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How are work requirements and environments evolving and what will be the impact of this on individuals who will reach 65 in 2025 and 2040?

Future of an ageing population: evidence review

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How are work requirements and environments evolving and what will be the impact of this on individuals who will reach 65 in 2025 and 2040?

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Executive summary

An ageing population and workforce bring both challenges and opportunities to employers. Consideration of these, alongside changing work requirements and environments, is needed to aid understanding and organisational planning. This Evidence Review focuses on the ageing workforce, how organisations are reacting (or not) to this, and what the likely impact of workforce demographics and organisational changes will be on older individuals in the future, i.e. those reaching age 65 in 2025 and 2040. The review presents existing research evidence and covers four broad areas: changing institutional arrangements, work environments, employer attitudes, and older workers' capacity to work. Evidence gaps and areas where limited evidence exists are identified.

The attitudes of older individuals to work can be expected to change between 2025 and 2040. Workers retiring in 10 years' time have spent the majority of their working lives with the expectation of retiring at approximately 65, and will be more likely to expect a 'main' career with a steady rise up the career ladder before retirement. However individuals aged 65 in 2040 will be more accepting of the need to work to an older age, and the possibility they may need to move between jobs and roles and to acquire new skills throughout their career.

The outlook for older workers in 10 and 25 years' time is drawn from the evidence presented and summarised at the start of each review area. Change, particularly in relation to attitudes and workplace practices, is likely to be gradual. Given this, it is expected that workers aged 65 in 10 years' time will have experiences similar to those detailed by the evidence in this review, whereas workers aged 65 in 25 years' time are likely to have different work attitudes and will be exposed to a different work 'reality' as practices and attitudes towards older workers change.

Although not exhaustive, the following points summarise the outlook for older workers:

- Older workers will increasingly be protected against age discrimination by policies and practices.
- There will be increasing older worker demand for part-time and flexible work.
- Training demand will increase to enable workers to have skills relevant to changing work environments.
- The trend towards reduced manual and increased people work will continue. Older workers have the skills needed for such work but may be deterred by low pay.
- Stereotypes change slowly and older workers may continue to be negatively affected in the near future. Over time, however, increased positive older worker information, and demographic change, should begin to challenge and reduce negative stereotypes.
- Uncertainty relating to changes to retirement practice will reduce over time. By 2040 retirement decisions should be driven by employee choice, or be performance-related, and be less influenced by expectations of a 'normal' retirement age.

I. Introduction

The UK population aged over 65 rose from 15% in 1985 to 17% in 2010 and is predicted to continue to rise (Office for National Statistics, 2012a). Men/women aged 65 can expect to live another 18.3/20.8 years (Office for National Statistics, 2014a). One outcome of such changes is the need to encourage workforce involvement to older ages, as evidenced by changes to pension income and the rising state pension age, which will influence whether or not older age employment is a financial necessity. However, researchers and policymakers have only recently begun to take an interest in older age working, meaning evidence is relatively scarce. Furthermore, the rapid change in the workforce age profile and population may mean that research findings from 10 years ago could be unreliable in terms of guiding current attitudes and behaviour (McNair *et al.*, 2012). A review of existing advice and evidence is therefore timely. This review covers four areas: (i) changing institutional arrangements; (ii) work environments; (iii) employer attitudes; and (iv) older workers' capacity to work. Given the contention above that rapid change may reduce the usefulness of prior research findings, research is needed in all these areas. Nevertheless, a broad distinction is attempted between 'evidence gaps' and areas where there is 'limited evidence'.

Labour market involvement varies across cohorts, especially for women, and yet much of the research is 'gender blind' and fails to report gender differences. There is a likely interaction between gender and age and evidence suggests issues facing the older workforce may affect women more negatively. There are now more women than men over state pension age and women are more likely to work part-time and hold low-status positions, and there remains a significant gender gap in employment and pay (Cory, 2012). There are also issues relating to informal caring that can influence decisions to exit the workforce, which are arguably more likely to affect women than men.

Limited evidence: There should be increased focus and reporting on gender differences. How will gender employment rates change over time? How will different treatment across genders affect older worker employment rates? What are the gender-related barriers (e.g. caring) affecting older individual employment and how will these change over time?

There also appears to be little understanding of how other demographic variables, such as disability and ethnicity, may interact in terms of the issues discussed in this report.

Evidence gap: How do other demographic variables (e.g. disability and ethnicity) interact with age and what effect does this have on employees and workplaces?

There is a lack of agreement on what constitutes an 'older worker', with workers considered 'older' at ages ranging from 28 to 75 years (McCarthy *et al.*, 2014). This review focuses on workers at or above age 65 but draws on research evidence that has conceptualised older at a variety of ages.

Limited evidence: There is a need to consider what defines an 'older worker' to allow greater comparison across sectors, occupations and evidence sources. Longitudinal and long-term research is needed to disentangle generational and ageing effects (Scheibe and Zacher, 2013).

2. Changing institutional arrangements

Outlook: Decreasing public sector work will continue to affect older workers, who in general will increasingly need to move between jobs to stay in employment. By 2040 individuals will be more informed and accepting of working to older ages, and the possibility of needing to move between jobs, although older workers reaching 65 in 2025 may be more resistant to this. There will be a steady increase in training demand to enable workers to have skills relevant to changing work environments. Workers will be differentially affected across UK regions, and training and support will need to be targeted as appropriate. Appropriate occupational health provision should increase over time in SMEs if the Government Health and Work service proves successful.

2.1 Employment and labour market patterns

In Europe employment rates of older workers have increased (Eurostat, 2014) and the trend for 'over 65s' to work in the UK is continuing, despite the economic recession (Office for National Statistics, 2013). The number of people of state pension age and in employment has almost doubled since 1993 and is at an all-time high (Office for National Statistics, 2012b). It is expected that this growth will continue, in part due to changing pension entitlement designed to encourage older age working.

The nature of work varies with age and gender, and changes in employment patterns will affect the type of work available to older workers. It is evident that individuals may change their expectations of work as they age, for example part-time employment and self-employment is more common among older age groups (Cory, 2012). Older worker preference for part-time work is discussed later in the Evidence Review but could fit well with the trend for the labour market to become more flexible (Office for National Statistics, 2012a).

Older workers often work in local, low-skilled jobs regardless of former skill levels (Health and Safety Executive, 2011), which means pay may decrease with age. After age 60 the majority of employees are in low-skilled work, a large minority are in high-skilled work, and there is an increase in employment in the service sector (McNair, 2010).

Between 2010 and 2020 employment growth is expected in private services, and higher-skilled, white collar occupations, including managers, professionals and associate professional roles. This trend will probably continue after 2020. Declines are predicted in skilled and semi-skilled manual roles, and administrative and secretarial occupations. Low-skilled jobs will remain a significant component of the labour market (UK Commission for Employment and Skills, 2012). Older workers have differing employment rates across industries (Department for Work and Pensions, 2015) and are therefore likely to be differently affected. For example, projected falls in public sector employment are thought to affect older workers more than other age groups (Cory, 2012).

