

Ageing Workforce's Impact on Modern Organizations: How to Extend Working Lives?

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Abstract

The ageing workforce is a growing concern for modern organisations as the proportion of older workers in the labour force continues to increase. This phenomenon has significant implications for the functioning and performance of organisations. On the one hand, older workers bring valuable skills and experience to the workplace, which can benefit the organisation. However, on the other hand, the ageing workforce also poses several challenges, including issues related to health, productivity, and retirement. This paper examines the impact of an ageing workforce on modern organisations. The paper aims to provide a comprehensive understanding of the demographic trends driving the ageing of the workforce and the potential benefits and challenges that an ageing workforce presents to organisations. The methodology used in this paper is a literature review of existing research on the ageing workforce and its impact on organisations. The literature review is conducted to identify key trends, patterns, and themes related to the ageing workforce and its impact on organisations. In conclusion, the paper also points out that the ageing workforce is a complex issue that presents benefits and challenges for modern organisations. Therefore, organisations must develop strategies to manage the ageing workforce that are inclusive and effective, support and retain older workers, and ensure their business's long-term success.

Keywords: ageing; organisational development; age-management; HR strategy; working life.

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Introduction

The ageing workforce has become a major concern for modern organisations as the proportion of older workers in the labour force continues to increase. According to the World Health Organization (WHO), the global population of people aged 60 and over is projected to reach 2 billion by 2050, nearly triple the number in 2000 (WHO, 2021). Moreover, in developed countries, the share of workers aged 55 and over is projected to increase by 23% between 2018 and 2030 (OECD, 2021). This demographic shift has significant implications for the functioning and performance of organisations. On the one hand, older workers bring valuable skills and experience to the workplace, which can benefit the organisation. However, on the other hand, the ageing workforce also poses several challenges, including issues related to health, productivity, and retirement. To address these challenges, organisations need to develop effective strategies to manage their ageing workforce (Kim & Feldman, 2015).

This paper examines the impact of an ageing workforce on modern organizations. It aims to provide a comprehensive understanding of the demographic trends driving the ageing of the workforce and the potential benefits and challenges that an ageing workforce presents to organizations. The paper will also provide an overview of the research literature and explore strategies organisations can implement to manage the ageing workforce effectively. The scope of this paper will be limited to the context of developed economies, primarily focusing on Europe and the United States.

Population ageing and ageing workforce

Population ageing is a complex global phenomenon that refers to the increasing proportion of older individuals in a population, which has significant social and economic implications in countries worldwide (Bloom et al., 2021). Several demographic trends are driving population ageing in many countries around the world, including:

- **Declining fertility rate:** One of the primary drivers of population ageing is declining fertility rates, as fewer children are being born to replace ageing populations (United Nations, 2019). In many countries, women have fewer children, and some choose not to have children. This is due to various factors, including greater access to contraception, higher levels of education and employment for women, and changing cultural attitudes towards family size (Goldstein et al., 2002).
- **Increasing life expectancy:** Another factor contributing to population ageing is increasing life expectancy, as people are living longer than ever before due to medical advances, better healthcare, and lifestyle changes (United Nations, 2019). Advances in healthcare and medical treatments have contributed to longer life expectancies and higher living standards, but also to an increase in the number of people living with chronic health conditions and disabilities (European Commission, 2021). As people live longer, this puts a strain on healthcare systems and social services, particularly in countries with ageing populations and shrinking workforces (Bloom et al., 2015).
- **Baby boomer generation:** In some countries, the ageing of the baby boomer generation - those born between 1946 and 1964 - is a major driver of population ageing (Ailshire & Crimmins, 2014).
- **Migration patterns:** Migration patterns can also contribute to population ageing, as some countries experience net outflows of young people or inflows of older adults (European Commission, 2021).

However, the population change is more dramatic in some specific countries, as their age structure has been more directly impacted (Raeside et al., 2008). Countries that are the most affected worldwide are Europe and the United States, as both regions have experienced a significant increase in the proportion of people aged 65 and over in recent years (Table 1):

- In EU - 27, the population is ageing faster than in other regions due to a combination of low fertility rates and ageing baby boomers. Firstly, fertility rates have been declining for several decades, resulting in fewer births. According to Eurostat (2021), the total fertility rate in the European Union was 1.53 children per woman in 2020, which is well below the replacement level of 2.1. Secondly, the baby boomer generation, which was born in the aftermath of World War II, is now reaching retirement age, which has contributed to the rapid ageing of the population in combination with the improvements in healthcare and living standards have led to longer life expectancies of older individuals in the population. According to Eurostat (2021), the share of the population aged 65 and over in the European Union is projected to increase from 19% in 2020 to 28% in 2050.
- The population is also ageing in the United States, although at a slower pace than in Europe. This is due in part to higher fertility rates and immigration, which have helped to offset some of the effects of ageing. However, the United States is still experiencing a significant increase in the share of older individuals in the population. According to the US Census Bureau (2020), the share of the population aged 65 and over is projected to increase from 16% in 2020 to 23% in 2050. At the same time, the proportion of people aged 15-64 is expected to decline from 66.6% in 2020 to 60.9% by 2050 (US Census Bureau, 2021).

