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Retaining an ageing workforce: The effects of high-performance work systems and flexible work programmes

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Abstract

Older workers make up a growing proportion of the workforce, and research on how best to manage them is being conducted accordingly. Here, we explored the employee retention payoff of high-performance work systems (HPWS) and flexible work programmes (FWPs) when used with an older workforce. Drawing from the job demands-resources model, we hypothesised that HPWS retention outcomes decrease as the workforce ages, whereas the retention capacity of FWPs increases. We also explored how the parallel provision of HPWS and FWPs affects workforce retention in more ageing workplaces. The results suggest that workforce age composition affects the HPWS-retention relationship. However, the value of FWPs as retention tools does not vary significantly with workforce ageing. Furthermore, the provision of FWPs alongside HPWS appears to be a less-than-optimal approach to this retention. These findings may contribute to a better understanding of the HRM-performance relationship, while inspiring further research into successful age-differentiated HR strategies.

KEYWORDS

flexible work programmes, high-performance work systems, job demands-resources model, retention rate, workforce ageing

1 | INTRODUCTION

Workforces are ageing because of increasing life expectancy, lower birth rates and better health care. In the final quarter of 2014, for example, 75.3% of people in the United Kingdom aged between 50 and state pension age were in work, together with 12.1% of people over that age (ONS, 2015). Similar figures may be found for other developed countries (OECD, 2018). Managing an ageing workforce has therefore moved up the HR agenda, now constituting a pressing concern for managers (Economist Intelligence Unit, 2014).

A number of studies have explored how best to deal with an older workforce (e.g., Armstrong-Stassen & Ursel, 2009; Bal & Dorenbosch, 2015; Göbel & Zwick, 2013; Kooij, De Lange, Jansen, & Dikkers, 2008; Ng & Feldman, 2013), with the retention of older talent being regarded as a critical issue. Emphasis has therefore been placed on the need to analyse the extent to which the practices and initiatives put forward for retaining employees are equally effective when applied to an older workforce (Kooij et al., 2013). Otherwise, the use of such initiatives in today's labour market would not be the best way of reining in the loss of invaluable expertise and knowledge or of resolving the forecasted labour shortages due to declining birth rates (Van Yperen & Wörtler, 2017).

Following this research stream, we analyse the employee retention outcomes of two sets of HR initiatives in workplaces with older workforces, namely, high-performance work systems (HPWS) and flexible work programmes (FWPs), which are both commonly regarded as effective approaches for talent retention (e.g., Guest, Michie, Conway, & Sheehan, 2003; McNall, Masuda, & Nicklin, 2010). As retention tools, they are based on the assumption that the effectiveness of HR initiatives depends on how well they match employees' needs, values and characteristics (Baron & Kreps, 1999; Gardner, Wright, & Moynihan, 2011; Guzzo & Noonan, 1994; Jensen & van de Voorde, 2016; Peccei, Van de Voorde, & Van Veldhoven, 2013). HPWS and FWPs create a workplace in which employees, with their expectations and needs satisfied, respond by remaining in the organisation and contributing to the achievement of its goals (Armstrong-Stassen & Ursel, 2009; Bal & De Lange, 2015; Baron & Kreps, 1999; Gardner et al., 2011; McNall et al., 2010).

Nevertheless, effective retention strategies call for a profound understanding of employees' needs and preferences (Aselage & Eisenberger, 2003; Bal & Dorenbosch, 2015; Baron & Kreps, 1999; Guzzo & Noonan, 1994; Jensen & van de Voorde, 2016; Peccei et al., 2013; Stirpe & Zárraga-Oberty, 2017). Research on lifespan development indicates that as they age, individuals tend to experience a number of changes in their motivational, cognitive and physical profile (Baltes, 1997; Carstensen, 1991). If indeed true, this poses certain highly significant issues, for which the extant literature does not appear to provide either answers or evidence: What effect does workforce ageing have on the retention outcomes of the two HR initiatives considered (i.e., HPWS and FWPs)? Or to put it another way, are HPWS and FWPs well suited to the purpose of retaining older workforces? And if these two HR initiatives are applied jointly, what effect do they have on firms' ability to retain these workforces?

These are the questions underpinning our research. In our analysis, we understand HPWS and FWPs in terms of the job demands-resources (JD-R) model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Bakker, 2004; Schaufeli & Taris, 2014), which addresses the impact perceived work characteristics have on employees' workplace experience and attitudes. Whereas demands are those aspects of work that require sustained physical and mental effort and that may impair employees' workplace experience, resources involve those work characteristics that help employees achieve their goals and stimulate their personal development, enhancing their experience (Schaufeli & Taris, 2014). Following this model, we argue that age-related specificities may make employees perceive the demands and resources associated with HPWS and FWPs differently, whereby such initiatives will have a differential workforce retention payoff depending on workforce age composition.

This study contributes to HR research and practice in several ways. First, it responds to recent calls to explore the pertinence of accepted employee retention models across different workforce characteristics (cf. Hom, Lee, Shaw, & Hausknecht, 2017, p. 540). In particular, the study examines a potential moderator (i.e., workforce age composition) of the relationships HPWS and FWPs have with retention (alone and in combination), thus going beyond the mainstream "one-size-fits-all" approach to the investigation of their payoff. Second, and relatedly, the study is among

the first to examine HPWS and FWP from the angle of the JD-R perspective, which may advance our understanding of the meaning employees attach to HPWS and FWPs with age and, accordingly, of the outcomes expectable from such initiatives as workforce age composition varies. Furthermore, whereas previous research has used the JD-R perspective to predict employee-level performance results, we use the logic of this perspective to make sense of an organisational performance outcome (i.e., retention at workplace level). Finally, this study may provide practitioners with insights relevant to their HR decision making, suggesting that when the aim is to retain older workers, there are good reasons for critically assessing those approaches that have to date been some of the more popular ones.

Below, we first analyse the changes in the motivational and aptitudinal profile associated with ageing. Second, we present our theoretical framework to formulate three hypotheses on the influence workforce age may have on the retention ability of, respectively, HPWS, FWPs and their joint application. The hypotheses are then tested using a multi-industry sample of U.K. workplaces. Lastly, the results are presented and discussed.

2 | THEORETICAL FRAMEWORK AND HYPOTHESES

2.1 | Age-related work attitudes and behaviours

Effective retention strategies require understanding the idiosyncrasies of older employees. Although these employees are heterogeneous in terms of personal traits (e.g., their social, psychological and health conditions) and work situations (Damman, 2016), research on lifespan development suggests that several common changes occur with age in both individual preferences and needs. These changes may have an impact on the effectiveness of HR practices, so attention needs to be paid to them (Armstrong-Stassen & Ursel, 2009; Bal & De Lange, 2015; Kooij et al., 2008; Yeung & Fung, 2009).