There is a risk that older workers are seen as employable only for 'peripheral jobs' (dead-end jobs requiring few skills, offering poor wages, fewer benefits, and low job security) rather than 'core jobs' (good jobs requiring high skills, offering decent wages and supporting training) (Billet *et al.*, 2011). Training is needed to help older workers move between jobs (Department for Business, Innovation & Skills, 2010a), and to have the flexible and adaptable skills needed to match changing work environments (Health and Safety Executive, 2011).

Evidence for changing employment and labour market patterns includes:

- Men and women are increasingly working beyond age 65. From 1996 to 2011 the percentage of men aged over 65 and working rose from just over 7% to around 11.5%, and the percentage of women rose from 3% to just over 6% (Beers, 2014).
- Between 2001 and 2013 the employment rate of workers aged 50 to 64 increased from 62% to 67%. Workers aged 65 and over increased from 5% to almost 10% (Office for National Statistics, 2013).
- Workers over state pension age are more likely to work part-time compared to full-time (Office for National Statistics, 2012c).
- Work is changing, with increased internationalisation, new technologies, increased flexibility and new working practices (Koukoulaki, 2010).
- A fall of around 11% is predicted in administrative and secretarial occupations by 2020, largely due to the impact of workplace technology (UK Commission for Employment and Skills, 2012).
- Increases in service sector jobs and decreases in manufacturing jobs are evident (Clancy, 2009).

Limited evidence: What type of training is suitable to ensure older workers have the skills to match changing work environments?

Evidence gap: Can older workers' preference for part-time work meet the desire of employers to have a flexible workforce?

2.2 Regional variations

There are regional variations in health and life expectancy. For example life expectancy for men at age 65 is highest in Harrow (20.9 years) and lowest in Glasgow City (14.9 years). For women it is highest in Camden (23.8 years) and again lowest in Glasgow City (18.3 years) (Office for National Statistics, 2014b).

Limited evidence: How will health and life expectancy variations affect employment trends across different UK regions?

There are also employment rate variations across the UK. London and the South East have the highest percentage of people aged above state pension age in employment, and the North East has the lowest (Office for National Statistics, 2012b). High older worker employment rates in London may reflect the higher cost of living, greater availability of jobs, and wider job variety, which could incentivise people to remain in work beyond state retirement age. There also appears to be a drift out of London after retirement so the older individuals remaining are likely to be working (Office for National Statistics, 2012b).

Other regional differences include more employment opportunities anticipated in southern England than the devolved nations and northern England, due to more rapid employment growth (half of the growth of employment in higher-level occupations is expected to occur in London, South-East England and the East of England) (UK Commission for Employment and

Skills, 2012). Employment type also varies between UK regions. For example, highest self-employment levels are in Southern and Eastern regions, and the lowest in the North East and North West. Given the desire for self-employment by some older workers (Cory, 2012), these regional differences may be partly explained by older workers.

Changes in traditional industries, such as the decline of heavy industry, are also likely to disparately affect older workers across regions. Older workers may be skilled in declining or obsolete industries, and therefore face higher levels of unemployment and inactivity in some parts of the country (Cory, 2012).

Evidence for regional variations includes:

- In 2010 the highest rate of employment of people aged 50 to 64 was in the South of England (70.2%), and the lowest in Northern Ireland (55.3%). Scotland's rate was 63.3% and Wales 58.3%. Self-employment incidences increase with age (Department for Work and Pensions, 2010).
- Private sector employment growth is more strongly concentrated in London and South-East England, with other areas excessively dependent on public sector employment (UK Commission for Employment and Skills, 2012).
- The level of regional variation in employment levels for people aged 50 to state pension age is more than twice that of younger workers (Cory, 2012).
- The UK Commission for Employment and Skills (2012) outline the prospects for the UK labour market (2010 to 2020), presenting data for the devolved nations and regions of England.

Limited evidence: How do regional employment trends and opportunities influence older workers' involvement in the labour market?

Evidence gap: Can regionally specific training be helpful in terms of facilitating older worker employment?

2.3 SMEs

The number of SMEs is increasing and they account for 99.9% of private sector businesses, employing an estimated 14.4 million people. Much of this is due to an increase in the number of businesses without employees, which may be explained by the economic downturn encouraging people to set up businesses after redundancy (Department for Business, Innovation & Skills, 2013). More older workers (32%) are self-employed than younger workers (13%) (Office for National Statistics, 2012b), which may contribute to this. In addition there are more older workers in SMEs, although this is due to workers remaining and ageing within small firms rather than recruitment of older workers (McNair *et al.*, 2012).

Age demographics in SMEs are complex and although older workers form a large proportion of employees, the majority of firms employ no older workers (McNair *et al.*, 2012). Just above half of older workers work in small firms of less than 25 employees. One possible explanation for this is that smaller firms were less likely to offer workplace pensions than larger organisations, which meant workers stayed longer for financial reasons (Office for National Statistics, 2012b), although this may change now all employees must be enrolled in workplace pensions.

Smaller firms are less likely to have policies and practices against age discrimination and equal opportunity policies than larger organisations (Metcalf and Meadows, 2010). They also lack resources and the scale to implement major health initiatives and provide occupational health support (McNair *et al.*, 2012). The Government Health and Work service, where employees will be referred to an occupational health professional via their doctor following 4 weeks of sickness absence, should help to address this (Department for Work and Pensions, 2014).

Evidence gaps: What will be the impact of the introduction of compulsory workplace pensions? What will be the impact of a Government Health and Work service on older workers?

Training levels in SMEs are lower than in large organisations. Furthermore, training is often informal and does not lead to formal qualifications (McNair *et al.*, 2012). This can restrict job movement, with older workers not holding relevant qualifications despite expertise.

Evidence for SMEs includes:

- More larger, and fewer smaller, establishments monitor the age profile of their workforce (Metcalf and Meadows, 2010).
- Negative older worker attitudes and practice are seen in SMEs, although both negative and positive age stereotypes can coexist. Negative stereotypes can damage the perceived economic value of older workers (Fuertes *et al.*, 2013).
- HR expertise is not usually available internally in SMEs, meaning they tend to rely more on external sources of advice, information and support (ACAS, 2012).
- Smaller businesses are more likely to take an informal approach to continuing vocational training (CEDEFOP, 2010).
- Recruitment practices in SMEs may limit opportunities for older workers (Kitching, 2006).
- Flexible working in small businesses may be informal rather than strategic, and can have operational and administrative challenges (Maxwell *et al.*, 2007).

3. Changing work environments

Outlook: It is expected the trend for less manual work and more ‘people’ work will continue, which will match older worker skill sets well, and mean less negative impact of physical work on health. However, low pay may deter some older workers from entering the service sector. The predicted growth of information and communication technologies will influence the jobs available and skills required in the future.

Over the next 25 years older workers should increasingly be protected by policies and practices against age discrimination, particularly in SMEs and the private sector, who are managing this less successfully at the moment but can be predicted to catch up over time.

Increasing demand for part-time and flexible work will need to be met by employers to retain workers. However without the provision of support to SMEs in this regard it can be predicted that older workers in SMEs will continue to have fewer opportunities in this area.

