules and job satisfaction was found.	Job satisfaction (Affective)	75% (***)
Fonner and Roloff (2010)	US, different sectors and occupations, (n= 192: n = 103 office-based*, n = 89 telecommuters). **Telecommuters:** working at least 3 days a week from a remote location.	Quantitative, cross-sectional **Findings:** A direct and significant effect between remote e-working and job satisfaction was supported.	Job satisfaction (*Affective*)	100% (****)
Kelliher and Anderson (2010)	UK, three multinational private sector organizations. 1ˢᵗ study: (n = 14 remote workers); 2ⁿᵈ study: (n = 729 remote workers, n = 1109 non-remote workers) **Remote working:** working from home partly in the week.	Mixed-method, 1ˢᵗ study: qualitative, semi structured interviews; 2ⁿᵈ study: quantitative, cross- sectional. **Findings:** Remote e-workers were suggested to be more satisfied with their jobs and committed to the organizations they worked for when e-working. Remote e-workers were more satisfied than their colleagues.	Job satisfaction Organisational commitment (*Affective*)	75% (***)
Virick et al. (2010)	US, telecommunications organisation, (n = 85). **Virtual work arrangement/Telecommuting:** employees working from home.	Quantitative, cross-sectional. **Findings:** A curvilinear relationship between the extent of remote e-working and job satisfaction was supported: after a number of days per week an individual e-works, the benefits to job satisfaction started dropping.	Job satisfaction (*Affective*)	100% (****)
Lal and Dwivedi (2009)	UK, telecommunications company, (n = 25). **Homeworking:** employees worked from two to five days a week from home *the majority worked for most of their time from home.*	Qualitative, in-depth, semi-structured interviews. **Findings:** Employees working extensively from home took proactive steps to decrease social isolation (by using phone devices). Relationship did not deteriorate as employees maintained social networks and had close colleagues.	Social Isolation Social relationships (*Social*)	75% (***)
Golden et al. (2008)	US, high-tech corporation, (n = 261). **Telework:** employees performing work assignments remotely, away from the office.	Quantitative, cross sectional. **Findings:** Although remote e-workers reported a quite high average level of professional isolation there was no significant correlation between professional isolation and time spent e-working.	Professional Isolation (*Professional*)	75% (***)
Marsh and Musson (2008)	UK, (n = 3). **Home-based teleworkers:** worked from home for between half and all of their working week.	Qualitative, semi-structured interviews **Findings:** Remote e-working offered men the opportunity to deal with emotional discourses traditionally associated with women. This could, in turn, liberate them and enable them to become more emotionally engaged in their parental role.	Emotions (*Affective*)	75% (***)
McDonald et al. (2008)	Australia, government agency, (n= 40) **Telecommuting/teleworking** working some or all the time from home.	Qualitative, semi-structured interviews **Findings:** Remote e-working was perceived as a type of workplace absence, which was inconsistent with the requirement to be visible in order to get access to career opportunities.	Career success/career opportunities (*Professional*)	75% (***)
Hartig et al. (2007)	Sweden, national energy administration, (n= 101: n = 58 teleworkers, n = 43 non-teleworkers) **Teleworkers:** working at least eight or more hours of an ordinary work week (not overtime) at home.	Quantitative, cross sectional. **Findings:** Both remote and non-remote e-workers experienced home more of a place of restoration than demands and reported similarly effective restoration.	Home as a place of restoration or as a place of demands/ Effective restoration outside work (*Cognitive*)	75% (***)
Taskin and Edwards (2007)	Belgium, public agencies, (n= 36). **Home-based paid telework:** work conducted from home at least one day per week.	Qualitative, two case studies, semi-structured interviews. **Findings:** Not the public sector itself, but employees' occupational status affected the control and discretion remote e-workers had. Remote e-working may benefit more knowledge employees, who are already autonomous. In organizations with bureaucratic structure, control may intense to ensure that employees are present.	Control – Autonomy (*Professional*)	75% (***)
Baker, Avery, and Crawford (2006)	20 Australian, both public and private organizations, (n = 50). **Working from home** for their organisation (for a range of hours).	Quantitative, cross-sectional. **Findings:** High scores of job satisfaction were indicated. Also organisational constructs (e.g., technical support, managers' trust) and job related factors (e.g., feedback from the jobs) were positively related to employees' satisfaction.	Job satisfaction (*Affective*)	75% (***)

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Table 4. (Continued).