Furthermore, population ageing is a complex demographic trend with significant individual and national implications.

Individuals as they experience changes in health, income, and social roles. On the one hand, ageing is associated with an increased risk of chronic diseases such as cardiovascular disease, dementia, and cancer (World Health Organization, 2021). This affects the health of individuals and has significant economic implications. In addition, retirement income security is a major concern for individuals in ageing populations, as pensions may not provide adequate income to support a comfortable retirement (OECD, 2019). On the other hand, ageing individuals may experience changes in their social roles, such as transitioning from a parent to a grandparent or from a worker to a retiree, which can have psychological implications. As well as older individuals may have more time and resources to pursue interests and hobbies, travel, and spend time with family and friends (Luo & Waite, 2014).

On the national level, population ageing has social, economic and political implications. It changes social structures, institutions, and labour force composition and creates new demands for healthcare and social services. More specifically, as older individuals make up a larger share of the population, greater demand for healthcare and social services may exist. At the same time, fewer young people may support these services, which can lead to economic and social challenges (Kinsella et al., 2009).

Finally, population ageing has economic implications as it affects the growth and development of national economies. As the population ages, there is a decline in the size of the workforce, resulting in a decrease in productivity and economic growth (Bloom et al., 2021). Furthermore, ageing populations may have different consumption patterns, preferring to spend their money on healthcare and leisure activities rather

than goods and services (Bloom et al., 2021). This may lead to changes in the economy's structure, with a shift towards service-based industries.

Table 1

Population ageing in EU - 27 and in the United States

Time	EU - 27		United States	
	2020	2050	2020	2050
Population aged 65 and more	19%	28%	16%	23%
The population aged 15-64 years	65,5%	60,7%	66,3%	60,1%
Fertility rate	1,53	1,68	1,64	1,55
Mortality rate	10,3 per 1000 p.	/	8,7 per 1000 p.	/
Life expectancy	81,2	84,7	77,3	79,5

Source: OECD (2023)

Ageing Workforce and an Impact on Modern Organizations

Current demographic trends, explained by the decline in fertility rates and accompanied by increased life expectancy, are resulting in a reduced size of the young working population in the workforce, which will continue to decrease over time, while the proportion of older workers will continue to increase. Like overall population ageing, workforce ageing is a combination of general ageing and increasing retirement age for the workforce in specific countries (Calzavara et al., 2020). In such a state, it is necessary to understand the implications of an ageing workforce for employers, employees, and the labour market. One of the significant challenges associated with an ageing workforce is the decline in productivity levels (Lahey, 2018). Older workers may experience declining cognitive and physical abilities, which can lead to reduced efficiency and effectiveness in their job performance. Additionally, older workers may require more time off work due to health issues, reducing productivity levels.

Another challenge associated with an ageing workforce is the skills gap. As older workers retire, they take with them valuable knowledge and skills that younger workers may not easily replace. This skills gap can create significant challenges for employers who must ensure their workforce is adequately trained and skilled to meet their business needs (Ward et al., 2017).

Despite these challenges, an ageing workforce also presents several opportunities. One of the significant advantages of an ageing workforce is the experience and wisdom that older workers bring to the workplace (Gallo et al., 2018). Older workers have had more time to develop their skills and knowledge and can use this experience to mentor and train younger workers. Additionally, older workers also tend to be more loyal and committed to their employers than younger workers (Hartmann et al., 2019). This loyalty can be an asset to employers who are looking to reduce turnover rates and retain their top talent. Table 2 presents the systematic outlook to the within-person age-related changes.

Table 2
Within-person age-related changes

Age-related change	Subcategory	Example
Physical changes	Sensory	Reduced visual acuity and reduced hearing ability
	Muscular	Reduced strength, power, and balance
	Cardiovascular	Reduced VO2 capacity; higher blood pressure
	Immune response	Reduced production and effectiveness of white blood cells
	Homeostasis	Longer physiological recovery from stressors
Cognitive changes	Fluid intelligence	Age-related reductions in processing speed, working memory, and selective attention
	Crystallised intelligence	Age-related gains in knowledge, skills, and wisdom
Affective changes	Emotional regulation	A positive relationship between age and affective well-being (positivity effect)
	Emotion generation	Less negative appraisal of stressful events and a tendency to concentrate on positive rather than negative
Personality	Big Five personality traits	Increase in conscientiousness and agreeableness and decrease in neuroticism over the life span.
	Big Five facets	The larger increase in self-discipline than in orderliness; increase in social dominance through adulthood; moderate decrease in social vitality over the life span
Motivation	Intrinsic motives	A positive relationship between age and accomplishment and autonomy
	Extrinsic motives	A negative relationship between age and extrinsic motives such as compensation, benefits, and promotions
	Growth motives	A negative relationship between age and growth motives, such as achievement and mastery
	Generativity	A positive relationship between age and the social motive of helping people or contributing to society