3.1 Work requirements and job characteristics

The last few decades have seen a decline in traditional industries, with older workers most affected by this (Cory, 2012), and reductions in skilled and semi-skilled manual roles are predicted (UK Commission for Employment and Skills, 2012). A shift is evident from manufacturing to service industries, with increasing service sector employment expected to continue alongside increases in skilled and white-collar occupations (UK Commission for Employment and Skills, 2012). Such changes mean less heavy manual work and more work involving people skills, which should protect employment prospects for the older cohort to some extent as older workers typically have the skills needed for the service sector. Less heavy manual work also means a likely reduction in the negative physical impact of work on employee health. While the potential psychological health impacts of ‘people work’ such as burnout should not be ignored, there is evidence that older workers are better equipped to deal with such demands and have fewer negative health outcomes (Johnson *et al.*, 2013). Increased people work may also align well with older workers’ intrinsic job satisfaction (Bertolino *et al.*, 2013).

The continued growth of information and communication technologies will probably influence the jobs available and skills required in the future, which links to training requirements mentioned in Section 2.1.

Evidence for older worker service sector skills includes:

- Ng and Feldman (2010) report that older workers experience fewer problems with burnout.
- Age is related to the experience of fewer customer confrontations, meaning older workers are less exposed to negative customer behaviours than younger workers (e.g. Johnson *et al.*, 2013).
- Urry and Gross (2010) and Charles and Carstensen (2010) detail how emotion regulation develops and is modified across the lifespan, with increased emotional control and variability in emotion regulation with age.

- The association of age with emotional competence, and the motivation to avoid or limit negative or high arousal situations, is attributed to a shift in priorities as time is perceived to be more limited as people age, and to possible declines in physiological flexibility and cognition (Scheibe and Zacher, 2013).
- In a work-based study, Johnson *et al.* (2013) report that older workers have better emotion control when faced with customer stressors.

3.2 HR and diversity practices

Age-related practices differ between organisations, sectors and job roles. Some organisations have adopted life-phase oriented HR management to reduce age discrimination and increase employee motivation, but HR management is still often characterised by discrimination of older workers (Schröder *et al.*, 2014). Positive managerial attitudes to older workers, a focus on HR management, and moral obligation to combat early retirement, increase the likelihood of organisations having active ageing policies. SMEs are less likely to have age-related policies, and examples of good practice age management policies and practices in SMEs are needed (Fuertes *et al.*, 2013). This is a concern given the larger proportion of older workers in SMEs. It is possible, however, that the nature of SMEs allows greater opportunity for idiosyncratic deals with employees in the absence of such policies. Overall there is an increase in age-related policies and practices but small firms and the private sector need to improve (Metcalf and Meadows, 2010; Fuertes *et al.*, 2013). Sectoral differences are evident, such as manufacturing being behind other sectors (McNair *et al.*, 2012).

Limited evidence: What proportion of older workers is protected/motivated/retained by age-related policies and how does this differ by occupation and organisational size?

Line managers are key to supporting organisational age policies and practices (McCarthy *et al.*, 2014) and a lack of awareness or concern for organisational policies can hinder their implementation (Schröder *et al.*, 2014). Time restraints can also negatively affect good practice.

Limited evidence: What is the gap between formal policies and implemented practices regarding age? What training is available, and useful, to managers to assist good practice in age policies and practices?

Evidence for older worker HR and diversity practices includes:

- Managers are central to their organisational culture and the support of age-neutral policies and practices (Leisink and Knies, 2011).
- The survey of line managers by Leisink and Knies (2011) found no evidence that line manager social support was influenced by negative older worker stereotypes.
- The likelihood that a company will have an active ageing policy is increased by management having positive attitudes towards older workers, a HR management focus, and feeling morally obliged to combat early retirement (Midtsundstad, 2011).
- Discrimination of older workers is evident in the UK despite the existence of age discrimination laws (Dewhurst, 2015).

- There can be a lack of awareness or concern from line managers with regard to age and work HR policies (Flynn, 2010).
- Older workers can be hindered in access to development opportunities and advancements (Billet *et al.*, 2011).

3.3 Working patterns

Workers over state pension age tend to work fewer hours and are twice as likely to be working part-time as full-time (Office for National Statistics, 2012b). This trend for part-time work has protected older workers somewhat in the recession as part-time roles have grown (Cory, 2012). However, there is demand for greater flexibility at work, indicating more can be done to meet employee needs in this area (Department for Work and Pensions, 2013).

The right to request flexible working was extended to all employees in June 2014 (Department for Work and Pensions, 2014), in theory enabling people to change working patterns. Employers typically report being happy to allow reduced working hours, especially as people approach retirement (Department for Business, Innovation & Skills, 2010b). However, there are occupational and organisational size differences in the availability of flexible working. For example, small businesses can struggle with requests for flexible working and may need more government help to enable them to design and support flexible jobs. Also, during recruitment few employers offer flexible working, therefore potentially excluding older people from entering the workforce (Brooks, 2011).

Sectoral differences in flexible working are evident. Retail, health and social care, and the voluntary sector commonly have some form of flexibility, but it is less widespread in manufacturing and construction (McNair *et al.*, 2012). Many part-time or flexible working opportunities are restricted to lower-paid occupations (Smeaton *et al.*, 2010), and are more likely to be held by women (Health and Safety Executive, 2011).

Evidence gaps: What assistance can be given to SMEs to aid flexible and part-time work provision?

Limited evidence: How does flexible and part-time work differ across sectors? How does this interact with the age composition of workforces?

Flexible working, and its importance to older workers, is reported repeatedly in the literature (Department for Business, Innovation & Skills, 2010b; Department for Work and Pensions, 2011, 2013; Health and Safety Executive, 2011). The proposed advantages of flexible work are numerous, e.g. increased productivity and an improved work–life balance (Brooks, 2011), although flexible working is not necessarily linked to positive outcomes in the research literature (Armstrong-Stassen and Ursel, 2009).

Limited evidence: How will flexible working affect work outcomes (e.g. job satisfaction, commitment, intentions to leave)? What factors will influence older worker involvement in flexible working?

Evidence relating to flexible and part-time working includes:

- Around 60% of workers over 50 wanted to work part-time past pension age; 40% wanted more flexible working hours (Department for Work and Pensions, 2013).

- Half of 60–69 year olds are already working reduced hours, or plan to reduce working hours as they prepare for retirement (Office for National Statistics, 2012b).
- The desire of older workers to work beyond age 65 increased from 35% to 56% with the hypothetical offer of flexible working (Department for Business, Innovation & Skills, 2010b).
- Flexible and part-time working can help older workers with caring and domestic responsibilities, and those managing long-term health problems (Griffiths *et al.*, 2009).
- Phased retirement options involving flexible working are described as limited and restricted to high-skill and high-value workers (Cory, 2012).
- Despite the above, Armstrong-Stassen and Ursel (2009) found no link between older worker flexible work options and perceived organisational support.

4. Attitudes towards older workers

Outlook: Attitudes towards, and stereotypes of, older workers can be expected to continue to negatively affect older workers in the immediate future, for example in terms of recruitment and training opportunities. By 2040, however, the expanding information available on the positive aspects of older worker employment, alongside changing workforce demographics, will begin to change misplaced negative assumptions. This means workers aged 65 in 2040 should be impacted less negatively than workers aged 65 in 2025.

