

EXPLORING THE STRATEGIC POTENTIAL OF AGE MANAGEMENT FOR WORKFORCE SUSTAINABILITY: A SYSTEMATIC LITERATURE REVIEW

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Abstract

Research background: Population ageing and demographic changes are significantly transforming labor markets and creating new challenges for organizations in maintaining a sustainable workforce. As the proportion of older employees increases, organizations must adopt strategies that enable employees to remain productive, healthy, and engaged throughout their working lives. In this context, the concept of age management has gained increasing attention in both academic research and organizational practice. Age management encompasses a set of organizational policies and practices aimed at effectively managing age diversity, supporting longer working lives, and improving the well-being and performance of employees across different age groups. Previous studies have examined various aspects of age management, including health promotion, lifelong learning, flexible work arrangements, and knowledge transfer. However, despite the growing body of research on this topic, there is still a lack of a systematic literature review that synthesizes existing knowledge and identifies key research directions.

Purpose of the article: The aim of this study is to systematically review the existing literature on age management and to explore its strategic potential for workforce sustainability. Specifically, the study seeks to identify the main research trends, thematic areas, and approaches discussed in the academic literature. Furthermore, the review aims to highlight research gaps and underexplored areas that may guide future research in the field of age management and sustainable workforce development.

Methods: This study applies a systematic literature review following the PRISMA guidelines to ensure a transparent and structured selection of relevant academic publications. Relevant studies were identified through database searches and subsequently screened based on predefined inclusion and exclusion criteria. After the selection process, the final set of articles was analyzed to identify major research themes and patterns. In addition, a qualitative synthesis of the literature was conducted to examine how age management is addressed in relation to workforce sustainability and to highlight the dominant perspectives within the existing research.

Key words: age management, older workers, workforce sustainability, sustainable employability, lifelong learning

JEL Classification J11, J24, J26

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INTRODUCTION

Population ageing represents a fundamental challenge for the sustainability of labour markets and pension systems. A declining birth rate, together with increasing life expectancy, is leading to a reduction in the proportion of the economically active population. This demographic shift creates growing pressure to extend working lives and adapt labour market structures (Vyhlídal; Aitken & Singh; Novak et al.). Cross-country analyses indicate that the likelihood of remaining in employment beyond the age of 60 is significantly influenced by health status, socio-economic position, and the level of education. These factors play a crucial role in shaping individuals' capacity and willingness to continue working in later life. (Head et al., 2024; Lu et al., 2023; Macken et al., 2022). However, the risk of early exit from the labour market is not evenly distributed across the population. It varies significantly depending on individual characteristics and socio-economic conditions (Oylu et al., 2025). Studies have identified a lower likelihood of re-employment at older ages, with older workers more frequently facing the risk of occupational downgrading following periods of unemployment. (Brydsten et al., 2023) Research has highlighted

the existence of differentiated retirement trajectories that reflect underlying social inequalities and individuals' economic conditions.

At the same time, health status and working conditions play a significant role in shaping decisions to remain in employment. Authors (Petersen et al., 2025) emphasize the role of physical capacity and supportive working environments in extending working life, while (Abrams et al., 2025) highlight the negative impact of unstable work schedules on the well-being of older workers. (Nivalainen, 2022) confirms that health status and job control are key determinants of both planned and actual retirement age. In response to these challenges, the concept of age management has gained increasing attention as a strategic approach to managing age diversity within organizations. (Urbancova et al., 2020) provide empirical evidence that the systematic implementation of age management practices can contribute to competitive advantage and workforce stability. In contrast, (Vrabcova & Urbancova, 2022) highlight that during periods of crisis, the systematic management of older workers tends to weaken. Despite the extensive research on individual determinants, the literature remains fragmented and offers only limited integration of macroeconomic, organizational, and individual factors related to workforce sustainability. Therefore, this study aims to systematize existing knowledge and identify the mechanisms through which age management can support long-term labour market participation.