Authors	Sample (Demographics and remote e-working definition used)	Type of evidence and Findings	Well-being construct(s) examined	MMAT score
Golden (2006a)	US, internet solution corporation, (n = 393). **Telework:** the amount of time employees spent working away from the office (no exact location provided)	Quantitative, cross-sectional **Findings:** Remote e-working was (a) significantly and positively associated with a greater degree of organisational commitment and (b) negatively linked to work exhaustion.	Organisational commitment Work exhaustion (Affective)	75% (***)
Kossek, Lautsch, and Eaton (2006)	US, information and finance organizations, (n = 245). Formal users of the **telework policy:** working from home.	Quantitative, cross sectional **Findings:** Psychological job control was positively correlated with both formal telework policy user and telework volume.	Psychological job control (over how, when and where job is done) (Professional)	75% (***)
Akkirman and Harris (2005)	Turkey, subsidiary of an international company, (n= 68: n = 46 virtual, n = 22 traditional office workers). **Virtual office workers:** worked from the office whenever they wanted	Quantitative, cross sectional. **Findings:** Virtual workers indicated higher level of satisfaction with their relationship with their supervisor than the traditional office workers.	Relationship with supervisor (Social)	75% (***)
Dimitrova (2003)	Canada, telecommunications company, (n = 20). **Teleworkers:** Employees working full time from home.	Qualitative, case study (semi-structured interviews). **Findings:** Limited beneficial influence of remote e-working on autonomy, as supervisory procedures had not changed. Increased discretion of temporal management of work was found, which led to longer working hours.	Autonomy (Professional)	75% (***)
Konradt et al. (2003)	Germany, 19 companies, (n = 72). **Home-centred teleworkers:** worked more than 50% of their working hours from home. **Office-centred teleworkers:** worked more than 50% of their working hours from office.	Quantitative, cross-sectional. **Findings:** No general differences between the teleworkers and the control group as per the job satisfaction. The quality of management by objectives was the strongest predictor of job satisfaction.	Job Satisfaction (Affective)	100% (****)
Raghuram et al., 2003	US, telecommunications company (n = 723). **Telecommuters** worked from home.	Quantitative, cross sectional. Telecommuters scored higher on self-efficacy and structuring behaviour skills. Individuals' self-efficacy was related to their structuring behaviour skills, whereas their experience with remote e-working was not. The more self-efficacious individuals were, the easier they found it to adjust to remote e-working.	Self-efficacy Structuring behaviour (skills) (Professional)	75% (***)
Cooper and Kurland (2002)	US, private and public sectors (n= 92: n = 30 supervisors, n = 37 telecommuters, n = 25 non-telecommuters) **Telecommuting:** working outside an office environment (mainly home).	Qualitative, semi-structured interviews. **Findings:** Remote e-workers from both private and public sector expressed feelings of professional isolation.	Professional Isolation (Professional)	75% (***)
Bélanger et al. (2001)	US, six IS organizations, (n= 110: n = 67 telecommuters, n = 43 non-telecommuters) **Telecommuting:** working at least one day away from the main office.	Quantitative, cross sectional. **Findings:** Higher levels of available communication technology were associated with greater levels of remote e-workers' satisfaction.	Job Satisfaction (Affective)	75% (***)
Ilozor et al. (2001)	Australia, IBM, (n = 43). **Telecommuters:** exact definition not provided.	Quantitative, cross sectional. **Findings:** Specific management communication strategies (e.g., clarity and regularity of communication) were positively associated with remote e-workers' job satisfaction.	Job Satisfaction (Affective)	50% (**)
Baruch (2000)	UK, five organizations, (n = 62). **Teleworkers:** working from their home (between two days a week to a full-time basis).	Qualitative, semi-structured interviews Remote e-working had a negative impact on career aspiration and future career perceptions. Individuals mentioned that there were some very important qualities to effectively work from home, such as being self-disciplined, self-motivated, able to work on own, being tenacious, and well-organised. On the contrary, high need for social life, and a need to be supervised showed unfit for remote e-working.	Career development, future career perceptions, Qualities/Competencies/Skills (Professional)	75% (***)
Mann et al. (2000)	UK, telecommunications, (n = 14). **Teleworkers:** worked mainly from home, although most did go into the office at times (for meetings).	Qualitative, semi-structured interviews. **Findings:** A minor positive emotional impact of remote e-working on affective well-being (e.g., less travel-related stress) and a major negative impact (e.g, loneliness, frustration) were found.	Psychological implications/ Emotional experience (Affective)	50% (**)
Igbaria and Guimaraes (1999)	US, sales company, (n= 225: n = 104 telecommuters; n = 121 non-telecommuters) **Telecommuters:** working mostly at home or on the road, go into the office at times (for meetings).	Quantitative, cross sectional. **Findings:** E-workers showed greater levels of overall satisfaction, but similar levels of organisational commitment. They were more satisfied with work and supervisions, and less satisfied with co-workers and promotion.	Job Satisfaction Organisational commitment (Affective)	75% (***)

can harm one's perceptions about career opportunities and how much the organisation invests in training and development of employees (Redman, Snape, & Ashurst, 2009).

Professional and social facets of well-being at work

Ten studies examined the professional and social aspects of well-being together. Initially, qualitative studies investigated how autonomy is redefined in remote e-working populations because of changes in supervisory control and dynamics. Findings revealed that despite already trusted employee-supervisor relationships, individuals still noticed increased supervision from their line manager (Sewell & Taskin, 2015). These findings stress how physical absence from the central office can create trust issues and an increase in control imposed upon employees. It is, thus, not surprising that developing and maintaining relationships was found to be a crucial skill for these employees' career advancement (Richardson & McKenna, 2014). A slightly different picture was presented by some studies suggesting that autonomy was indeed increased but social relationships were challenged (Sardeshmukh et al., 2012) with communication between colleagues and managers becoming more difficult (Dambrin, 2004). On another note, Ten Brummelhuis, Haar, and van der Lippe (2010) found that working away from the office was associated with greater autonomy; and autonomy was associated with more collegial behaviours. It was then suggested that remote e-workers can counterbalance the decreased interaction with greater communication and collegial behaviours the days that they are present at work.

Psychosomatic and affective facets of well-being at work

Research focusing on remote e-workers' emotional experience alongside psychosomatic health was assessed in two studies. Remote e-workers' narratives revealed that remote e-workers experienced more negative emotions compared to their office-based colleagues (Mann & Holdsworth, 2003). Furthermore, the reduced feelings of work-life conflict were not associated with their affective well-being. Additionally, no links were supported between remote e-working and individuals' psychosomatic symptoms (Lapierre & Allen, 2006; Mann & Holdsworth, 2003). However, it is worth mentioning that both studies are somewhat outdated and have solely assessed negative emotions, suggesting that more research is warranted.