The negative effects of recruitment practices, such as the use of online recruitment tools on older job applicants, should diminish over time as older cohorts in the future will be more familiar with such tools.

Changes to retirement practice will bring increased opportunities for older workers to remain in the workplace. The uncertainty surrounding retirement evident in workplaces at the moment should decrease by 2025. By 2040 retirement decisions should be based on the choices and performance of older workers and be less driven by existing workplace norms than is currently the case. The change in attitudes should facilitate this also.

4.1 Recruitment and training

The Department for Work and Pensions (2013) reports numerous benefits of older worker employment but attitudes do not always reflect this. Negative practices are evident in recruitment, retention and training; attitudes can, however, be more positive if employers already have experience of older workers (Department for Business, Innovation & Skills, 2010b).

Ten per cent of establishments report that age affected selection in 2010 (Metcalf and Meadows, 2010), but evidence on recruitment practice is mixed. Most employers attempt to eliminate formal age discrimination, but this does not increase recruitment levels of older people, possibly due to indirect discrimination from line managers. Discrimination in recruitment means that older people are less likely to find work, and a high proportion of older jobseekers are unemployed for more than a year (Cory, 2012). Reluctance to recruit older workers can reduce labour mobility, as older workers fear discrimination (McNair *et al.*, 2012).

Recruitment advice is to focus on skills and experience rather than qualifications as older workers often have expertise without qualifications (Department for Work and Pensions, 2013). Online recruitment is a particular problem, with applications filtered by qualifications and keywords (McNair *et al.*, 2012). Additionally, use of the internet declines after age 25, with 60% of adults over 65 never using it (TAEN, 2011).

Limited evidence: How do recruitment practices affect older worker employment?

All employees should be offered the same training regardless of age yet, despite equal chances of success in training, older workers are less likely to undertake it (TAEN, 2011; Walker and Maltby, 2012; Department for Work and Pensions, 2013, 2014). Discrimination in training opportunities explains some of this, but employee attitudes, and weaknesses in communication within organisations, are also to blame (McNair, 2010). Recent surveys show increased levels

of training being undertaken by older workers, particularly in the public sector and large organisations (McNair *et al.*, 2012).

Training selection can be influenced by the anticipated time remaining before employee retirement, even though this is discriminatory and younger employees are as likely to leave after training (Department for Work and Pensions, 2013). There is little evidence to suggest older workers are less capable of successful training. Training can be maximised if it is designed taking into account the learning styles of older adults (Health and Safety Executive, 2011).

Limited evidence: Are there performance differences across ages for different training methods?

Evidence on training and older workers includes:

- Workers over the age of 50 reported fewer opportunities to learn and train (Vendramin *et al.*, 2012).
- Lower levels of training in older workers are mainly due to employer decision-making (Taylor and Urwin, 2001). A follow-up study by Canduela *et al.* (2012) reports similar findings to Taylor and Urwin for men but not for women. A proposed explanation for the gender difference is women's increasing participation in jobs with formalised training.
- Some evidence suggests older workers may not take up training due to a perception of it offering few advantages (Phillipson and Smith, 2005).

4.2 Retirement and retention

As recently as 2012 it was legal to sack an employee for turning 65 regardless of job performance (Department for Work and Pensions, 2014). The default retirement age was removed in 2012, with no forced retirement allowed at 65. Prior to this, compulsory retirement levels were higher in the public sector compared to the private sector (Metcalf and Meadows, 2010), which may indicate a greater need in the public sector for change in approaches to retirement. Ending work at 60 or 65 is embedded in HR policies (McCarthy *et al.*, 2014), and a quarter of decision-makers view workers as 'older' in line with the age at which employees begin to prepare for retirement (McCarthy *et al.*, 2014).

Evidence gaps: How will changes to retirement laws affect HR policies over time? How will older worker attitudes, and decision-maker attitudes towards older workers, change following the abolishment of the default retirement age?

Employers are concerned about whether changes to compulsory retirement will increase their vulnerability to age discrimination cases (Johnson, 2013). There is uncertainty surrounding the use of a compulsory retirement age following court rulings that compulsory retirement measures can be used to meet the aim of 'dignity' (Dewhurst, 2013).

Limited evidence: How will uncertainty surrounding retirement affect employees and organisations?

Most older worker participation in the labour market is as a result of retention (McNair *et al.*, 2012) and changes in retirement legislation should facilitate this. This is more important to some sectors than others, for example some manufacturing sub-sectors need dramatic changes in retirement patterns to prevent labour shortages, whereas the health and social care sector

typically has good retention via engagement through training throughout working life (McNair *et al.*, 2012).

Phased retirement, such as reduced hours and flexible work, is attractive to older workers but typically is restricted to highly skilled, high-value workers (Cory, 2012). Such retirement practices can be beneficial to organisations, as they allow mentoring opportunities and facilitate the sharing of organisational knowledge, thus preventing the loss of key skills and expertise (Department for Work and Pensions, 2013).

Workplace stress, boring or repetitive work, low autonomy and flexibility all influence employees' decision-making with regards to retirement. These are especially important to people with health conditions or caring responsibilities (Department for Work and Pensions, 2014), both highly relevant to older workers.

The drivers of remaining in employment have been reported (Schalk and Desmette, 2015) and where relevant are covered in this review (e.g. flexible working, training opportunities).

Evidence gap: What will be the drivers of retirement in the future? How can organisations respond to these to encourage employee retention?

Evidence on retirement includes:

- Retirement is acknowledged as a significant life change (Wang and Schultz, 2010) and uncertainty about retirement could be detrimental to both individuals and organisations.
- Wang and Shi (2014) review the retirement process from a psychological viewpoint and discuss antecedents (individual attributes, job and organisational factors, family factors, and socio-economic context) and outcomes (financial well-being, physical well-being, and psychological well-being) of retirement for individuals.
- Lain and Vickerstaff (2014) look at the prevalence and characteristics of people working beyond retirement age and consider the impact of different employment rights across countries.
- A focus on performance management in retirement decisions gives employers considerable discretion over employee retirement, which may be detrimental to older workers (Beck and Williams, 2015).
- Maintenance of intergenerational balance is often raised in relation to Court of Justice cases looking at mandatory retirement ages (Dewhurst, 2013).
- Hennekam and Herrbach (2015) investigated retirement decisions and HR management practices in low occupational status employees and reported them to be both complex and contradictory.

4.3 Age discrimination and older worker stereotypes

The Employment Equality (Age) Regulations banning age discrimination in the workplace were introduced in the UK in 2006, followed by the Single Equality Act (2010). However, ageist attitudes and negative stereotyping of older workers persist, accompanied by unfair treatment. Older workers are often seen as 'last resort' employees, which affects their employment and development opportunities (Billet *et al.*, 2011). Expectations of work withdrawal, assumptions about health, and decision-maker age can influence negative attitudes towards older workers (Metcalf and Meadows, 2010; McCarthy *et al.*, 2014).

Limited evidence: How does decision-maker age influence their treatment of older workers? Can line manager training reduce discrimination?