LITERATURE OVERVIEW

The literature suggests that one of the key mechanisms supporting workforce sustainability is lifelong learning and the systematic development of older workers' competencies. (Naegele et al., 2025) highlight unequal access to vocational training and emphasize that internalized age-related stereotypes may negatively affect older workers' motivation to participate in training activities. Building on these findings, (Li et al., 2023), provide empirical evidence that participation in education significantly increases the intention to remain in employment beyond retirement eligibility, particularly when organizations foster an age-inclusive climate and actively support the development of older employees. An important factor in the development of employability is also intergenerational interaction and knowledge sharing. (Chen et al., 2025) confirm that intergenerational interactions and reciprocal knowledge transfer enhance the self-perceived employability of older workers, with a positive intergenerational climate further strengthening this effect. (Lagace et al., 2023) additionally demonstrate that systematic knowledge-sharing practices reduce age-related stereotypes while increasing work engagement and the intention to remain within the organization. (Marcaletti et al., 2023) further suggest that the positive effects of training are particularly evident among workers aged 50 and over, where they help mitigate the negative impact of long-term seniority on job quality. In the context of technological change, the development of digital competencies has become increasingly important. (Low et al., 2025) emphasize that lifelong learning and the development of artificial intelligence-related skills enhance the career resilience of older workers. Similarly, (Xie et al., 2023) identify access to digital training as a key factor supporting autonomy and competence self-efficacy, which in turn increases the intention to remain in employment. Education thus represents not only a tool for adapting to technological change but also a mechanism for stabilizing labour market participation in later career stages.

However, workforce sustainability is not determined solely by the development of competencies, but also by employer perceptions and organizational culture. (Lee et al., 2026) identify differing recruitment preferences toward "mature" and "senior" workers, with assessments of their adaptability and competencies significantly influencing hiring decisions. (Meng et al., 2022) confirm that negative managerial attitudes and experiences of age discrimination increase the risk of job loss prior to reaching retirement age. Conversely, (Binyamin & Brender-Ilan, 2023) highlight the importance of communication climate and the social environment in shaping attitudes

toward middle-aged workers, showing that a positive organizational communication setting can mitigate discriminatory tendencies. (Jensen et al., 2024) find that age-related stereotypes do not necessarily translate into discriminatory HR practices, pointing to the important role of broader institutional and cultural contexts.

The concept of sustainable employability provides a broader framework for understanding these processes. (Neupane et al., 2022) define sustainable employability as a multidimensional construct encompassing health, well-being, and competencies, while also pointing to the relative stability of these indicators over time. However, (Verdonk et al., 2022) critically argue that existing definitions often fail to adequately reflect a life-course perspective and the diversity of career trajectories, thereby limiting their ability to capture the complexity of later career stages. The heterogeneity of career trajectories is further illustrated by research focusing on so-called “bridge employment”. (Mazumdar et al., 2023) highlight that older workers sometimes deliberately choose non-standard forms of employment, where the extent to which employer expectations are fulfilled significantly influences their work attitudes and intention to remain employed. (Hallpike et al., 2024) identify both individual and contextual strategies through which career sustainability can be optimized in later career stages, emphasizing the importance of multi-actor involvement in career decision-making processes. Furthermore (Sousa-Ribeiro et al., 2025) underline the role of organizational support, well-being, and perceived competence in post-retirement employment. In a related vein, (Aisa et al., 2023) link technological change, skills development, and delayed retirement, highlighting the growing importance of continuous upskilling in the context of automation. The importance of career sustainability in the context of an ageing workforce is emphasized by (van der Heijden & Vermeeren, 2025), who demonstrate that the ability and willingness to work until retirement age result from the interaction between individual resources and organizational support. Their findings suggest that workforce sustainability cannot be reduced solely to health status or chronological age but should instead be understood as a dynamic process unfolding across the entire working life. The conceptual linkage between ageing and career sustainability is further developed by (Visentini et al., 2025), who identify key dimensions of professional longevity and successful ageing. This framework allows age management to be understood not merely as an HR tool, but as a broader strategic approach aimed at supporting long-term labour market participation. From an organizational perspective, (Lima & de Amorim, 2025) show that organizations that systematically invest in HR policies and diversity management are better positioned to attract and retain older workers. This implies that age management should not be implemented as a short-term response to immediate challenges (such as labour shortages), but rather as an integral component of long-term organizational strategy. The importance of the psychosocial work environment is further highlighted by (Gignac et al., 2022), who show that job insecurity and lack of trust reduce older workers’ willingness to communicate their needs. A supportive organizational culture therefore represents a key prerequisite for the effective sustainability of employment. (Trentini, 2024) additionally points to the risk of older workers becoming “trapped” in unemployment, emphasizing the need for preventive measures at the organizational level. (Feng et al., 2025) further argue that labour market participation in later career stages has not only economic but also important social and identity-related dimensions. From a synthetic perspective, workforce sustainability can be understood as the result of a complex interaction between competency development, organizational climate, employer perceptions, and broader technological changes. Education, inclusive HR practices, and supportive working environments emerge as key mechanisms through which long-term labour market participation of older workers can be enhanced, while simultaneously mitigating the risk of early exit from the labour market.