Carstensen (1991), one of the authors shedding more light on the specificity of older individuals, maintains that people become more selective as they grow older, tending to invest increased resources in emotionally meaningful goals and activities. As opposed to their younger counterparts, older workers no longer perceive that expected future gains may outweigh present losses (Lang & Carstensen, 2002). Thus, long-term goals are relatively less attractive for them (Kooij, De Lange, Jansen, Kanfer, & Dikkers, 2011); the time and effort associated with their achievement carry more weight and are considered more carefully (Freund & Baltes, 2002); and current emotional comfort (or discomfort) at work becomes more important (Bal & Dorenbosch, 2015). That same willingness to maximise short-term emotional gratification also appears within the area of interpersonal relationships (Fung, Carstensen, & Lang, 2001). The need for immediate emotional fulfilment normally prompts older individuals to prefer social interactions with a positive affective return (e.g., with family members and significant others), whereas those of minor relevance receive less consideration. Thus, job satisfaction among older employees tends to be driven by different factors, with more emphasis on good relationships with colleagues, whereas advancement opportunities (and equivalent extrinsic outcomes such as income) become less important (Drabe, Hauff, & Richter, 2015).

Yet it is not only our preferences that change but also our capabilities. Indeed, ageing is often accompanied by a decline in cognitive, physical and sensory resources (Warr, 2001). Such decline may impair performance in many jobs. Thus, older employees often deliberately deploy a number of strategies at work for offsetting the losses associated with ageing, thereby remaining active and productive (Baltes, 1997; Yeung & Fung, 2009). These strategies include concentrating on those functions less affected by the passage of time (De Lange, Van Yperen, Van der Heijden, & Bal, 2010; Yeung & Fung, 2009); selecting a smaller number of goals and focusing on those that are perceived as being more attainable (De Lange et al., 2010); reducing the number of shifts to save energy (Ng & Feldman, 2013); or compensating for decreases in physical prowess by taking more breaks or seeking external aids (Freund & Baltes, 2002; Yeung & Fung, 2009). As highlighted by Zacher (2015), the deployment of these regulation strategies by older employees—what these individuals need to do to remain competitive—reflects an overall shift toward preservation and loss prevention rather than toward growth and development.

In sum, the literature suggests that as individuals age, their workplace preferences and needs may change accordingly. Indeed, recent research has shown that older employees are more sensitive to their work environments than younger ones, being more likely to react negatively to misfits between their labour preferences and the perceived opportunities to fulfil them (Krumm, Grube, & Hertel, 2013). There is therefore a need to investigate the interaction between age and HR practices for a better understanding of the payoff such practices may have depending on workforce age composition (Armstrong-Stassen & Schlosser, 2011; Bal & De Lange, 2015; Göbel & Zwick, 2013; Kooij et al., 2013). Accordingly, we will continue by exploring the effect workforce age composition may have on the retention payoffs of two sets of HR initiatives, namely, HPWS and FWP, considered both separately and jointly.

2.2 | Workforce ageing, HPWS and retention rate

Over the past two decades, a large amount of evidence has shown the benefits for organisational effectiveness of so-called HPWS (Combs, Liu, Hall, & Ketchen, 2006; Jiang, Lepak, Hu, & Baer, 2012; Subramony, 2009). These are sets of HR practices that place greater value on employees as a source of competitive advantage, being typically associated with employers providing higher levels of skill-enhancing practices (e.g., selective staffing and training); motivation-enhancing practices (e.g., performance appraisal and incentives); and participation-enhancing practices (e.g., quality circles and disclosure of company information; Jiang et al., 2012).

We explain HPWS' performance effects here by drawing from the JD-R model. According to this model, management practices provide employees with demands and/or resources (Demerouti et al., 2001; Schaufeli & Bakker, 2004; Schaufeli & Taris, 2014). Demands are those aspects employees perceive in their job that may impair their experience of the workplace, such as increased time pressure or overexertion, whereas resources involve any job facet that may improve workplace experience and positively influence the level of their productive contributions (Schaufeli & Taris, 2014). HPWS are intended to provide employees with a number of resources, such as flexibility, job variety and involvement, which are highly valued by today's workforces. They do indeed promote more stimulating work environments and increase an employee's sense of worth (Wood, Van Veldhoven, Croon, & de Menezes, 2012), encouraging the workforce to deliver higher-level outputs. HPWS are thus associated with several organisational outcomes, including greater quality (e.g., Appelbaum, Bailey, Berg, & Kalleberg, 2000); productivity (e.g., Zatzick & Iverson, 2006); and profitability (e.g., Huselid, 1995).

However, HPWS also have a "dark side" (Jensen, Patel, & Messersmith, 2013; Van de Voorde, Paauwe, & Van Veldhoven, 2012), which involves the parallel demands they place on the workforce. Indeed, although employees under HPWS may experience a more interesting workplace, the message these systems send is one of increasingly higher performance (Kroon, Van de Voorde, & Van Veldhoven, 2009), with repercussions on employee health-related wellbeing. Ramsay, Scholarios, and Harley (2000) have found that HPWS may intensify job strain. Truss (2001) has likewise found that some HPWS practices are coupled with feelings of greater stress and work pressure, whereas White, Hill, McGovern, Mills, and Smeaton (2003) have related selected HPWS practices to a more negative interface between work and private life. More recently, Wood et al. (2012) and Jensen et al. (2013) have shown that HPWS are associated with higher degrees of employee anxiety.

Judging from HPWS research, such demands do not appear to be severe enough to increase employee turnover. Indeed, a significant body of research consistently reports a positive association between greater use of HPWS and workforce retention (e.g., Gardner et al., 2011; Guest et al., 2003; Hom et al., 2017; Jensen et al., 2013; Way, 2002; Yalabik, Chen, Lawler, & Kim, 2008). This evidence suggests that from the employees' perspective, the resources associated with HPWS (e.g., discretion, involvement and empowerment) exceed the demands of these systems (e.g., work overload, stress and longer working hours). Yet drawing such a conclusion for the workforce as a whole may be misguided, as reactions to HR practices may vary across different employee groups depending on how well the practices match their characteristics and priorities (Aselage & Eisenberger, 2003; Baron & Kreps, 1999; Guzzo & Noonan, 1994; Jensen & van de Voorde, 2016; Peccei et al., 2013).