Professional and cognitive facets of well-being at work

Only one mixed-method study examined both autonomy and concentration levels within remote e-working populations (Vittersø et al., 2003). According to the quantitative findings, working from home was not associated with autonomy or greater concentration. This contradicted the qualitative findings, which suggested that work conducted at home enabled individuals to concentrate more, providing them a sense of freedom in their working practices. Also, Vander Elst et al. (2017) suggested that while remote e-working was not related to autonomy, it led to greater cognitive stress complaints (e.g., difficulty concentrating on specific tasks).

Psychosomatic and social facets of well- being at work

From the included studies, just one looked into both psychosomatic and social aspects of well-being at work. In particular, qualitative narratives of Canadian remote e-workers suggested that individuals rarely felt socially isolated, and that they had strategies in place to ameliorate these feelings (Montreuil & Lippel, 2003). This is common in modern organizations where employees are required to socialize and interact with colleagues both in person and electronically (Beauregard, Basile, & Canonico, 2013). Whereas feelings of social isolation seemed to be lessened, individuals mentioned musculoskeletal problems, such as a backache, linked to computer use (Montreuil & Lippel, 2003). This finding highlights the importance of and need for ergonomically sound equipment and furniture when working from home.

Studies expanding on one out of the five proposed well-being dimensions

As mentioned above, the majority of the studies included ($N = 34$) in this systematic review focused on solely one well-being dimension. Their contribution to our understanding around remote e-working and well-being at work is still considered to be fundamental and thus presented in the following section (see Table 4).

Affective well-being dimension

Emotions. As already mentioned, the affective dimension attracted the highest number of papers. To begin with, initial qualitative research supported that remote e-working had a negative impact on emotions (Mann, Varey, & Button, 2000). An alternative interpretation of emotions, based on narratives of three fathers, was that working from home could "provide a space where men can adopt the emotional discourses traditionally associated with women" (Marsh & Musson, 2008, p. 46). Whereas fathers prioritized different roles when working from home, they all became more emotionally engaged in parenthood. Nevertheless, recent quantitative findings indicated a more positive relationship. Employing a within-subject design, Anderson, Kaplan, and Vega (2015) suggested that, during the days working from home, individuals expressed higher degrees of positive emotions and lower degrees of negative emotions. This was in line with Redman et al.'s (2009) finding that the more employees worked from home, the higher degrees of positive affect they experienced. The fact that more recent results (i.e., Anderson et al., 2015) support a link between remote e-working and positive emotions could perhaps link to an improvement in technology which enables employees to be more connected to their workplace than previously (e.g., Lal & Dwivedi, 2009). This may, in turn, decrease frustration linked to an inability to reach colleagues (Mann & Holdsworth, 2003).

Emotional exhaustion. Studies included in this review discussed the relationship between remote e-working and emotional exhaustion by solely drawing upon quantitative findings. Altogether, it was indicated that remote e-working may decrease how emotionally exhausted individuals feel (Golden, 2006a; Redman et al., 2009). Drawing upon the

Conservation of Resources theory (Hobfoll, 1989), Golden (2006a) suggested that remote e-workers are enabled to stockpile their resources by avoiding commuting, being flexible to respond to family needs and reducing emotional drain coming from traditional day-to-day work activities. This consequently reduces their emotional depletion.

Job satisfaction. Moreover, job satisfaction has been the most studied construct within remote e-workers, with retrieved studies discussing a mainly positive influence of remote e-working. Meta-analytical findings provided strong evidence for a positive association between remote e-working and job satisfaction (Gajendran & Harrison, 2007). This was supported by the majority of the included studies (e.g., Hornung & Glaser, 2009; Kelliher & Anderson, 2010; Vega, Anderson, & Kaplan, 2015). An interesting viewpoint was that the positive link between remote e-working and job satisfaction occurs under specific conditions; indicating a curvilinear relationship (i.e., Caillier, 2012; Golden & Veiga, 2005; Virick, DaSilva, & Arrington, 2010). Golden and Veiga (2005) particularly found that job satisfaction was greater with an increase of remote e-working, but at about 15 h it decreased and plateaued. It can, thus, be suggested that remote e-working is more beneficial when it takes place as a part-time flexible work arrangement, where face-to-face interactions are maintained and the flexibility is still provided (Caillier, 2012). These findings challenge previous research suggesting that the more extensively employees are e-working, the greater the job satisfaction they experience (Pinsonneault & Boisvert, 2001).

Organisational commitment. Concerning the last element of the affective well-being dimension, included studies illustrated a mostly positive relationship between remote e-working and organisational commitment. As indicated in Kelliher and Anderson (2010) interviews, individuals valued the fact that their organisation was accommodating their needs, allowing them to work more flexibly. Although work intensified due to remote e-working, individuals were still more committed to their organisation than their office-based counterparts (Kelliher & Anderson, 2010). Individuals may become more loyal as they appreciate the fact that their organizations trust them to work remotely (Igbaria & Guimaraes, 1999). Meta-analytical findings have confirmed this positive relationship (Harker Martin & MacDonnell, 2012).

Moderating, mediating and other related factors in the relationship between affective well-being and remote e-working. Personality traits play an important role in what kind of emotions individuals can experience (i.e., Anderson et al., 2015), suggesting that not all individuals would benefit in the same degree from remote e-working. Also, individuals' home situation was found to influence feelings of emotional exhaustion, as those who extensively e-worked remotely and experienced high work-family conflict (WFC) were the most emotionally exhausted (Golden, 2012). This finding is of high importance to individuals who experience a negative blurring of home and work boundaries (Golden, 2012) as they are likely to have less detachment from work and increased negative emotions and fatigue (Sonnentag, Binnewies, & Mojza, 2008).