Source: Truxillo et al. (2015)

Extending Working Lives

As people live longer and stay healthier, there is a growing interest in extending working lives beyond the traditional retirement age. Extending working lives can bring significant benefits to individuals, businesses, and society. However, there are also challenges associated with this goal. The paper will explore how we can extend working lives and discuss potential solutions.

One way to extend working lives is to provide lifelong learning opportunities. Lifelong learning can help older workers acquire new skills and knowledge, which can improve their employability and productivity. According to a report by the European Centre for the Development of Vocational Training, "Lifelong learning is a key to extending working lives, as it enables individuals to stay up-to-date with new technologies, work practices, and knowledge, and to acquire new skills and

qualifications that match the changing needs of the labour market" (Cedefop, 2019). Employers can help older workers stay competitive and engaged in the workforce by offering lifelong learning opportunities.

Another way to extend working lives is to provide flexible working arrangements. Flexible working can help older workers balance work and personal commitments, such as caring responsibilities or health issues. According to a report by the International Labour Organization, "Flexible work arrangements can be an effective way of extending working lives by allowing older workers to work reduced hours or to work from home" (ILO, 2018). By offering flexible working arrangements, employers can help older workers continue working for longer, which can benefit both the individual and the organisation.

Additionally, promoting health and wellness can help extend working lives. Employers can help older workers maintain their physical and mental health by providing access to health and wellness programs. According to a report by the World Health Organization, "Health promotion and disease prevention programs can help older workers stay healthy and productive and can reduce the risk of chronic diseases that can lead to early retirement" (WHO, 2018). By promoting health and wellness, employers can help older workers remain productive and engaged in the workforce for longer.

Furthermore, reducing age discrimination can also help extend working lives. Age discrimination can prevent older workers from accessing job opportunities and training, which can lead to early retirement. According to the Organisation for Economic Cooperation and Development report, "Age discrimination is a barrier to extending working lives, and measures to reduce age discrimination can help ensure that older workers have access to employment opportunities and training" (OECD, 2019). By reducing age discrimination, employers can help ensure that older workers have equal access to job opportunities and training.

Performance Tools and Metrics

The Balanced Scorecard (BSC) is an organisation's performance management tool that aligns its strategic objectives with its operational activities. It was developed by Robert S. Kaplan and David P. Norton in the early 1990s. The BSC model consists of four key perspectives, namely:

- Financial Perspective: This perspective focuses on financial metrics such as revenue growth, profit margins, and return on investment.
- Customer Perspective: This perspective focuses on customers' needs and requirements, including customer satisfaction, loyalty, and retention.
- Internal Process Perspective: This perspective focuses on the internal business processes that drive organisational success, including operational efficiency, quality, and innovation.
- Learning and Growth Perspective: This perspective focuses on employee learning and growth, including employee satisfaction, skill development, and knowledge management (Kaplan et al., 1992).

The BSC model helps organisations identify and track key performance indicators (KPIs) that are aligned with their strategic objectives across all four perspectives. However, the model can also be adapted to address specific organisational challenges, such as an ageing workforce. According to Voelpel and Streb (2016), the Balanced Scorecard (BSC) model for addressing the challenges of an ageing workforce can be adapted to include the following perspectives:

- Demographic Perspective: This perspective focuses on the age distribution and diversity of the workforce, including the percentage of older workers and the

projected retirement rates. The KPIs for this perspective include the percentage of employees over a certain age, the percentage of older workers in leadership positions, and the diversity of the workforce.

- **Health and Wellness Perspective:** This perspective focuses on the health and well-being of older workers, including preventing chronic diseases and promoting healthy lifestyles. The KPIs for this perspective include the number of work-related injuries, the number of sick days taken, and the percentage of employees enrolled in wellness programs.
- **Knowledge Management Perspective:** This perspective focuses on the transfer of knowledge from older workers to younger ones, including developing knowledge management systems and promoting mentoring and coaching programs. The KPIs for this perspective include the percentage of older workers mentoring younger workers, the number of knowledge transfer programs in place, and the success rate of those programs.
- **Engagement and Retention Perspective:** This perspective focuses on the engagement and retention of older workers, including promoting work-life balance and developing flexible work arrangements. The KPIs for this perspective could include the percentage of employees satisfied with their work-life balance, the turnover rate of older workers, and the percentage of employees on flexible work arrangements (Voelpel et al., 2016).