We argue that the age-related needs and preferences highlighted in the previous section may adversely affect older workers' response to HPWS, resulting in the lower retention capacity of these systems for more ageing workforces. On the one hand, relative to their younger counterparts, older employees may be less willing to bear the demands of such systems. On the other hand, compared with younger employees, they may value HPWS' resources to a lesser extent. Beginning with HPWS-related demands, these may be associated with any one of the three categories of HR practices described earlier. As regards the first, skill-enhancing, older workers may be less enthusiastic about practices such as comprehensive training and development programmes. As with any learning experience, these practices require employees to process new knowledge and abilities and effectively integrate them into work processes. This is a demanding activity (Kanfer & Ackerman, 2004), and given the increasing constraints on their cognitive and physical resources, older employees may need more effort to leverage skill-enhancing initiatives (Warr, 2001). This may well decrease their predisposition toward learning and growth (Ng & Feldman, 2013; Warr & Birdi, 1998) and, accordingly, the appeal of training and development opportunities available at the workplace.

A similar analysis can be applied to HPWS' motivation-enhancing components. Older workers may have a less favourable view of practices such as economic incentives and performance assessment, which are the hallmarks of these systems (Huselid, 1995). In exchange for economic incentives, challenging performance standards are set, and a sustained effort toward their achievement is therefore required. However, ageing may hinder the delivery of a sustained high performance (Ng & Feldman, 2013). In fact, as mentioned, older workers tend to be more focused on maintaining, rather than improving, their current levels of performance (Zacher, 2015). Furthermore, because of their desire for more positive emotional experiences (Carstensen, 1991), older employees may tolerate less well the increased anxiety that motivation-enhancing initiatives tend to foster (Wood et al., 2012).

Finally, participation-enhancing practices associated with HPWS, such as job rotation, self-managed teams, or quality circles, may also be less readily received by older employees. The increased task variety (and hence job complexity) associated with these practices may again require additional exertion from older workers due to their cognitive and physical losses (Ng & Feldman, 2013). Older workers tend indeed to prefer well-defined job domains to optimise their resources and limit potential energy waste (Zaniboni, Truxillo, & Fraccaroli, 2013). Moreover, the greater pressure these practices place on employees to be proactive contributors may result in increased tension, anxiety and unease at work (Wood et al., 2012), which are emotional states inconsistent with older individuals' prioritisation of more positive psychological states (Carstensen, 1991; Ng & Feldman, 2013).

In turn, the resources HPWS provide seem to be more aligned with the interests of younger employees than with those of older ones. Thus, whereas skill-enhancing practices provide younger employees with growth opportunities with a long-term value, because of their shorter time horizon, older employees may find training and development policies less attractive (Lang & Carstensen, 2002; Warr & Birdi, 1998). Similarly, although younger employees may be lured by possibilities of promotion and the higher income associated with motivation-enhancing practices, these are less likely to appeal to older ones, either because their career perspectives are more limited (Ng & Feldman, 2013) or they give less importance to the performance feedback designed to improve their output and professional development (Findley, Giles, & Mossholder, 2000), or simply because they may have already reached the top of the ladder and have fewer financial concerns (Kanfer & Ackerman, 2004). Finally, whereas younger employees may welcome the participation-enhancing practices that allow gaining experience, developing a broad view of the organisation, and expanding their personal social network (Baron & Kreps, 1999), older ones tend to attach less value to this, given their lower expectations of advancement (Innocenti, Profili, & Sammarra, 2013; Kooij, Jansen, Dijkers, & De Lange, 2010) and their preference for dealing with colleagues they already know (Drabe et al., 2015) and value more (Fung et al., 2001).

In sum, although HPWS aim to create an appealing work context encouraging workforce attachment, employee preferences vary with age, with HPWS being best suited to younger workforces rather than older ones. Specifically, older employees may be less positive about the resources provided by HPWS and more adversely affected by the demands associated with these systems. Accordingly, the impact of HPWS on workforce retention may diminish in step with workforce ageing. We thus propose the following:

Hypothesis 1. *There will be an interaction between workforce ageing and HPWS, whereby HPWS will deliver lower retention outcomes with increased workforce ageing.*

2.3 | Workforce ageing, FWP's and retention rate

Similarly to HPWS, FWP's are another set of HR initiatives that may increase workplace appeal, especially for those employees faced with personal concerns that interfere with their work duties (Rau & Hyland, 2002). FWP's include a variety of practices such as part-time working, flexitime, compressed hours and teleworking (Heywood & Miller, 2014).

As opposed to HPWS, which may engender both demands and resources for employees, FWP's tend to be regarded in the literature mainly as triggers of resources. Consistent with the JD-R model, the notion underpinning the provision of FWP's is that increased flexibility on where and when to work may improve employees' overall workplace experience (CIPD, 2016), as individuals feel they have more control over their lives and can work in ways that better suit their idiosyncratic preferences (Scandura & Lankau, 1997). This increased autonomy can help employees to comply with their work duties, while allowing the development of other aspects of life (Hoeven & van Zoonen, 2015). Preference for FWP's tends to be influenced by perceived interfering needs (Rau & Hyland, 2002). Thus, the empirical evidence shows a positive association between FWP's and different employee-level outcomes, particularly for specific employee groups. For instance, FWP's tend to record stronger relationships with the organisational commitment, job satisfaction and work-family balance of employees with family responsibilities (Scandura & Lankau, 1997; Shockley & Allen, 2007). In turn, workplaces with more women tend to have less absenteeism (Heywood & Miller, 2014) and better retention outcomes with FWP's (Stirpe & Zárraga-Oberty, 2017).

The higher levels of autonomy provided by FWP's may constitute a particularly valuable resource for older employees. First, as mentioned in terms of motives, perceived time limitations may change older adults' priorities, with long-term relationships with family and significant others acquiring unrivalled importance (Carstensen, Fung, & Charles, 2003). FWP's can thus help these employees to continue working while upholding these priorities. Furthermore, some distinct concerns that commonly appear with age, such as looking after grandchildren or fulfilling family caregiving responsibilities, can be better addressed through job flexibility (Van Yperen & Wörtler, 2017). Second, older employees may find FWP's useful for dealing with needs arising from losses in physical and mental abilities. In particular, FWP's may enable older employees to better select and optimise the resources they need in their work, providing compensatory ways to sustain acceptable levels of performance (Bal & De Lange, 2015). For example, FWP's can help older employees to adapt their schedules to altered sleep patterns or adjust the pace at which they work (Freund & Baltes, 2002; Yeung & Fung, 2009).

The resources FWP's may provide for older employees are therefore relevant. Indeed, it has been suggested that FWP's may be used to motivate older employees to continue working during retirement (Bal, De Jong, Jansen, & Bakker, 2012), and interviews with older employees and retirees indicate that the availability of FWP's could influence their decision on whether or not to continue working (Shacklock, Fulop, & Hort, 2007).