Moreover, the positive relationship between remote e-working and job satisfaction was found to be moderated by low task interdependence and/or high levels of job discretion (Golden & Veiga, 2005); as well as performance-outcome orientation and workaholic levels (i.e., high drive and low enjoyment; Virick et al., 2010). Furthermore, remote e-workers' satisfaction resulted from greater autonomy (Gajendran & Harrison, 2007; Hornung & Glaser, 2009); greater work-life balance or reduced work-life/family conflict (Fonner & Roloff, 2010; Gajendran & Harrison, 2007; Golden, 2006b), and better relationships with supervisors and colleagues (Fay & Kline, 2012; Golden, 2006b; Staples, 2001). Being able to "filter out" office-based distractions and disconnect deliberately was positively associated with satisfaction (Fonner & Roloff, 2010). Setting clearer goals, getting more feedback, and providing a higher degree of participation (Konradt, Hertel, & Schmook, 2003), as well as having appropriate equipment (Ilozor, Ilozor, & Carr, 2001), and available ICTs (Bélanger, Collins, & Cheney, 2001) was associated with greater job satisfaction. Remote e-working arrangements were found to be more beneficial to women's levels of job satisfaction compared to men's (Troup & Rose, 2012). This aligns with research suggesting that women are more satisfied when e-working, as they can dedicate more time to their family responsibilities (Caillier, 2012).

Cognitive well-being dimension
The cognitive well-being dimension received the least attention from all the other dimensions. An earlier study by Hartig, Kylin, and Johansson (2007) indicated that both remote and office-based workers considered home to be more as a place of restoration, than a place of demands.

Moderating, mediating and other related factors in the relationship between cognitive well-being and remote e-working. A significant interaction between gender and work arrangement showed that women who were e-working remotely experienced less effective restoration than those who did not (Hartig et al., 2007). This may imply that remote e-working reinforces gendered patterns, as women may have a greater ability to be more involved in the domestic life when working from home (Michelson, 2000). Conclusions should be drawn with caution though, due to Hartig et al.'s (2007) small sample, which makes the results less powerful.

Social well-being dimension
Social relationships (with both colleagues and supervisors).
Researchers explored whether working relationships change when employees are e-working remotely. One of the main concerns raised was the social isolation that individuals may experience. Qualitative findings have suggested that remote e-workers occasionally missed the spontaneous socialization occurring in an office environment (Tietze & Nadin, 2011). This finding is in line with Sewell and Taskin (2015) proposition that the decreased regular face-to-face interaction and social proximity between colleagues and supervisors led individuals to feel that "out of sight really was out of mind" (p. 1518).

Within a hostile environment, employees working from home narrated how their office-based colleagues resented communicating with them and their supervisors trusted them less as they could not see them in the main office (Tietze & Nadin, 2011). Additional qualitative findings suggested that the dynamics of the relationships may actually change as remote e-workers created stronger bonds with people working in a similar way, and simultaneously disconnected themselves from office-based colleagues (Collins, Hislop, & Cartwright, 2016). Alternatively, Gajendran and Harrison (2007) meta-analytic findings contradicted their expectations, indicating a positive association between the employee-supervisor relationship and remote e-working. The cross-sectional nature of the studies included in this meta-analysis, prohibits us from determining whether remote e-working benefits working relationships, or whether supervisors offer remote e-working to employees who are already performing well, or who they know better (Gajendran & Harrison, 2007). Also, it is worth mentioning that in a supportive organisation where essential training to transition to a virtual way of working took place, remote e-workers were more satisfied with their relationship with their supervisor than their counterparts (Akkirman & Harris, 2005).

Moderating, mediating and other related factors in the relationship between social well-being and remote e-working. Initially, at an individual level, remote e-workers can take the initiative to decrease social isolation or counterbalance its negative consequences by effectively using ICTs (e.g., mobile phones) to stay connected with colleagues (Lal & Dwivedi, 2009; Sewell & Taskin, 2015). This strategy carries the risk though, that individuals may get caught into a negative loop of always being visible to their workplace to avoid judgements of not being physically present (Sewell & Taskin, 2015). Moreover, individuals can work both from home and office when possible, to establish a network of remote e-workers with whom they can discuss and provide mutual assistance (Montreuil & Lippel, 2003), and develop a network of friends outside of work (Tietze & Nadin, 2011). It was also suggested that some individuals are more intrinsically suited to deal with feelings of social isolation (Beauregard et al., 2013); since self-efficacious individuals were less likely to experience isolation from their working environment (Mulki & Jaramillo, 2011). Moreover, the frequency of remote e-working acted as a moderator to the association between remote e-working and working relationships (Gajendran & Harrison, 2007). Specifically, spending more than 2.5 days per week working away from the office was associated with deterioration in the quality of co-worker relationships. Additionally, demographics were found to link to relationships as remote e-workers who were older and had more tenure with their organisation claimed to have the best-established relationships (Akkirman & Harris, 2005; Gajendran & Harrison, 2007). At an organisational level, managers were found to play an important role to support individuals' social isolation feelings. The more supervisors supported and considered employees' efforts (Mulki & Jaramillo, 2011), the less workplace isolation individuals experienced. Also, Montreuil and Lippel (2003) suggested that working with clients, which increased connectedness

feelings, as well as getting used to this way of working decreased social isolation feelings.