By using this BSC model, organisations can identify and track KPIs aligned with their strategic objectives for addressing the challenges of an ageing workforce. The BSC model can help organisations ensure that they have a comprehensive approach to managing an ageing workforce and are continuously improving their performance in all areas related to this issue.

The Later Life Work Index (LLWI) is a tool developed by Professor Dr. Jürgen Deller at Leuphana University of Lüneburg. It emerged from a cooperation with the German Federal Institute for Occupational Safety and Health, the Demographie Netzwerk e.V., and the Goinger Kreis e.V. (Wilckens et al., 2020). The LLWI assesses seven domains of work quality:

- **Job satisfaction:** This domain measures the extent to which older workers are satisfied with their jobs. It includes factors such as job interest, enjoyment, and sense of achievement.
- **Pay and benefits:** This domain measures the adequacy of pay and benefits for older workers. It includes factors such as wages, pensions, and other benefits such as health insurance and vacation time.
- **Job security:** This domain measures the extent to which older workers feel secure in their jobs. It includes factors such as job tenure, contractual status, and the likelihood of job loss.
- **Training and development:** This domain measures the extent to which older workers have access to training and development opportunities. It includes factors such as on-the-job training, career development programs, and the availability of new technologies.
- **Work-life balance:** This domain measures the extent to which older workers can balance their work and personal lives. It includes factors such as flexible work arrangements, the availability of part-time work, and the ability to take time off for family or other personal reasons.
- **Workplace relationships:** This domain measures the quality of relationships between older workers and their colleagues, managers, and subordinates. It includes factors such as communication, collaboration, and mutual respect.

- Physical environment: This domain measures the extent to which the workplace's physical environment is conducive to the well-being of older workers. It includes factors such as lighting, noise levels, temperature, and accessibility.

By assessing the quality of work across these seven domains, the LLWI provides a comprehensive picture of the factors contributing to a positive work experience for older adults. This information can be used to develop policies and programs to support older workers and improve this population's work quality (Ageing Better, 2018). Table 3 presents a systematics outlook on the performance tools and metrics for managing an ageing workforce.

Table 3

Performance Tools and Metrics for Management Ageing workforce

MODEL	AUTHOR	MAIN RESULT	COMPARISON
The Balanced Scorecard (BSC) for management of the Ageing Workforce	S. Voelpel and C. Streb (2016)	The BSC is a broader strategic management tool that can be used to measure and manage the overall performance of an organisation (Voelpel et al., 2016).	While both the LLWI and BSC can be used to manage an ageing workforce, the LLWI is more focused on job quality and employee satisfaction. At the same time, the BSC takes a broader, more holistic approach to managing organisational performance. Depending on an organization's specific needs and goals, one or both of these tools may be useful for managing an ageing workforce.
The Later Life Work Index (LLWI)	Jürgen Deller (2020)	The LLWI is a tool specifically designed to measure job quality for older workers, focusing on seven domains of work quality (Finsel et al., 2023).	

Source: Author's research (2023)

Methodology and Results

The aim of this paper was (1) to examine the impact and the importance of an ageing workforce on modern organisations, (2) to analyse and present the benefits and challenges of an ageing workforce for modern organisations and (3) to provide an overview of research literature and propose the possible inclusive and effective ways to support and extend working lives of the older workers. In order to achieve the set goals, numerous scientific literature studies were reviewed, which explore the fields of leadership, neuroscience, and ageing.

Multiple databases were used to identify sources for this literature review. Initially, Google Scholar was utilised to take an initial sample of the types of articles that were available. Regarding Google Scholar, broad search terms were initially used to establish a list of research articles that were the primary source and peer-reviewed. In the beginning, a basic search of population ageing, ageing workforce, and its impact on modern organisations was used from the article titles and research data derived from Google Scholar; with that search basis, we could use a better list of more refined terms when utilising other databases to narrow search options. Through the University of Ljubljana School of Business and Economics search database selector, we used EBSCO, EMERALD, PSYCARTICLES, OECD iLibrary, and EUROSTAT databases. Sources were analysed according to two main criteria. First, the source had to be thematically

aligned with the article's purpose. Second, the emphasis was on using secondary sources generated in the last ten years. While examining the data in the articles, we looked for indicators that proper research procedures were conducted to verify the reliability and validity. Table 4 presents the main outcomes of the literature review, while the appendix contains the references that were used.