In sum, following the JD-R model and based on older workers' specificity, the provision of FWP's may make the workplace more appealing to these workers. We therefore propose the following:

Hypothesis 2. *There will be an interaction between workforce ageing and FWP's, whereby FWP's will deliver higher retention outcomes with increased workforce ageing.*

2.4 | Workforce ageing, HPWS-FWP's combination and retention

Hypothesis 1 suggests that HPWS' retention payoff decreases with workforce ageing. We have proposed that this is partly due to a more unfavourable response among older employees to the demands associated with such systems. We therefore explore ways in which employers may mitigate older workers' exposure to HPWS-related demands, hence improving the sustainability of these systems in more ageing workplaces.

The JD-R model posits that certain resources available in the workplace may alleviate the negative impact of job demands on work experience (Bakker & Demerouti, 2007). Consistent with the arguments presented for Hypothesis 2, we contend that the resources associated with the provision of FWP in terms of the opportunity to determine one's working hours and location may deliver a potential buffer against HPWS-related demands, such as longer working time (White et al., 2003) and overexertion (Wood et al., 2012). This buffering effect may prevail more among older employees. First, as said, older workers are likely to perceive HPWS demands more negatively, thus having greater need to deal with them. Second, following the arguments for Hypothesis 2, older employees may also value FWP-related resources more positively, hence increasing the value of these programmes to counteract HPWS-related demands. Therefore, one may expect HPWS' retention capacity to improve in more ageing workplaces when these systems are accompanied with FWPs. Accordingly, we propose the following:

Hypothesis 3. *There will be an interaction between workforce ageing, HPWS and FWPs, whereby HPWS will deliver improved retention outcomes in more ageing workplaces when provided together with FWPs.*

3 | METHODOLOGY

3.1 | Data

This study uses data from the Workplace Employment Relations Study (WERS) 2011, a government-funded survey designed to provide representative data on a wide range of employment practices across the U.K. economy (see Wanrooy et al., 2013). Its unit of analysis is the workplace. The WERS Cross-Section Management Questionnaire, which is completed through face-to-face interviews with HR managers (response rate, 46.3%), provides the information required for testing our hypotheses. Following previous research (e.g., Huselid, 1995), we omitted workplaces with fewer than 100 employees, as they might lack formal HR procedures. The study sample therefore comprises 736 workplaces.

3.2 | Measures

3.2.1 | Retention rate

We focused on voluntary employee turnover, which becomes an issue when firms start losing potentially competent employees (Way, 2002). As in previous research (e.g., Gardner et al., 2011; Guest et al., 2003), we measured voluntary turnover as the proportion of employees leaving over the previous year relative to the total workforce at the beginning of the year. The retention rate was calculated as one minus this proportion. The skewness of the variable's distribution has been corrected, after adding 1.0 to the variable, via a natural log transformation.

3.2.2 | High-performance work systems

As mentioned, HPWS are generally associated with employers using three primary categories of HR policies and practices: (a) skill-enhancing; (b) motivation-enhancing; and (c) participation-enhancing (Jiang et al., 2012; Subramony, 2009). Our HPWS measure therefore includes specific practices belonging to these categories, chosen according to previous research. Thus, as in Combs et al. (2006), we adopted only those practices considered in at least five previous works (e.g., Datta, Guthrie, & Wright, 2005; Gardner et al., 2011; Guest et al., 2003; Huselid, 1995; Jensen et al., 2013; Way, 2002; Wood et al., 2012). Table 1 provides more detailed information on the 17 practices chosen. Consistent with the position held by Becker and Huselid (1998) regarding the need to measure the overall HR system, and like other studies (e.g., Datta et al., 2005; Guest et al., 2003; Jensen et al., 2013), we applied an additive index to measure the degree to which HPWS are used. To ensure the scales' comparability,

TABLE 1 High-performance work systems

Items	Scale
1. When filling vacancies for nonmanagerial positions, do you ever conduct any type of personality or attitude test?	Binary (0 = No; 1 = Yes)
2. When filling vacancies for nonmanagerial positions, do you ever conduct any type of performance or competency test?	Binary (0 = No; 1 = Yes)
3. What proportion of experienced workers in the largest occupational group have been given time off from their normal daily work duties to undertake training over the past 12 months?	Ordinal (0 = 0%; 7 = 100%)
4. What proportion of the largest occupational group of employees is formally trained to do jobs other than their own?	Ordinal (0 = 0%; 7 = 100%)
5. What proportion of nonmanagerial employees at this workplace have their performance formally appraised?	Ordinal (0 = 0%; 7 = 100%)
6. Is the individual pay of nonmanagerial employees linked to the outcome of the performance appraisal?	Binary (0 = No; 1 = Yes)
7. What proportion of nonmanagerial employees at this workplace has received profit-related pay in the past 12 months?	Ordinal (0 = 0%; 7 = 100%)
8. What proportion of nonmanagerial employees at this workplace participates in the employee share ownership scheme(s)?	Ordinal (0 = 0%; 7 = 100%)
9. What proportion of the largest occupational group of employees actually does jobs other than their own at least once a week?	Ordinal (0 = 0%; 7 = 100%)
10. Do you have problem-solving groups or continuous improvement groups of nonmanagerial employees that solve specific problems or discuss aspects of performance or quality?	Binary (0 = No; 1 = Yes)
11. What proportion of the largest occupational group of employees at this workplace works in formally designated teams?	Ordinal (0 = 0%; 7 = 100%)
12. Do line managers or supervisors have meetings with all the workers for whom they are responsible to discuss issues related to work organisation?	Binary (0 = No; 1 = Yes)
13. Does management use suggestion schemes to communicate or consult with employees?	Binary (0 = No; 1 = Yes)
14. Does management regularly give employees, or their representatives, any information about internal investment plans?	Binary (0 = No; 1 = Yes)
15. Does management regularly give employees, or their representatives, any information about the financial position of the establishment?	Binary (0 = No; 1 = Yes)
16. Does management regularly give employees, or their representatives, any information about staffing plans?	Binary (0 = No; 1 = Yes)
17. Have you or a third party conducted a formal survey of your employees' views or opinions during the past 2 years?	Binary (0 = No; 1 = Yes)

we standardised the items before adding them up. Although HPWS can be understood as formative indexes for which internal consistency is not essential (MacKenzie, Podsakoff, & Jarvis, 2005), Cronbach's alpha of 0.63 for our HPWS measure is comparable with that in other multi-industry HPWS studies (e.g., Guthrie, 2001; Huselid, 1995; Zatzick & Iverson, 2006).