GOAL AND METHODOLOGY

The main objective of this study is to provide a comprehensive overview of the research on age management in the context of workforce sustainability. Specifically, the study aims to analyse

the evolution of scientific publications, identify dominant research themes and conceptual approaches, and highlight existing research gaps within the literature. To address these objectives, the following research questions were formulated.

RQ1: How has the volume of scientific publications addressing age management in the context of workforce sustainability evolved over time?

RQ2: What are the dominant research themes and conceptual perspectives in the existing literature on age management and workforce sustainability?

RQ3: What research gaps can be identified in the current body of literature, and what potential directions for future research emerge in the field of age management and sustainable workforce development?

The systematic literature review was conducted in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to ensure a transparent, structured, and reproducible study selection process. In the identification phase, a comprehensive search was carried out using the Web of Science database, which is widely recognized for its high-quality and curated academic content. The search strategy was developed using a combination of relevant keywords and Boolean operators to capture studies addressing age management in the context of labour market outcomes. The search query was formulated as follows:

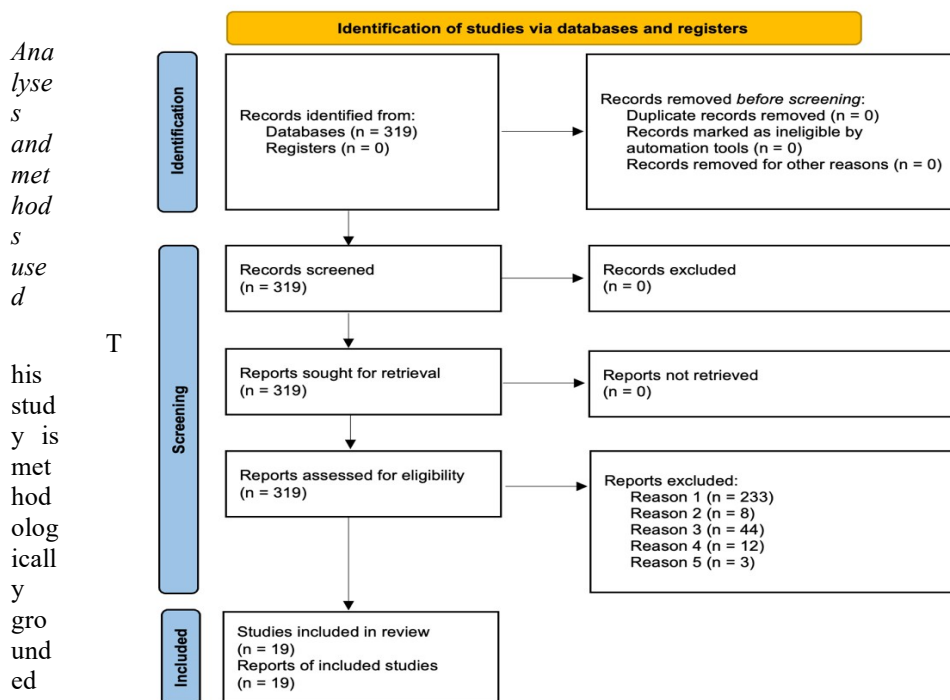
TS = (("age management" OR "aging workforce" OR "older workers") AND (sustainab* OR retention OR employab* OR "working life extension") AND (employment OR "labour market" OR "labor market")).

