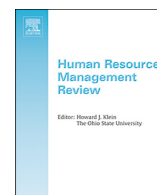


Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Human Resource Management Review

journal homepage: www.elsevier.com/locate/hrmr

Human Resource Management and the ability, motivation and opportunity to continue working: A review of quantitative studies



Karen Pak^{a,b,*}, Dorien T.A.M. Kooij^a, Annet H. De Lange^{b,c,d},
Marc J.P.M. Van Veldhoven^a

^a Human Resource Studies, Tilburg University, Tilburg, The Netherlands

^b Human Resource Management, HAN University of Applied Sciences, Arnhem, Nijmegen, The Netherlands

^c Hotel school of Management, Social Sciences, university of Stavanger, Norway

^d Department of Psychology, Norwegian University of Science and Technology (NTNU), Trondheim, Norway

ARTICLE INFO

Keywords:

HRM
Work ability
Employability
Motivation and age discrimination

Abstract: Organisations are challenged to retain older workers, however knowledge on how this should be done is scattered. The aim of this paper is to integrate knowledge on the actions organisations can take to facilitate the extension of working lives by identifying and examining the effectiveness of Human Resource Management activities directed at the extension of working lives. To this end a systematic review was conducted, which identified 110 peer-reviewed and unpublished empirical articles concerning the influence of job demands, job resources and Human Resource practices on the ability, motivation and opportunity to work(ing). The results indicate that offering job resources has a positive effect on the ability, motivation and opportunity to continue working. Furthermore, work ability was found to be most negatively related with job demands whereas employability was most positively related with developmental practices. The paper concludes by suggesting directions for future research and practical implications to encourage evidence-based practice.

1. Introduction

The composition of the workforce is changing due to increased life expectancies and declining fertility rates (OECD, 2015; United Nations, 2017). Older workers are exiting the workforce, often before the official retirement age, and fewer younger workers are available to replace them; this has led to substantial pressure on the pension systems of many developed countries (Taylor & Earl, 2016) and expectations of labour shortages in the near future (Bal, Kooij, & Rousseau, 2015; Ilmarinen, 2005; Ng & Feldman, 2008). To cope with the rising costs of retirement and prevent labour shortages, governments have taken measures to stimulate employees to work until a later age (e.g. increasing mandatory retirement ages and discouraging early exit from the labour market) (OECD, 2015; United Nations, 2017). This challenges organisations to design work in such a way that (older) workers are able to continue working, are motivated to continue working and have the opportunity to do so (Kanfer & Ackerman, 2004; Phillips & Siu, 2012). It is assumed that organisations can achieve this through the use of Human Resource Management (HRM) (Truxillo, Cadiz, Rineer, Zaniboni, & Fraccaroli, 2012; Veth, Emans, Van der Heijden, Korzilius, & De Lange, 2015).

Driven by the abovementioned societal and political trends research interest in the extension of working lives is growing (e.g. Bal

* Corresponding author at: Human Resource Studies, Tilburg University, Tilburg, The Netherlands.

E-mail addresses: k.pak@tilburguniversity.edu (K. Pak), t.a.m.kooij@tilburguniversity.edu (D.T.A.M. Kooij), annet.delange@han.nl (A.H. De Lange), m.j.p.m.vanveldhoven@tilburguniversity.edu (M.J.P.M. Van Veldhoven).

<https://doi.org/10.1016/j.hrmr.2018.07.002>

Received 11 July 2017; Received in revised form 9 July 2018; Accepted 9 July 2018
1053-4822/ © 2018 Elsevier Inc. All rights reserved.

et al., 2015; Fisher, Ryan, & Sonnega, 2015). However, numerous outcome measures have been used as indicators for the extension of working lives (Eurofound, 2016; Kooij, 2015; Zacher, 2015). For example, the concept of sustainable employability is dominant in Western Europe (Eurofound, 2016), and is often conceptualised as a combination of work ability (i.e. being physically and mentally capable to conduct one's work), competence-based employability (i.e. having the skills and competences to conduct one's work) and vitality (i.e. having the energy and resilience to conduct one's work) thereby mainly focusing on the ability to continue working (Brouwer et al., 2012; De Graaf, Peeters, & Van der Heijden, 2011; Van der Klink et al., 2011). However, the motivation to continue working is more often researched in the United States than in Europe (e.g. Armstrong-Stassen, 2008; Armstrong-Stassen & Ursel, 2009). Other relevant concepts related to the extension of working lives are successful ageing at work, sustainable work, decent work, well-balanced work, good-quality employment and quality of working life (Eurofound, 2016).

Due to this diversity in concepts and outcome measures, present knowledge on the effectiveness of HRM for the ability, motivation and opportunity to continue working is scattered. This makes it difficult for researchers to make informed decisions about areas that need future research, and for practitioners to get an overview of which practices or interventions are available and effective to use (Briner & Rousseau, 2011). Furthermore, as demonstrated by De Lange, Kooij, and Van der Heijden (2015) there is little consensus on which theories could be applied in this research field resulting in a large variety of theories used with regard to the extension of working lives. This research field would therefore benefit from a research model that is strongly grounded in (HRM) theory (De Lange et al., 2015). To fill this gap, this paper aims to integrate existing knowledge by creating a framework for analysing studies on the ability, motivation and opportunity to continue working simultaneously, identifying HR practices that organisations can use to stimulate employees to work longer and examining the effectiveness of these HR practices on the extension of working lives. With this overview, we aim to stimulate evidence-based practice and present an agenda for future research.

To our knowledge no existing (systematic) reviews to date have combined outcomes related to the ability, motivation or opportunity to continue working and examined the effectiveness of HR practices on this broad range of outcomes. Although many previous reviews on this topic have focused on the ability to continue working (e.g. Cloostermans, Bekkers, Uiters, & Proper, 2015; Fadyl, Mcpherson, Schlüter, & Turner-Stokes, 2010; Kuoppala, Lammipaa, & Husman, 2008; Smith, 2010; Steenstra, Cullen, Irvin, & Van Eerd, 2016; Van den Berg, Elders, de Zwart, & Burdorf, 2009), only a few reviews focused on the motivation to continue working (e.g. Feldman, 1994; Kooij, De Lange, Jansen, & Dijkers, 2008) and the opportunity to continue working (e.g. Wood, Wilkinson, & Harcourt, 2008). These reviews either have not focused on the effect of HRM (e.g. Kooij et al., 2008; Wood et al., 2008) or have focused only on one specific type of HR practice or element of work design (Fadyl et al., 2010; Van den Berg et al., 2009). Whilst acknowledging the value of these earlier reviews we decided to conduct a new systematic literature review in which a broad range of outcomes was included and in which the effectiveness of HRM was specifically addressed. This will result in an overview of current studies from which concrete recommendations can be given to organisations regarding the actions they can take with regard to the extension of working lives and an agenda for future research can be created.

The contributions of this review are threefold. First, this review aims to contribute to the literature on HRM and the extension of working lives (including, but not limited to, the topics of successful ageing at work, sustainable employability and work ability) by combining and reframing existing models on HRM and the extension of working lives to be able to give a complete overview of the available evidence on this topic. This review builds further on a model for conceptualizing HRM (provided by Van Veldhoven and Peccei (2015)), bundles of HR practices (provided by Kooij, Jansen, Dijkers, and De Lange (2014)) and a framework for categorizing relevant outcomes relating to the extension of working lives (provided by Van der Heijden (2012)). The framework of Van Veldhoven and Peccei (2015) helped to categorize HRM factors as being part of the immediate or distal work context, with the aim to disentangle how different components of HRM influence the extension of working lives. The model of (Kooij et al., 2014) helped to categorize HR practices in bundles that are relevant for the retention of older workers. The framework of Van der Heijden (2012) argues that in order to work longer one has to be able and motivated to do so and have the opportunity, thereby capturing a broad range of outcomes related to the extension of working lives. Although HR research has typically focused on either the ability, motivation or opportunity (to continue working), considering all these outcomes at once provides a broader and more complete picture (Jiang, Lepak, Hu, & Baer, 2012) and allows for the identification of possible conflicting outcomes (Van de Voorde, Paauwe, & Van Veldhoven, 2012). Second, this review aims to contribute to the literature on the extension of working lives by providing an overview of the research designs, conceptualisations and theories that studies have used to date to examine the effect of HRM on the ability, motivation and opportunity to continue working. This overview provides an image of the available research to date and identifies gaps in knowledge in order to create an agenda for future research. Third, although the body of research on the extension of working lives is growing, it remains unclear how organisations can act to improve the ability, motivation and opportunity to continue working. This review contributes to the literature by examining the effectiveness of HRM in relation to the ability, motivation and opportunity to continue working. Furthermore, these insights can be used to stimulate evidence-based practice.

Specifically, the following research questions will be answered:

- 1 What kind of research is conducted on the relations between HRM and the ability, motivation and opportunity to continue working?
- 2 How strong is the empirical evidence regarding the associations between HRM and the ability, motivation and opportunity to continue working?

2. The ability, motivation and opportunity to continue working

A common belief in HR research is that employee performance is a function of an employee's ability, motivation and opportunity

to work (Blumberg & Pringle, 1982). The Abilities-Motivation-Opportunity (AMO) theory (Appelbaum, Bailey, Berg, & Kalleberg, 2000) builds further upon this premise, proposing that an organisation can positively affect its performance by ensuring that all employees have the ability and motivation to perform their jobs and the opportunity to contribute. When we apply this theory to the extension of working lives, this means that in order for organisations to extend the working lives of (older) workers, HRM should improve and sustain the work ability and work motivation of employees over the course of their working lives (De Lange, 2014) and offer them sufficient opportunities to work, even at a later age. In other words, in order for people to work longer, they need to be able and motivated and be provided with the right opportunities (Van der Heijden, 2012). The framework of Van der Heijden (2012) captures a broad range of outcomes and is therefore considered to be appropriate to give a complete overview of current knowledge on the extension of working lives.

In line with Van der Heijden (2012), this paper argues that in order to be able to continue working, people should have and maintain the physical and mental capacity to do so (i.e. work ability) and should have and maintain the competencies needed to fulfil their jobs or find a new job when needed (i.e. employability). Work ability represents the current ability to continue working, whereas employability represents the future ability to continue working.

Work ability is often defined as the ability of the worker to carry out work given the demands of the work, the health of the worker and his or her mental resources (Ilmarinen, Tuomi, & Klockars, 1997). Previous research has demonstrated that having a low work ability is a predictor of sickness absence (Sell, 2009) and early retirement (Hopsu, Leppänen, Ranta, & Louhevaara, 2005; Sell, 2009). Work ability can be conceptualised as an observed (medical) construct (e.g. the cutlery wiping performance test; Dellve et al., 2011), as a subjective self-assessment (e.g. McGonagle et al., 2014) or as a combination of subjective self-assessment with objective information on diseases (e.g. the work ability index; Tuomi, Ilmarinen, Jahkola, Katajarinne, & Tulkki, 1998; Tuomi, Ilmarinen, Martikainen, Aalto, & Klockars, 1997). In this review we are interested in each of these conceptualizations as long as they measure work ability or health in relation to the job. Employability is commonly defined as ‘the continuous fulfilling, acquiring or creating of work through the optimal use of competences’ (Van der Heijde & Van der Heijden, 2006, p. 453). Research has indicated that individuals with a high level of perceived employability are able to cope more effectively with the increasingly complex labour market that workers have to deal with nowadays (De Cuyper et al., 2014; Vanhercke, De Cuyper, Peeters, & De Witte, 2014), and are therefore more capable of continuing to work (Van der Heijden, 2012).

Motivation is a broad concept and can be conceptualised as the motivation to work, motivation at work or motivation to continue working until (or even beyond) the retirement age (Kanfer, Beier, & Ackerman, 2013). Motivation at work refers to the cognitions, affect and behaviours that people direct towards job accomplishment, i.e. motivation to perform well at work (Kanfer et al., 2013). Motivation to work refers to the cognitions, affect and behaviours related to participation, i.e. motivation to participate in a work arrangement (Kanfer et al., 2013). Finally, motivation to continue working refers to the intention to work until or beyond the retirement age (Kanfer et al., 2013). This last aspect of motivation is the most relevant for the extension of working lives, as with ageing the motivation to work until or beyond the retirement age becomes more predictive of the actual retirement age than the motivation to work and the motivation at work (Kooij et al., 2008). We therefore focus on motivation to continue working in this study.

The opportunity to continue working refers to opportunities for older workers to find work in the internal and external labour market. Since this review focuses on the effect of HRM, we will limit the scope of the review to factors that influence the opportunity of older workers to continue working in the internal labour market. Although opportunities in the external labour market are also very important when facilitating successful ageing at work, this is not within the control of organisations and therefore falls out of the scope of this review. Similarly to Van der Heijden (2012), the opportunity to continue working is conceptualised as the organizational climate towards working until a later age, which can be measured as either (perceived) discrimination towards older workers in the organisation or (perceived) facilitation of older workers in the organisation. Organizational climate towards working until a later age is defined as ‘group members’ shared perceptions (Kozlowski & Klein, 2000) of the fairness or unfairness of organizational actions, procedures, and behavior towards different age groups’ (Kunze, Boehm, & Bruch, 2011, p. 266). Previous studies have suggested that people who experience a negative climate towards working longer want to retire at an earlier age (Schermuly, Deller, & Büsch, 2014; Snape & Redman, 2003). Although age discrimination can affect workers of all ages, it is most prevalent among older workers (Wood et al., 2008).