3.2.3 | Provision of FWP

Following Bal and De Lange (2015), this construct was measured through an additive index capturing the degree to which employers are committed to meeting employees' potential needs in work flexibility. This involved seven binary items included in the WERS 2011, indicating whether common FWPs were available. The items are reported in Table 2. The index ranges from a minimum of zero (none of the programmes is available) to a maximum of seven (all are available). Item 7 in Table 2 was considered in light of the current trend for couples to delay parenthood (Henwood, Shirani, & Procter, 2011). Cronbach's alpha for our FWPs

TABLE 2 Flexible work programmes

Items	
1. Working at or from home during normal working hours	Binary (0 = No; 1 = Yes)
2. Flexi-time (i.e., an employee has no set start/finish time but agrees to work a set number of hours per week/month)	Binary (0 = No; 1 = Yes)
3. Job-sharing schemes (sharing a full-time job with another employee)	Binary (0 = No; 1 = Yes)
4. The ability to reduce working hours (e.g., switching from full- to part-time employment)	Binary (0 = No; 1 = Yes)
5. Compressed hours (i.e., working standard hours across fewer days)	Binary (0 = No; 1 = Yes)
6. The ability to change set working hours (including changing shift pattern)	Binary (0 = No; 1 = Yes)
7. Working only during school term times	Binary (0 = No; 1 = Yes)

index is 0.65. However, as with HPWS, this index is also formative, making internal consistency measures less relevant (MacKenzie et al., 2005).

3.2.4 | Workforce ageing

As in other studies (e.g., Armstrong-Stassen & Ursel, 2009; Göbel & Zwick, 2013), we measured the degree of workforce ageing through the proportion of employees aged 50 or over. Given the skewed nature of the variable's distribution, we performed a natural log transformation (after adding 1.0 to the variable).

3.2.5 | Control variables

We controlled for several variables that may impact on workforce retention (e.g., Guest et al., 2003; Huselid, 1995). Specifically, we included a set of 17 industry dummies. We also included dummies indicating whether the workplace belonged to the private sector; whether it was part of a larger organisation (1 = yes; 0 = no); the timetable (1 = it operates seven days a week; 0 = otherwise); trade union recognition (1 = unions are recognised for collective bargaining; 0 = otherwise); and whether it downsized in the previous year (1 = yes; 0 = no), as this may decrease "survivor" commitment and thus increase voluntary turnover (Zatzick & Iverson, 2006). Furthermore, we controlled for workplace size (measured as the logarithm of the headcount) and age (measured as the logarithm of the number of years it has been operating), and the proportion of turnover/operating costs accounted for by labour costs measured through a 4-point scale (1 = less than 25%; 4 = more than 75%). As gender may be associated with voluntary turnover (Griffeth, Hom, & Gaertner, 2000), we controlled for the proportion of women in the workplace (after adding 1.0 to the variable, a natural log transformation was used to correct the skewness of the variable's distribution). Finally, as there may be racial effects on turnover (Griffeth et al., 2000), we considered the proportion of employees from a non-White ethnic group as a control (here, too, skewness has been corrected as for the women variable).

As the data come from a single source (i.e., HR managers), there is a potential threat of common method variance (CMV), which is tempered because the items for our variables were derived from different sections of a 107-page questionnaire. To address this issue in more depth, we performed Harman's one-factor test on all the items (Fuller, Simmering, Atinc, Atinc, & Babin, 2016). We have extracted four factors accounting for 55.97% of the total variance, with the first factor explaining 21.53%. Hence, no single factor emerged, nor did any one factor account for most of the variance. These two conditions reduced the possibility of CMV being a major concern here. To further support this conclusion, we have also tested that a single factor measurement model does not fit the data well

($\chi^2 = 893.78$, degrees of freedom = 227, comparative fit index = 0.75, Tucker-Lewis index = 0.70, root mean square error of approximation = 0.05). However, because HPWS and FWP are formative constructs, confirmatory and exploratory factor analyses become nonessential (Bollen & Lennox, 1991). We used the Lindell and Whitney (2001) marker-variable method to complement our previous analyses by estimating the amount of inflation in correlations due to CMV. Accordingly, we selected an item from the WERS survey—one asking how much time the respondent spends managing employment relations in the organisation—as the marker variable, as it seemed theoretically unrelated to our dependent and independent variables. We then made a partial correlation adjustment to the bivariate correlations in our study using the CMV estimate. If the correlations that were originally statistically significant remained so after making the partial correlation adjustment, this would suggest the results could not be accounted for by CMV. In our case, all the significant correlations remained significant after the adjustment.

4 | RESULTS

Table 3 presents descriptive statistics for the study variables. HPWS, FWPs and workforce ageing are all positively associated with retention rate. The variables “subsidiary” and “downsizing” are not significantly associated with the dependent variable, so they were omitted from the subsequent analysis.

We used ordinary least squares regressions to test our hypotheses, with the analysis using interaction terms among the variables indicating HPWS, the degree of workforce ageing and FWPs. To avoid multicollinearity problems and facilitate the interpretation of regression coefficients, we first standardised these variables (Dawson, 2014). All variance inflation factor values in the regressions were lower than three, suggesting that multicollinearity effects did not influence the analysis.

Table 4 shows the results of the ordinary least squares regressions. Model 1 in Table 4 includes the controls only, whereas the independent variables have been progressively included in Models 2, 3 and 4. As shown in Model 4, and similarly to previous research (e.g., Guest et al., 2003; Jensen et al., 2013), we found a positive and significant relationship between HPWS and workforce retention. Consistent with other studies (e.g., Griffeth et al., 2000), we also found that workforce ageing is positively associated with retention in Models 2 through 4. Finally, we found a nonsignificant association between FWPs and retention, which is consistent with previous research showing that such programmes tend to have more noticeable effects when there is a more salient presence of employee groups that may benefit more from them (e.g., employees with household responsibilities; see, for instance, Heywood & Miller, 2014; Stirpe & Zárraga-Oberty, 2017). Model 5 then introduced the interaction between HPWS and workforce ageing. We found a negative and significant relationship between this two-way interaction and employee retention. This finding supports Hypothesis 1, whereby the retention payoff of HPWS diminishes as the workforce ages. Figure 1 includes the plots for lower and higher values of workforce ageing—using one standard deviation below and one above the mean (Dawson, 2014). The results of simple slope analyses reveal that the slope for higher values of workforce ageing is negative and nonsignificant ($b = -0.007$, standard error [SE] = 0.006, $p = 0.231$), whereas the slope is positive and significant for lower values ($b = 0.025$, SE = 0.006, $p = 0.000$). For higher values, the simple slope test becomes significant when calculated for one-and-a-half standard deviations above the mean ($b = -0.015$, SE = 0.007, $p = 0.041$), which suggests that the relationship between HPWS and retention may indeed become negative in more extreme cases of workforce ageing.

