

A systematic literature review to explore the antecedents of employee engagement among remote workers

Employee
engagement
among remote
workers

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Abstract

Purpose – This study aims to identify and review research articles to understand the conceptualization of employee engagement (EE) in a remote working environment. Specifically, the aim is to explore the antecedents impacting remote workers' engagement.

Design/methodology/approach – A systematic literature review was conducted, encompassing empirical studies sourced from EBSCO, Emerald and Gale databases. Studies published in peer-reviewed journals between 2013 and 2023 covering countries in the Organization for Economic Co-operation and Development (OECD) were included. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed to capture the review process.

Findings – A total of 25 empirical studies published across 18 journals were synthesized, with the results being reported in terms of three research objectives. The researchers identified that individual, organizational/job resources and organizational/job demands are the three main antecedents affecting EE in remote working environments.

Research limitations/implications – This study can serve as an important source of information for academics and practitioners as well as postulate new avenues for the future research. While the Job Demands-Resources model remains relevant in specifying demands and resources as antecedents of workforce engagement, technological antecedents gain prominence as additional factors contribute to the engagement of remote workforce.

Originality/value – This article studies the shifting landscape of EE with the rise of remote working and the need to gain a better understanding of how to keep remote workers engaged.

Keywords Work engagement, Employee engagement, Systematic literature review, Job engagement, Hybrid working, Remote working, Work from home, Job demands-resources model, Employee engagement antecedents

Paper type Literature review

1. Introduction

Employee engagement (EE) is a critical factor in the success of any organization, reflecting the emotional and psychological attachment an employee has towards their job, organization and its values (Schaufeli *et al.*, 2002; Kahn, 1990). The strong link between EE, work performance and a variety of organizational outcomes, including customer loyalty, satisfaction, staff productivity and financial profits, has been repeatedly shown by extensive research spanning more than two decades (Harter *et al.*, 2002). The idea that work characteristics and employee attributes significantly predict EE, which in turn impacts individual, team and organizational performance, is supported by empirical evidence

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regardless of the specific EE model used (Adisa *et al.*, 2021; Albrecht *et al.*, 2015). A number of meta-analysis and review studies have found linkages between engagement and its positive association with attitudinal, behavioural and performance related outcomes (Anand and Acharya, 2021; Demerouti *et al.*, 2010). Although there are many different elements that affect EE, common ones include perceived management and leadership quality, working environment and possibilities for career advancement. Thus, it is possible to view EE as a performance indicator for people management (OECD, 2021).

The rise of remote work, enabling employees to work from locations outside the office and hybrid work, allowing them to alternate between working from home (WFH) and the office, has gained prominence, especially in light of the COVID-19 pandemic (Anand and Acharya, 2021; Pass and Ridgway, 2022; Choudhary and Jain, 2021). This shift towards flexible work arrangements has prompted organizations to re-evaluate their engagement practices and how they interact with their employees (Pass and Ridgway, 2022; Harter, 2020). Remote work can present unique challenges to EE, such as feelings of isolation and difficulty communicating with colleagues (Adisa *et al.*, 2021; Schaufeli *et al.*, 2002).

While there are existing review studies on EE practices in traditional office settings (Kossyva *et al.*, 2022), there is a scarcity of systematic literature reviews (SLRs) specifically focussing on engagement in remote working environments (Mäkikangas *et al.*, 2022). To fill this research gap, a SLR of peer-reviewed articles on EE in remote work environments in Organization for Economic Co-operation and Development (OECD) countries was performed. This is paramount due to the influential economic status and advanced policy frameworks of such countries (Brinatti *et al.*, 2023; OECD, 2021). By studying these nations, researchers can uncover nuanced insights pivotal in shaping international workplace strategies (Williamson *et al.*, 2021; Pass and Ridgway, 2022).

Moreover, outcomes of increased engagement, including improved employee commitment, well-being, productivity (Chanana, 2021) and higher organizational performance (Purcell, 2014), highlight the significance of understanding and promoting EE in remote work arrangements.

The aim of this study is to identify and review research articles to understand the concept and antecedents of EE in a remote working context through conducting a SLR. To fulfil this aim, the following research objectives were examined:

1.1 Research objectives

- (1) To identify and review research articles that examines EE in remote working environments.
- (2) To explore the conceptualization of EE in terms of its theories and definitions in the context of remote working environments.
- (3) To identify and analyse the antecedents influencing EE in remote working environments.

The following section discusses the research methodology, including the process followed to conduct the SLR.