3. Human Resource Management

As previously mentioned it is assumed that organisations can stimulate the ability, motivation and opportunity to continue working through the use of HRM (Truxillo et al., 2012; Veth et al., 2015). Boxall and Purcell (2003) have broadly defined HRM as ‘all those activities associated with the management of people in firms’ (p.1). In this review we will limit these activities to work design (i.e. job demands and job resources) and HR practices. In line with Van Veldhoven and Peccei (2015) work design and HR practices are broken down further as elements that immediately influence the work activities of employees (the proximal or immediate work context) and activities in the distal or wider context. This model was chosen to organize HRM as it allows to get a more detailed overview of how the work context influences work outcomes than traditional HRM models (Van Veldhoven & Peccei, 2015).

The immediate work context consists of all elements that ‘are necessary for and/or a direct part of the work activities’ (Van Veldhoven & Peccei, 2015, p. 4). These elements could either be physical (e.g. machines or tools) social (e.g. co-workers or clients) or intangible (e.g. orders or scripts). We will consider several job resources and job demands as part of the immediate work context. All job demands that are directly related to the tasks that are performed are considered to be part of the immediate work context in this review, whereas job demands that relate to the work environment are considered to be part of the distal context. An example of such

a proximal job demand is physical demands, as these demands directly relate to the tasks that need to be performed. Furthermore, only those resources that immediately influence the tasks that are being performed are considered to be part of the immediate work context in this review. Proximal resources are feedback, learning value of the job, task variety and autonomy.

The distal or wider context is thought to refer to the organizational and societal context in which the work takes place. In this review we will focus specifically on the organizational level. At this level we will examine the effect of job demands that relate to the work environment such as environmental conditions (e.g. noise) and work schedules and job resources that do not directly influence the work tasks such as job security, organizational justice and social support.

In addition to work design this review examines the effect of bundles of HR practices. These HR bundles are a set of interrelated and internally consistent HR practices which are used to achieve a common goal (Guest, Conway, & Dewe, 2004; MacDuffie, 1995). Most studies that have examined HR practices have made use of bundles (Wall & Wood, 2005), as HR practices within a specific bundle are understood to support and enhance one another (Delery, 1998). This review uses a set of HR bundles constructed by Kooij et al. (2014), which specifically focus on the extension of working lives. Although these bundles were originally designed to enhance the motivation to continue working, they are also expected to stimulate the ability and opportunity to continue working. Kooij et al. (2014) have distinguished between developmental practices, maintenance practices, utilisation practices and accommodative practices. Developmental HR practices are those practices that assist workers in reaching higher levels of functioning. Examples of developmental practices are training, internal promotion and continuous development. Maintenance HR practices are those practices that allow workers to maintain their current levels of functioning despite (age-related) changes. Examples of maintenance practices are health checks, performance appraisals, ergonomic adjustments to the workplace and a compressed work week. Utilisation HR practices make use of the knowledge, experience and competences of older workers, and can be used to help workers return to previous levels of functioning after experiencing a loss. Examples of utilisation practices are job redesign, mentoring roles, participation in decision making, lateral moves and a second career. Finally, accommodative HR practices help workers function at lower levels when maintenance or recovery is no longer possible. Examples of accommodative HR practices are additional leave, demotion, exemption from overtime and partial retirement. Each of these HR bundles is thought to be part of the distal context. Tables 1 and 2 present an overview of all included job demands, job resources and HR practices respectively. Fig. 1 presents an overview of all included variables.

4. Methods

4.1. Selection criteria

This systematic literature review focuses on the previously mentioned outcomes related to the ability, motivation and opportunity to continue working (conceptualised as work ability, employability, motivation to work until or beyond the retirement age and culture towards working longer). Articles were included if (1) they incorporated any of the abovementioned outcomes, (2) they concerned employees in organisations, (3) they tested the effect of an HR practice or work design practice on any of the previously mentioned outcomes, (4) they were peer-reviewed publications and (5) they were written in English. Theoretical and qualitative studies that were identified were not analysed for the results section, as it was not possible to produce any firm conclusions regarding the effectiveness of HR practices. However, they are used to improve the theoretical foundation of this study.

4.2. Search strategy

For this systematic review the instructions of Rousseau, Manning, and Denyer (2008) were followed. In line with their suggestions we have formulated a research question that reflects the review's intended use, identified relevant research relevant to answer our research question, organized and interpreted the articles that were identified and synthesized these findings to answer our research question.

This research employed search terms related to the motivation, ability and opportunity to continue working, such as 'work ability' or 'motivation to continue working'. These main search terms related to the first selection criterion. With regard to the second selection criterion, a second set of search terms was created that included terms such as 'employee' or 'worker'. Finally, to comply with the third selection criterion, a set of search terms focused on HRM was created with terms such as 'HR practices' or 'job resources'. A complete overview of the search terms can be found in Appendix 1. The different sets of search terms were combined in the search machines with the Boolean 'AND' and 'OR' operators. These search terms were created based on the concepts identified in

Table 1

Overview of the proximal and distal job demands and resources included in this systematic review.

Proximal job demands	Proximal job resources	Distal job demands	Distal job resources
Physical demands	Feedback	Quality of the work environment	Job security
Mental demands	Learning value of the job	Work conditions	Organizational justice
Emotional demands	Autonomy	Work schedules	Social support
Workload	Task variety		Leadership
Effort-reward imbalance	Skill discretion		Pay
Demand-control imbalance			Organizational climate

Table 2
Overview of the HR practices included in this systematic review (Kooij et al., 2014).

Accommodative practices	Utilisation practices	Maintenance practices	Developmental practices
Part-time work/semi-retirement	Lateral job movements	Compressed workweek	Career planning
Additional leave	Participation	Ergonomic adjustments to the workplace	Development on the job
Demotion	Second career	Flexible benefits	Promotion
Early retirement	Task enrichment	Performance appraisal	Training
Exemption from working overtime/night shifts		Pay for performance	
Reduced workload		Teleworking	
Prolonged career interruptions			

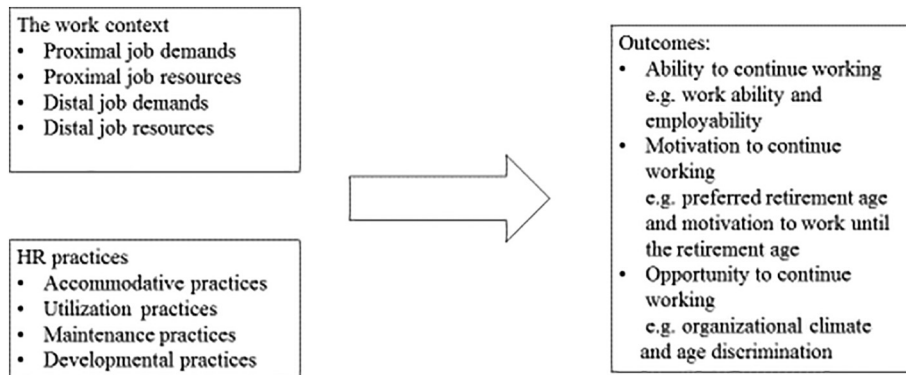


Fig. 1. Conceptual model of the review.

the theoretical framework of this article and refined by checking whether these search terms would lead to several key articles that were pre-identified by the authors. Furthermore the search terms were refined throughout the process if too many articles were rejected for similar reasons in an iterative process. For example, when we realized that many of the identified articles focused on other groups of respondents than employees in organisations (e.g. students, unemployed individuals and inmates) we added the search words “employee”, “worker” and “professional”.

The final search terms were entered in November 2016 in the following electronic databases: PsycINFO, PsycARTICLES, MEDline, Business Source Elite, Web of Science and Science Direct. In each database, the search included only peer-reviewed articles (fourth selection criterion) that were written in English (fifth selection criterion). This initial search resulted in 620 hits in the PsycINFO, PsycARTICLES, MEDline and Business Source Elite databases combined, 707 in Web of Science and 54 in Science Direct. This led to 1381 papers in total, of which 964 were unique papers. Based on an analysis of the abstracts, 355 articles were selected. The main reasons for exclusion were that the sample did not consist of employees in organisations (second selection criterion) or that the article did not consider the influence of HRM (third selection criterion). After reading the full articles, 105 relevant studies were identified and included in the analysis. Furthermore, the abstracts of the past three editions of the European Association of Work and Organizational Psychology (EAWOP) conference, Society for Industrial and Organizational Psychology (SIOP) conference and annual meeting of Academy of Management (AoM) were scanned to identify additional unpublished studies. 24 potential unpublished studies were identified. We emailed the authors of these 24 studies of which six were shared with us. After reading these papers five studies were considered to be relevant for this review. Therefore, five unpublished studies were included, resulting in 110 studies in total, of which the majority ($N = 85$) concerned the ability to continue working (employability $N = 15$; work ability $N = 70$). The remaining studies were categorised as motivation to continue working ($N = 20$) or opportunity to continue working ($N = 5$). The first author performed the study selection independently, but had intensive contact with the other authors during the process. Any article that the first author was uncertain about including was discussed with at least one of the other authors before making a final decision. All authors agreed upon the exclusion criteria the selection of articles before starting the selection process. The selection criteria were easy to apply thereby making the selection process relatively straightforward. This resulted in a very low amount of papers on which the selection criteria were difficult to apply and for which discussion had to take place in order to select them. The articles that are included in this review are marked with an asterisk in the reference list. Fig. 2 displays an overview of the selected papers after each step in the selection process.

4.3. Analysis strategy

The articles selected for this review were first divided into articles that primarily dealt with the ability, motivation or opportunity to continue working. Subsequently, tables were constructed to facilitate the analysis. These tables summarised the articles according to the design of the study (cross-sectional/longitudinal/intervention study), the definition used for the outcome variable, the theory used, the measurement instrument used, the target group, the type of HRM predictor examined, the way this HRM predictor was

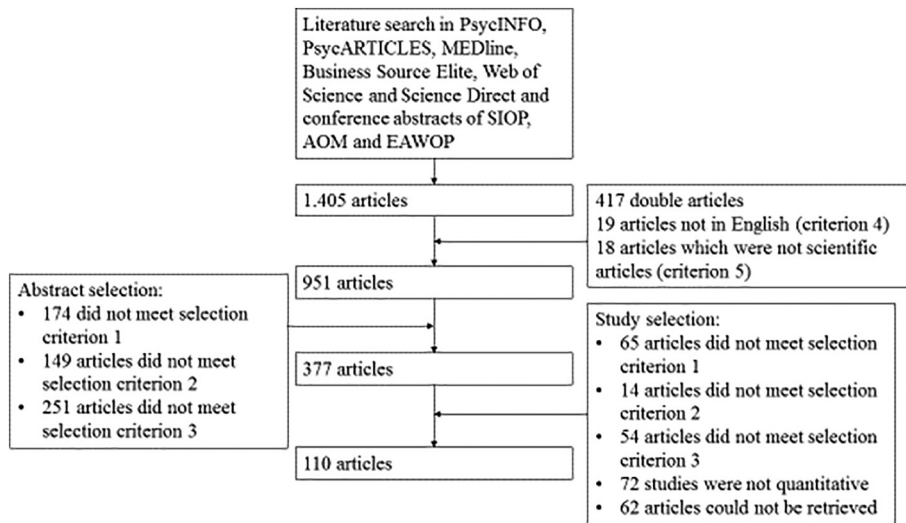


Fig. 2. Systematic literature search and selection process.

measured and the effectiveness of this HRM predictor. This was conducted by the first author. However, to improve the reliability of this study the first 50 articles were also coded by the second and third author. This resulted in an inter-rater agreement of 87,15% with the second author and 83,93% with the third author. Discrepancies were thoroughly discussed. These tables can be found in Appendix 2.