To test Hypothesis 2, Model 6 introduced the FWPs–workforce ageing interaction. We found a negative, though nonsignificant, association between this two-way interaction term and retention. The data do not therefore support Hypothesis 2.

Finally, Model 7 introduced the three-way interaction term among HPWS, workforce ageing and FWPs, alongside all three pairs of two-way interaction terms. The three-way interaction is negatively and significantly associated with retention rate. This finding is different to our third hypothesis. An employer's greater provision of

TABLE 3 Descriptive statistics and bivariate correlations

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Retention rate (ln)	4.53	0.11													
2. HPWS	0.04	6.36	0.09*												
3. FWPs	4.78	1.78	0.09*	0.17**											
4. Workforce ageing (ln)	3.24	0.60	0.26**	0.08*	0.16**										
5. Private sector	0.59	0.49	-0.20**	0.01	-0.38**	-0.24**									
6. Seven-day working	0.45	0.50	-0.14**	0.01	0.01	-0.04	0.07								
7. Firm size (ln)	6.11	1.12	0.08*	0.15**	0.45**	0.11**	-0.22**	0.17**							
8. Firm age (ln)	3.50	1.01	0.09*	-0.02	0.09*	0.19**	-0.17**	0.02	0.17**						
9. Subsidiary	0.82	0.38	0.02	0.23**	0.06	-0.03	-0.02	0.05	-0.04	-0.02					
10. Labour costs	2.78	1.04	0.14*	-0.14**	0.27**	0.12**	-0.49**	-0.04	0.12**	-0.06	-0.10**				
11. Unions	0.81	0.39	0.24**	0.16**	0.22**	0.41**	-0.38**	0.06	0.26**	0.09*	0.01	0.19**			
12. Downsizing	0.52	0.50	0.04	-0.02	0.21**	0.02	-0.02	-0.15**	0.22**	0.07*	-0.06	0.04	-0.01		
13. Proportion of women (ln)	3.73	0.75	-0.13**	0.07	0.33**	-0.04	-0.32**	0.04	0.11**	-0.04	-0.09*	0.30**	0.01	0.02	
14. Proportion of ethnic mins. (ln)	1.81	1.17	-0.14**	0.05	0.14**	0.10**	-0.02	0.12**	0.24**	-0.05	0.03	0.03	0.03	0.14**	0.23**

Note. FWPs: flexible work programmes; HPWS: high-performance work systems; SD: standard deviation.

* $p < 0.05$. ** $p < 0.01$.

TABLE 4 Results of regression analysis

Variables	Retention rate (ln)						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Industry dummies	Yes ^a	Yes	Yes	Yes	Yes	Yes	Yes
Seven-day working	-0.001	0.002	0.003	0.001	0.009	0.001	0.015
Firm size (ln)	0.031	0.031	0.019	0.014	0.023	0.020	0.026
Labour costs	0.072	0.073	0.072	0.080*	0.076	0.081*	0.087*
Unions	0.139**	0.099*	0.097*	0.085*	0.076	0.076*	0.067
Proportion of women (ln)	-0.066	-0.051	-0.053	-0.067	-0.076	-0.070	-0.084
Proportion of ethnic mins. (ln)	-0.077*	-0.069	-0.069	-0.072*	-0.083*	-0.072*	-0.083*
Private sector	-0.122*	-0.122**	-0.120*	-0.118*	-0.117*	-0.119*	-0.124*
Firm age (ln)	0.011	-0.006	-0.006	-0.002	-0.006	-0.007	-0.008
Workforce ageing (ln)		0.138***	0.135**	0.131**	0.086*	0.113**	0.086*
FWPs			0.033	0.020	0.008	0.016	0.019
HPWS				0.080*	0.076*	0.078*	0.102**
Workforce ageing × HPWS					-0.141***		-0.225***
Workforce ageing × FWPs						-0.050	-0.059
HPWS × FWPs							0.063
Workforce ageing × HPWS × FWPs							-0.161***
ΔR^2	0.215	0.014	0.001	0.005	0.017	0.002	0.018
Adjusted R^2	0.189	0.202	0.202	0.206	0.222	0.207	0.238
Change in F	8.146***	12.854***	0.575	4.523*	15.940***	0.177	5.927**

Note. FWPs: flexible work programmes; HPWS: high-performance work systems. $N = 736$ firms with 100 employees or more. Standardised coefficients are shown.

^aYes indicates that the 17 industry dummy variables were included within the model.

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

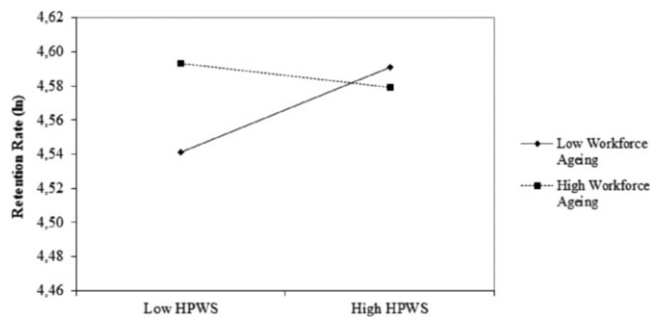


FIGURE 1 Effects of the interaction of workforce ageing and high-performance work systems (HPWS) on retention rate

HPWS, together with high levels of FWPs, appears to decrease retention in more ageing workplaces rather than increase it, so Hypothesis 3 is rejected. To further explore the nature of this interaction, we have produced plots for lower and higher values of workforce ageing in combination with higher and lower values of FWPs (Figure 2). To simplify the interpretation, we have also plotted the interaction effects for lower and higher values of workforce ageing—again using one standard deviation below and one above the mean. For each workforce ageing level, we have plotted the relationship between HPWS and retention for lower and higher levels of FWPs (Figures 3 and 4).