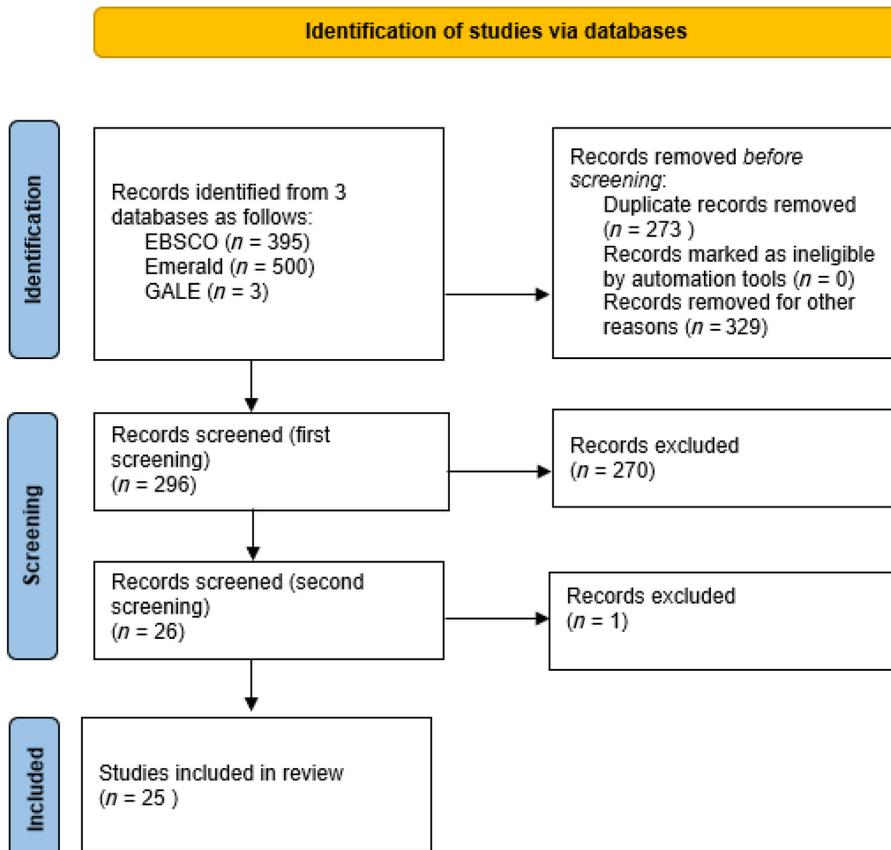
2. Research methodology

A SLR was conducted to identify and review the relevant research papers to comprehensively examine the definitions and theories of “employee engagement” and identify the antecedents of EE. SLRs are valuable research techniques as they facilitate the identification and analysis of all available information on a particular topic (Davis *et al.*, 2014). The study followed the

Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines (PRISMA, 2023) to capture the phases of this review process, as shown in Figure 1. PRISMA is a widely used guideline for reporting SLRs (Page et al., 2021; Moher et al., 2009). The SLR included the following steps:

2.1 Systematic literature review process

2.1.1 Identifying. The initial step in this research is to identify relevant research articles from the selected databases, namely EBSCO, Emerald and GALE. These databases are known to be comprehensive, up-to-date, inter-disciplinary and were chosen to access to a range of databases, e-journals and e-books. For, e.g. EBSCO has up-to-date collections from 24 fields of study. The search terms used include “employee engagement”, “job engagement”, “work engagement”, “hybrid work*”, “blended work*”, “remote work*” “Telework*”, “telecommut*”, “work* from home”. Boolean operators such as “AND” and “OR” were used to refine the search and include additional relevant terms. The identified articles were downloaded into the reference management system software, Zotero.



Source(s): Authors' own work

Figure 1.
PRISMA flow diagram

2.1.2 Inclusion and exclusion criteria. The inclusion criteria were:

- (1) published between 2013 and 2023,
- (2) written in English,
- (3) peer-reviewed articles.

The exclusion criteria involved:

-
- (1) articles not directly related to EE,
 - (2) non-empirical papers,
 - (3) non-OECD countries.

The articles were then exported to an MS Excel spreadsheet for further screening purposes.

2.1.3 Screening process. The screening process was conducted in two stages: abstract screening and full-text screening. Initially, the abstracts of the articles were screened to determine their relevance to the research topic. Many articles were discarded at this stage for being irrelevant to the research objectives. The selected articles underwent a full-text screening to assess their eligibility for inclusion. Both researchers independently reviewed articles at each stage and subsequently reached a consensus.

2.1.4 Data extraction. Relevant data from the selected articles were extracted on a separate tab of the excel sheet for final review. The extracted information included; title of the article; year of publication; author details; study timeframe; geographical location; research objectives; methodologies; conceptual or theoretical foundations; variables examined; hypotheses; key findings; conceptualization of EE, and antecedents of EE.

2.1.5 Data synthesis and analysis. The findings from the relevant research articles were synthesized and analysed to conceptualize EE, identify antecedents influencing EE in a remote working environment, and provide future research direction. The analysis involved a qualitative synthesis of the research articles.