Professional well-being dimension
Autonomy. The qualitative studies, included in this review, provide a pessimistic picture of the autonomy levels of remote e-workers. Dimitrova (2003) claims that although remote e-workers have more autonomy around their temporal scheduling, work becomes intensified and the hours longer. This led to the suggestion that autonomy comes with a cost, which is the collapse of the boundaries between work and non-work spheres. The challenge is to identify whether individuals blur the boundaries and overwork willingly, as a reciprocation of working more flexibly (Kelliher & Anderson, 2010), or whether this is inevitable as ICT use imposes pressure on them to be constantly accessible and responsive (Matusik & Mickel, 2011). Previous research on knowledge workers, who extensively use ICTs for work purposes, encounter the autonomy paradox (Mazmanian, Orlikowski, & Yates, 2013; Putnam, Myers, & Gailliard, 2014; Ter Hoeven & Van Zoonen, 2015). This paradox posits that whilst employees have greater autonomy due to ICT means available, they simultaneously feel compelled to respond to work matters outside normal working hours. A different picture is provided by the majority of the quantitative evidence, suggesting that autonomy increases within remote e-working populations (Gajendran & Harrison, 2007). Also, even when controlling for individuals' degree of freedom (considering decision-making and how work is structured), Gajendran, Harrison, and Delaney Klinger (2014) still suggested higher levels of perceived autonomy among remote e-workers.

Competence (knowledge, skills, and abilities). Literature also identified the essential competencies that remote e-workers need to work effectively. Individuals' narrations suggested that some of the most important skills were: self-discipline, self-motivation, ability to work on own, and good time management (Baruch, 2000; Richardson & McKenna, 2014). In contrast, individuals with a high need for supervision and socialisation were found to be unfit for remote e-working. Self-efficacious remote e-workers were found to have better structuring behaviours, adjusting easily to changes in their work brought by remote e-working (Raghuram, Wiesenfeld, & Garud, 2003). Evaluating the evidence, researchers have still not established and quantitatively assessed a list of the essential competencies that are required to be an effective remote e-worker.

Professional isolation. Three studies included discussed professional isolation as a main concern within remote e-workers. Qualitative narratives of remote e-workers, from both private and public sectors, expressed greater feelings of professional isolation compared to their counterparts (Cooper & Kurland, 2002). It was particularly mentioned that, not being constantly in an office environment was negatively associated with developmental activities, making employees feel professionally isolated. Individuals predominantly missed the interpersonal networking with other co-workers, the informal learning which develops work-related skills and information sharing

and the mentoring from colleagues and supervisors. Quantitative evidence, likewise, suggests that employees working mainly from the office experienced the highest degree of inclusion in their departments, compared to employees working mainly from a home, a satellite, or a client-based office (Morganson, Major, Oborn, Verive, & Heelan, 2010). Included studies suggested that organizations and managers need to monitor feelings of professional isolation within remote e-workers, as this may be detrimental to their job satisfaction (Morganson et al., 2010) and performance (Golden, Veiga, & Dino, 2008).

Career prospects. The studies included in the current review discussed both neutral and negative links between remote e-working and career prospects. Remote e-working was suggested to be an analogue of workplace absence (McDonald, Bradley, & Brown, 2008). This absence was not in line with the visibility required to show dedication and commitment to the organization and consequently impaired employees' perceptions about their career opportunities. Employees may feel their career is threatened as the organization does not support their progression by investing in their training and development (McDonald et al., 2008; Redman et al., 2009). This was challenged by a study conducted by McCloskey and Igbaria (2003) where supervisors' appraisals suggested that all employees had the same amount of opportunities for career advancement. These findings should be interpreted with caution though, as they do not portray individuals' perceptions but their supervisors' instead. Likewise, Gajendran and Harrison (2007) meta-analysis did not support any negative links between remote e-working and perceived career prospects. This was attributed to samples consisting of mostly women, who are more likely to benefit from increased control over their personal and working lives.

Moderating, mediating and other related factors in the relationship between professional well-being and remote e-working. Organizational culture may impact on the degree to which remote e-working influences professional well-being. For instance, organizations which show more understanding of the importance of balancing work and live spheres may make it easier for the individuals to get promoted and feel autonomous (Gálvez, Martínez, & Pérez, 2011; Taskin & Edwards, 2007). Organizations' readiness to use remote e-working arrangements was also found to be important as trusting relationships can be challenged, leading organizations to greater micromanagement of employees who work away (Sewell & Taskin, 2015). Last, qualitative findings suggested that although remote e-working benefited knowledge workers at the higher levels of the hierarchy, who already possess autonomy in their roles, it did not benefit the rest of the employees (Dimitrova, 2003; Grant et al., 2013; Taskin & Edwards, 2007).

Psychosomatic well-being dimension

With regards this final well-being dimension, no further evidence was presented except from that which was described earlier, suggesting a lack of research conducted on this aspect.

Discussion

The influence of new forms of work, and particularly remote e-working, on knowledge workers' well-being has been extensively discussed and debated, with research providing both positive and negative viewpoints. The current review supports Allen et al.'s (2015) findings, according to which remote e-working is associated with many different spheres of individuals' working lives (e.g., job satisfaction, relationships, and career). Drawing upon Van Horn et al.'s (2004) model, some strong evidence for a positive relationship between remote e-working and well-being at work is provided. More explicitly, remote e-working was found to associate with individuals' positive emotions, to increase their job satisfaction and organizational commitment levels, and to ameliorate feelings of emotional exhaustion. Additionally, when it comes to professional well-being, remote e-workers were found to be more autonomous as a result of this working arrangement. Some nuanced findings were presented in relation to social relationships within a remote e-working population. For example, although social isolation has been repeatedly identified as one the main drawbacks of remote e-working (Bailey & Kurland, 2002), this review suggests that individuals can be proactive in mitigating these feelings. Also, considering that individuals are not physically located next to each other, it is not surprising that relationships were found to change. This review goes beyond acknowledging this change, highlighting the pivotal role those relationships, and social support, in particular, can play for remote e-working to succeed. Nevertheless, some pitfalls are acknowledged. For example, professional isolation and perceived threats in career advancement seem to challenge employees who worry about the opportunities available to them. Moreover, this review discusses some of the mechanisms that seem to underline the complicated relationship between remote e-working and well-being at work expanding on the individual (e.g., personality traits), work-related (e.g., job role), and organizational aspects (e.g., organisational culture).