Due to a lack of appropriate effect sizes in 60 of the included studies, it was not possible to conduct a meta-analysis, even though meta-analyses are considered to be a valuable tool for aggregating research findings (Stone & Rosopa, 2017). Particularly on the relations between different bundles of HR practices and the outcomes few articles were identified. If we were to conduct a meta-analysis we would need to disregard 60 more articles as not all studies report the necessary effect sizes. This would lead to the exclusion of many relevant and valuable articles. Nevertheless, to answer our second research question (“how strong is the empirical evidence regarding the associations between HRM and the ability, motivation and opportunity to continue working?”) some quantification of evidence is needed, but simply comparing the number of studies with positive and negative outcomes is not considered useful (Van Tulder, Furlan, Bombardier, & Bouter, 2003). In order to avoid ‘vote counting’, the Standardized Index of Convergence (SIC) of Wielenga-Meijer, Taris, Kompier and Wigboldus (2010) was used, which demonstrates the degree of consistency in findings and can be applied when at least three studies study the same relationship and does not require comparable effect sizes (see also Bernstrøm & Houkes, 2017; Naczenski, de Vries, van Hooff, & Kompier, 2017; Nilsen, Skipstein, Østby, & Mykletun, 2017). This method is therefore more suitable in our research context than a meta-analysis. The SIC demonstrates to what degree findings are consistent across studies, but does not give any indication of the average effect size. The SIC for a specific relationship is calculated by subtracting the number of studies that found a significant negative relationship from the number of studies that found a significant positive relationship, and then dividing this number by the total amount of studies which investigated this relationship, as dictated in the following formula by Wielenga-Meijer et al. (2010):

$$n[\text{positive}] - n[\text{negative}] / n[\text{total}]$$

The SIC ranges from -1 to 1. According to Wielenga-Meijer et al. (2010) values between 0.29 and -0.29 indicate that there is an inconsistent effect. Values between 0.30 and 1 indicate evidence for a positive relationship and values between -0.30 and -1 indicate evidence of a negative relationship. However, this does not give any information regarding the strength of the evidence. The strength of evidence is either ‘strong’, ‘moderate’, ‘weak’ or ‘inconsistent’. Strong evidence indicates that the findings are consistent across many studies (e.g. many studies find a negative or positive effect), whereas inconsistent evidence indicates that the findings

Table 3
Strength of the evidence for the relationships studied (Wielenga-Meijer et al., 2010).

SIC-value					
Number of studies	1.00 to 0.60	0.59 to 0.30	0.29 to -0.29	-0.30 to -0.59	-0.60 to -1.00
1-2	Insufficient evidence				
3-5	++	+	0	-	-
≥ 6	+++	++	0	-	-

Note. 0 = inconsistent evidence or no evidence, +/- = limited evidence for a positive/negative relationship, ++/-- = moderate evidence for a positive/negative relationship, +++/--- = strong evidence for a positive/negative relationship.

are dissimilar across studies and no statement regarding the direction of the effect can be made. The strength of the evidence is determined as a combination of the SIC-values and the number of studies that assessed the association, as shown in Table 3. For example a SIC level of 0.50 indicates weak evidence of a positive relationship when three to five studies were found that assess the relationship, however a SIC level of 0.50 would indicate moderate evidence for a positive relationship if six or more studies were found that assess this relationship.

The SIC formula is applied to each category of work design and HR bundles for the various outcomes (i.e. the ability, motivation and opportunity). As the minimum amount of studies needed to determine the SIC is three, the formula is also applied to individual practices when three or more studies studied the same relationship. Furthermore, when at least three studies are available per subgroup, differences between age groups are also analysed.

5. Results

5.1. Descriptive information

A total of 110 studies were included for analysis, of which 85 address the ability component ($N = 70$ for work ability and $N = 15$ for employability), 20 address the motivation component and 5 address the opportunity component. To address the first research question (“what kind of research is conducted on the relations between HRM and the ability, motivation and opportunity to continue working?”) a description of the studies included in this research will be presented below.

Of the 110 included studies, 64 were based on cross-sectional data or cross-sectional analyses of longitudinal data (58%), 22 were based on longitudinal data (21%) and 23 reported an intervention study (21%). The remaining study was a meta-analysis in which the relation between health promotion and work ability was investigated. It must be noted that all but one of the intervention studies concerned work ability.

A total of 43% of the studies did not define the outcome variable being studied. Definitions were absent in studies on opportunity to continue working (40%), work ability (41%) and motivation to continue working (89%) in particular. However, all articles regarding employability specified a definition. With regard to employability, the definition of Van der Heijde and Van der Heijden (2006) prevailed (54%), and with regard to work ability, the definition of the Finnish Institute of Occupational Health was most prominent (59%). Thus, all articles on work ability that included a definition based it on the definition of the Finnish Institute of Occupational Health.

Just over half of all studies did not use any theory (52%). The theories that were used varied greatly (42 in total, of which 28 were used only once), indicating that there is no consensus on which theory should be applied when examining the influence of HRM on the ability, motivation and opportunity to continue working. Especially with regard to work ability (67%) and employability (46%) articles lacked theory. Studies on motivation did not include theory in 37% of all studies, whereas all articles on the opportunity to continue working referred to an existing theory. Overall, the JD-R model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) was most frequently used ($N = 13$), followed by the conservation of resources model (Hobfoll, 1989) ($N = 7$), the work ability model ($N = 5$), the job characteristics model (Hackman & Oldham, 1980) ($N = 5$), the job demand-control model (Karasek, 1979) ($N = 4$), the job demand-control-support model (Johnson & Hall, 1988) ($N = 4$) and the social exchange theory (Blau, 1964) ($N = 4$). Most of the theories (the JD-R model, the job demand-control model, the job demand-control-support model and the job characteristics model) that were applied multiple times can be classified as work design theories and all theories that were applied multiple times can be classified as psychological theories rather than HRM theories. It is important to note that even the JD-R model only featured in 12% of the selected studies; thus, it is not possible to conclude that this theory is widely used in this line of research.

With regard to measurement instruments, 108 (98%) studies used self-evaluations to measure the outcome variable relevant to this review, one study measured work ability with supervisor perceptions and one study performed laboratory tests to measure work ability. A total of 23 studies used self-constructed items to measure the outcome variable (particularly prevalent in studies regarding motivation and opportunity). Over 80% of the studies regarding employability used the scale by Van der Heijde and Van der Heijden (2006), and 91% of the studies regarding work ability made use of the Work Ability Index (WAI) (Tuomi et al., 1998).

With regard to the target group, it was notable that most studies were conducted in Scandinavia ($N = 32$), The Netherlands ($N = 33$) or other European countries ($N = 29$). Healthcare ($N = 26$) was the most commonly studied sector, followed by education ($N = 9$), construction ($N = 8$) and industry ($N = 5$). There were 21 studies that focused on older workers, nine that concerned people on sick leave or with specific conditions and six that specifically considered females.

With regard to the type of HR practices that were included, most focused on some form of work design ($N = 244$), either in the immediate context (N [demands] = 100, N [resources] = 46) or in the distal context (N [demands] = 26, N [resources] = 69). Maintenance practices ($N = 23$) were the most frequently included type of HR practice, followed by developmental practices ($N = 22$), accommodative practices ($N = 8$) and utilisation practices ($N = 3$). These HRM measures were most often measured as employee perceptions ($N = 48$) or interventions in intervention studies in which the effect of a particular intervention (i.e. coaching) was compared before and after the implementation of that intervention ($N = 23$). Furthermore, seven studies measured HRM as self-rated usage, two studies used management perceptions, one study used objective data to measure job demands and in three studies it was not clear how HRM was measured. Of the remaining studies 14 reported a mix of employee perceptions and employee rated usage of HRM, one study reported a mix of employee perceptions and objective ratings of job demands per job category and one study reported a mix of employee perceptions and interventions. Formal learning opportunities and work schedules were in all cases assessed as self-reported usage.

To address the second research question (“how strong is the empirical evidence regarding the associations between HRM and the

ability, motivation and opportunity to continue working?") a description will be given of the relations between different HRM predictors and the outcome variables related to the ability, motivation and opportunity to continue working.

5.2. Ability to continue working (work ability)

5.2.1. Proximal job demands and job resources

Strong evidence was found that proximal job demands negatively relate to work ability (SIC = -0.77 , $N = 52$). Out of all job demands, only physical demands and effort-reward imbalance have been investigated more than three times. For physical demands, there was strong evidence of a negative relationship with work ability (SIC = -0.73 , $N = 15$). With regard to reward-control imbalance, moderate evidence was found for a negative relationship with work ability (SIC = -0.80 , $N = 5$). Since many studies have investigated the relationship between proximal job demands and work ability, it was possible to take into account differences between older workers and workers of all ages. It was found that the negative effect of proximal job demands was somewhat stronger in studies that only considered workers aged 45 years and older (SIC = -1 , $N = 6$) in comparison with studies that considered employees of all ages (SIC = -0.74 , $N = 43$).

In terms of proximal job resources, strong evidence was found for a positive relationship with work ability (SIC = 0.73 , $N = 31$). Job control and skill discretion were most frequently investigated. For job control strong evidence was found for a positive relationship (SIC = 0.76 , $N = 21$). Moreover, moderate evidence was found for a positive relationship between skill discretion (SIC = 1 , $N = 4$) and work ability. Both for workers aged 45 years and older (SIC = 1 , $N = 4$) and workers of all ages (SIC = 0.75 , $N = 24$) evidence for a positive relationship was found, however much more evidence was available with regards to workers of all ages.

5.2.2. Distal job demands and job resources

Moderate evidence was found with regard to the effect of distal job demands on work ability (SIC = -0.59 , $N = 29$). Of all distal job demands, working times were most often investigated. Moderate evidence was found to support a relationship between unfavourable work times (e.g. shift work and working overtime) and work ability (SIC = -0.33 , $N = 9$).

Strong evidence was found for a positive relationship between distal job resources and work ability (SIC = 0.69 , $N = 32$). Social support was most frequently investigated, for which strong evidence of a positive relationship was found (SIC = 0.63 , $N = 19$). Enough studies were available to examine differences between older employees and employees from all ages. The effect of distal job resources on work ability varied substantially between workers older than 45 years of age (SIC = 0.50 , $N = 4$) and employees of all ages (SIC = 0.75 , $N = 24$). However, it must be noted that there were far more studies available on employees of all ages than on older workers.

5.2.3. HR practices

With regard to HR practices, there was moderate evidence of a positive relationship between maintenance HR practices and work ability (SIC = 0.47 , $N = 32$). Of all maintenance practices, health promotion was investigated most often. A moderate positive effect was found for the relationship between health promotion and work ability (SIC = 0.50 , $N = 24$). Maintenance practices were assessed as either employee perceptions or interventions. The way maintenance practices were measured did not seem to affect the results. In terms of accommodative practices (SIC = 0.33 , $N = 3$), there was limited evidence of a positive effect. No evidence for a positive effect was found with regard to utilisation practices (SIC = 0 , $N = 5$). No evidence was found for the effect of development practices on work ability (SIC = 0.25 , $N = 4$).

5.2.4. Ability to continue working (employability)

Strong evidence was found that developmental practices positively affect employability (SIC = 0.78 , $N = 18$). Formal learning opportunities were researched most frequently. Strong evidence was found that formal learning opportunities also have a positive effect on employability (SIC = 0.71 , $N = 6$). In addition, there was strong evidence that both proximal job resources (SIC = 0.63 , $N = 8$) and distal job resources (SIC = 1 , $N = 5$) positively affect employability.

5.3. Motivation to continue working

5.3.1. Proximal job demands and job resources

Moderate evidence for a negative effect was found for the influence of proximal job demands on motivation to continue working (SIC = -0.36 , $N = 22$). Physical demands and challenging work were the most commonly researched proximal job demands. For physical demands, there was limited evidence of a negative relationship with the motivation to continue working (SIC = -0.33 , $N = 6$), whereas for challenging work, moderate evidence was found of a positive relationship with motivation to continue working (SIC = 1 , $N = 3$). The SIC for the influence of proximal job demands on motivation to continue working increases slightly when challenging work is not considered a proximal job demand (SIC = 0.42 , $N = 19$). Comparing the relationship between proximal job demands and motivation to continue working for workers of 45 years and older and workers of all ages revealed moderate evidence for a negative effect for older workers (SIC = 0.33 , $N = 15$), and moderate evidence for a negative effect for workers of all ages (SIC = -0.43 , $N = 7$). If challenging work is not considered a job demand, there is strong evidence for a negative relationship between job demands and motivation to continue working for older workers (SIC = -0.50 , $N = 12$). This effect is stronger compared to employees of all ages (SIC = -0.43 , $N = 7$).

Moderate evidence was found for a positive relation between proximal job resources and the motivation to continue working (SIC = 0.47, N = 15). Of all proximal job resources job control was most often investigated. Moderate evidence of a positive relationship between job control and motivation to continue working (SIC = 0.38, N = 8) was found. The positive effect of proximal job resources was found to be roughly equal for older workers (SIC = 0.44, N = 9) than for general employees (SIC = 0.40, N = 5).

5.3.2. *Distal job demands and job resources*

Moderate evidence for a negative relationship between distal job demands and the motivation to continue working was found (SIC = -0.33, N = 6). Work times were most often investigated. No evidence was found for a positive or negative relationship between work times (work schedules and irregular work hours) and motivation (SIC = 0.0, N = 4).

Strong evidence was found for a positive relationship between distal job resources and motivation to continue working (SIC = 0.57, N = 14). Social support was researched most frequently. There was strong evidence of a positive relationship between social support and motivation to continue working (SIC = 0.86, N = 7). The positive effect of distal job resources on motivation to continue working is somewhat stronger for older workers (SIC = 0.63, N = 8) than for workers of all ages (SIC = 0.50, N = 6).

5.3.3. *HR practices*

With regard to HR practices, moderate evidence was found for a positive relation between developmental practices and motivation to continue working (SIC = 0.44, N = 9). There was insufficient evidence found for the other bundles (utilisation, accommodative and maintenance practices), although utilisation (N = 1) and accommodative (N = 2) practices did have a positive effect.