3. Results

This section presents the analysis of results from the selected papers.

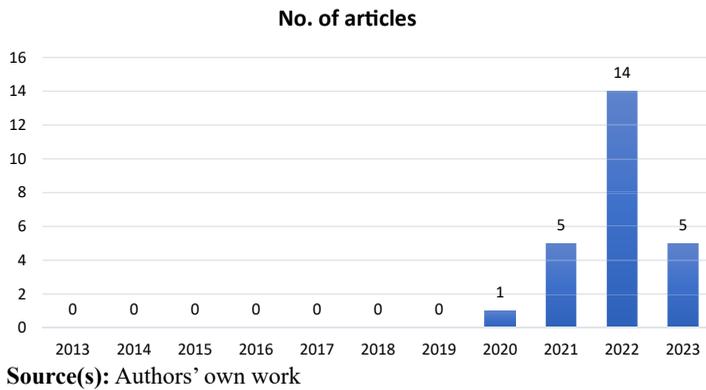
3.1 Identification and reviewing of the articles

In total, 898 articles were found during the identification stage, as shown by the PRISMA flow diagram (Figure 1).

After removing the duplicates and articles irrelevant to EE, first level screening was conducted on 296 research articles where researchers independently reviewed the abstracts of articles. 270 articles were excluded because they were irrelevant to the research objectives of this paper. At the next level of screening, a full text review of the remaining 26 articles was conducted and one article was identified as irrelevant to the scope of this study. At the end, 25 articles were identified from 18 journals relevant to the scope of this study.

A bibliographic overview of selected articles was produced, including the year of publication, demography of studies and the ranking of journals. This information provided a contextual background for the research findings and allowed the researchers to examine the papers from multiple perspectives.

3.1.1 Bibliographic overview (year of publication). More than 75% of the studies dated post 2022, while less than 25% dated on or before 2021 (Figure 2). This suggests a growing interest in the subject of EE in the remote working environment.



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Figure 2.
Year of publication

3.1.2 Bibliographic overview (demography of articles). Selected articles were predominantly based in Japan, Portugal, Norway and the Netherlands followed by the USA, Turkey, Germany and the UK (Figure 3), revealing insights into the distribution of this research.

3.1.3 Bibliographic overview (journals' ranking). The SJR ranking of two of the journals was 2+, while four journals possessed 1+ and ten journals had a ranking between 0.966 and 0.240. Two journals were not listed in the SJR ranking; one of these has an impact factor 0.600 and the other one is listed as "B" in the ABDC journal ranking (Table 1). This ranking data aids in assessing the quality and impact of the selected articles.

3.2 Conceptualisation of employee engagement

This section explores the definitions and theories discussed in selected articles in relation to the EE in a remote working environment.

3.2.1 Theories related to EE. Nine theories related to EE are mainly discussed in relation to the remote working, hybrid working, WFH, or flexible work arrangements in the order of the Job Demands-Resources model (Demerouti *et al.*, 2001) followed by the conservation of resources model (Hobfoll, 1989) and the self-determination theory (Deci and Ryan, 1985). Seven articles indicate no theories. Please refer Table 2 for this analysis.

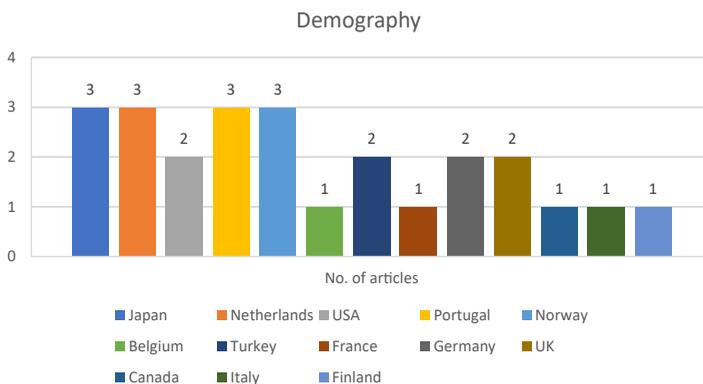


Figure 3.
Demography of articles

S. No.	Name of journals	Ranking	No. of articles
1	International Journal of Environmental Research and Public Health	SJR 0.828	5
2	Computers in Human Behaviour	SJR 2.464	2
3	Employee Relations	SJR 0.897	2
4	Frontiers in Psychology	SJR 0.891	2
5	Asia Pacific Business Review	SJR 0.522	1
6	European Journal of Work and Organizational Psychology	SJR1.966	1
7	European Review of Applied Psychology	SJR 0.240	1
8	German Journal of Human Resource Management	B (ABDC ranking)	1
9	Health Care Management Review	SJR 0.827	1
10	International Journal of Psychology	SJR 0.922	1
11	Journal of Knowledge Management	SJR 2.22	1
12	Journal of Occupational and Environmental Medicine	SJR 0.741	1
13	Journal of Systems and Software	SJR 1.126	1
14	Learning Organization	SJR 0.718	1
15	Personality and Individual Differences	SJR 1.463	1
16	Psychology of Leaders and Leadership	Impact factor: 0.600	1
17	Revista de Psicología del Trabajo y de Las Organizaciones	SJR 0.922	1
18	Scandinavian Journal of Work, Environment and Health	SJR 1.43	1