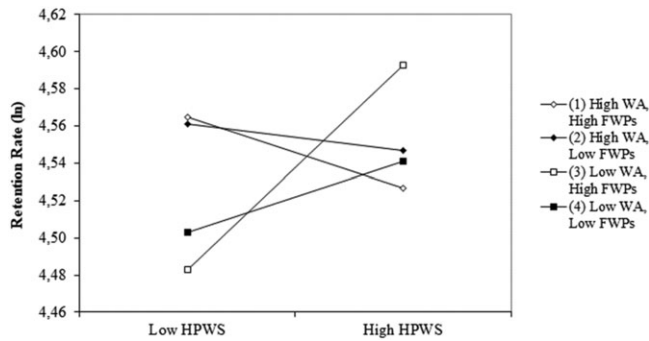


FIGURE 2 Effects of the interaction of workforce ageing (WA), high-performance work systems (HPWS) and flexible work programmes (FWPs) on retention rate

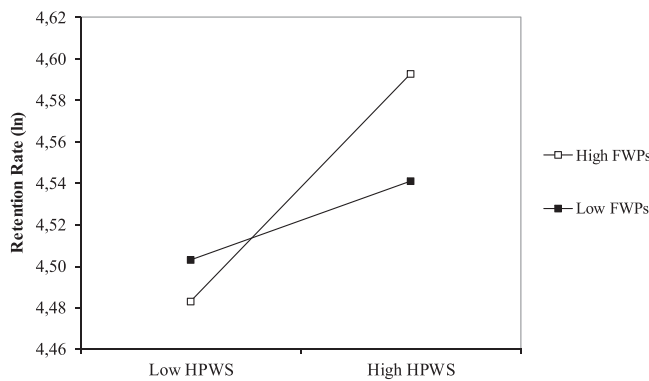


FIGURE 3 Effects of the interaction of high-performance work systems (HPWS) and flexible work programmes (FWPs) on retention rate for lower levels of workforce ageing

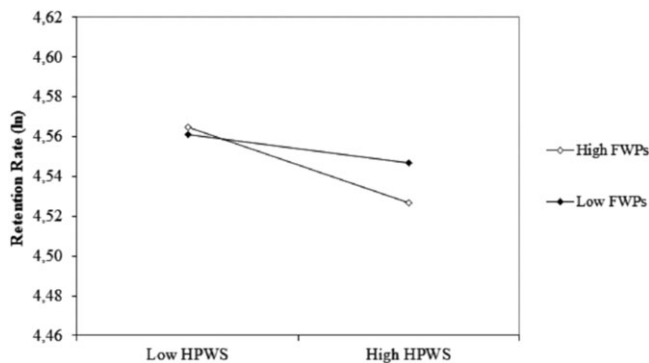


FIGURE 4 Effects of the interaction of high-performance work systems (HPWS) and flexible work programmes (FWPs) on retention rate for higher levels of workforce ageing

Finally, we have carried out a simple slope analysis for each regression line to test whether the slopes were significantly different to zero (Dawson, 2014). For lower values of workforce ageing (Figure 3), the relationship between HPWS and retention rate was positive and significant when coupled with both higher values of FWPs ($b = 0.055$, $SE = 0.010$, $p = 0.000$) and lower ones ($b = 0.019$, $SE = 0.006$, $p = 0.002$). In the case of higher values of workforce ageing (Figure 4), the relationship between HPWS and retention was negative and significant when coupled with

higher values of FWPs ($b = -0.019$, $SE = 0.009$, $p = 0.039$), and it was negative but nonsignificant when coupled with lower values of FWPs ($b = -0.007$, $SE = 0.007$, $p = 0.308$). In sum, these results suggest that HPWS always improve retention among younger workforces, with this relationship being stronger when coupled with FWPs. For older workforces, the use of HPWS does not increase retention, and even reduces it when coupled with FWPs.

5 | DISCUSSION AND CONCLUSIONS

With the mean age of workforces increasing in most industrialised countries, there is a growing need to identify the HR initiatives that may help to retain older workers and keep leveraging their talents. Accordingly, we have investigated here how HPWS and FWPs interact separately—and jointly—with workforce ageing to affect retention.

Our study shows that workforce age composition matters in the relationship between HPWS and retention. Specifically, although our analysis confirms that HPWS are valuable tools for retaining employees, their expected retention payoff changes as a function of workforce ageing. Although HPWS may increase the retention of younger workforces, this does not appear to be the case for older ones, where retention may even be impaired; hence, the conventional view that HPWS generate more appealing work environments, thereby reinforcing employee attachment to the firm (e.g., Appelbaum et al., 2000), does not seem to hold for older talent. Following the JD-R model, and on the basis of changes in older workers' preferences and abilities, we have argued that older employees will perceive HPWS-related resources less positively and HPWS-related demands more negatively than younger ones, thereby reducing the appeal of HPWS for ageing workforces, and hence their retention potential.

Our findings have theoretical implications. First, although the JD-R model has been used largely to predict the employee-level outcomes of management practices, this study is among the first to use this model to explain an outcome at workplace level. The JD-R viewpoint has allowed us to theorise on the differential meaning different employee age groups in the workplace may attach to HPWS-related resources and demands, with a significant impact on aggregate retention. By so doing, we also contribute to the literature on the “dark side” of HPWS (e.g., Jensen et al., 2013) by suggesting that not all employees experience HPWS-related resources and demands in a similar way. It thus seems necessary to consider the employee age profile for a better understanding of the effects HPWS may have on workforce well-being. Second, and relatedly, the study responds to the call made by Hom et al. (2017) for more fine-grained predictions about the value well-established retention tools, such as HPWS, have across different ranges of workforce populations. Our findings support the contingency view of the meaning of HPWS (e.g., Zatzick & Iverson, 2006) and provide further insights into the organisational circumstances under which these systems may constitute effective initiatives for managing the workforce. Although previous research has analysed several firm-level moderators of the effectiveness of HPWS, such as firm size (Way, 2002) and industry (Datta et al., 2005), our study is one of the first to specifically investigate a workforce characteristic (i.e., age composition) that impinges upon a particular outcome (i.e., retention).

An additional finding here is related to the FWPs-retention link in more ageing workplaces. Following the JD-R model, we have posited that FWPs provide older employees with helpful resources to accommodate declines in their cognitive and physical abilities, as well as changes in their priorities, whereby more ageing workplaces with more extensive FWPs record improved retention outcomes. However, our empirical analysis does not support these arguments, as we found a nonsignificant association between FWPs and employee retention in more ageing workplaces. There are several possible explanations for this unexpected result—even if they are necessarily speculative at this point. First, although FWPs may provide employees with the resources they need for their jobs, there is some evidence to suggest that FWPs may also inadvertently bring attached demands. For example, the use of FWPs—especially when coupled with new communication technologies—may increase the likelihood of disruptions and unpredictable work developments (Hoeven & van Zoonen, 2015). Furthermore, and paradoxically, FWPs may sometimes lead to work intensification (Kelliher & Anderson, 2010), in terms of the time and effort invested. Older employees may find these added demands particularly taxing, hence reducing FWPs' value. Second, although the