This initial search yielded a total of 319 records. No additional records were identified through other sources, and no duplicate records were found or removed at this stage.

In the screening phase, all identified records (n = 319) were systematically screened based on their titles and abstracts to assess their preliminary relevance to the research topic. Following this, full-text versions of all records were retrieved and examined (n = 319). No studies were excluded at this stage due to accessibility issues, ensuring that the subsequent eligibility assessment was based on a complete dataset.

In the eligibility phase, a rigorous and sequential filtering process was applied using predefined inclusion criteria. First, a temporal filter was introduced, limiting the sample to studies published between 2021 and 2026 to ensure the timeliness and contemporary relevance of the findings in a rapidly evolving labour market environment (n = 233 excluded, Reason 1). Second, only peer-reviewed journal articles were retained, while other document types such as conference proceedings, book chapters, and editorial materials were excluded to ensure methodological robustness and scientific quality (n = 8 excluded, Reason 2). Third, the selection was restricted to studies classified within the Web of Science categories Management, Sociology, Business, and Demography, thereby ensuring conceptual alignment with the interdisciplinary nature of the research topic (n = 44 excluded, Reason 3). Fourth, only studies indexed in the Social Sciences Citation Index (SSCI) were included to further enhance the academic credibility, impact, and reliability of the dataset (n = 12 excluded, Reason 4). Finally, an additional quality filter was applied by retaining only articles published in journals ranked in the first and second quartiles (Q1 and Q2), thereby ensuring a high level of academic quality and impact (n = 3 excluded, Reason 5).

Figure 1: Systematic study selection process following PRISMA



Source: Own processing based on the PRISMA flow diagram.

tic literature review conducted in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. The application of this approach ensured a transparent, structured, and replicable process of identifying, screening, and selecting relevant scientific publications. As a result of this procedure, a final sample of 19 peer-reviewed journal articles was obtained, focusing on age management and workforce sustainability.

Subsequently, the selected publications were analysed using bibliometric methods implemented in the RStudio environment, specifically through the Bibliometrix/Biblioshiny tool. This analytical approach enabled the examination of key characteristics of the selected literature, including the evolution of scientific production over time, the identification of dominant research themes based on keyword analysis, and the mapping of conceptual structures within the field.

The bibliometric analysis served as a supportive methodological tool, allowing for the identification of prevailing research trends, thematic clusters, and the overall structure of the research domain. In addition, the results provided a basis for detecting underexplored areas and formulating potential directions for future research. To complement the quantitative insights, a qualitative content-oriented interpretation of the selected studies was also conducted, particularly in relation to identifying research gaps and conceptual perspectives within the literature.

FINDINGS

This section presents the results of the bibliometric analysis conducted on a final sample of 19 scientific articles retrieved from the Web of Science database. The analysis focuses on the development of publication activity, dominant research themes, and the conceptual structure of the research field.