HR managers often hold stereotypical views of older workers and studies consistently show an overall negative bias against older workers (McCarthy *et al.*, 2014). This is possibly because of the widespread deficit hypothesis, which assumes a general decline of skills, abilities and performance of older workers despite evidence suggesting this hypothesis is not accurate (Ng and Feldman, 2008; 2010, Bertolino *et al.*, 2013). Such myths, stereotypes and age norms, detrimental to age-diverse workplaces, need to be challenged, which requires management commitment (McCarthy *et al.*, 2014). Stereotypes change slowly and there is little evidence of a decline (Walker and Maltby, 2012).

Age stereotyping can vary across industries, and is most common in industries less likely to have age discrimination policies such as construction, wholesale and retail, and hotels and restaurants (Metcalf and Meadows, 2010).

On a positive note, removing the link between performance pay and formal appraisals reduces scope for age discrimination (Metcalf and Meadows, 2010). Older workers report fewer work problems than other age groups, although this could be due to older workers opting out of the workforce as a result of stereotyping or discrimination (Department for Business Innovation & Skills, 2010c).

Evidence gap: How will stereotypes change over time following the introduction of age discrimination laws?

Evidence for older worker age discrimination and older worker stereotypes includes:

- Higher levels of perceived age discrimination were reported by men and women in England (34.8%) compared to the USA (29.1%). A proposed explanation for this is that age discrimination legislation has existed for considerably longer in the USA (Rippon *et al.*, 2015).
- Parry and Tyson (2009) reported that even HR managers who are responsible for age-related policies can hold stereotypical views of older workers.
- Schalk *et al.* (2010) described how the existence of age stereotypes is an important source of negative HR policies and managerial decisions.
- Employee well-being, performance and health can be affected by the 'age appropriateness' of HR policies (Shultz *et al.*, 2010).

- Evidence against age stereotypes was found in Ng and Feldman's (2010) age and job attitudes meta-analysis.
- A review of the literature revealed that supervisors hold negative stereotypes, with older workers treated less fairly than middle-aged or younger workers (De Lange *et al.*, 2010).
- Age discrimination is a significant barrier to older individuals' labour market participation (Abrams *et al.*, 2011).

5. Older workers' capacity to work

Outlook: Understanding of older worker competencies will grow, resulting in negative assumptions of older worker performance and health being replaced with more factual positive knowledge of what older workers have to offer in the workplace. Thus, as above, negative older worker stereotypes and discrimination should gradually reduce over time, with workers aged 65 in 2025 and 2040 correspondingly being less affected by this.

Employees are increasingly managing their own careers, e.g. changing jobs or retraining, etc. Such proactive behaviours might be even more salient to older workers in the future.

5.1 Sector differences

Night work and shift work decrease with age (Vendramin *et al.*, 2012), although generally shift work is no worse in terms of health for older workers compared to younger. The Health and Safety Executive (2011) suggest older workers can have difficulty adjusting to night and afternoon shifts and recommend transferring such workers to their preferred shift pattern.

Declining physical capacity and health disproportionately affect those in manual occupations (McNair *et al.*, 2012), although exposure to physical strain at work differs little across age groups (Vendramin *et al.*, 2012). The Health and Safety Executive (2011) suggests older workers move to less physically demanding tasks to maintain health and productivity.

Although some differences are detailed above, there is limited evidence available on how age interacts with work requirements across different sectors and there is a need for more research to be done.

Limited evidence: How do the work requirements across sectors affect older workers?

Evidence for sector differences includes:

- Griffiths *et al.*'s (2009) review concluded that it is the cumulative effects of years of shift working rather than age that is important in terms of predicting ill health effects.
- Work ability was found to decrease with age when there was a high physical workload and lower job control (Costa and Sartori, 2007).
- Work ability was constant over years for jobs with high mental involvement and autonomy and lower physical constraints (Costa and Sartori, 2007).
- A number of studies have examined the links between age and driving performance (e.g. Makishita and Matsunaga, 2008; Popkin *et al.*, 2008). However there is mixed evidence and the relationship is not straightforward (Health and Safety Executive, 2011).
- Manual workers reported more physical problems with their work, with skilled craft workers and elementary workers most likely to report feeling they did not have the strength to perform their jobs as well as they did when younger (Smeaton *et al.*, 2010).
- Older professionals and managers were the most likely occupational group to report feeling tired, under stress and expected to work long hours (Smeaton *et al.*, 2010).

5.2 Older worker competencies

There is growing evidence relating to older worker competencies, much of which refutes age stereotypes and discrimination discussed above.

Human function and performance can deteriorate with age in some areas, but limited conclusions should be drawn regarding age-related changes due to differing study designs and age-related inequality in exposure to risk at work (Health and Safety Executive, 2012). Extensive evidence exists showing older workers are as effective at work as younger workers (Metcalf and Meadows, 2010), especially when abilities match requirements and expertise is accounted for (Beers, 2014).

Research and employer case studies show no age detriments in productivity or success in training, and older workers take less short-term sickness and offset any reduction in speed with experience (Department for Work and Pensions, 2013). There is no consistent evidence that older workers are less productive than younger workers (Health and Safety Executive, 2011) with job performance generally the same across age groups. It is possible that performance does not decline with age because of 'healthy worker' effects, where older individuals remaining in the workplace are productive whereas those whose performance has declined have left or moved to less demanding roles (Health and Safety Executive, 2011).

Limited evidence: Research is needed that accounts for the healthy worker effect and shows performance ability across age groups in a range of occupations.

Limited evidence: Occupation and industry differences regarding health and safety need further exploration.

The educational profiles of older workers will change over time, for example a rise is anticipated in the number of university-educated people reaching 65 in 2040. Because education influences employment this may improve employment prospects of older workers in the future, although this is clearly speculative.

Evidence gap: How will the changing educational profiles of older individuals affect employment in the future?

Other older worker competencies and benefits evident in the literature include:

- Older workers are less likely to leave an organisation, and costs to employers are the same across age groups (Walker and Maltby, 2012).
- Older workers are able to adapt to change (Health and Safety Executive, 2011).
- Older workers are not at higher risk of accidents, although accidents involving older workers can result in more serious injury (Health and Safety Executive, 2011; Beers, 2014).
- Age is linked to more organisational citizenship behaviours and less counterproductive work behaviours (Ng and Feldman, 2008).
- Older workers are more reliable and committed, and less aggressive and tardy (Health and Safety Executive, 2011).

- Age is linked to higher motivation and satisfaction at work (Ng and Feldman, 2010; Bertolino *et al.*, 2013). Older workers may be more influenced by intrinsic work factors, which has implications for management practice.
- Older service workers have superior social and emotional competencies, reduced exposure to customer stressors and better emotional control (Johnson *et al.*, 2013).

5.3 Health

Age brings increases in musculoskeletal disorders, especially for workers in physically demanding jobs, and cardiovascular disease. However, evidence suggests cognitive performance does not markedly decrease until after the age of 70–80. There is little evidence that chronological age is a strong determinant of health, and age-related declines in health do not generally adversely affect performance and productivity (Health and Safety Executive, 2011).