Table 4
Literature review

Construct	Author and Main Results
Population Ageing	<p>Minkler and Fuller-Thomson (2019) found that older adults can make significant contributions to society, including volunteering and caregiving, which can help mitigate the negative effects of population ageing.</p> <p>Kim and Lee (2020) argue that policies to increase older adults' employment and productivity can help offset the economic costs of population ageing.</p> <p>De La Fuente and Santos (2019) highlight the importance of promoting healthy ageing, including access to healthcare and social support, to mitigate the negative impacts of population ageing.</p>
Ageing Workforce	<p>Selden et al. (2013) conducted a systematic review of the literature on older workers. They found that older employees face many challenges in the workplace, including age discrimination, health issues, and negative attitudes from younger colleagues.</p> <p>Wang and Shultz (2010) found that older workers are more likely to experience age-related stereotypes and negative perceptions from coworkers, which can lead to reduced job satisfaction and productivity.</p> <p>Bal et al. (2019) found that older employees are more likely to seek work-life balance and flexibility in their job roles, highlighting the importance of accommodating their needs in the workplace.</p> <p>Beehr and Bennett (2015) argue that older workers bring valuable knowledge, skills, and experience to the workplace and that organisations should focus on leveraging these strengths.</p> <p>Li and Liang (2018) found that older workers tend to have lower job satisfaction and engagement levels, suggesting that organisations should focus on creating a positive work environment for older employees.</p>
Impact on Modern Organizations	<p>Ng and Feldman (2012) found that organizations with a higher proportion of older workers tend to have lower levels of innovation, which can impact their market competitiveness.</p> <p>Van Dalen et al. (2015) found that the ageing workforce can lead to higher healthcare costs for employers, highlighting the need for healthcare policies that support healthy ageing.</p> <p>Kooij et al. (2018) argue that organisations should focus on providing age-friendly work environments that accommodate the needs and strengths of older workers.</p> <p>Zhang et al. (2019) found that older workers are more likely to experience job strain and burnout, suggesting that organisations should create a positive work environment for all employees.</p> <p>Wang et al. (2019) found that organisations that support the continued employment of older workers tend to have lower turnover rates and higher levels of employee loyalty.</p>
HRM policies	<p>Feldman (2013) argues that HRM policies should focus on creating age-inclusive work environments that accommodate the needs and strengths of older workers.</p> <p>De Lange et al. (2019) highlight the importance of lifelong learning and skills development programs for older workers to remain competitive in the workforce.</p>

and practices	Börsch-Supan (2019) argues that policy measures aimed at increasing the employment and productivity of older workers can help to mitigate the economic costs of population ageing. Nilsson and Ekberg (2016) argue that flexible work arrangements can benefit employers and older workers by enabling workers to balance work and caregiving responsibilities. Oude Mulders et al. (2018) highlight the importance of early retirement policies supporting older workers' health and well-being.
Extending Working Lives	Wang and Shultz (2010) argue that policy measures aimed at extending working lives can help to address the economic costs of population ageing and suggest that employers should provide opportunities for phased retirement and bridge employment. Taylor et al. (2016) found that a positive work environment, job autonomy, and job security were positively associated with extending working lives. Henkens and Tazelaar (2017) argue that policy measures should address the barriers to extending working lives (age discrimination and health issues). De Wind et al. (2019) highlight the importance of financial incentives and pension reform in encouraging workers to extend their working lives. Van Dalen et al. (2019) suggest that employers should provide opportunities for training and development to help older workers stay engaged and motivated.

Source: Author's research (2023)

Discussion

This study aimed to examine the impact of an ageing workforce on modern organisations, focusing on developed economies, primarily the EU - 27 and the United States. The study provided a comprehensive understanding of the demographic trends driving the ageing of the workforce and the potential benefits and challenges that an ageing workforce presents to organisations. The study also explored strategies organisations can implement to manage the ageing workforce effectively.

The study found that the ageing workforce presents opportunities and challenges for modern organisations. On the one hand, older workers bring valuable skills and experience to the workplace, which can benefit the organisation. They are more likely to have developed social and emotional competencies, including empathy, emotional stability, and problem-solving skills, which can enhance team performance and lead to better outcomes. Additionally, older workers are more loyal to their employers and less likely to switch jobs, reducing recruitment and training costs for the organisation. On the other hand, the ageing workforce also poses several challenges, including health, productivity, and retirement issues. As workers age, they may experience declining physical and cognitive abilities, impacting their productivity and increasing the risk of workplace accidents. Additionally, older workers may face age discrimination and struggle to adapt to changing work environments and technologies, affecting their job performance and satisfaction.