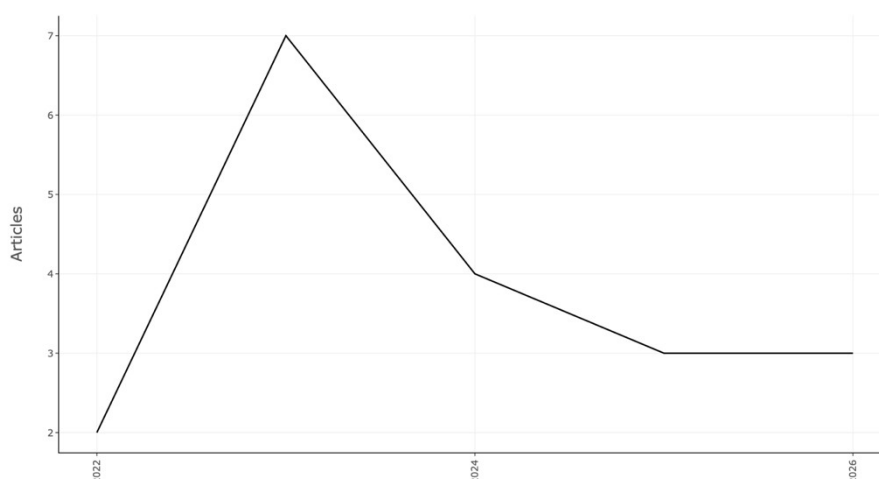
Development of publication activity

The analysis of annual scientific production, based exclusively on data obtained from the Web of Science database, reveals a fluctuating trend in the number of publications addressing age management and workforce sustainability over the observed period (2022–2026). It should be noted that the data for 2026 reflect only the initial phase of the year.

The number of publications increased significantly from 2 articles in 2022 to a peak of 7 articles in 2023, indicating a rapid rise in academic interest in the topic. However, this growth was followed by a gradual decline, with the number of publications decreasing to 4 in 2024 and further to 3 articles in both 2025 and 2026.

As a result of this structured selection procedure, a total of 19 studies met all inclusion criteria and were included in the final review. The number of reports corresponds directly to the number of included studies ($n = 19$), forming the basis for the subsequent analysis and synthesis.

Figure 2: Annual scientific production, 2022–2026



Source: Own processing in RStudio.

Despite this decline, the publication activity remained relatively stable in the later years, suggesting a sustained, although less dynamic, level of research interest. Overall, the results indicate that while the topic experienced a notable surge in attention in the early phase, it has since transitioned into a more stabilized research area.

Dominant keywords in the literature

The analysis of authors' keywords provides important insights into the dominant research themes within the field of age management and workforce sustainability. The most frequently occurring terms, such as “older workers,” “retirement,” “age,” “employment,” and “productivity,” indicate that the literature is primarily focused on labour market participation and the economic implications of workforce ageing.

Figure 3: Keyword cloud



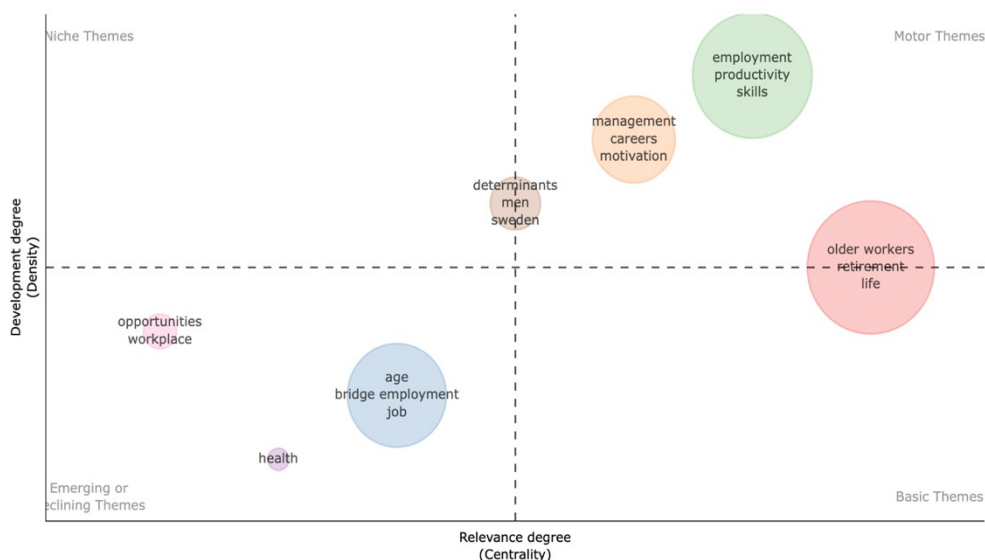
Source: Own processing in RStudio.