5.4. *Opportunity to continue working*

Moderate evidence was found for a positive association between distal job resources (e.g. organizational climate and supervisor support) and the opportunity to continue working (SIC = 1, N = 3). Although a positive association was also identified between utilisation practices and opportunity to continue working (SIC = 1), there was insufficient evidence (N = 2) to draw conclusions. Tables 4 to 7 provide a complete overview of the results.

Table 4
Overview of the effect of proximal job demands.

	Ability		Motivation	Opportunity
	Work ability	Employability		
Proximal job demands	-	i.s.	-	n.e.
- Challenging work	n.e.	n.e.	++	n.e.
- Physical demands	-	n.e.	-	n.e.
- Effort reward imbalance	-	n.e.	n.e.	n.e.

Note. n.e. = no evidence, i.s = insufficient evidence, 0 = inconsistent evidence, + (-) = limited evidence for a positive (negative) relationship, ++ (-) = moderate evidence for a positive (negative) relationship, +++ (-) = strong evidence for a positive (negative) relationship.

Table 5
Overview of the effect of proximal job resources.

	Ability		Motivation	Opportunity
	Work ability	Employability		
Proximal job resources	+++	+++	++	n.e.
Job control	+++	n.e.	++	n.e.
Skill discretion	++	n.e.	n.e.	n.e.

Note. n.e. = no evidence, i.s = insufficient evidence, 0 = inconsistent evidence, + (-) = limited evidence for a positive (negative) relationship, ++ (-) = moderate evidence for a positive (negative) relationship, +++ (-) = strong evidence for a positive (negative) relationship.

Table 6
Overview of the effect of distal job demand and job resources.

	Ability		Motivation	Opportunity
	Work ability	Employability		
Distal job demands	–	n.e.	–	n.e.
- Work times	–	n.e.	0	n.e.
Distal job resources	+++	+++	+++	++
- Social support	+++	n.e.	++	n.e.

Note. n.e. = no evidence, i.s = insufficient evidence, 0 = inconsistent evidence, + (–) = limited evidence for a positive (negative) relationship, ++ (–) = moderate evidence for a positive (negative) relationship, +++ (–) = strong evidence for a positive (negative) relationship.

Table 7
Overview of the effect of HR practices.

	Ability		Motivation	Opportunity
	Work ability	Employability		
Developmental practices	0	+++	++	n.e.
- Formal learning opportunities	n.e.	+++	n.e.	n.e.
Maintenance practices	++	i.s.	i.s.	n.e.
- Health promotion	++	n.e.	n.e.	n.e.
Accommodative practices	+	n.e.	i.s.	n.e.
Utilisation practices	0	n.e.	i.s.	i.s.

Note. n.e. = no evidence, i.s = insufficient evidence, 0 = inconsistent evidence, + (–) = limited evidence for a positive (negative) relationship, ++ (–) = moderate evidence for a positive (negative) relationship, +++ (–) = strong evidence for a positive (negative) relationship.

6. Discussion

6.1. Overview

This paper aimed to build a new model to examine current studies that focused on the relation between HRM and the ability, motivation and opportunity to continue working and identify proximal and distal HR practices through which organisations can effectively stimulate the extension of the working lives of employees. A systematic literature review was conducted in which 110 peer-reviewed and unpublished empirical articles were identified that concerned the influence of HRM on the ability, motivation and opportunity to (continue) work(ing). The most important finding was that (both proximal and distal) job resources have a positive effect on the ability, motivation and opportunity to continue working.

6.2. Contributions to the literature

This systematic literature review contributes to the literature on the extension of working lives in three ways. First, it presented a new framework for organizing research on the relation between HRM and the extension of working lives by combining previous work of Van Veldhoven and Peccei (2015), Kooij et al. (2014) and Van der Heijden (2012) to provide a complete overview of current knowledge on the extension of working lives. Second, we provided an overview of the research designs, conceptualisations and theories that studies have used to examine the effect of HRM on the ability, motivation and opportunity to continue working. Third, this review contributes to the literature by examining the effectiveness of HRM on the ability, motivation and opportunity to continue working. Below we will discuss each of these three contributions in more detail.

6.3. Contribution 1: combining previous work

As mentioned above, the first contribution of this review was to combine the work of Van Veldhoven and Peccei (2015), Kooij et al. (2014) and Van der Heijden (2012) to provide a complete overview of current knowledge on the extension of working lives. First, the outcomes related to the extension of working lives were operationalized as the ability, motivation and opportunity to continue working based on the framework of Van der Heijden (2012). This helped to distinguish some indication of inconsistent effects of HRM on these different outcome measures. Specifically, work times had a negative effect on work ability, but the effect of work times on motivation was inconclusive. Furthermore developmental practices had a positive effect on employability and motivation but inconclusive evidence was found with regard to the relation between developmental practices and work ability. It could be that developmental practices temporarily increase job demands (Veth et al., 2015) which leads to mixed evidence with regards to work ability. Further, in general, proximal job demands appear to have a negative effect, but challenging work has a positive effect (at least on motivation) and seems to act more as a resource than a demand. This is consistent with LePine, Podsakoff, and LePine (2005), who distinguished between challenging and hindrance demands and determined that there is a positive effect of challenging demands

and a negative effect of hindrance demands. [Schaufeli and Taris \(2014\)](#) consequently classify challenging demands as resources rather than demands.

Furthermore, the model by [Van Veldhoven and Peccei \(2015\)](#) helped to categorize HR practices and job characteristics as being part of the immediate or distal work context. This has revealed that splitting job demands into proximal and distal job demands may provide a more nuanced picture than when all demands are treated as one overarching construct. Proximal job demands were found to have a negative effect on work ability, whereas inconclusive evidence was found for the effect of distal job demands on work ability. Conversely, inconclusive evidence was found for the effect of proximal job demands and motivation, whereas distal job demands were found to have a negative effect. With regard to job resources on the other hand it did not seem to matter much whether they were proximal or distal for any of the outcome variables. The model by [Van Veldhoven and Peccei \(2015\)](#) was supplemented by the HR bundles of [Kooij et al. \(2014\)](#). The bundling of HR practices as suggested by [Kooij et al. \(2014\)](#) helped to draw some conclusions about the few studies on HR practices that were available.

6.4. Contribution 2: overview of the current state of the research field

The second contribution of this research is that we provided an overview of the research designs, conceptualisations and theories that studies have used to examine the effect of HRM on the ability, motivation and opportunity to continue working. It appears that research on the extension of working lives is still in its early stages. Most studies were cross-sectional, and half of the studies were not based on theory. Among the studies that did use theory, no leading theory could be identified. Approximately 40% of the studies did not provide a conceptualisation of the main outcome variable, and just over 20% of the studies used self-constructed items to measure the outcome variable. Furthermore, 53% of the studies did not use any theory.

6.5. Contribution 3: examining the effectiveness of HRM on the extension of working lives

The third contribution of this review is the examination of the effectiveness of HRM on the ability, motivation and opportunity to continue working. The findings reveal that work ability is influenced most negatively by proximal job demands (especially physical job demands). Distal job demands, on the other hand do not seem to influence work ability much. Furthermore, work ability is most positively influenced by proximal as well as distal job resources (especially job control and social support). Employability is influenced most positively by developmental practices (different forms of formal and informal learning). Just like work ability, motivation is influenced most positively by distal job resources (especially support) and most negatively by proximal and distal job demands (when challenging work is excluded). Job resources positively influence opportunity to continue working. It is not yet possible to establish general conclusions about the effectiveness of HR practices that are most influential, as different predictors were studied for the different outcome measures. However, overall, it seems that offering job resources has a positive effect on the ability, motivation and opportunity to continue working.

7. Limitations

Some limitations should be noted. First, we were not able to conduct a meta-analysis as too many studies would need to be omitted because they do not report appropriate effect sizes. Second, since not all predictors were studied in relation to all the outcome measures, it is difficult to develop overall conclusions or detect possible inconsistent effects. For example, some indication was found of an inconsistent effect for job demands on work ability and motivation, but more research is needed to examine this relationship. Third, 86% of the studies included in this review were conducted in the European Union, thereby limiting the generalisability of these findings. Finally, over half of the studies included were based on cross-sectional data, thus restricting the possibility to infer causality.

7.1. Recommendations for future research: A research agenda

The findings of this study suggest that there is still substantial work to be done with regard to research on the relation between HR practices and the ability, motivation and opportunity to continue working. Accordingly, we propose seven suggestions for future research, which are outlined below. In the first section we will focus on the shortcomings we identified when describing the included studies in general and recommendations to overcome these issues. In the second section we will focus on the research gaps that were identified when we created an overview of the effect of job design and HR practices on the ability, motivation and opportunity to continue working.

7.1.1. General shortcomings of studies on the extension of working lives

First, researchers working on this topic should define the outcome variables they use, and should employ more longitudinal panel studies to investigate the nature and direction of the cross-lagged relations across time ([De Lange, Taris, Kompier, Houtman, & Bongers, 2003](#)). It is recommended that researchers use the conceptualisation of the Finnish Institute of Occupational Health for work ability ([Ilmarinen et al., 1997](#)) and the conceptualisation of [Van der Heijde and Van der Heijden \(2006\)](#) for competence-based employability, as these scales have been tested for their reliability and validity in relation to other concepts, and the articles included in this review used these definitions and scales most frequently. With regard to motivation to continue working and opportunity to continue working, no popular definition emerged in the analyses; however, we suggest to use the definition of [Kanfer et al. \(2013\)](#) for motivation to continue working and of [Kunze et al. \(2011\)](#) for culture towards working longer (indicators of opportunity to continue

working), as used in this review as these definitions give a clear and concise description of the relevant constructs. Second, researchers should employ more longitudinal panel studies to investigate the nature and direction of the cross-lagged relations across time (De Lange, Taris, Kompier, Houtman, & Bongers, 2003). 59% of the studies included in this review were based on cross-sectional studies. In order to imply causality, longitudinal and intervention studies are needed to advance the field.

Third, researchers studying the effect of HR practices on the extension of working lives should base their hypotheses on theoretical approaches. We propose researchers should use the JD-R model in combination with the AMO framework (Kooij & Van de Voorde, 2015), as this review has done. However, building further upon the model this review has investigated, future research should examine whether distal HR practices influence the ability, motivation and opportunity to continue working through their effect on work design (e.g. proximal HR practices), as Kooij et al. (2014) have suggested. Developmental practices for example could influence the ability, motivation and opportunity to continue working by increasing job demands and job and personal resources (e.g. participating in a training can increase self-efficacy [personal resource], but at the same time increase job pressure [job demand]). In this review, it was not possible to test such a mediation model, as this would severely limit the amount of studies that could be included.

Fourth, the majority of the studies assessed employee perceptions of HR practices rather than interventions or employee rated usage of HR practices. However, giving recommendations to practitioners on how to extend working lives is rather difficult based on employee perceptions of practices as no insight is given in how these perceptions could be changed. Based on intervention studies and employee rated usage of HR practices, on the other hand, concrete recommendations can be given on which practices need to be implemented.

7.1.2. Research gaps with respect to the relation between HRM and the extension of working lives

When we analyse Tables 4 to 7 we see that up to now the research focus has been much more on (both proximal and distal) resources and demands rather than on HR practices. Therefore, we recommend researchers not only to evaluate work design, but also test for associations with HR practices to allow for more conclusive advice to be given to practitioners. Specifically, researchers are recommended to examine the effects of accommodative, utilisation, maintenance and development bundles. Furthermore, of the 110 studies included in this review, 70 focused on work ability, while only 15 focused on employability, 20 on motivation and 5 on opportunity. Therefore, more research is needed on which actions organisations can take to improve employability, the motivation to continue working and especially the opportunity to continue working. Moreover, in this review we have limited ourselves to the opportunity to continue working in the internal labour market, whereas for policy formulation the opportunity to continue working in the external labour market is also relevant. Hence, we urge researchers to examine what policy makers can do to facilitate the opportunity to continue working in the internal as well as the external labour market.