The striking conclusion of this review is that information about important dimensions and sub-dimensions of remote e-workers' well-being is absent. In particular, research has not satisfactorily explored remote e-workers' job aspirations, cognitive weariness, and psychosomatic health. Although, this review elaborated on findings about career prospects and perceptions of professional isolation as an analogue of job aspiration, further evidence is needed to better understand how remote e-workers' perceive their career development. Furthermore, researchers have attempted to respond to the critical question: Does being away from a traditional office involve specific competencies (i.e., knowledge, skills, and abilities) to be an effective worker? However, additional research is fundamental to establish and quantitatively assess a list of competencies that are required to effectively e-work remotely. This will then fulfil the growing need to shift our attention from virtual work at a group-level and firm-level, and focus on an individual-level instead (Wang & Haggerty, 2011).

There is an increased need to investigate whether remote e-workers experience cognitive weariness, reflected in reduced

concentration, and impaired switchingoff from work. Online debates within a variety of employees revealed that working in solitude and avoiding office interruptions, benefits tasks that require high concentration (Boell, Cecez-Kecmanovic, & Campbell, 2016). Conversely, empirical evidence suggested that remote e-workers' routine is heavily dependent upon ICTs, dealing with a lot of interruptions such as incoming emails and instant messages (Leonardi et al., 2010). Using multiple communication channels was found to impair concentration (Braukmann, Schmitt, Ďuranová, and Ohly (2017). Therefore, this review denotes the need for further research to examine remote e-workers' concentration. Additionally, developed social norms in modern organizations encourage an always-on culture (Derks et al., 2015), which especially influences remote e-workers who feel pressurized to be constantly available (Suh & Lee, 2017). Remote e-workers could be considered as susceptible to this "always-on culture", due to a great blurring of personal and work boundaries (e.g., Tietze & Musson, 2005). This blurring of boundaries and the available technology may enhance the temptation to continue working resulting in a lack of recuperation (Grant et al., 2013). In a very recent review by Schlachter, McDowall, Cropley, and Inceoglu (2017) it was claimed that individuals who use ICTs for work matters, during non-working hours, may fail to mentally detach and switch-off from work (e.g., Middleton, 2007). Hence, further research needs to address whether remote e-working and the extensive use of ICTs may make it harder for individuals to switch-off from work.

Furthermore, there has also been scarce research concerning the link between remote e-working and individuals' psychosomatic conditions, specifically to musculoskeletal or somatic complaints. The suggestion made by this review are in line with Eurofound and the International Labour Office (2017) report, according to which we lack knowledge at a European national level about whether remote e-workers are working in ergonomically sound environments when conducting work outside the traditional office. This report particularly raised concerns about the use of mobile ICT devices when remotely e-working and how they influence the ergonomics of work. Although remote e-workers may be exposed to the same ergonomic risks as their office-based colleagues, organizations are often not paying sufficient attention to remote or home offices (Ellison, 2012). Ergonomically designed working environments and guidance to work in a safe manner are essential in order to avoid physical complaints and irritations (Garza, Catalano, Katz, Huysmans, & Dennerlein, 2012). Assessing whether remote e-workers change their health-related behaviours (such as eating habits, exercise habits, and breaks) is important as these behaviours are again inextricably linked to psychosomatic health (Allen et al., 2015). The combination of increased sedentary behaviours when working, decreased exercise, and deterioration in food's quality may have detrimental outcomes to individuals' health (Healy et al., 2012). In the absence of such evidence, links between important aspects of well-being at work (i.e., psychosomatic) and remote e-working cannot be made, restricting our full understanding of the topic.

Benefits of a multi-dimensional approach to remote e-workers' well-being

Van Horn et al.'s (2004) five-dimensional model seems to provide a relevant and meaningful contextual framework when investigating the relationship between remote e-working and well-being at work. The 26 included studies that explored more than one well-being dimension enable us to see different, and simultaneously pivotal, angles of this relationship. For instance, autonomy was found to be a mechanism through which remote e-working decreased emotional exhaustion (Sardeshmukh et al., 2012), increasing job satisfaction (Gajendran & Harrison, 2007). Good working relationships also explained why remote e-workers were more (Fay & Kline, 2011, 2012) or less committed (Tietze & Nadin, 2011) to their organizations. Additionally, Bentley et al. (2016) suggested that the available organizational support, and support around remote e-working linked to both increased job satisfaction and reduced psychological strain; reducing feelings of social isolation. Synthesising well-being dimensions together may also bring critical thought into this growing topic. For example, instead of taking for granted that working in solitude will lead individuals to become socially isolated, we could explore where they may also benefit (e.g., greater satisfaction) due to filtering out office-based distractions (Fonner & Roloff, 2010). This review portrays how the combination of the aforementioned dimensions influence one another, resulting in a more representative reflection of the relationship between remote e-working and well-being at work.

Overall assumptions about remote e-working and well-being dimensions

Beyond the specific conclusions drawn about each individual well-being dimension, some additional generic assumptions are presented below.