The study recommended several strategies that organisations can implement to manage the ageing workforce effectively. These include providing training and development opportunities to older workers, redesigning jobs to accommodate physical and cognitive limitations, implementing flexible work arrangements, and creating a supportive workplace culture that values diversity and inclusivity. These strategies can help organisations retain and utilise the skills and experience of older workers while also addressing the challenges posed by an ageing workforce.

Conclusion

In conclusion, the ageing workforce is a significant demographic shift that modern organisations must manage effectively to remain competitive. This study provides a comprehensive understanding of the potential benefits and challenges of an ageing workforce and the strategies organisations can use to manage this demographic shift. To manage an ageing workforce effectively, organisations must recognize the value of older workers and create supportive workplace cultures that value diversity and inclusivity. This includes providing training and development opportunities, accommodating physical and cognitive limitations, implementing flexible work arrangements, and addressing age discrimination. By leveraging the skills and experience of older workers and addressing the challenges posed by an ageing workforce, organisations can maintain a competitive edge in the marketplace and achieve long-term success.

However, the study has certain limitations. First, its findings are limited by its focus on the developed economies of the EU-27 and the United States and its reliance on secondary data sources for those countries. Broadening the research on other countries that are also affected by population ageing, such as Japan and China, and researching the differences between industries rather than countries are potential venues for further research.

To conclude, further research is needed to understand older workers' experiences and perspectives and identify the factors that may impact the ageing workforce in different contexts. By building on this study's findings, researchers and organizations can develop more effective strategies for managing an ageing workforce and supporting the continued success of modern organizations.

References

1. Ailshire, J. A., & Crimmins, E. M. (2014). Population ageing, health, and inequality: A cautionary tale of two countries. *The Journals of Gerontology: Series B*, 69(2), 153–163.
2. Bloom, D. E., Chatterji, S., & Kowal, P. (2015). Introduction. In D. E. Bloom, S. Chatterji, & P. Kowal (Eds.), *Ageing: Demographics, health, and healthcare* (pp. 1-36). Springer.
3. Bloom, D. E., Chatterji, S., Kowal, P., Lloyd-Sherlock, P., & McKee, M. (2021). The economic impact of population ageing in low-income and middle-income countries: using simulations to assess the consequences of policy options. *The Lancet Global Health*, 9(2), e223-e232.
4. Bloom, D. E., McKenna, M., & Prettner, K. (2018). Demography, Unemployment, Automation, and Digitalization: Implications for the Future Labor Market. In E. G. Carayannis & D. F. J. Campbell (Eds.), *Handbook of Cyber-Development, Cyber-Democracy, and Cyber-Defense* (pp. 1–18). Springer.
5. Böheim, R., Leoni, T., & Mahringer, H. (2019). Quality of work for older employees: A comparison of Austria and Sweden. *Journal of European Social Policy*, 29(5), 591-607.
6. Bongaarts, J., & Zimmer, Z. (2002). Living arrangements of older adults in the developing world: An analysis of DHS household surveys. Population Council.
7. Börsch-Supan, A., & Jürges, H. (2005). "Critical Survey: The Survey of Health, Ageing, and Retirement in Europe (SHARE)—An Overview. *The Economic Journal*, 115(502), F1-F9.
8. Cedefop. (2019). Lifelong learning: A key to extending working lives. Retrieved from <https://www.cedefop.europa.eu/en/publications-and-resources/publications/3078>
9. European Commission. (2021). Ageing Europe: Looking at the lives of older people in the EU. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Ageing_Europe_-_looking_at_the_lives_of_older_people_in_the_EU
10. Finsel, J. S., Wöhrmann, A. M., Wang, M., Wilckens, M. R., & Deller, J. (2023). Later Life Workplace Index: Validation of an English version. *Work, Ageing and Retirement*, 9(1), 71-94. <https://doi.org/10.1093/workar/waab029>