8. Practical implications

This review aimed to stimulate evidence-based practice by giving insight in the areas in which most evidence exist. We suggest that organisations that want to improve the sustainability of the careers of their employees start by assessing the current level of ability, motivation and opportunity to work their employees have. Based on this assessment the organisation can identify which area needs attention. Next, this review can be used to identify the actions that could be taken in order to stimulate this specific component. First, with regard to work ability proximal job demands were found to have a negative influence. In order to improve work ability HR practitioners must make sure that there is sufficient balance between job demands and job resources, by either lowering job demands or providing sufficient resources to help employees deal with high job demands. Furthermore, utilisation practices can be used to exchange different types of job demands to make sure the work fits the abilities of the worker. When exchanging job demands is not possible accommodative practices can be used to lower the level of job demands when job demands are causing decreases in the ability, motivation and opportunity to continue working. Second, with regards to employability developmental practices were found to have a positive influence. Thus in order to keep persons employable HR practitioners should provide developmental opportunities regardless of the age of employees. Unfortunately, older employees are less likely to receive training compared to their younger counter parts (Canduela et al., 2012; Karpinska, Henkens, Schippers, & Wang, 2015; Lazazzara, Karpinska, & Henkens, 2013) which appears to be counterproductive for the retention of older workers. Finally, motivation was found to be influenced negatively by proximal and distal job demands, but positively by challenging work. HR practitioners and managers could stimulate job crafting of employees so that they can reshape hindering job demands into challenging demands and thereby increase their motivation to continue working. When organisations do not have the resources to measure the current level of ability, motivation and opportunity to work before taking deliberate actions, but want to improve nonetheless they can focus on improving the level of (proximal as well as distal) job resources. This review has demonstrated that having (both proximal and distal) job resources has a positive effect on the ability, motivation and opportunity to continue working and improving these is therefore a good starting point for working on the extension of working lives for any organisation. An example of a proximal job resource is autonomy and an example of distal job resource is supervisor support. Autonomy could be stimulated by implementing self-managing teams or employee empowerment (Parker, Williams, & Turner, 2006). Supervisor support can be stimulated by supervisors by showing personal consideration, asking how they can assist employees in doing their job better and making sure that work procedures are perceived as fair (Maertz, Griffeth, Campbell, & Allen, 2007). Hence, we urge HR practitioners to ensure that workers have sufficient resources (such as supervisor support and autonomy), especially at a later age. HR practitioners can use these insights to improve their policy for the extension of working lives. However, additional research is needed for a more thorough understanding of the effects of HR practices on outcomes related to the extension of working lives.

Funding information/conflict of interest

This research is not funded and there are no conflicts of interest to declare.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.hrmr.2018.07.002>.

References

- Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A. (2000). *Manufacturing competitive advantage: The effects of high performance work systems on plant performance and company outcomes*. New York: Cornell University Press.
- Armstrong-Stassen, M. (2008). Human resource practices for mature workers—And why aren't employers using them? *Asia-Pacific Journal of Human Resources*, 46(3), 334–352. <https://doi.org/10.1177/1038411108091755>.
- Armstrong-Stassen, M., & Ursel, N. D. (2009). Perceived organizational support, career satisfaction, and the retention of older workers. *Journal of Occupational and Organizational Psychology*, 82(1), 201–220. <https://doi.org/10.1348/096317908x288838>.
- Bal, P. M., Kooij, T. A. M., & Rousseau, D. M. (2015). Introduction to aging workers and the employee-employer relationship. In P. M. Bal, D. T. A. M. Kooij, & D. M. Rousseau (Vol. Eds.), *Aging workers and the employment relationship. Vol. 1. Aging workers and the employment relationship* (pp. 9–). Dordrecht: Springer Publishers.
- Bernström, V. H., & Houkes, I. (2017). A systematic literature review of the relationship between work hours and sickness absence. *Work and Stress*, 1–21. <https://doi.org/10.1080/02678373.2017.1394926>.
- Boxall, P., & Purcell, J. (2003). *Strategy and HRM*. London: Palgrave.
- Briner, R. B., & Rousseau, D. M. (2011). Evidence-based I-O psychology: Not there yet. *Industrial and Organizational Psychology*, 4(1), 3–22. <https://doi.org/10.1111/j.1754-9434.2010.01287.x>.
- Brouwer, S., De Lange, A., Van der Mei, S., Wessels, M., Koolhaas, W., Bültmann, U., & Van der Klink, J. (2012). *Duurzame inzetbaarheid van de oudere werknemer: stand van zaken Universitair Medisch Centrum Groningen*. Groningen: Rijksuniversiteit Groningen.
- Canduela, J., Dutton, M., Johnson, S., Lindsay, C., McQuaid, R. W., & Raeside, R. (2012). Ageing, skills and participation in work-related training in Britain: assessing the position of older workers. *Work, Employment and Society*, 26(1), 42–60. <https://doi.org/10.1177/0950017011426303>.
- Cloostermans, L., Bekkers, M. B., Uiters, E., & Proper, K. I. (2015). The effectiveness of interventions for ageing workers on (early) retirement, work ability and productivity: a systematic review. *International Archives of Occupational and Environmental Health*, 88(5), 521–532. <https://doi.org/10.1007/s00420-014-0969-y>.
- De Cuyper, N., Sulea, C., Philippaers, K., Fischmann, G., Iliescu, D., & De Witte, H. (2014). Perceived employability and performance: moderation by felt job insecurity. *Personnel Review*, 43(4), 536–552. <https://doi.org/10.1108/PR-03-2013-0050>.
- De Graaf, S., Peeters, M., & Van der Heijden, B. (2011). De relatie tussen employability en de intentie tot langer doorwerken [The relationship between employability and the retirement intentions of older employees]. *Gedrag & Organisatie*, 24(4), 374–391.
- De Lange, A. H. (2014). *Langer werken: de arbeidsmarkt in transitie en duurzame inzetbaarheid*. Arnhem. The Netherlands: HAN University of Applied Sciences Press.
- De Lange, A. H., Taris, T. W., Kompier, M. A., Houtman, I. L., & Bongers, P. M. (2003). The very best of the millennium: longitudinal research and the demand-control-(support) model. *Journal of Occupational Health Psychology*, 8(4), 282. <https://doi.org/10.1037/1076-8998.8.4.282>.
- De Lange, A. H., Kooij, D., & Van der Heijden, B. (2015). In L. M. Finkelstein, D. M. Truxillo, F. Fraccaroli, & R. Kanfer (Eds.), *Human resource management and sustainability at work across the lifespan: An integrative perspective* (pp. 50–79). New York: Routledge Facing the challenges of a multi-age workforce: A use-inspired approach.
- Delery, J. E. (1998). Issues of fit in strategic human resource management: Implications for research. *Human Resource Management Review*, 8(3), 289–309. [https://doi.org/10.1016/S1053-4822\(98\)90006-7](https://doi.org/10.1016/S1053-4822(98)90006-7).
- Dellve, L., Ahlstrom, L., Jonsson, A., Sandsjö, L., Forsman, M., Lindegard, A., & Hagberg, M. (2011). Myofeedback training and intensive muscular strength training to decrease pain and improve work ability among female workers on long-term sick leave with neck pain: a randomized controlled trial. *International Archives of Occupational and Environmental Health*, 84(3), 335–346. <https://doi.org/10.1007/s00420-010-0568-5>.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, 86(3), 499–512. <https://doi.org/10.1037/0021-9010.86.3.499>.
- Eurofound (2016). *Sustainable work throughout the life course: national policies and strategies*. Luxembourg: Publications Office of the European Union <https://www.eurofound.europa.eu/publications/report/2016/working-conditions-labour-market/sustainable-work-throughout-the-life-course-national-policies-and-strategies>, Accessed date: 25 January 2018.
- Fadyl, J. K., Mcpherson, K. M., Schlüter, P. J., & Turner-Stokes, L. (2010). Factors contributing to work-ability for injured workers: literature review and comparison with available measures. *Disability and Rehabilitation*, 32(14), 1173–1183. <https://doi.org/10.3109/09638281003653302>.
- Feldman, D. C. (1994). The decision to retire early: A review and conceptualization. *Academy of Management Review*, 19(2), 285–311. <https://doi.org/10.5465/AMR.1994.9410210751>.
- Fisher, G. G., Ryan, L. H., & Sonnega, A. (2015). Prolonged working years: Consequences and directions for interventions. In J. Vuori, R. W. B. Blonk, & R. H. Price (Eds.), *Sustainable Working Lives* (pp. 269–288). Dordrecht: Springer.
- Guest, D., Conway, N., & Dewe, P. (2004). Using sequential tree analysis to search for 'bundles' of HR practices. *Human Resource Management Journal*, 14(1), 79–96. <https://doi.org/10.1111/j.1748-8583.2004.tb00113.x>.
- Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*. Reading, MA: Addison-Wesley.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513–524. <https://doi.org/10.1037/0003-066X.44.3.513>.
- Hopsu, L., Leppänen, A., Ranta, R., & Louhevaara, V. (2005). Perceived work ability and individual characteristics as predictors for early exit from working life in professional cleaners. *International Congress Series*, 1280, 84–88. <https://doi.org/10.1016/j.ics.2005.03.062>.
- Ilmarinen, J. (2005). *Towards a longer worklife: ageing and the quality of worklife in the European Union*. Helsinki: Finnish Institute of Occupational Health. Ministry of Social Affairs and Health.
- Ilmarinen, J., Tuomi, K., & Klockars, M. (1997). Changes in the work ability of active employees over an 11-year period. *Scandinavian Journal of Work, Environment & Health*, 23(1), 49–57.
- Jiang, K., Lepak, D. P., Hu, J., & Baer, J. C. (2012). How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms. *Academy of Management Journal*, 55(6), 1264–1294. <https://doi.org/10.5465/amj.2011.0088>.
- Johnson, J. V., & Hall, E. M. (1988). Job strain, work place social support, and cardiovascular disease: a cross-sectional study of a random sample of the Swedish working population. *American Journal of Public Health*, 78(10), 1336–1342. <https://doi.org/10.2105/AJPH.78.10.1336>.
- Kanfer, R., & Ackerman, P. L. (2004). Aging, adult development, and work motivation. *Academy of Management Review*, 29(3), 440–458. <https://doi.org/10.5465/AMR.2004.13670969>.
- Kanfer, R., Beier, M. E., & Ackerman, P. L. (2013). Goals and motivation related to work in later adulthood: An organizing framework. *European Journal of Work and Organizational Psychology*, 22(3), 253–264. <https://doi.org/10.1080/1359432x.2012.734298>.
- Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24(2), 285–308. <https://doi.org/10.2307/2392498>.
- Karpinska, K., Henkens, K., Schippers, J., & Wang, M. (2015). Training opportunities for older workers in the Netherlands: A Vignette Study. *Research in Social Stratification and Mobility*, 41, 105–114. <https://doi.org/10.1016/j.rssm.2015.03.002>.
- Kooij, D. T. A. M. (2015). Clarifying and Discussing Successful Aging at Work and the Active Role of Employees. *Work, Aging and Retirement*, 1(4), 334–339. <https://doi.org/10.1093/workar/wav024>.
- Kooij, D. T., & Van de Voorde, K. (2015). Strategic HRM for older workers. In M. Bal, D. T. A. M. Kooij, & D. M. Rousseau (Eds.), *Aging workers and the employee-employer relationship* (pp. 57–72). Switzerland: Springer.