Source(s): Authors' own work

Table 1.
Journals' ranking

S. No.	Theories related to engagement	Cited in	Number of times cited
1	Job demands-resources model (Demerouti <i>et al.</i> , 2001)	Syrek <i>et al.</i> (2022), Shamsi <i>et al.</i> (2021), Karaca <i>et al.</i> (2022), Donovan (2022), Amano <i>et al.</i> (2021), Olsen <i>et al.</i> (2023), Mosquera <i>et al.</i> (2022), Takahashi <i>et al.</i> (2022), Miglioretti <i>et al.</i> (2021), Parent-Lamarche (2022), Günther <i>et al.</i> (2022), Delanoëje and Verbruggen (2020)	11
2	Transactional theory of stress and coping (Lazarus and Folkman, 1984)	Syrek <i>et al.</i> (2022)	1
3	Conservation of resources model (Hobfoll, 1989)	Syrek <i>et al.</i> (2022), Karaca <i>et al.</i> (2022), Tokdemir (2022), Parent-Lamarche (2022)	4
5	Cognitive crafting theory (Wrzesniewski and Dutton, 2001)	Wijngaards <i>et al.</i> (2022)	1
6	Person-job fit (Edwards, 1991)	Lopes <i>et al.</i> (2023)	1
7	Self-determination theory (Deci and Ryan, 1985)	Lopes <i>et al.</i> (2023), Dias <i>et al.</i> (2022), Schade <i>et al.</i> (2021)	3
8	Technology acceptance model (Davis, 1989; Davis <i>et al.</i> , 1989)	Shamsi <i>et al.</i> (2021)	1
9	Social exchange theory (Blau, 1964)	Lee (2023)	1
10	No theories indicated	Kaltiainen and Hakanen (2022), Nagata <i>et al.</i> (2021), Curcuruto <i>et al.</i> (2023), Bareket-Bojmel <i>et al.</i> (2023), Bollestad <i>et al.</i> (2022), Michinov <i>et al.</i> (2022), Boegheim <i>et al.</i> (2022)	7

Source(s): Authors' own work

Table 2.
Theories related to Engagement

3.2.2 Definitions of engagement. 19 articles used the term “work engagement” followed by “job engagement” used in two articles, one each article used “engagement”, “employee engagement” “employee mental health” and “happiness well-being as composed of work engagement and job satisfaction”. As the majority of the articles used the term “work engagement” (WE), this is the term used in this analysis to represent engagement. The definition of EE as work engagement is defined as a positive and fulfilling work-related state of mind, characterized by feelings of vigour, dedication and absorption in one’s work tasks (Schaufeli and Bakker, 2010). The three dimensions of engagement referred to here are vigour, dedication and absorption. The articles utilized various versions of the utrecht work engagement scale (UWES) by Schaufeli *et al.* (2002) to gauge work engagement. These versions include a 17-item scale assessing vigour, dedication and absorption, an ultra-short measure (UWES-3), a six-item version (UWES-6), and a nine-item UWES-9. Parent-Lamarche (2022) focussed on the first two dimensions of work engagement defined above-vigour and dedication. Delanoëje and Verbruggen (2020) also selected the vigour and the dedication subscales while excluding the work absorption scale.

Donovan (2022) employed a 10-item scale developed by Mone and London (2010) to assess employee purpose and energy. Amano *et al.* (2021) measured work engagement using part of the new brief job stress questionnaire (New BJSQ) (Inoue *et al.*, 2014) and two questions were used to evaluate employees’ work engagement to measure the vigour and dedication dimensions of this concept. Olsen *et al.* (2023) measured job engagement using a single question on a 7-point scale, which also appears in Sardeshmukh *et al.* (2012). Lee (2023) measured EE, using 11 items adopted from Saks (2006) consisting of job engagement and organizational engagement.

Bareket-Bojmel *et al.* (2023) adopted a holistic conceptualization of job engagement using the 18-item job engagement scale (JES; Rich *et al.*, 2010) to assess three aspects of the variable: physical, emotional and cognitive. Günther *et al.* (2022) employed a reflective higher-order construct of happiness well-being, consisting of job satisfaction and work engagement. Within this construct, work engagement was measured reflectively using a three-item short form of the UWES-3 (Schaufeli *et al.*, 2019), whilst Boegheim *et al.* (2022) used a combined measure for engagement and emotional exhaustion utilizing the oldenburg burnout inventory – OLBI (Demerouti *et al.*, 2010). Some articles also utilized the Dutch, Italian, Japanese and French versions of the UWES.