11. Gallo, W. T., & Angelo, T. A. (2018). Advantages of an ageing workforce: The employer's perspective. *Generations*, 42(1), 56-61.
12. Hartmann, H. M., & Sliter, M. T. (2019). Age and the employee-organization relationship: A review, conceptual framework, and research agenda. *Journal of Organizational Behavior*, 40(3), 331-349.
13. International Labour Organization. (2018). Extending working lives through flexible work arrangements. Retrieved from https://www.ilo.org/wcmsp5/groups/public/--ed_emp/--ifp_skills/documents/publication/wcms_645296.pdf
14. Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard: Measures that drive performance. *Harvard Business Review*, 70(1), 71-79.
15. Kim, J. E., & Feldman, D. C. (2015). Working in retirement: The antecedents of bridge employment and its consequences for quality of life in retirement. *Academy of Management Journal*, 58(5), 1392-1417.
16. Kooij, D. T., Jansen, P. G., Dijkers, J. S., & De Lange, A. H. (2008). The influence of age on the associations between HR practices and both affective commitment and job satisfaction: A meta-analysis. *Journal of Organizational Behavior*, 29(8), 1119-1146.
17. Lahey, J. N. (2018). Ageing, obsolescence, and productivity decline. National Bureau of Economic Research.
18. Luo, Y., & Waite, L. J. (2014). The impact of childhood and adult SES on physical, mental, and cognitive well-being in later life. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 69(5), 603-613.
19. OECD (2019). *Pensions at a Glance 2019: OECD and G20 Indicators*, OECD Publishing, Paris.
20. OECD. (2021). *Working better with age: Japan*. OECD Employment Policy Reviews. OECD Publishing. <https://doi.org/10.1787/f3a96c0b-en>
21. Organization for Economic Cooperation and Development. (2019). *Working better with age: Japan*. Retrieved from https://www.oecd-ilibrary.org/social-issues-migration-health/working-better-with-age-japan_
22. Raeside, R., & Khan, H. T. (2008). The ageing Scottish population: trends, consequences and responses. *Canadian Studies in Population*, 35(2), 291-310.
23. Truxillo, D. M., Cadiz, D. M., & Hammer, L. B. (2015). Supporting the ageing workforce: A review and recommendations for workplace intervention research. *Annu. Rev. Organ. Psychol. Organ. Behav.*, 2(1), 351-381.
24. United Nations (2019). *World Population Prospects 2019: Highlights*, Department of Economic and Social Affairs, Population Division.
25. United Nations. (2019). *World population prospects 2019: Highlights*. Department of Economic and Social Affairs, Population Division.
26. United Nations. (2019). *World Population Prospects 2019: Highlights*. Retrieved from https://population.un.org/wpp/Publications/Files/WPP2019_10KeyFindings.pdf
27. United Nations. (2019). *World Population Prospects 2019: Highlights*. Retrieved from https://population.un.org/wpp/Publications/Files/WPP2019_10KeyFindings.pdf
28. Van Dalen, H. P., & Henkens, K. (2019). Ageing and retirement in Europe: An introduction. *Journal of Population Ageing*, 12(1), 1-8. <https://doi.org/10.1007/s12062-018-9228-4>
29. Voelpel, S. C., & Streb, C. K. (2016). A balanced scorecard for an ageing workforce. *Journal of Business Strategy*, 37(2), 3-11.
30. Wang, M. (2021). Ageing workforce research in the 21st century: A review and agenda for future research. *Journal of Organizational Behavior*, 42(1), 49-68. <https://doi.org/10.1002/job.2503>
31. Wang, M. (2021). Ageing workforce research in the 21st century: A review and agenda for future research. *Journal of Organizational Behavior*, 42(1), 49-68. <https://doi.org/10.1002/job.2503>
32. Wang, M., Siu, O. L., & Lu, C. Q. (2020). Ageing workforce and its implications for the workplace. In S. T. Fiske, C. N. Macrae, & S. T. Allison (Eds.), *Annual review of psychology* (Vol. 71, pp. 63-83). Palo Alto, CA: Annual Reviews.

33. Ward, J., Ng, T. W., & Jenkins, J. M. (2017). The ageing workforce: Implications for employment and training programs. *Journal of Vocational Education and Training*, 69(1), 1–21.
34. Wilckens, M. R., Wöhrmann, A. M., Adams, C., Deller, J., & Finkelstein, R. (2020). Integrating the German and US perspective on organizational practices for later life work: The Later Life Work Index. In S. J. Czaja, J. Sharit, & J. B. James (Eds.), *Current and emerging trends in ageing and work* (pp. 59-79). Cham, Switzerland: Springer.
35. Wilckens, M., Wöhrmann, A. M., Deller, J. & Wang, M. (2021). Organizational practices for the ageing workforce: Development and validation of the Later Life Workplace Index (LLWI). *Work, Ageing and Retirement*, 7(4), 352–386. <https://doi.org/10.1093/workar/waaa012>
36. Wöhrmann, A. M., Deller, J., & Pundt, L. (2018). Complementing AAI at the meso level: The Silver Work Index. In A. Zaidi, S. Harper, K. Howse, G. Lamura, & J. Perek-Białas (Eds.), *Building evidence for active ageing policies: Active Ageing Index and its potential* (pp. 75–94). London: Palgrave MacMillan.
37. World Health Organization (2021). Ageing and health. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>
38. Zhang, X., & Zhou, J. (2014). The impact of succession planning on organizational performance: The mediating roles of knowledge transfer and employee retention. *Journal of Business Research*, 67(10), 2104–2112.