- Kooij, D., De Lange, A., Jansen, P., & Dijkers, J. (2008). Older workers' motivation to continue to work: five meanings of age. *Journal of Managerial Psychology*, 23(4), 364–394. <https://doi.org/10.1108/02683940810869015>.
- Kooij, D. T., Jansen, P. G., Dijkers, J. S., & De Lange, A. H. (2014). Managing aging workers: A mixed methods study on bundles of HR practices for aging workers. *The International Journal of Human Resource Management*, 25(15), 2192–2212. <https://doi.org/10.1080/09585192.2013.872169>.
- Kozlowski, S. W. J., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergent processes. In K. J. Mein, & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 3–90). San Francisco: Jossey-Bass.
- Kunze, F., Boehm, S. A., & Bruch, H. (2011). Age diversity, age discrimination climate and performance consequences—a cross organizational study. *Journal of Organizational Behavior*, 32(2), 264–290. <https://doi.org/10.1002/job.698>.
- Kuoppala, J., Lamminpää, A., & Husman, P. (2008). Work Health Promotion, Job Well-Being, and Sickness Absences—A Systematic Review and Meta-Analysis. *Journal of Occupational and Environmental Medicine*, 50(11), 1216–1227. <https://doi.org/10.1097/JOM.0b013e31818dbf92>.
- Lazazzara, A., Karpinska, K., & Henkens, K. (2013). What factors influence training opportunities for older workers? Three factorial surveys exploring the attitudes of HR professionals. *The International Journal of Human Resource Management*, 24(11), 2154–2172. <https://doi.org/10.1080/09585192.2012.725077>.
- Lepine, J. A., Podsakoff, N. P., & Lepine, M. A. (2005). A meta-analytic test of the challenge stressor–hindrance stressor framework: An explanation for inconsistent relationships among stressors and performance. *Academy of Management Journal*, 48(5), 764–775. <https://doi.org/10.5465/AMJ.2005.18803921>.
- MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review*, 48(2), 197–221 (doi: 0019-7939/95/4802).
- Maertz, C. P., Griffith, R. W., Campbell, N. S., & Allen, D. G. (2007). The effects of perceived organizational support and perceived supervisor support on employee turnover. *Journal of Organizational Behavior*, 28(8), 1059–1075. <https://doi.org/10.1002/job.472>.
- McGonagle, A. K., Barnes-Farrell, J. L., Di Milia, L., Fischer, F. M., Hobbs, B. B., Iskara-Golec, I., ... Smith, L. (2014). Demands, resources, and work ability: A cross-national examination of health care workers. *European Journal of Work and Organizational Psychology*, 23(6), 830–846. doi: <https://doi.org/10.1080/1359432x.2013.819158>.
- Naczenski, L. M., de Vries, J. D., van Hooff, M. L., & Kompier, M. A. (2017). Systematic review of the association between physical activity and burnout. *Journal of Occupational Health*, 59(6), 477–494. <https://doi.org/10.1539/joh.17-0050-RA>.
- Ng, T. W., & Feldman, D. C. (2008). The relationship of age to ten dimensions of job performance. *Journal of Applied Psychology*, 93(2), 392–423. <https://doi.org/10.1037/0021-9010.93.2.392>.
- Nilsen, W., Skipstein, A., Østby, K. A., & Mykletun, A. (2017). Examination of the double burden hypothesis—a systematic review of work–family conflict and sickness absence. *European Journal of Public Health*, 27(3), 465–471. <https://doi.org/10.1093/eurpub/ckx054>.
- OECD (2015). *Pensions at a Glance 2015: OECD and G20 indicators*. Paris: OECD publishing.
- Parker, S. K., Williams, H. M., & Turner, N. (2006). Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology*, 91(3), 636. <https://doi.org/10.1037/0021-9010.91.3.636>.
- Phillips, D. R., & Siu, O. (2012). Global aging and aging workers. In J. W. Hedge, & W. C. Bormans (Eds.), *The Oxford handbook of work and aging* (pp. 11–32). Oxford: Oxford University Press.
- Rousseau, D. M., Manning, J., & Denyer, D. (2008). Evidence in management and organizational science: assembling the field's full weight of scientific knowledge through syntheses. *Academy of Management Annals*, 2(1), 475–515. <https://doi.org/10.1080/19416520802211651>.
- Schaufeli, W. B., & Taris, T. W. (2014). A critical review of the Job Demands-Resources Model: Implications for improving work and health. In G. F. Bauer, & O. Hammig (Eds.), *Bridging occupational, organizational and public health* (pp. 43–68). Dordrecht: Springer.
- Schermuly, C. C., Deller, J., & Büsch, V. (2014). A research note on age discrimination and the desire to retire: The mediating effect of psychological empowerment. *Research on Aging*, 36(3), 382–393. <https://doi.org/10.1177/0164027513508288>.
- Sell, L. (2009). Predicting long-term sickness absence and early retirement pension from self-reported work ability. *International Archives of Occupational and Environmental Health*, 82(9), 1133–1138. <https://doi.org/10.1007/s00420-009-0417-6>.
- Smith, V. (2010). Review article: Enhancing employability: Human, cultural, and social capital in an era of turbulent unpredictability. *Human Relations*, 63(2), 279–300. <https://doi.org/10.1177/0018726709353639>.
- Snape, E., & Redman, T. (2003). Too old or too young? The impact of perceived age discrimination. *Human Resource Management Journal*, 13(1), 78–89. <https://doi.org/10.1111/j.1748-8583.2003.tb00085.x>.
- Steenstra, I., Cullen, K., Irvin, E., & Van Eerd, D. (2016). A systematic review of interventions to promote work participation in older workers. *Journal of Safety Research*, 60, 93–102. <https://doi.org/10.1016/j.jsr.2016.12.004>.
- Stone, D. L., & Rosopa, P. J. (2017). The Advantages and Limitations of Using Meta-analysis in Human Resource Management Research. *Human Resource Management Review*, 27(2), 1–7. <https://doi.org/10.1016/j.hrmm.2016.09.001>.
- Taylor, P., & Earl, C. (2016). The social construction of retirement and evolving policy discourse of working longer. *Journal of Social Policy*, 45(2), 251–268. <https://doi.org/10.1017/S0047279415000665>.
- Truxillo, D. M., Cadiz, D. M., Rineer, J. R., Zaniboni, S., & Fraccaroli, F. (2012). A lifespan perspective on job design: Fitting the job and the worker to promote job satisfaction, engagement, and performance. *Organizational Psychology Review*, 2(4), 340–360. <https://doi.org/10.1177/2041386612454043>.
- Tuomi, K., Ilmarinen, J., Martikainen, R., Aalto, L., & Klockars, M. (1997). Aging, work, life-style and work ability among Finnish municipal workers in 1981–1992. *Scandinavian Journal of Work, 58–65 Environment & Health*.
- Tuomi, K., Ilmarinen, J., Jähkölä, A., Katajarinne, L., & Tulkki, A. (1998). Work Ability Index. (Vol. 19). Helsinki: Finnish Institute of Occupational Health.
- United Nations, Department of Economic and Social Affairs (2017). *World Population Prospects: The 2017 Revision, Key Findings and Advance Tables. Working Paper No. ESA/P/WP/248*.
- Van de Voorde, K., Paaue, J., & Van Veldhoven, M. (2012). Employee well-being and the HRM–organizational performance relationship: a review of quantitative studies. *International Journal of Management Reviews*, 14(4), 391–407. <https://doi.org/10.1111/j.1468-2370.2011.00322.x>.
- Van den Berg, T. I., Elders, L. A., de Zwart, B. C., & Burdorf, A. (2009). The effects of work-related and individual factors on the Work Ability Index: a systematic review. *Occupational and Environmental Medicine*, 66(4), 211–220. <https://doi.org/10.1136/oem.2008.039883>.
- Van der Heijde, C. M., & Van der Heijden, B. I. J. M. (2006). A competence-based and multidimensional operationalization and measurement of employability. *Human Resource Management*, 45(3), 449–476. <https://doi.org/10.1002/hrm.20119>.
- Van der Heijden, B. (2012). 'Als het getij verloopt, zet men de bakens'. Duurzaam inzetbaarheidsbeleid als onderdeel van Strategisch HRM. [Sustainable employability policy as being part of Strategic Human Resource Management.]. *Gedrag en organisatie*, 25(2), 117–137.
- Van der Klink, J. J., Bültmann, U., Brouwer, S., Burdorf, A., Schaufeli, W. B., Zijlstra, F. R., & Van der Wilt, G. J. (2011). Duurzame inzetbaarheid bij oudere werknemers, werk als waarde [Sustainable employability in older workers, work as value]. *Gedrag en organisatie*, 24(4), 342–356.
- Van Tulder, M., Furlan, A., Bombardier, C., & Bouter, L. (2003). Updated method guidelines for systematic reviews in the Cochrane Collaboration Back Review Group. *Spine*, 28(12), 1290–1299. <https://doi.org/10.1097/01.BRS.0000065484.95996.AF>.
- Van Veldhoven, M., & Peccei, R. (2015). Contextualizing individual well-being and performance at work. In M. van Veldhoven, & R. Peccei (Eds.), *Well-being and Performance at Work: The Role of Context* (pp. 1–12). New York: Psychology Press.
- Vanhercke, D., De Cuyper, N., Peeters, E., & De Witte, H. (2014). Defining perceived employability: a psychological approach. *Personnel Review*, 43(4), 592–605. <https://doi.org/10.1108/PR-07-2012-0110>.
- Veth, K. N., Emans, B. J., Van der Heijden, B. I., Korzilius, H. P., & De Lange, A. H. (2015). Development (f) or maintenance? An empirical study on the use of and need for HR practices to retain older workers in health care organizations. *Human Resource Development Quarterly*, 26(1), 53–80. doi: <https://doi.org/10.1002/hrdq.21200>.
- Wall, T. D., & Wood, S. J. (2005). The romance of human resource management and business performance, and the case for big science. *Human Relations*, 58(4), 429–462. <https://doi.org/10.1177/0018726705050532>.
- Wielenga-Meijer, E. G., Taris, T. W., Kompier, M. A., & Wigboldus, D. H. (2010). From task characteristics to learning: A systematic review. *Scandinavian Journal of Psychology*, 51(5), 363–375. <https://doi.org/10.1111/j.1467-9450.2009.00768.x>.

- Wood, G., Wilkinson, A., & Harcourt, M. (2008). Age discrimination and working life: perspectives and contestations—a review of the contemporary literature. *International Journal of Management Reviews*, 10(4), 425–442. <https://doi.org/10.1111/j.1468-2370.2008.00236.x>.
- Zacher, H. (2015). The importance of a precise definition, comprehensive model, and critical discussion of successful aging at work. *Work, Aging and Retirement*, 1(4), 320–333. <https://doi.org/10.1093/workar/wav020>.