3.3 Antecedents affecting employee engagement of remote workers

The antecedents identified from the analysis of the selected articles were categorized into organizational/job resources (Table 3), organizational/job demands (Table 4) and individual level (Table 5). Each table is presented in terms of general categories based on similarity, the factors, the citations in which these appeared and the relationship with work engagement.

3.3.1 Categorisation of organizational/job resources antecedents (Table 3). Social support: This includes leaders or supervisors, colleagues or co-workers, human resource management (HRM) personnel or practices and other departments or work teams (Olsen *et al.*, 2023; Takahashi *et al.*, 2022; Miglioretti *et al.*, 2021; Shamsi *et al.*, 2021; Günther *et al.*, 2022). These sources serve as an important job resource that buffers against job demands, particularly when working remotely or working remotely under crisis conditions when employees are likely to experience uncertainty and anxiety.

Leaders may provide support in areas such as task fulfilment, consideration, health-related support, information, communication and guidance. This enhances employees’ resource base with positive effects on EE and well-being. Similarly, co-workers, colleagues or team members may provide support, communication or interpersonal care. These often act as a resource through a motivational stimuli process wherein employees perceive a feeling of

General categories	Organizational/Job resources factors	Article	Relationship with work engagement (WE)	
Social support	Leader support	Olsen et al. (2023)	Direct positive relationship	
	Supervisor's task behaviour	Takahashi et al. (2022)		
	Supervisors consideration	Takahashi et al. (2022)		
	Supervisor support	Miglioretti et al. (2021)		
	Colleague support	Olsen et al. (2023)		
	Perceived team support	Shamsi et al. (2021)		
	Co-worker support	Miglioretti et al. (2021)		
	Telework-oriented leadership	Günther et al. (2022)		Indirect relationship
	Telework-oriented HRM	Günther et al. (2022)		
	Motivators	Job control		Miglioretti et al. (2021)
Decision latitude		Tokdemir (2022)		
Empowerment		Donovan (2022)		
Skill utilization		Parent-Lamarche (2022)		
Quality of communication	Recognition	Parent-Lamarche (2022)	Direct positive relationship	
	Close communication with superiors	Amano et al. (2021)		
Relationship satisfaction	Informational substantiality	Lee (2023)	Indirect relationship	
	Relational satisfaction	Lee (2023)	Indirect relationship	
Environmental factor	Social isolation (low)	Mosquera et al. (2022) , Günther et al. (2022)	Direct negative relationship	
	Bullying	Bollestad et al. (2022)	Direct positive relationship	
	Access to outdoor natural spaces	Curcuruto et al. (2023)		
	Being satisfied with the noise level	Boegheim et al. (2022)		

Table 3. Organizational/job resources antecedents

Source(s): Authors' own work

General categories	Organizational/Job demands factors	Article	Relationship with work engagement
Positive job demands	Mental load	Shamsi et al. (2021)	Direct positive relationship
	Overtime	Olsen et al. (2023)	
Strain factor	Challenge stress	Donovan (2022)	Direct negative relationship
	Job strain	Tokdemir (2022)	
	Work overload	Mosquera et al. (2022)	

Table 4. Organizational/job demand antecedents

Source(s): Authors' own work

value and reciprocate through enhanced work engagement. Moreover, the support extended by HRM assumes importance, representing the organizational commitment to employee welfare, particularly in contexts characterized by remote work arrangements akin to those witnessed during the COVID-19 crisis situation ([Günther et al., 2022](#)).

Motivators: This consists of job control ([Miglioretti et al., 2021](#)), decision latitude ([Tokdemir, 2022](#)), empowerment ([Donovan, 2022](#)) and skill utilization and recognition ([Parent-Lamarche, 2022](#)), which are socio-emotional resources that fulfil employee needs such