Older workers have no greater sickness absence than younger workers. The negative relationship with age and general absence becomes stronger in studies published after 2000, which may be due to improved health of older workers now compared to 20 years ago (Health and Safety Executive, 2011).

People are commonly able to remain in work despite health issues (Health and Safety Executive, 2011). Also, health and technology improvements mean there are few jobs that the average 70 year old cannot do (McNair *et al.*, 2012). Indeed, it is generally reported that it is not the age of the worker that is most important but the demands of work exceeding worker capabilities (Health and Safety Executive, 2011). Poor health is a major factor in shortening working life and is often an outcome of poor-quality work and workplace design and poor management practices (Maltby, 2011).

Some of the consequences of ageing (e.g. poorer eyesight, hearing and mobility) can be compensated for (Health and Safety Executive, 2011), although adjustments may be needed to working patterns or equipment and moving to less physically demanding roles can help people stay in employment (Department for Business, Innovation & Skills, 2011). Related costs can be offset through the retention of skills and knowledge (Department for Work and Pensions, 2011).

Psychological health generally decreases with age but improves for older worker age groups (Health and Safety Executive, 2011). Attention is needed to reduce labour market exit before the 'older worker' age bracket is reached (Smeaton *et al.*, 2010).

Limited evidence: Ageing, work-related demands and workplace stress interactions need further exploration.

Welfare reform changes designed to encourage people off incapacity-related benefits and back into work may affect older age groups disproportionately compared to younger and back-to-work support is needed (Cory, 2012).

Limited evidence: What back to work support initiatives will be successful in helping people return to the workplace?

Evidence for health differences includes:

- Benjamin and Wilson (2005) reviewed the evidence and concluded there was little evidence to support chronological age as a determinant of health.
- Meta-analyses have shown age is negatively related to burnout (Brewer and Shapard, 2004; Ng and Feldman, 2010).
- Older workers do not have more sickness absence than younger workers (Benjamin and Wilson, 2005).
- Ng and Feldman (2008) reported that older workers were less likely to be absent but were slightly more likely to have sickness-related absences.
- Pransky *et al.* (2005) suggest that the presence of illness and infirmity does not necessarily negatively impact on functioning at work.

6. Conclusions

The ageing population has resulted in the need for an older workforce, and individuals are now typically required to work to an older age than has previously been the case. As a result of this, changes in work environments and workplace attitudes have already been seen and can be anticipated to continue in the future. The evidence reviewed above describes both existing changes (e.g. the introduction of age discrimination laws, increasing use of workplace age policies, and the abolishment of compulsory retirement ages) and the likely need for further change (e.g. to meet demands for part-time/flexible work from older individuals, and to reduce the risk of age stereotypes negatively affecting older workers).

The review details how changes in attitudes and workplace practices can often be gradual and take place over a number of years. It is proposed, therefore, that workers aged 65 in 2025 can expect workplace experiences in line with the evidence presented here. In contrast, workers aged 65 in 2040 can be expected to have, and to be exposed to, different workplace attitudes and practices.

Suggestions as to how organisations can successfully manage an older workforce include: raising awareness about the need to work to an older age; valuing older workers; avoiding discrimination; and encouraging skill development and knowledge transfer between employees (Johnson, 2013). Cultural change alongside the enforcement of age discrimination legislation will probably improve employment prospects of older workers (Smeaton *et al.*, 2010) and awareness campaigns to promote the benefits of ageing workers will help change attitudes towards older workers (Health and Safety Executive, 2010).

References

- Abrams, D., Russell, P. S., Vanclair, C.-M. and Swift, H. (2011) *Ageism in Europe: Findings from the European Social Survey*. Age UK: London. Available at: www.ageuk.org.uk/Documents/EN-GB/For-professionals/ageism_across_europe_report_interactive.pdf?dtrk=true (accessed 21 August 2015).
- ACAS (2012) *Research Paper: Employment relations in SMEs: Day-to-day advice-seeking and the role of intermediaries*. Available at: www.acas.org.uk/media/pdf/c/h/Employment-relations-in-SMEs-Day-to-day-advice-seeking-and-the-role-of-intermediaries-accessible-ver.pdf (accessed 21 August 2015).
- Armstrong-Stassen, M. and Ursel, N. D. (2009) *Perceived organizational support, career satisfaction, and the retention of older workers*. *Journal of Occupational and Organizational Psychology* 82, 201–220.
- Beck, V. and Williams, G. (2015) *The (performance) management of retirement and the limits of individual choice*. *Work, Employment and Society* 29, 267–277.
- Beers, H. (2014) *Age, employment and the health and safety of the workforce*. IOSH Conference, 18 June 2014, Health & Safety Laboratory. Available at: www.ioshconference.co.uk/files/1400_helen_beers_hsl.pdf (accessed 21 August 2015).
- Benjamin, K. and Wilson, S. (2005) *Facts and misconceptions about age, health status and employability. Report HSL/2005/20*. Health & Safety Laboratory: Buxton. Available at: www.hse.gov.uk/research/hsl_pdf/2005/hsl0520.pdf (accessed 21 August 2015).
- Bertolino, M., Truxillo, D. M. and Fraccaroli, F. (2013) *Age effects on perceived personality and job performance*. *Journal of Managerial Psychology* 28(7/8), 867–885.
- Billett, S., Dymock, D., Johnson, G. and Martin, G. (2011) *Overcoming the paradox of employers' views about older workers*. *International Journal of Human Resource Management* 22(6), 1248–1261.
- Brewer, E. W. and Shapard, L. (2004) *Employee burnout: A meta-analysis of the relationship between age or years of experience*. *Human Resource Development Review* 3(2), 102–123.
- Brooks, C. (2011) *Department for Business, Innovation and Skills consultation: Modern Workplaces. Consultation response*. Age UK: London. Available at: [www.ageuk.org.uk/Documents/EN-GB/Ref4711_Modern_Workplaces_Flexible_Working_\(August_2011\).pdf?dtrk=true](http://www.ageuk.org.uk/Documents/EN-GB/Ref4711_Modern_Workplaces_Flexible_Working_(August_2011).pdf?dtrk=true) (accessed 28 August 2015).
- Canduela, J., Dutton, M., Johnson, S., Lindsay, C., McQuaid, R. W. and 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.
- CEDEFOP (2010) *Employer-provided vocational training in Europe: Evaluation and interpretation of the third continuing vocational training survey*. Publications Office of the European Union: Luxembourg. Available at: www.cedefop.europa.eu/en/publications-and-resources/publications/5502 (accessed 21 August 2015).

Charles, S. and Carstensen, L. L. (2010) *Social and emotional aging*. Annual Review of Psychology 61, 383–409.

Clancy, G. (2009) *Labour demand: The need for workers*. Economic and Labour Market Review, 3(2), 21–29.

Cory, G. (2012) *Unfinished Business: Barriers and opportunities for older workers*. Resolution Foundation: London. Available at: http://resolutionfoundation.org/wp-content/uploads/2014/08/Unfinished_Business_FINAL_3.pdf (accessed 21 August 2015).

Costa, G. and Sartori, S. (2007) *Ageing, working hours and work ability*. Ergonomics 50(11), 1914–1930.