First, as previous reviews have highlighted (e.g., Allen et al., 2015; Sullivan, 2003) a variation in how remote e-working has been defined is noticeable. Not all studies have been clear about the extent to which employees are e-working remotely, or the actual location that work is conducted. Although an effort was made to ensure transparency when describing the studies included, readers should still account for this diversity in samples used when interpreting the current summary. A need to better understand today's workplace is highlighted, since employees are not exclusively working in an office or home locations, but also in places such as customer sites, hotels, airports, and cafes (Maitland & Thomson, 2014).

Second, this review emphasises that current research has not considered the degree to which ICT use, which is an integral part of working away from the main office (Leonardi et al., 2010), may particularly influence remote e-workers' well-being at work. Technostress is a growing topic in the general working population and it refers to the stress experienced by end users, resulting from extensive ICT use and the demand to stay updated with technological changes (Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008). Suh and Lee (2017) study is the only one that examined technostress within remote

e-workers. The authors suggested that, the degree to which remote e-workers deal with high task interdependence and low autonomy, in conjunction with technology stressors, can lead to technostress. This simultaneously leads to less job satisfaction. Thus, it is essential to identify how ICT use appropriateness and enactment in different work activities when e-working remotely may be another factor that influences remote e-workers' well-being (Boell et al., 2016).

Third, as according to Anderson et al. (2015), individuals were more likely to experience positive emotions, when e-working remotely, when they were more open to experience, ruminated less, and had more social connections outside their workplace. In a similar vein, workaholic individuals were found to be more satisfied with their job when e-working remotely (Virick et al., 2010) than the rest of their colleagues. These findings embrace the statement that "one size does not fit all". Thus, investigating employees' working preferences and personality types may enable us to better foresee who will benefit the most by remote e-working. As this review points out, this is a current gap in our knowledge.

Fourth, a growing idea embraced by a number of studies (e.g., Gálvez et al., 2011) is that organizational culture and environment may play a pivotal role in remote e-workers' well-being. Lautsch et al. (2009) have proposed that helpful and supportive organizational culture (where supervisors encourage individuals to maintain their performance even when e-working remotely), implement remote e-working practices more effectively. Characteristically, perceived support from the organization, along with the support from supervisors and peers, positively influenced individuals' job satisfaction, reducing psychological strain, and social isolation (Bentley et al., 2016). It is thus strongly suggested that social support is very important for this working arrangement to succeed (Haines III, St-Onge, & Archambault, 2002). The impact of organizational culture and environment could probably be understood under the psychological contract theory. In particular, remote e-workers and their organisation have to adjust to a different psychological contract. When working outside an office environment, individuals are still trusted to provide good quality work, and equally organizations are trusted to keep an eye on these employees, without "forgetting" about them as they are not always physically present. The challenge here, is that some organizations (e.g., in the U.K.) have not yet established policies to safeguard healthy ICT use; maintaining a perception that managing ICT for work purposes is a mainly individual responsibility (McDowall & Kinman, 2017). This can be a particular issue for remote e-workers whose working life, as described above, heavily depends on ICTs.

Last, advanced methods are needed to reach more robust conclusions. For instance, longitudinal data is vastly absent, something that obstructs our ability to define causation and the actual direction for most of the relationships discussed above (Schieman & Glavin, 2011) and to reveal actual mechanisms between these dimensions. Additionally, it would be useful to conduct more diary studies which will allow us to capture a within-person change on levels of well-being, as opposed to a cumulative "mean" group change. An advantage of this method is that it decreases retrospective bias, which often threatens the validity of cross-sectional surveys (Reis & Gable, 2000). Moreover, although researchers' fair attempt to examine moderating and mediating relationships, our knowledge is still in its infancy; with the exact psychological processes that underlie the link between remote e-working and well-being unexplored. Additional qualitative data could enable us to delve into and identify possible moderating and mediating factors, and consequently indicate how they operate.

Limitations and future research

Despite the strengths of the current review, such as its rigorous theoretical and contextual framework and the breadth of information it provides there are some limitations that need to be addressed. Particularly, this review focuses on research within a specific time frame, excluding any research conducted, before and after the inclusion criteria. Consequently, future research including different studies could reach different conclusions. However, this is a usual limitation of both systematic reviews and meta-analyses (Harker Martin & MacDonnell, 2012). The trade-off is that systematic reviews may give good evidence when understanding previously conducted research (Petticrew & Roberts, 2006). Additionally, the current review excluded specific working populations, such as self-employed and disabled employees. Whereas, this enables better comparability of the obtained studies, it concurrently leaves unclear how remote e-working links to these employees' well-being at work.

When it comes to future work, studies could focus on well-being dimensions that have been unexplored (i.e., cognitive, psychosomatic), and further examine underlying factors that may influence more frequently studied dimensions (i.e., affective, social, and professional). As clearly suggested by this review a multi-dimensional approach such as, Van Horn et al.'s (2004), may bring essential aspects into the discussion of remote e-workers' well-being at work. To the best of researchers' knowledge, there are no measures tailored towards assessing remote e-workers well-being at work, and a multi-dimensional approach may provide a good theoretical grounding when developing one. A measure would enable organizations to detect and manage any issues raised by remote e-working (as discussed earlier), enabling organizations to put specific actions and strategies in place and to make sound policy recommendations. Lastly, this systematic review has exclusively focused on remote e-workers' well-being at work without considering their counterparts who are still full-time based in an office location. Research suggested that office-based employees experienced greater WFC when their colleagues were absent from the office (Lautsch et al., 2009). Thus, it is imperative for future research to explore if the change of the social milieu of the traditional office may occasionally improve the well-being of a few (i.e., remote e-workers) at the expense of others (i.e., office-based workers).