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Job crafting	Cognitive crafting	Wijngaards et al. (2022) , Takahashi et al. (2022)	Direct positive relationship
Motivational aspects	Task crafting	Takahashi et al. (2022)	Direct negative relationship
	Involuntariness in telework	Lopes et al. (2023) , Dias et al. (2022)	Direct positive relationship
Technological aspects	Higher competence need satisfaction	Schade et al. (2021)	Indirect relationship
	Individual's perception/evaluation of mastering new technologies	Dias et al. (2022)	Indirect relationship
	Technology related perceptions (perceived ease of use and perceived usefulness of technology)	Shamsi et al. (2021)	
	High technological competency	Karaca et al. (2022)	Direct positive relationship
Psychological aspects	Technology acceptance	Shamsi et al. (2021)	Direct positive relationship
	Psychological resilience	Karaca et al. (2022)	Direct positive relationship
	Conscientiousness	Donovan (2022)	Direct positive relationship
	Emotional intelligence-i.e. use of emotion dimension	Parent-Lamarche (2022)	
	Psychological profiles- "affiliative" profile	Michinov et al. (2022)	
Rest and balance	Hope	Bareket-Bojmel et al. (2023)	Indirect relationship
	Loneliness	Bareket-Bojmel et al. (2023)	
	Refraining from working long hours	Amano et al. (2021)	Direct positive relationship
	Obtaining adequate sleep	Amano et al. (2021)	
	Sleep quality	Tokdemir (2022)	
	Managing work-life balance	Olsen et al. (2023)	
Teleworker strain	Günther et al. (2022)	Indirect relationship	

Source(s): Authors' own work

Table 5.
Individual level antecedents

as autonomy, skill growth, goal achievement, self-esteem, trust and appreciation. These elements collectively contribute to strengthening the employee resource base and act on a motivational level to enhance EE.

Quality of communication: This encompasses two factors: close communication with superiors ([Amano et al., 2021](#)) and information substantiality ([Lee, 2023](#)). Both highlight the key role of the provision of communication and information in effective remote working. When employees have effective two-way communications with superiors or colleagues and access to accurate, timely information, it helps them to make informed decisions, carry out role requirements and collaborate for work in the context of remote working.

Relationship satisfaction: This includes relational satisfaction ([Lee, 2023](#)), social isolation ([Mosquera et al., 2022](#); [Günther et al., 2022](#)) and bullying ([Bollestad et al., 2022](#)). This becomes especially relevant in the context of remote work, where a key facet of the work is being separated from others. It is apparent that remote workers' basic needs for relatedness and connectedness and feelings of inclusion and belonging become challenging. Additionally, loneliness and social isolation could become more acute for victims of workplace bullying.

Environmental factor: This comprises of access to outdoor natural spaces (Curcuruto *et al.*, 2023) and being satisfied with the noise level (Boegheim *et al.*, 2022), both of which can play a role in mitigating fatigue and stress. This becomes particularly crucial when remote workers experience high levels of technological use and technostress.

The review also revealed interactions among factors in explaining work engagement at the organizational level. For example, telework oriented leadership increases happiness well-being (combined job satisfaction and work engagement) by reducing teleworker strain (mediator) (Günther *et al.*, 2022). Telework-oriented HRM showed two interactional effects: first, it increases happiness well-being (job satisfaction and work engagement) by reducing social isolation (mediator) (Günther *et al.*, 2022). Secondly, it reduces social isolation, which reduces strain resulting in increased happiness well-being (job satisfaction and work engagement) (Günther *et al.*, 2022). Increased satisfaction with information substantiality had an indirect relationship as a mediator variable; the formal use of information and communication technology (ICT) met employees' informational needs, thereby increasing their levels of engagement (Lee, 2023). Likewise, increased relational satisfaction had an indirect relationship as a mediator; both the formal and informal use of ICT met employees' relational needs, thereby increasing their engagement levels (Lee, 2023). Increased social isolation was linked with reduced work engagement, as highlighted in Mosquera *et al.* (2022). Additionally, an interaction effect was noted in Günther *et al.* (2022), indicating that social isolation leads to teleworker strain, which leads to reduced job satisfaction and work engagement. Bollestad *et al.* (2022) found that higher levels of bullying not only led to reduced engagement but also revealed an indirect relationship, particularly evident when victims of bullying work remotely, resulting in increased engagement with their work (Bollestad *et al.*, 2022).

3.3.2 Categorisation of organizational/job demand antecedents (Table 4). Positive job demands include mental load (Shamsi *et al.*, 2021), overtime (Olsen *et al.*, 2023) and challenge stress (Donovan, 2022), which have a positive relationship with work engagement due to a motivational element involved. This is seen as efforts or cognitive demands leading to growth, goal attainment or reward (Shamsi *et al.*, 2021), indicate perfection in work tasks (Olsen *et al.*, 2023) or components of work that are challenging or rewarding (Donovan, 2022). All three job demands enhance work engagement.

Strain factor comprises job strain (Tokdemir, 2022) and work overload (Mosquera *et al.*, 2022) that exhibit a direct negative relationship with work engagement. Work overload, in terms of amount, difficulty or pace (Mosquera *et al.*, 2022), and job strain, in terms of work-related stress arising from high workload along with low control and support (Tokdemir, 2022), impede engagement levels. In the context of remote work, these factors could potentially mean employees' are required to work swiftly and extensively with continuous availability and be tech-savvy.