De Lange, A. Taris, T. W., Jansen, P., Kompier, M. A. J., Houtman, I. L. D. and Bongers, P. M. (2010) *On the relationships among work characteristics and learning-related behavior: Does age matter?* Journal of Organizational Behaviour 31, 925–950.

Department for Business, Innovation & Skills (2010a) *Is business ready for an ageing nation? Economic opportunities and challenges of ageing: Discussion paper*. BIS: London. Available at: www.mbsportal.bl.uk/secure/subjareas/hrmemployrelat/bis/11559710_827ageing10.pdf (accessed 21 August 2015).

Department for Business, Innovation & Skills (2010b) *Review of the Default Retirement Age: Summary of Research Evidence*. Employment Relations Occasional Paper. BIS: London. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/32178/10-1080-retirement-age-summary-research.pdf (accessed 21 August 2015).

Department for Business, Innovation & Skills (2010c) *The Fair Treatment at Work Age Report – Findings from the 2008 survey*. Employment Relations Research Series No. 109. BIS: London. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/192220/10-813-fair-treatment-at-work-report-2008-survey-errs-109.pdf (accessed 21 August 2015).

Department for Business, Innovation & Skills (2011) *Economic Opportunities and Challenges of Ageing*. BIS: London. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/31973/11-915-economic-opportunities-challenges-ageing.pdf (accessed 21 August 2015).

Department for Business, Innovation & Skills (2013) *Business population estimates for the UK and regions 2013: Statistical release*. BIS: London. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/254552/13-92-business-population-estimates-2013-stats-release-4.pdf (accessed 21 August 2015).

Department for Work and Pensions (2010) *Older Workers Statistical Information Booklet. Quarter Two 2010*. DWP: London. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/214353/owsib2010.pdf (accessed 21 August 2015).

Department for Work and Pensions (2011) *Employer case studies: Employing older workers for an effective multi-generational workforce*. DWP: London. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/142752/employing-older-workers-case-studies.pdf (accessed 21 August 2015).

Department for Work and Pensions (2013) *Employing older workers: An employer's guide to today's multi-generational workforce*. DWP: London. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/142751/employing-older-workers.pdf (accessed 21 August 2015).

Department for Work and Pensions (2014) *Fuller Working Lives: A Framework for Action*. DWP: London. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/319872/fuller-working-lives.pdf (accessed 21 August 2015).

Department for Work and Pensions (2015) *Statistics on older workers by sector*. DWP: London. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/412033/older-workers-by-sector-ad-hoc-statistics.pdf (accessed 21 August 2015).

Dewhurst, E. (2013) *The development of EU case-law on age discrimination in employment: "Will you still need me? Will you still feed me? When I'm sixty-four."* *European Law Journal* 19(4), 517–544.

Dewhurst, E. (2015) *Are older workers past their sell-by date? A view from UK age discrimination law*. *The Modern Law Review* 78(2), 189–215.

Eurostat (2014) *Employment rate of older workers*. Available at: <http://epp.eurostat.ec.europa.eu/tgm/printTable.do?tab=tableandplugin=1andlanguage=enandpcode=tsdde100andprintPreview=true> (accessed 21 August 2015).

Flynn, M. (2010) *The United Kingdom government's "business case" approach to the regulation of retirement*. *Ageing and Society* 30(3), 421–443.

Fuertes, V., Egdell, V. and McQuaid, R. (2013) *Extending working lives: age management in SMEs*. *Employee Relations* 35(3), 272–293.

Griffiths, A., Knight, A. and Nor Mohd Mahudin, D. (2009) *Ageing, Work-Related Stress and Health: Reviewing the evidence. A report for Age Concern and Help the Aged, and TAEN – The Age and Employment Network*. Institute of Work, Health & Organisations, University of Nottingham: Nottingham. Available at: http://taen.org.uk/uploads/resources/24455_TAEN_Work_Related_Stress_32pg.pdf (accessed 21 August 2015).

Health and Safety Executive (2010) *Ageing and work-related musculoskeletal disorders: A review of the recent literature*. Research Report RR799. HSE: London. Available at: www.hse.gov.uk/research/rrpdf/rr799.pdf (accessed 21 August 2015).

Health and Safety Executive (2011) *An update of the literature on age and employment*. Research Report RR832. HSE: London. Available at: <http://www.hse.gov.uk/research/rrpdf/rr832.pdf> (accessed 21 August 2015).

Health and Safety Executive (2012) *Age related changes and safety critical work: Identification of tools and a review of the literature*. Research Report RR946. HSE: London. Available at: www.hse.gov.uk/research/rrpdf/rr946.pdf (accessed 21 August 2015).

Hennekam, S. and Herrbach, O. (2015) *The influence of age-awareness versus general HRM practices on the retirement decision of older workers*. *Personnel Review* 44(1), 3–21.

- Johnson, S. (2013) The wellbeing of an ageing workforce. *Occupational Health* 65(9), 27. Available at: <http://search.proquest.com/docview/1436870936/fulltextPDF?accountid=12253> (accessed 26 August 2015).
- Johnson, S., Holdsworth, L., Hoel, H. and Zapf, D. (2013) *Customer stressors in service organizations: The impact of age on stress management and burnout*. *European Journal of Work and Organizational Psychology* 22(3), 318–330.
- Kitching, J. (2006) *Can small businesses help reduce employment exclusion*. *Environment and Planning C: Government and Policy* 24(6), 869–884.
- Koukoulaki, T. (2010) *New trends in work environment – New effects on safety*. *Safety Science* 48(8), 936–942.
- Lain, D. and Vickerstaff, S. (2014) Working beyond retirement age: lessons for policy. In Harper, S. and Hamblin, K. (eds) *International Handbook on Ageing and Public Policy*. Edward Elgar Publishing: Cheltenham, pp. 242–255.
- Leisink, P. L. M. and Knies, E. (2011) *Line managers' support for older workers*. *International Journal of Human Resource Management* 22(9), 1902–1917.
- Makishita, H. and Matsunaga, K. (2008) *Differences in drivers' reaction times according to age and mental workload*. *Accident Analysis and Prevention* 40, 567–575.
- Maltby, T. (2011) *Extending working lives? Employability, work ability and better quality working lives*. *Social Policy and Society* 10(3), 299–308.
- Maxwell, G., Rankine, L., Bell, S. and MacVicar, A. (2007) *The incidence and impact of flexible working arrangements in smaller businesses*. *Employee Relations* 29(2), 138–161.
- McCarthy, J., Heraty, N., Cross, C. and Cleveland, J. N. (2014) *Who is considered an 'older worker'? Extending our conceptualisation of 'older' from an organisational decision maker perspective*. *Human Resource Management Journal* 24(4), 374–393.
- McNair, S. (2010) *A sense of a future: A study of training and work in later life*. A report for the Nuffield Foundation. NIACE: Leicester. Available at: http://shop.niace.org.uk/media/catalog/product/a/ /a_sense_of_a_future_full_report_final_2.pdf (accessed 21 August 2015).
- McNair, S., Flynn, S., Myerson, J., Gheerawo, R. and Ramster, G. (2012) *What are the supply (workforce) and demand (product) implications of an ageing society? Future of Manufacturing Project: Evidence Paper 22*. Foresight, Government Office for Science: London. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/283896/ep22-ageing-society-implications-manufacturing.pdf (accessed 21 August 2015).
- Metcalf, H. and Meadows, P. (2010) *Second survey of employers' policies, practices and preferences relating to age, 2010*. *Employment Relations Research Series No. 110*. BIS/DWP: London. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/214453/rrep682.pdf (accessed 21 August 2015).