Further reading

- Adley, K., Boyd, S., Kerr, R., McQuillan, P., Houdmont, J., & McCrory, M. (2014). The impact of two workplace-based health risk appraisal interventions on employee lifestyle parameters, mental health and work ability: results of a randomized controlled trial. *Health Education Research*, 29(2), 247–258. <https://doi.org/10.1093/her/cyt113>.
- Ahlstrom, L., Hagberg, M., & Dellve, L. (2013). Workplace Rehabilitation and Supportive Conditions at Work: A Prospective Study. *Journal of Occupational Rehabilitation*, 23(2), 248–260. <https://doi.org/10.1007/s10926-012-9391-z>.
- Airila, A., Hakkanen, J., Punakallio, A., Lusa, S., & Luukkonen, R. (2012). Is work engagement related to work ability beyond working conditions and lifestyle factors? *International Archives of Occupational and Environmental Health*, 85(8), 915–925. <https://doi.org/10.1007/s00420-012-0732-1>.
- Airila, A., Hakkanen, J. J., Schaufeli, W. B., Luukkonen, R., Punakallio, A., & Lusa, S. (2014). Are job and personal resources associated with work ability 10 years later? The mediating role of work engagement. *Work and Stress*, 28(1), 87–105. <https://doi.org/10.1080/02678373.2013.872208>.
- Aittomaki, A., Lahelma, E., & Roos, E. (2003). Work conditions and socioeconomic inequalities in work ability. *Scandinavian Journal of Work, Environment & Health*, 29(2), 159–165.
- Akkermans, J., Tims, M., Beier, S., & De Cuyper, N. (2018). *All-in or all out? Examining potential trade-off effects of HRM investments in employability*. (Unpublished manuscript *).
- Alavinia, S. M., van Duivenbooden, C., & Burdorf, A. (2007). Influence of work-related factors and individual characteristics on work ability among Dutch construction workers. *Scandinavian Journal of Work, Environment & Health*, 33(5), 351–357.
- Alavinia, S. M., van den Berg, T. I. J., van Duivenbooden, C., Elders, L. A. M., & Burdorf, A. (2009). Impact of work-related factors, lifestyle, and work ability on sickness absence among Dutch construction workers. *Scandinavian Journal of Work, Environment & Health*, 35(5), 325–333.
- Alcántara, M. A., Sampaio, R. F., Assunção, A. Á., & Martins Silva, F. C. (2014). Work Ability: Using structural equation modeling to assess the effects of aging, health and work on the population of Brazilian municipal employees. *Work*, 49(3), 465–472. <https://doi.org/10.3233/WOR-131703>.
- Arcury, T. A., Chen, H. Y., Mora, D. C., Walker, F. O., Cartwright, M. S., & Quandt, S. A. (2016). A comparison of the relationships between psychosocial factors, occupational strain, and work ability among 4 ethnic teacher groups in China. *Archives of Environmental & Occupational Health*, 71(2), 66–73. <https://doi.org/10.1080/19338244.2014.956859>.
- Bal, P. M., & Visser, M. S. (2011). When Are Teachers Motivated to Work Beyond Retirement Age? The Importance of Support, Change of Work Role and Money. *Educational Management Administration & Leadership*, 39(5), 590–602. <https://doi.org/10.1177/1741143211408448>.
- Barene, S., Krstrup, P., & Holtermann, A. (2014). Effects of the Workplace Health Promotion Activities Soccer and Zumba on Muscle Pain, Work Ability and Perceived Physical Exertion among Female Hospital Employees. *PLoS One*, 12(1), 9. <https://doi.org/10.1371/journal.pone.0115059>.
- Bethge, M., & Radoschewski, F. M. (2012). Adverse effects of effort-reward imbalance on work ability: longitudinal findings from the German Sociomedical Panel of Employees. *International Journal of Public Health*, 57(5), 797–805. <https://doi.org/10.1007/s00038-011-0304-2>.
- Blangsted, A. K., Søgaard, K., Hansen, E. A., Hanner, H., & Sjøgaard, G. (2008). One-year randomized controlled trial with different physical-activity programs to reduce musculoskeletal symptoms in the neck and shoulders among office workers. *Scandinavian Journal of Work, Environment & Health*, 34(1), 55–65.
- Blau, P. M. (1964). *Exchange and power in social life*. New Brunswick NJ: Transaction Publishers.
- Blumberg, M., & Pringle, C. D. (1982). The missing opportunity in organizational research: Some implications for a theory of work performance. *Academy of Management Review*, 7(4), 560–569. <https://doi.org/10.5465/AMR.1982.4285240>.
- Boehm, S. A., Kunze, F., & Bruch, H. (2014). Spotlight on Age-Diversity Climate: The Impact of Age-Inclusive HR Practices on Firm-Level Outcomes. *Personnel Psychology*, 67(3), 667–704. <https://doi.org/10.1111/peps.12047>.
- Bostrom, M., Sluiter, J. K., & Hagberg, M. (2012). Changes in work situation and work ability in young female and male workers. A prospective cohort study. *BMC Public Health*, 12, (694–507) <https://doi.org/10.1186/1471-2458-12-694>.
- Boumans, N. P. G., de Jong, A. H. J., & Vanderlinden, L. (2008). Determinants of early retirement intentions among Belgian nurses. *Journal of Advanced Nursing*, 63(1), 64–74. <https://doi.org/10.1111/j.1365-2648.2008.04651.x>.
- Bugajska, J., & Lastowiecka, E. (2005). Life style, work environment factors and work ability in different occupations. *International Congress Series*, 1280, 247–252. <https://doi.org/10.1016/j.ics.2005.03.002>.
- Camerino, D., Conway, P. M., Sartori, S., Campanini, P., Estryn-Béhar, M., van der Heijden, B. I. J. M., & Costa, G. (2008). Factors affecting work ability in day and shift-working nurses. *Chronobiology International*, 25(2), 425–442. <https://doi.org/10.1080/07420520802118236>.
- Camps, J., & Majocchi, A. (2010). Learning Atmosphere and Ethical Behavior, Does It Make Sense. *Journal of Business Ethics*, 94(1), 129–147. <https://doi.org/10.1007/s10551-009-0253-3>.
- Camps, J., & Rodríguez, H. (2011). Transformational leadership, learning, and employability Effects on performance among faculty members. *Personnel Review*, 40(4), 423–442. <https://doi.org/10.1108/004834811111333327>.
- Carmen Martínez, M., da Silva Alexandre, T., Latorre, D. d. O., R. M. D., & Marina Fischer, F. (2016). *Longitudinal associations between stressors and work ability in hospital workers*. *Chronobiology International* 754–758. <https://doi.org/10.3109/07420528.2016.1167713>.
- Carr, E., Hagger-Johnson, G., Head, J., Shelton, N., Stafford, M., Stansfeld, S., & Zaninotto, P. (2016). Working conditions as predictors of retirement intentions and exit from paid employment: A 10-year follow-up of the English Longitudinal Study of Ageing. *European Journal of Ageing*, 13(1), 39–48. <https://doi.org/10.1007/s10433-015-0357-9>.
- Chou, R. J. A., & Choi, N. G. (2011). Prevalence and correlates of perceived workplace discrimination among older workers in the United States of America. *Ageing and Society*, 31, 1051–1070. <https://doi.org/10.1017/s0144686x10001297>.
- Costa, G., & Sartori, S. (2007). Ageing, working hours and work ability. *Ergonomics*, 50(11), 1914–1930. <https://doi.org/10.1080/00140130701676054>.
- Damman, M., Henkens, K., & Kalmijn, M. (2011). The Impact of Midlife Educational, Work, Health, and Family Experiences on Men's Early Retirement. *The Journals of Gerontology, Series B, Psychological Sciences and Social Sciences*, 66(5), 617–627. <https://doi.org/10.1093/geronb/gbr092>.
- de Boer, A., van Beek, J. C., Durinck, J., Verbeek, J., & van Dijk, F. J. H. (2004). An occupational health intervention programme for workers at risk for early retirement; a randomised controlled trial. *Occupational and Environmental Medicine*, 61(11), 924–929. <https://doi.org/10.1136/oem.2003.009746>.
- de Boer, A., Burdorf, A., van Duivenbooden, C., & Frings-Dresen, M. H. W. (2007). The effect of individual counselling and education on work ability and disability pension: a prospective intervention study in the construction industry. *Occupational and Environmental Medicine*, 64(12), 792–797. <https://doi.org/10.1136/oem.2006.029678>.
- de Croon, E. M., Sluiter, J. K., Nijssen, T. F., Kammeijer, M., Dijkmans, B. A. C., Lankhorst, G. J., & Frings-Dresen, M. M. W. (2005). Work ability of Dutch employees with rheumatoid arthritis. *Scandinavian Journal of Rheumatology*, 34(4), 277–283. <https://doi.org/10.1080/03009740510018615>.
- De Vos, A., De Hauw, S., & Van der Heijden, B. I. J. M. (2011). Competency development and career success: The mediating role of employability. *Journal of Vocational Behavior*, 79(2), 438–447. <https://doi.org/10.1016/j.jvb.2011.05.010>.
- Della Russo, S., & Polanska, M. (2017). *The effect of HRD practices on perceived employability: Test of a moderated mediation model*. (Unpublished manuscript *).
- Dellve, L., Fallman, S. L., & Ahlstrom, L. (2016). Return to work from long-term sick leave: a six-year prospective study of the importance of adjustment latitudes at work and home. *International Archives of Occupational and Environmental Health*, 89(1), 171–179. <https://doi.org/10.1007/s00420-015-1061-y>.
- Elovainio, M., Kuusio, H., Aalto, A. M., Sinervo, T., & Heponiemi, T. (2010). Insecurity and shiftwork as characteristics of negative work environment: psychosocial and behavioural mediators. *Journal of Advanced Nursing*, 66(5), 1080–1091. <https://doi.org/10.1111/j.1365-2648.2010.05265.x>.

- Fischer, F. M., & Martinez, M. C. (2013). Individual features, working conditions and work injuries are associated with work ability among nursing professionals. *Work*, 45(4), 509–517. <https://doi.org/10.3233/WOR-131637>.
- Fischer, F. M., Borges, F. N. D., Rotenberg, L., Latorre, M., Soares, N. S., Rosa, P., & Landsbergis, P. (2006). Work ability of health care shift workers: What matters? *Chronobiology International*, 23(6), 1165–1179. <https://doi.org/10.1080/07420520601065083>.
- Froehlich, D. E., Beusaert, S., Segers, M., & Gerken, M. (2014). Learning to stay employable. *Career Development International*, 19(5), 508–525. <https://doi.org/10.1108/cdi-11-2013-0139>.
- Furunes, T., Mykletun, R. J., Einarsen, S., & Glaso, L. (2015). Do Low-quality Leader-Member Relationships Matter for Subordinates? Evidence from Three Samples on the Validity of the Norwegian LMX Scale. *Nordic Journal of Working Life Studies*, 5(2), 71–87.
- Gerken, M., Beusaert, S., & Segers, M. (2016). Working on professional development of faculty staff in higher education: investigating the relationship between social informal learning activities and employability. *Human Resource Development International*, 19(2), 135–151. <https://doi.org/10.1080/13678868.2015.1116241>.
- Ghaddar, A., Ronda, E., & Nolasco, A. (2011). Work ability, psychosocial hazards and work experience in prison environments. *Occupational Medicine-Oxford*, 61(7), 503–508. <https://doi.org/10.1093/occmed/kqr124>.
- Goldberg, C. B., Perry, E. L., Finkelstein, L. M., & Shull, A. (2013). Antecedents and outcomes of targeting older applicants in recruitment. *European Journal of Work and Organizational Psychology*, 22(3), 265–278. <https://doi.org/10.1080/1359432x.2012.746315>.
- Gommans, F., Jansen, N., Stynen, D., de Grip, A., & Kant, I. (2015). The ageing shift worker: a prospective cohort study on need for recovery, disability, and retirement intentions. *Scandinavian Journal of Work, Environment & Health*, 41(4), 356–367. <https://doi.org/10.5271/sjweh.3497>.
- Gram, B., Holtermann, A., Bultmann, U., Sjogaard, G., & Sogaard, K. (2012). Does an Exercise Intervention Improving Aerobic Capacity Among Construction Workers Also Improve Musculoskeletal Pain, Work Ability, Productivity, Perceived Physical Exertion, and Sick Leave? A Randomized Controlled Trial. *Journal of Occupational and Environmental Medicine*, 54(12), 1520–1526. <https://doi.org/10.1097/JOM.0b013e318266484a>.
- Groot, W., & Van Den Brink, H. M. (2000). Education, training and employability. *Applied Economics*, 32(5), 573–581. <https://doi.org/10.1080/000368400322471>.
- Henkens, K., & Leenders, M. (2010). Burnout and older workers' intentions to retire. *International Journal of Manpower*, 31(3), 306–321. <https://doi.org/10.1108/01437721011050594>.
- Heponiemi, T., Kouvonon, A., Vanska, J., Halila, H., Sinervo, T., Kivimaki, M., & Elovainio, M. (2008). Health, psychosocial factors and retirement intentions among Finnish physicians. *Occupational Medicine-Oxford*, 58(6), 406–412. <https://doi.org/10.1093/occmed/kqn064>.
- Hofstetter, H., & Cohen, A. (2014). The mediating role of job content plateau on the relationship between work experience characteristics and early retirement and turnover intentions. *Personnel Review*, 43(3), 350–376. <https://doi.org/10.1108/pr-03-2012-0054>.
- Jakobsen, M. D., Sundstrup, E., Brandt, M., Jay, K., Aagaard, P., & Andersen, L. L. (2015). Physical exercise at the workplace prevents deterioration of work ability among healthcare workers: cluster randomized controlled trial. *BMC Public Health*, 15, 1174–1183. <https://doi.org/10.1186/s12889-015-2448-0>.
- Jensen, A. G. C. (2013). A two-year follow-up on a program theory of return to work intervention. *Work-a Journal of Prevention Assessment & Rehabilitation*, 44(2), 165–175. <https://doi.org/10.3233/wor-121497>.
- Kaewboonchoo, O., Saleekul, S., & Usathaporn, S. (2011). Factors related to work ability among Thai workers. *Southeast Asian Journal of Tropical Medicine and Public Health*, 42(1), 225–230.
- Karazman, R., Kloimüller, I., Geissler, H., & Karazman-Morawetz, I. (2000). Effects of ergonomic and health training on work interest, work ability and health in elderly public urban transport drivers. *International Journal of Industrial Ergonomics*, 25(5), 503–511. [https://doi.org/10.1016/S0169-8141\(99\)00037-2](https://doi.org/10.1016/S0169-8141(99)00037-2).
- Koen, J., Van Vianen, A. E. M., Nauta, A. & de Pater, I. (2015). Managing employees' employability and job quality: different ages require different approaches. (Unpublished manuscript.*).
- Koolhaas, W., van der Klink, J. J. L., de Boer, M. R., Groothoff, J. W., & Brouwer, S. (2014). Chronic health conditions and work ability in the ageing workforce: the impact of work conditions, psychosocial factors and perceived health. *International Archives of Occupational and Environmental Health*, 87(4), 433–443. <https://doi.org/10.1007/s00420-013-0882-9>.
- Koolhaas, W., Groothoff, J. W., de Boer, M. R., van der Klink, J. J. L., & Brouwer, S. (2015). Effectiveness of a problem-solving based intervention to prolong the working life of ageing workers. *BMC Public Health*, 15, 76–89. doi: <https://doi.org/10.1186/s12889-015-1410-5>.
- Larsson, A., Karlqvist, L., Westerberg, M., & Gard, G. (2012). Identifying work ability promoting factors for home care aides and assistant nurses. *BMC Musculoskeletal Disorders*, 13, 1–11. <https://doi.org/10.1186/1471-2474-13-1>.
- Li, H. L., Liu, Z. T., Liu, R. Z., Li, L., & Lin, A. H. (2016). The relationship between work stress and work ability among power supply workers in Guangdong, China: a cross-sectional study. *BMC Public Health*, 16(1), 123–131. <https://doi.org/10.1186/s12889-016-2800-z>.
- Marklund, S., Bolin, M., & von Essen, J. (2008). Can individual health differences be explained by workplace characteristics?—A multilevel analysis. *Social Science & Medicine*, 66(3), 650–662. <https://doi.org/10.1016/j.socscimed.2007.09.008>.
- Martinez, M. C., Latorre, M., & Fischer, F. M. (2015). A cohort study of psychosocial work stressors on work ability among Brazilian hospital workers. *American Journal of Industrial Medicine*, 58(7), 795–806. <https://doi.org/10.1002/ajim.22476>.
- McGonagle, A. K., Bames-Farrell, J. L., Fisher, G. G., Grosch, J. W., & Barnes-Farrell, J. L. (2015). Individual and work factors related to perceived work ability and labor force outcomes. *Journal of Applied Psychology*, 100(2), 376–398. <https://doi.org/10.1037/a0037974>.
- Miettinen, M., & Louhevaara, V. (1994). Job demands, physical-fitness, work ability, and age of vehicle inspectors. *International Journal of Industrial Ergonomics*, 13(4), 337–342. [https://doi.org/10.1016/0169-8141\(94\)90090-6](https://doi.org/10.1016/0169-8141(94)90090-6).
- Muller, A., Weigl, M., Heiden, B., Glaser, J., & Angerer, P. (2012). Promoting work ability and well-being in hospital nursing: the interplay of age, job control, and successful ageing strategies. *Work*, 41(1), 5137–5144. <https://doi.org/10.3233/WOR-2012-0083-5137>.
- Müller, A., Heiden, B., Herbig, B., Poppe, F., & Angerer, P. (2016). Improving well-being at work: A randomized controlled intervention based on selection, optimization, and compensation. *Journal of Occupational Health Psychology*, 21(2), 169–181. <https://doi.org/10.1037/a0039676>.
- Münderlein, M., Ybema, J. F., & Koster, F. (2013). Happily ever after? Explaining turnover and retirement intentions of older workers in The Netherlands. *Career Development International*, 18(6), 548–568. <https://doi.org/10.1108/CDI-01-2013-0004>.
- Nabe-Nielsen, K., Thielen, K., Nygaard, E., Thorsen, S. V., & Diderichsen, F. (2014). Demand-specific work ability, poor health and working conditions in middle-aged full-time employees. *Applied Ergonomics*, 45(4), 1174–1180. <https://doi.org/10.1016/j.apergo.2014.02.007>.
- Nowrouzi, B., Lightfoot, N., Carter, L., Lariviere, M., Rukholm, E., Schinke, R., & Belanger-Gardner, D. (2015). Work ability and work-related stress: A cross-sectional study of obstetrical nurses in urban northeastern Ontario. *Work-a Journal of Prevention Assessment & Rehabilitation*, 52(1), 115–122. <https://doi.org/10.3233/wor-141976>.
- Nurminen, E., Malmivaara, A., Ilmarinen, J., Ylostalo, P., Mutanen, P., Ahonen, G., & Aro, T. (2002). Effectiveness of a worksite exercise program with respect to perceived work ability and sick leaves among women with physical work. *Scandinavian Journal of Work, Environment & Health*, 28(2), 85–93.
- Oakman, J., & Wells, Y. (2013). Retirement intentions: what is the role of push factors in predicting retirement intentions? *Ageing and Society*, 33, 988–1008. <https://doi.org/10.1017/s0144686x12000281>.
- Oude Hengel, K. M., Blatter, B. M., Geuskens, G. A., Koppes, L. L. J., & Bongers, P. M. (2012). Factors associated with the ability and willingness to continue working until the age of 65 in construction workers. *International Archives of Occupational and Environmental Health*, 85(7), 783–790. <https://doi.org/10.1007/s00420-011-0719-3>.
- Oude Hengel, K. M., Blatter, B. M., Joling, C. I., van der Beek, A. J., & Bongers, P. M. (2012). Effectiveness of an intervention at construction worksites on work engagement, social support, physical workload, and need for recovery: results from a cluster randomized controlled trial. *BMC Public Health*, 12, 1008–1009. <https://doi.org/10.1186/1471-2458-12-1008>.
- Perkio-Makela, M., & Hirvonen, M. (2012). Physical workload and thoughts of retirement. *Work-a Journal of Prevention Assessment & Rehabilitation*, 41, 303–306. <https://doi.org/10.3233/wor-2012-0173-303>.
- Pohjonen, T. (2001). Perceived work ability of home care workers in relation to individual and work-related factors in different age groups. *Occupational Medicine-*