3.3.3 Categorisation of individual antecedents (Table 5). Job crafting: This includes cognitive crafting (Wijngaards *et al.*, 2022; Takahashi *et al.*, 2022) and task crafting (Takahashi *et al.*, 2022). Job crafting is a personal resource as it involves a proactive role of employees in redesigning jobs by themselves either by altering perceptions (Wijngaards *et al.*, 2022; Takahashi *et al.*, 2022) or altering the boundaries of jobs (Takahashi *et al.*, 2022). As remote workers are working at a distance and have less access to significant others, a key need may be to make a job more significant by actively crafting jobs, which in turn may enhance engagement levels.

Motivational aspects: comprise of involuntariness in telework (Lopes *et al.*, 2023; Dias *et al.*, 2022) and competence need satisfaction (Schade *et al.*, 2021). "Involuntariness in telework" concerns the choice of a less preferred work situation accompanied by an individual's feelings of being pressured to opt for telework (Delanoije and Verbruggen, 2020). The underlying reason/motivation is pressure and control arising from external factors in opting for

teleworking and translates into suboptimal outcomes such as reduced engagement. Conversely, “competence need satisfaction”, a fundamental need, is primarily satisfied by work means (Schade *et al.*, 2021). When there is high competence need satisfaction derived from job control in remote work settings, it translates into higher engagement levels (Schade *et al.*, 2021).

Technological aspects: These encompass perception/evaluation of mastering new technologies (Dias *et al.*, 2022), technology acceptance (Shamsi *et al.*, 2021), technology related perceptions (perceived ease of use and perceived usefulness of technology, Shamsi *et al.*, 2021) and high technological competency (Karaca *et al.*, 2022).

The role of these antecedents becomes paramount in the context of remote working as effective technology usage becomes a key success factor in the positive experiences of remote workers. These antecedents relate to personal level attitudes, perceptions and evaluations regarding one’s competence in using technology effectively (Dias *et al.*, 2022; Karaca *et al.*, 2022), as well as the perception that the use of technology is free of effort and/or the effort is justified by the potential benefits (Shamsi *et al.*, 2021). The perception of usage and usefulness of technology reflect in greater technology acceptance (Shamsi *et al.*, 2021). Accordingly, the cited stream of research finds that favourable attitudes and perceptions related to technology use subsequently influence positive emotional states, such as engagement levels of remote workers.

Psychological aspects: These emphasize the importance of various psychological traits as personal resources in remote work environments, particularly resilience (Karaca *et al.*, 2022), hope (Bareket-Bojmel *et al.*, 2023), conscientiousness (Donovan, 2022), emotional intelligence (Parent-Lamarche, 2022), affiliative profile (Michinov *et al.*, 2022) and loneliness (Bareket-Bojmel *et al.*, 2023). Resilience enables individuals to persevere through setbacks and uncertainties, maintaining focus and motivation (Karaca *et al.*, 2022). Hope drives goal-directed behaviour, sustaining engagement despite challenges (Bareket-Bojmel *et al.*, 2023). Conscientiousness foster responsibility, organization and self-discipline, aiding in achieving work goals remotely (Donovan, 2022). Emotional intelligence, especially in understanding and managing emotions of self and others, facilitates adaptive problem-solving essential in remote work contexts (Parent-Lamarche, 2022). Personality profiles of teleworkers also have an effect on employee well-being, including engagement. An “*affiliative*” profile composed of high levels of extraversion, conscientiousness and agreeableness and low levels of neuroticism and preference for solitude – a combination suggesting a resilient profile seems to be signify greater coping ability with isolation and stress and achieve higher work engagement (Michinov *et al.*, 2022). This also reflects that extraverts reach out for communication needs using digital solutions.

In remote work environments, employees may experience feelings of loneliness as they struggle to maintain the level of interaction and communication that is present when working from an office environment (Bareket-Bojmel *et al.*, 2023).

Rest and balance: This includes refraining from working long hours (Amano *et al.*, 2021), obtaining adequate sleep (Amano *et al.*, 2021), sleep quality (Tokdemir, 2022), managing work-life balance (Olsen *et al.*, 2023) and teleworker strain (Günther *et al.*, 2022). While sleep quality, work life balance and balanced work hours are personal resources when managed well, often these tend to become risk factors of remote work with work getting extended, sleep or sleep quality getting compromised and work family conflicts with work impinging on personal life as revealed by the research. Teleworker strain also arises from time or role-related stressors experienced in remote working environments (Günther *et al.*, 2022). Naturally, such poor well-being outcomes among remote workers translate into reduced engagement levels.