FWPs included in the WERS 2011 are generic; gender neutral; and, in principle, open to all employees, FWPs are often perceived “as being developed for, and aimed at, women” (McDonald, Pini, & Bradley, 2007, p. 604). The fact that such programmes may be perceived as not explicitly targeting older employees is an important issue. Indeed, HR initiatives designed to support specific employee groups are more likely to be successful when employees perceive they have been tailored to meet their distinctive condition and desires (Aselage & Eisenberger, 2003; Baron & Kreps, 1999; Darcy, McCarthy, Hill, & Grady, 2012). Finally, there might also be a generational bias toward FWPs. Indeed, it is not only age that affects the employee experience but also specific generational work values (Parry & Urwin, 2011). Compared with younger generations, older generations, such as baby boomers, have socialised with more traditional work practices and tend to give more value to loyalty (D’Amato & Herzfeldt, 2008); team orientation (Sirias, Karp, & Brotherton, 2007); and presenteeism (Bierla, Huver, & Richard, 2013). Earlier generations may therefore consider that FWPs contradict this work ethic. Recent findings concur, reporting that Generation Y and millennials value flexible work options more than earlier generations (Ernst and Young, 2015). Despite the benefits FWPs could bring to older employees, deep-seated generational values and beliefs may prevent them from perceiving FWPs more positively and taking advantage of them.

We have also explored whether FWPs could improve HPWS retention payoff in more ageing workplaces, considering they may temper HPWS-related demands for older employees. However, differently from our expectations, HPWS in more ageing workplaces record a lower retention payoff when coupled with FWPs. This finding seems consistent with the results obtained for Hypotheses 1 and 2, with negative associations for both HPWS and FWPs (though nonsignificant for FWPs). Again, different explanations are plausible. Consistent with our previous argument on FWP-related demands, when combined with HPWS, these programmes may help to further increase the typical work intensification that one may experience under HPWS rather than reduce it, which may become particularly detrimental to older employees due to their needs and inclinations. An additional explanation can be found in the role played by generational values. By virtue of their traditional work ethic, earlier generations may see FWPs as difficult to reconcile with the greater participation levels associated with HPWS. In their view, working a flexible schedule might suggest they are detached and uncommitted, precisely when employee involvement and commitment are key assets to the employer. This perceived dissonance may further reduce workplace appeal.

From a practical viewpoint, our findings advise caution when deploying HPWS as talent retention instruments in more ageing workplaces, where their reduced payoff may hinder the recovery of the high implementation and administration costs incurred (Appelbaum et al., 2000). As Figure 1 shows, HPWS may even compromise retention, with the loss of firm-specific human and social capital, the disruption of work operations, and the impairment of production quality and sales levels (Griffeth et al., 2000). These consequences may be particularly severe due to older workers' accumulated knowledge and experience. At a broader level, our findings predict a rather challenging future for employers. Despite potential contextual moderators of their effectiveness, HPWS remain significant ingredients of organisational performance, as shown by meta-analytic investigations (e.g., Jiang et al., 2012). They are typically regarded as “best HR practices.” However, our study suggests that as the workforce steadily ages, HPWS may become a less attractive approach, at least for employee retention; that is, what may currently be leveraged as a source of talent retention (i.e., HPWS) may in the future become an unfavourable option due to irreversible workforce ageing. More research on age-responsive HR strategies is therefore needed.

Additional evidence that may be relevant to employers concerns the scarce value “standard” FWPs may have for retaining ageing workforces, especially when combined with HPWS. Along with previous studies (e.g., Darcy et al., 2012), our data may actually indicate that the “one-size-fits-all” approach to the use of FWPs may be ineffective in terms of meeting the concerns of specific employee groups, such as older workers. Employers may need to pay more attention to the design and presentation of such programmes to prompt older workers to perceive they have been tailored to their distinctive needs (Baron & Kreps, 1999). This could also attenuate the potential generational bias toward nontraditional work programmes. Furthermore, as recently argued by Damman (2016), employers may need to evaluate the convenience of FWPs for older employees based on the latter's current psychological and physical health, as well as on their need for autonomy, structure and engagement. Diversity among older employees may

indeed make FWPs significant for some, but not for all. Such suggestions require empirical support and may well underpin future research. In any case, our findings call for caution over optimistic views about the role FWPs may play in increasing workplace appeal for older employees (e.g., Dropkin, Moline, Kim, & Gold, 2016; Shacklock et al., 2007).

This research also has its limitations. First, our analysis cannot be extrapolated to managers because the data in WERS 2011 refer to nonmanagerial workers. The professional status of older employees may indeed intervene in the relationships explored. Second, alternative explanations to our findings may exist. In particular, older employees may be the victims of their supervisors' stereotypical views, which may limit their access to HR policies (Maurer, Wrenn, & Weiss, 2003). Hence, such employees may not be equally exposed to HPWS and/or FWPs, which may affect the observed retention payoff for these initiatives. Third, the cross-sectional nature of the data calls for caution when interpreting causal relationships, as there may be issues of potential reverse causality between our dependent and independent variables. Finally, another limitation is that this research cannot be extrapolated to workplaces in every country because HPWS and FWPs may prompt different outcomes across cultures (Bonache, Trullen, & Sanchez, 2012; Masuda et al., 2012), whereby the meaning of their interactions with workforce ageing may also be culturally variable.

Future research may address these issues and extend our analysis by including other outcome measures besides retention rate, such as quality or sales, where HPWS may have a greater impact in more ageing workplaces. These effects could compensate, or even overcome, the negative ones on retention, whereby HPWS record a net positive value even in more ageing workplaces. Future research could delve further into the effect of HPWS and FWPs on specific attitudinal-level outcomes of older employees (e.g., commitment) and the mediating role they play in the relationship these HR initiatives have with older employees' exit behaviours. Moreover, as mentioned, future research may also investigate the retention payoff of FWPs more tailored to suit older workers, and also whether the appeal these programmes have for older employees may be affected by generational work values. Furthermore, it should be explored whether our findings vary across industries (e.g., low- vs. high-human capital intensity) and whether they are affected by employment relationship quality (e.g., in terms of employee-supervisor trust level; Van Yperen and Wörtler, 2017). Finally, because there may be heterogeneity among older workers (Damman, 2016), an intriguing field for future research would be to explore the role that older workers' specificities in terms of psychological and social traits play in the relationships addressed here.

In sum, our study suggests that effectively managing an ageing workforce seems to be easier said than done. Although there is a great deal of work to be done if we are to fully understand how best to address this challenge, we trust that our findings will prompt further academic work and contribute to managerial decision making.

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CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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