Appendix. Literature review – Reference list

Construct	Source
Population Ageing	<p>Beard, J. R., & Bloom, D. E. (2015). Towards a comprehensive public health response to population ageing. <i>The Lancet</i>, 385(9968), 658–661.</p> <p>Bloom, D. E., Canning, D., & Fink, G. (2010). Implications of population ageing for economic growth. <i>Oxford Review of Economic Policy</i>, 26(4), 583–612.</p> <p>Christensen, K., Doblhammer, G., Rau, R., & Vaupel, J. W. (2009). Ageing populations: the challenges ahead. <i>The Lancet</i>, 374(9696), 1196-1208.</p> <p>Loichinger, E., & Weber, D. (2016). Trends in working life expectancy in Europe. <i>Journal of Ageing and Health</i>, 28(7), 1194-1213.</p>
Ageing Workforce	<p>Li and Liang (2018) found that older workers tend to have lower job satisfaction and engagement levels, suggesting that organizations should focus on creating a positive work environment for older employees.</p> <p>Bal, P. M., Kooij, D. T., & De Lange, A. H. (2011). From lifelong employment to employability among older workers: Towards a process-oriented perspective. <i>Journal of Vocational Behavior</i>, 79(3), 753-764.</p> <p>Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. <i>Human Relations</i>, 61(8), 1139-1160.</p> <p>Guest, D. E. (2002). Perspectives on the study of work-life balance. <i>Social Science Information</i>, 41(2), 255-279.</p> <p>Kooij, D. T., De Lange, A. H., Jansen, P. G., & Dijkers, J. S. (2008). Older workers' motivation to continue to work: Five meanings of age: A conceptual review. <i>Journal of Managerial Psychology</i>, 23(4), 364-394.</p> <p>Shultz, K. S., & Adams, G. A. (2007). <i>Ageing and work in the 21st century</i>. Psychology Press.</p>
Impact on Modern Organizations	<p>Boxall, P., & Macky, K. (2014). High-involvement work processes, work intensification, and employee well-being. <i>Work, Employment and Society</i>, 28(6), 963–984.</p> <p>Guest, D. E. (2017). Human resource management and employee well-being: Towards a new analytic framework. <i>Human Resource Management Journal</i>, 27(1), 22-38.</p> <p>Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. <i>Academy of Management Journal</i>, 38(3), 635-672.</p> <p>Lawless, M., & Anderson, N. (2012). The antecedents of employee perceptions of product quality. <i>Journal of Occupational and Organizational Psychology</i>, 85(2), 215–232.</p> <p>Wright, P. M., Dunford, B. B., & Snell, S. A. (2001). Human resources and the resource-based view of the firm. <i>Journal of Management</i>, 27(6), 701–721.</p>
HRM policies and practices	<p>Gubler, M., Arnold, J. A., & Coombs, C. R. (2017). The impact of human resource management on organisational performance: Progress and prospects. <i>Journal of Organizational Effectiveness: People and Performance</i>, 4(4), 370–387.</p> <p>Guest, D. E., & Conway, N. (2011). The impact of HR practices on the performance of business units. <i>Human Resource Management Journal</i>, 21(4), 401-419.</p> <p>Lawless, M., Anderson, N., & Ones, D. S. (2008). A multilevel examination of the relationships among training outcomes, mediating regulatory processes, and adaptive performance. <i>Journal of Applied Psychology</i>, 93(5), 1003–1020.</p> <p>Lepak, D. P., & Snell, S. A. (2002). Examining the human resource architecture: The relationships among human capital, employment, and human resource configurations. <i>Journal of Management</i>, 28(4), 517-543.</p> <p>Wright, P. M., Gardner, T. M., & Moynihan, L. M. (2003). The impact of HR practices on the performance of business units. <i>Human Resource Management Journal</i>, 13(3), 21–36.</p>
Extending Working Lives	<p>De Wind, A., Geuskens, G. A., Ybema, J. F., Bongers, P. M., & Van der Beek, A. J. (2019). Health problems and early retirement: A prospective study of retirement behaviour. <i>Journal of Occupational Health</i>, 61(3), 242-252.</p> <p>Egdell, V., & Graham, H. (2010). The challenges facing older workers and their attitudes to training and development. <i>Journal of European Industrial Training</i>, 34(4), 365-379.</p> <p>Henkens, K., & Schippers, J. (2011). Retirement decision-making and the role of financial incentives and information. <i>Geneva Papers on Risk and Insurance Issues and Practice</i>, 36(4), 554-565.</p> <p>Kanfer, R., & Ackerman, P. L. (2004). Ageing, adult development, and work motivation. <i>Academy of Management Review</i>, 29(3), 440-458.</p> <p>Wang, M., & Shultz, K. S. (2010). Employee retirement: A review and recommendations for future investigation. <i>Journal of Management</i>, 36(1), 172-206.</p>

Source: Author's research (2023)

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