The review also revealed interaction effects in explaining engagement. First, individual subjective perceptions of mastering new technologies lead to reduced involuntariness in

adopting telework, resulting in higher work engagement (Dias *et al.*, 2022). Second, technology related perceptions such as perceived ease of use and perceived usefulness of technology contribute to increased technology acceptance, which positively impacts work engagement (Shamsi *et al.*, 2021). Third, the relationship between psychological resilience and work engagement was stronger among employees with high technological competency (Karaca *et al.*, 2022). Fourth, enhancing hope among lonely employees raises job engagement in remote work (Bareket-Bojmel *et al.*, 2023). Fifth, employees with moderate and high levels of loneliness in remote work are at risk of decreased job engagement (Bareket-Bojmel *et al.*, 2023). Lastly, an increase in telework strain leads to decreased happiness well-being that means reduced job satisfaction and work engagement, but reducing it can have an indirect positive impact on both (Günther *et al.*, 2022).

4. Implications

Remote work has gained momentum following the COVID-19 pandemic and organizations worldwide are witnessing an increased prevalence of remote work. It is evident that the engagement levels of remote workers are based on the mix of resources and demands at organizational/job as well as individual level and how these interact with each other in determining engagement levels. Remote workers with low levels of job/personal resources accompanied by high levels of job demands are particularly vulnerable to low engagement levels. But, if job resources are high, it helps to buffer against the impact of high or moderately high job demands. Given the characteristics of remote work, where workers work in solitude and are separated from co-workers and supervisors, easy availability and accessibility of social support becomes an important resource that can buffer against job demands. At the organizational level, social support from peers, teams, supervisors and leaders is a key resource for remote workers to feel guided, supported and cared for. Feelings of social isolation and loneliness among remote workers can be addressed through organizing virtual meetings to foster connection and ensure work coordination. Clear communication and information sharing are vital in managing uncertainty and anxiety in remote work. Job design should focus on enriching roles with autonomy, skills utilization, recognition and revised performance to effectively boost engagement among remote workers. It has also become clear from our analyses that workload by itself is not a demand-workload that has a motivational element-such as the challenge of learning to use new technologies involved in remote work might help with enhancing engagement. However, workload that is perceived as excessive combined with a lack of control and support might exacerbate stress levels and harm work engagement. Therefore, organizations should discuss workload with employees to understand its impact and meaning for them.

Effective remote work relies heavily on technology, so organizations must ensure that remote workers are proficient in using technological tools or provided training to enhance their skills. Personality profiles of remote workers are also key to effective remote work engagement; selecting remote workers with affiliative profiles and specific competences including resilience, conscientiousness, emotional intelligence and hope is a starting point for ensuring remote worker engagement. Alternately, organizations may offer training interventions targeting these specific skills and competencies and design performance management and reward programmes that focus on these skill sets at the core of remote work. Further, organizations may do well to allocate employees for remote work based on their voluntariness and intrinsic motivation. Lastly, as remote work often involves work-life imbalance, a key message going out to remote workers should be that organization cares for employees' well-being and encourages them to avoid overworking, and get adequate rest for work-life balance and reduced job strain.

In conclusion, remote work offers flexibility and productivity benefits but also brings challenges like social isolation, blurred boundaries between work and home life, technological hurdles and the interplay of remote workers' personalities and psychological profiles, leading to decreased job engagement. Some of these challenges get exacerbated in situations of imposed work from home or emergency remote work such as that witnessed during COVID-19 pandemic. Based on our analysis organizations need to plan effectively for remote work and have targeted interventions and approaches to ensure that the remote workforce feels engaged and uplifted.

5. Limitations of the study

Conducting a literature review involves thorough searching across databases, yet the probability of missing important papers persists due to factors like the vast literature volume and publication bias.

However, to mitigate this bias, the researchers implemented strategies outlined by [Davis et al. \(2014\)](#) and [Moher et al. \(2009\)](#), which involved explicitly identifying and adhering to the steps required for the review process.

Another limitation of the study may pertain to its focus on OECD countries within the literature review. While this approach provided valuable insights into the antecedents underpinning the phenomenon of interest within this specific subset of countries, it may not fully capture the diversity of factors influencing the phenomenon on a global scale.

6. Future research directions

The final selection of articles included only quantitative studies, highlighting the need for more qualitative research that gives voice to employees' experiences. Moreover, the lack of investigations into moderating effects is an important gap in the literature. Thus, it is suggested to examine the moderating effects of demographic factor age, gender and occupation in future research. Further research should also consider conducting comparative studies across OECD and non-OECD countries to explore how remote work policies, organizational practices and cultural norms impact EE. Interestingly, "hybrid work" or "blended work" did not feature in any of the selected articles in the final list. This indicates a gap in research regarding EE in hybrid work setups. Further investigation is warranted to explore the antecedents of EE in small- and medium-sized enterprises compared with large organizations.

As work arrangements continue to evolve, understanding and fostering EE in remote and hybrid settings will remain crucial for organizations seeking to optimize their outcomes and support their workforce effectively.

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