Midtsundstad, T. I. (2011) *Inclusive workplaces and older employees: an analysis of companies' investment in retaining senior workers*. *International Journal of Human Resource Management* 22(6), 1277–1293.

Ng, T. W. H. and Feldman, D. C. (2008) *The relationship of age to ten dimensions of job performance*. *Journal of Applied Psychology* 93(2), 392–423.

Ng, T. W. H. and Feldman, D. C. (2010) *The relationships of age with job attitudes: A meta-analysis*. *Personnel Psychology* 63, 677–718.

Office for National Statistics (2012a) *Population Ageing in the United Kingdom, its Constituent Countries and the European Union*. ONS: London. Available at: www.ons.gov.uk/ons/dcp171776_258607.pdf (accessed 21 August 2015).

Office for National Statistics (2012b) *Older Workers in the Labour Market, 2012*. ONS: London. Available at: www.ons.gov.uk/ons/dcp171776_267809.pdf (accessed 21 August 2015).

Office for National Statistics (2012c) *Pension Trends – Chapter 4: The Labour Market and Retirement, 2013 Edition*. ONS: London. Available at: <http://www.ons.gov.uk/ons/rel/pensions/pension-trends/chapter-4--the-labour-market-and-retirement--2013-edition/art-pt2013ch4.html> (accessed 21 August 2015).

Office for National Statistics (2013) *Older Workers Statistical Information Booklet 2013. Official Statistics*. ONS: London. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/264899/older-workers-statistical-information-booklet-2013.pdf (accessed 21 August 2015).

Office for National Statistics (2014a) *National Life Tables, United Kingdom, 2011-2013*. ONS: London. Available at: www.ons.gov.uk/ons/dcp171778_377972.pdf (accessed 21 August 2015).

Office for National Statistics (2014b) *Life Expectancy at Birth and at Age 65 by Local Areas in the United Kingdom, 2006-08 to 2010-12*. ONS: London. Available at: www.ons.gov.uk/ons/dcp171778_360047.pdf (accessed 21 August 2015).

Parry, E. and Tyson, S. (2009) *Organisational reactions to UK age discrimination legislation*. *Employee Relations* 31(5), 471–488.

Phillipson, C. and Smith, A. (2005) *Extending working life: A review of the research literature*. Department for Work and Pensions. Research Report No. 298. DWP: London. Available at: www.keele.ac.uk/csg/downloads/researchreports/Extending%20working%20life.pdf (accessed 21 August 2015).

Popkin, S. M., Morrow, S. L., Di Domenico, T. E. and Howarth, H. D. (2008) *Age is more than just a number: Implications for an aging workforce in the US transportation sector*. *Applied Ergonomics* 39, 542–549.

Pransky, G., Benjamin, K., Savageau, J., Currivan, D. and Fletcher, K. (2005) *Outcomes in work-related injuries: A comparison of older and younger workers*. *American Journal of Industrial Medicine* 47, 104–112.

Rippon, I., Zaninotto, P. and Steptoe, A. (2015) *Greater perceived age discrimination in England than the United States: Results from HRS and ELSA*. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences [epub ahead of print]. Available at: <http://psychsocgerontology.oxfordjournals.org/content/early/2015/07/28/geronb.gbv040.full.pdf+html> (accessed 28 August 2015).

Schalk, R. and Desmette, D. (2015) Intentions to continue working and its predictors. In Bal, P. M., Kooij, D. T. A. M. and Rousseau, D. M. (eds) *Aging Workers and the Employee–Employer Relationship*. Springer: Dordrecht, pp. 187–201.

Schalk, R., van Veldhoven, M., De Lange, A. H., De Witte, H., Kraus, K., Stamov-Roßnagel, C., Tordera, N., van der Heijden, B., Zappalà, S., Bal, M., Bertrand, F., Claes, R., Crego, A., Dorenbosch, L., de Jonge, J., Desmette, D., Gellert, F. J., Hansez, I., Iller, C., Kooij, D., Kuipers, B., Linkola, P., van den Broeck, A., van der Schoot, E. and Zacher, H. (2010) *Moving European research on work and ageing forward: Overview and agenda*. *European Journal of Work and Organizational Psychology* 19(1), 76–101.

Scheibe, S. and Zacher, H. (2013) *A lifespan perspective on emotion regulation, stress, and well-being in the workplace*. *Research in Occupational Stress and Well-Being* 11, 163–193.

Schröder, H., Muller-Camen, M. and Flynn, M. (2014) *The management of an ageing workforce: organisational policies in Germany and Britain*. *Human Resource Management Journal* 24(4), 394–409.

Shultz, K. S., Wang, M., Crimmins, E. M. and Fisher, G. G. (2010) *Age differences in the demand-control model of work stress*. *Journal of Applied Gerontology* 29(1), 21–47.

Smeaton, D., Vegeris, S. and Sahin-Dikmenm, M. (2010) *Older workers: employment preferences, barriers and solutions*, Equality and Human Rights Commission Research report 43. Policy Studies Institute: Manchester. Available at: www.equalityhumanrights.com/sites/default/files/documents/research/older_workers_employment_preferences_barriers_and_solutions_v2.pdf (accessed 21 August 2015).

TAEN (2011) *Key Facts: Age, Demographics and Employment*. Available at: http://taen.org.uk/uploads/resources/Key_Fact_Sep_11.pdf (accessed 21 August 2015).

Taylor, P. and Urwin, P. (2001) *Age and participation in vocational education and training*. *Work, Employment and Society* 15(4), 763–779.

UK Commission for Employment and Skills (2012) *Working Futures 2010-2020, Evidence Report 41*. UKCES: South Yorkshire. Available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/303434/evidence-report-41-working-futures-2010-2020.pdf (accessed 21 August 2015).

Urry, H. L. and Gross, J. J. (2010) *Emotion regulation in older age*. *Current Directions in Psychological Science* 19(6), 352–357.

Vendramin, P., Valenduc, G., Molinié, A. F., Volkoff, S., Ajzen, M. and Léonard, E. (2012) *Sustainable work and the ageing workforce*. European Foundation for the Improvement of Living and Working Conditions: Dublin. Available at: http://eurofound.europa.eu/sites/default/files/ef_files/pubdocs/2012/66/en/1/EF1266EN.pdf (accessed 21 August 2015).

Walker, A. and Maltby, T. (2012) *Active ageing: a strategic policy solution to demographic ageing in the European Union*. *International Journal of Social Welfare* 21(S1), S117–S130.

Wang, M. and Shi, J. (2014) *Psychological research on retirement*. *Annual Review of Psychology*, 65, 209–233.

Wang, M. and Shultz, K. S. (2010) *Employee retirement: A review and recommendations for future investigation*. *Journal of Management* 36(1), 172–206.



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