- Oxford, 51(3), 209–217. <https://doi.org/10.1093/ocmed/51.3.209>.*
- Pohjonen, T., & Ranta, R. (2001). Effects of worksite physical exercise intervention on physical fitness, perceived health status, and work ability among home care workers: Five-year follow-up. *Preventive Medicine*, 32(6), 465–475. <https://doi.org/10.1006/pmed.2001.0837>.*
- Rasmussen, C. D. N., Holtermann, A., Jorgensen, M. B., Orberg, A., Mortensen, O. S., & Sogaard, K. (2016). A multi-faceted workplace intervention targeting low back pain was effective for physical work demands and maladaptive pain behaviours, but not for work ability and sickness absence: Stepped wedge cluster randomised trial. *Scandinavian Journal of Public Health*, 44(6), 560–570. <https://doi.org/10.1177/1403494816653668>.*
- Salminen, H. M. (2012). Turning the tide: Registered nurses' job withdrawal intentions in a Finnish university hospital. *South African Journal of Human Resource Management*, 10(2), 1–11. <https://doi.org/10.4102/sajhrm.v10i2.410>.*
- Saltychev, M., Laimi, K., Oksanen, T., Pentti, J., Kivimäki, M., & Vahtera, J. (2013). Does perceived work ability improve after a multidisciplinary preventive program in a population with no severe medical problems? The Finnish Public Sector Study. *Scandinavian Journal of Work, Environment & Health*, 39(1), 57–65. <https://doi.org/10.5271/sjweh.3298>.*
- Sampaio, R. F., Coelho, C. M., Barbosa, F. B., Mancini, M. C., & Parreira, V. F. (2009). Work ability and stress in a bus transportation company in Belo Horizonte. *Brazil. Ciencia & Saude Coletiva*, 14(1), 287–296.
- Sanders, J., Dorenbosch, L., Gründemann, R., & Blonk, R. (2011). Sustaining the Work Ability and Work Motivation of Lower-educated Older Workers: Directions for Work Redesign. *Management Review*, 22(2), 132–150. <https://doi.org/10.1688/1861-9908^mrev^2011^02^Sanders>.*
- Sandsjö, L., Larsman, P., Huis, In T Veld, R M H, A., & Vollenbroek-Hutten, M. M. R. (2010). Clinical evaluation of a myofeedback-based tele-treatment service applied in the workplace: a randomized controlled trial. *Journal of Telemedicine and Telecare*, 16(6), 329–335. doi: <https://doi.org/10.1258/jtt.2010.006007>.*
- Schloegel, U., Stegmann, S., Maedche, A., & van Dick, R. (2016). Reducing age stereotypes in software development: The effects of awareness- and cooperation-based diversity interventions. *Journal of Systems and Software*, 121, 1–15. <https://doi.org/10.1016/j.jss.2016.07.041>.*
- Schultz, H., Zacher, H., & Pfaff, H. (2013). *Aging, work characteristics and job performance: mediators and objective workplace outcomes*. (Unpublished manuscript.*).
- Sejbaek, C. S., Nexø, M. A., & Borg, V. (2013). Work-related factors and early retirement intention: a study of the Danish eldercare sector. *European Journal of Public Health*, 23(4), 611–616. <https://doi.org/10.1093/eurpub/cks117>.
- Sell, L., Lund, H., Holtermann, A., & Sogaard, K. (2016). The effect on work ability of a tailored ergonomic learning program. *Work - A Journal of Prevention Assessment & Rehabilitation*, 53(2), 357–366. <https://doi.org/10.3233/wor-152228>.*
- Sugimura, H., & Thériault, G. (2010). Impact of supervisor support on work ability in an IT company. *Occupational Medicine*, 60(6), 451–457. <https://doi.org/10.1093/ocmed/kqq053>.*
- Sun, J., Buys, N., & Wang, X. C. (2013). Effectiveness of a Workplace-Based Intervention Program to Promote Mental Health among Employees in Privately Owned Enterprises in China. *Population Health Management*, 16(6), 406–414. <https://doi.org/10.1089/pop.2012.0113>.*
- Sundstrup, E., Jakobsen, M. D., Brandt, M., Jay, K., Persson, R., Aagaard, P., & Andersen, L. L. (2014). Workplace strength training prevents deterioration of work ability among workers with chronic pain and work disability: a randomized controlled trial. *Scandinavian Journal of Work, Environment & Health*, 40(3), 244–251. <https://doi.org/10.5271/sjweh.3419>.*
- Thorsen, S., Rugulies, R., Longgaard, K., Borg, V., Thielen, K., & Bjorner, J. B. (2012). The association between psychosocial work environment, attitudes towards older workers (ageism) and planned retirement. *International Archives of Occupational and Environmental Health*, 85(4), 437–445. <https://doi.org/10.1007/s00420-011-0689-5>.*
- Thorsen, S. V., Burr, H., Diderichsen, F., & Bjorner, J. B. (2013). A one-item workability measure mediates work demands, individual resources and health in the prediction of sickness absence. *International Archives of Occupational and Environmental Health*, 86(7), 755–766. <https://doi.org/10.1007/s00420-012-0807-z>.*
- Tuomi, K., Vanhala, S., Nykyri, E., & Janhonen, M. (2004). Organizational practices, work demands and the well-being of employees: a follow-up study in the metal industry and retail trade. *Occupational Medicine-Oxford*, 54(2), 115–121. <https://doi.org/10.1093/ocmed/kqh005>.
- Van Dam, K., van der Vorst, J. D. M., & van der Heijden, B. (2009). Employees' Intentions to Retire Early A Case of Planned Behavior and Anticipated Work Conditions. *Journal of Career Development*, 35(3), 265–289. <https://doi.org/10.1177/0894845308327274>.*
- Van der Heijden, B. I. J. M., & Bakker, A. B. (2011). Toward a Mediation Model of Employability Enhancement: A Study of Employee-Supervisor Pairs in the Building Sector. *Career Development Quarterly*, 59(3), 232–248. <https://doi.org/10.1002/j.2161-0045.2011.tb00066.x>.*
- Van der Heijden, B., Boon, J., Van der Klink, M., & Meijs, E. (2009). Employability enhancement through formal and informal learning: an empirical study among Dutch non-academic university staff members. *International Journal of Training and Development*, 13(1), 19–37. <https://doi.org/10.1111/j.1468-2419.2008.00313.x>.*
- Van der Heijden, B., Van Vuuren, T. C. V., Kooij, D., & de Lange, A. H. (2015). Tailoring professional development for teachers in primary education The role of age and proactive personality. *Journal of Managerial Psychology*, 30(1), 22–37. <https://doi.org/10.1108/jmp-07-2014-0211>.*
- Van der Heijden, B., Gorgievski, M. J., & De Lange, A. H. (2016). Learning at the workplace and sustainable employability: a multi-source model moderated by age. *European Journal of Work and Organizational Psychology*, 25(1), 13–30. <https://doi.org/10.1080/1359432x.2015.1007130>.*
- Van der Klink, M., Van der Heijden, B., Boon, J., & van Rooij, S. W. (2014). Exploring the contribution of formal and informal learning to academic staff member employability A Dutch perspective. *Career Development International*, 19(3), 337–356. <https://doi.org/10.1108/cdi-03-2013-0030>.*
- Van der Meer, L., Leijten, F. R. M., Heuvel, S. G., Ybema, J. F., de Wind, A., Burdorf, A., & Geuskens, G. A. (2016). Company Policies on Working Hours and Night Work in Relation to Older Workers' Work Ability and Work Engagement: Results From a Dutch Longitudinal Study with 2 Year Follow-Up. *Journal of Occupational Rehabilitation*, 26(2), 173–181. <https://doi.org/10.1007/s10926-015-9599-9>.
- Van Dongen, J. M., van Berkel, J., Boot, C. R. L., Bosmans, J. E., Proper, K. I., Bongers, P. M., & van Wier, M. F. (2016). Long-Term Cost-Effectiveness and Return-on-Investment of a Mindfulness-Based Worksite Intervention Results of a Randomized Controlled Trial. *Journal of Occupational and Environmental Medicine*, 58(6), 550–560. <https://doi.org/10.1097/jom.0000000000000736>.*
- Van Harten, J., Knies, E., & Leisink, P. (2016). Employer's investments in hospital workers' employability and employment opportunities. *Personnel Review*, 45(1), 84–102. <https://doi.org/10.1108/pr-05-2014-0115>.*
- Van Holland, B. J., Soer, R., de Boer, M. R., Reneman, M. F., & Brouwer, S. (2015). Workers' Health Surveillance in the Meat Processing Industry: Work and Health Indicators Associated with Work Ability. *Journal of Occupational Rehabilitation*, 25(3), 618–626. <https://doi.org/10.1007/s10926-015-9569-2>.*
- Van Solinge, H., & Henkens, K. (2014). Work-related factors as predictors in the retirement decision-making process of older workers in the Netherlands. *Ageing and Society*, 34(9), 1551–1574. <https://doi.org/10.1017/s0144686x13000330>.*
- Viotti, S., Guidetti, G., Loera, B., Martini, M., Sottimano, I., & Converso, D. (2016). Stress, Work Ability, and an Aging Workforce: A Study Among Women Aged 50 and Over. *International Journal of Stress Management*, 24(Suppl. 1), 98–112. <https://doi.org/10.1037/str0000031>.*
- Von Bonsdorff, M. E., Huuhtanen, P., Tuomi, K., & Seitsamo, J. (2010). Predictors of employees' early retirement intentions: an 11-year longitudinal study. *Occupational Medicine-Oxford*, 60(2), 94–100. <https://doi.org/10.1093/ocmed/kqp126>.
- Weigl, M., Müller, A., Hornung, S., Zacher, H., & Angerer, P. (2013). The moderating effects of job control and selection, optimization, and compensation strategies on the age-work ability relationship. *Journal of Organizational Behavior*, 34(5), 607–628. <https://doi.org/10.1002/job.1810>.*
- Yong, M., Nasterlack, M., Pluto, R.-P., Elmerich, K., Karl, D., & Knauth, P. (2010). Is health, measured by Work Ability Index, affected by 12-hour rotating shift schedules? *Chronobiology International*, 27(5), 1135–1148. <https://doi.org/10.3109/07420528.2010.490111>.*
- Zaniboni, S., Truxillo, D., Chiesa, R., Guglielmi, D., Depolo, M., & Fraccaroli, F. (2017). The interplay between age and job characteristics in affecting work and retirement related outcomes. Unpublished manuscript.*