Practical implications

Despite discussed limitations, we believe that this review can offer implications for practice to a variety of stakeholders.

Considering that remote e-working's impact on well-being is complex, organizations should weigh both benefits and drawbacks. For instance, granting autonomy to individuals and avoiding micromanagement can act as a resource which may decrease feelings of emotional exhaustion and lead to greater job satisfaction. Additionally, conveying a sense of trust in that individual will appropriately conduct their work duties outside an office environment can increase individuals' loyalty and organisational commitment. Nevertheless, individuals need to be aware of the isolating nature of this way of working. As per this review, the fundamental role of maintaining good interpersonal relationships at work is especially heightened for individuals who remotely e-work. Therefore, organizations are called to openly discuss ways in which isolating feelings may be ameliorated. In order to increase confidence in conducting their work and reduce isolation, organizations should be encouraged to create social support networks between remote e-workers, colleagues, and supervisors. Good communications between remote e-workers and their office-based colleagues needs to be encouraged, especially when task interdependence is involved. Effective planning of remote e-workers' office presence could be a useful coping strategy. In other words, individuals can have flexibility around their work time and place, but simultaneously arrange face-to-face meetings at appropriate times. A good coordination of online work activities with colleagues is also needed for individuals who are working full-time away from an office location, in order to ensure that deadlines are met and projects are finished on time. Furthermore, providing information about career opportunities and mentors may be crucial to alleviate concerns about career advancement, resulting from a physical absence from the main office location.

Conclusion

Considering the growing use of technology, and the consequent increase in flexibility around where work is conducted, organizations and employees need to be aware of both the benefits and drawbacks of remote e-working practices. Conclusions drawn on all five well-being dimensions indicate that we know more about employees' affective state, social, and professional life than we know about their cognitive functioning and psychosomatic well-being. Although, links between remote e-working and each of the five dimensions seem to be both positive and negative, there is still a greater consensus towards a beneficial impact of this working arrangement. This review suggests that research within remote e-workers should incorporate: (1) a greater variety of remote e-workers, (2) identification of ICT use appropriateness and enactment on working tasks and its influence on individuals' working lives (e.g., technostress), (3) personality traits as "one size does not fit all", (4) a deeper understanding of organizational culture and climate, and (5) more advanced methods of conducting research (e.g., longitudinal data, diary studies, moderating, and mediating relationships). This research proposes that adopting a multidimensional approach may provide a rigorous theoretical and contextual framework for both academics to better understand the relationship between

remote e-working and well-being at work, and for practitioners, to enhance their knowledge surrounding implementing and managing remote e-working policies and strategies in a more effective manner.

Notes

1. As some studies looked into a couple of well-being dimensions (and sub-dimensions), the number does not add up to 63, which is the final number of included studies. Tables 3 and 4 provide detail on the aspects examined by each study.
2. Relevant studies should include at least one keyword from each set of keywords.
3. ICT use is not mentioned in any of the definitions provided, since it was an essential requirement for a study to be included.
4. The three meta-analyses received no MMAT scores, as the MMAT tool criteria have only the ability to assess the quality of primary quantitative, qualitative and mixed-method studies.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Appendix A. PsycINFO search.[2]

Telework* OR DE "Telecommuting" OR telecommut* OR "home-based work*" OR "home-based telework*" OR "home-based e-work*" OR "home-based telecommut*" OR homeworking OR homeworker* OR home-work* OR "working from home" OR DE "Virtual Teams" OR "virtual office" OR "virtual work" OR "satellite office" OR "remote employee*" OR "remote work*" OR "remote office*" OR "e-work*" OR "satellite center" OR "satellite centre" OR "electronic home work" OR "distance work*" OR "rural work*"

OR "flexible work*" OR "alternative work*" OR "distributed work*" OR "mobile work*" OR "multi locational work*" OR "multi location work*" OR "isolated work*" OR "peripatetic work*" OR "nomadic work*" OR "dispersed technical work*" OR "solitary work*" OR "sole work*" OR "lone work*" OR "agile work*" OR "smart work*" OR "hot-desking" OR "hotelling" OR "multi location mobility" OR "multi-location mobility" OR "functional relocation" OR "telecentre" OR "telecenter" OR telecottage

AND

DE "Well Being" OR "wellbeing" OR "well-being" OR "well being" OR "quality of life" DE "Occupational Health" OR DE "Emotions" DE "Job Satisfaction" OR DE "Organizational Commitment" OR "emotional exhaustion" OR "affective wellbeing" OR "affective well-being" OR affective well being" OR "musculoskeletal discomfort" OR "musculoskeletal pain" OR "health complaints" OR "ill health" OR "illness" OR DE "Stress" OR "strain" OR "psychosomatic wellbeing" OR "psychosomatic well being" OR "psychosomatic well-being" OR "psychosomatic health" OR "physical health" OR "physical well-being" OR "social wellbeing" OR "social well being" OR "social well-being" OR DE "Social Interaction" OR DE "Social Isolation" OR DE "Cognitive Ability" OR "cognitive weariness" OR DE "Concentration" OR "work-related rumination" OR "switch-off from work" OR "switch off" OR "switching-off" OR "cognitive wellbeing" OR "cognitive well being" OR "cognitive well-being" OR DE "Professional Competence" OR "competence" OR "knowledge" OR "skill" OR abilit* OR "self-efficacy" DE "Autonomy" OR DE "Occupational Aspirations" OR "aspiration" OR "interest" OR "growth-need" OR "accomplishment" OR "professional wellbeing" OR "professional well being" OR "professional well-being