A substantial body of research concentrates on late-career employment trajectories, particularly in relation to retirement processes and bridge employment. This suggests that extending working life beyond traditional retirement age represents a central concern in the current literature. In parallel, a significant stream of studies addresses organizational and managerial dimensions, including job management, workplace conditions, and skills development, emphasizing the role of employers in facilitating the integration and retention of older workers.

In addition, the findings highlight the importance of individual-level determinants, such as health status, perceived employability, and attitudes toward ageing, which shape both the capacity and motivation of older individuals to remain economically active. The presence of keywords related to discrimination and ageism further points to persistent structural and social barriers within labour markets. Overall, the keyword analysis suggests that the literature adopts a multidimensional perspective, integrating economic, organizational, and socio-demographic viewpoints in the examination of age management and sustainable workforce development.

The thematic map provides a structured overview of the conceptual landscape of research on age management and workforce sustainability, distinguishing between themes based on their relevance and level of development.

Figure 4: Thematic map



Source: Own processing in RStudio.

The results indicate that the core of the research field is formed by motor themes such as employment, productivity, and skills, as well as management, careers, and motivation. These themes are both highly relevant and well-developed, suggesting that they represent the central focus of the existing literature.

In contrast, themes related to older workers, retirement, and life are positioned among the basic themes, indicating their high importance for the field, but relatively lower level of conceptual development. This suggests that, although widely studied, these topics still offer potential for further theoretical and empirical advancement.

The analysis further reveals a set of emerging or underdeveloped themes, including health, workplace opportunities, and bridge employment. These themes appear to be either newly developing or insufficiently explored within the current literature. Their position in the thematic map highlights their potential significance for future research.

Overall, the findings suggest that while the field is strongly grounded in employment-related and managerial perspectives, there is considerable scope for expanding research toward more diverse and integrative themes, particularly those related to well-being, workplace conditions, and non-linear career trajectories in later life.

Table 1: The main characteristics of the analysed studies

Authors	Goal	Theory	Methodology and data analysis
Lugova et al. (2026)	Examines the impact of delayed retirement on mental health and job quality among older workers	Life course perspective; Job quality framework	Quantitative study; cross-national data; regression analysis
André et al. (2026)	Analyses labour market participation of older workers with a focus on policy implications	Labour market theory; Active ageing framework	Comparative macro-level analysis; secondary data
Lee et al. (2026)	Investigates employer perceptions of older workers and their influence on hiring decisions	Ageism theory; Employer perception framework	Quantitative study; survey data; regression analysis
van der Heijden & Vermeeren (2025)	Explores sustainable employability and willingness to continue working in later life	Sustainable employability theory; Career sustainability perspective	Quantitative study; survey data; structural equation modelling (SEM)
Chen et al. (2025)	Examines the role of intergenerational interactions in shaping employability of older workers	Social exchange theory; Intergenerational learning	Quantitative study; survey data; structural equation modelling (SEM)
Li et al. (2023)	Investigates the impact of lifelong learning on intention to remain employed after retirement age	Human capital theory; Lifelong learning framework	Quantitative study; survey data; regression analysis
Naegele et al. (2022)	Analyses access to training and age-related differences in participation in learning activities	Human capital theory; Age diversity perspective	Conceptual and qualitative analysis
Lagacé et al. (2022)	Examines knowledge sharing practices and their impact on engagement of older workers	Knowledge management theory; Social exchange theory	Quantitative study; survey data; structural equation modelling (SEM)
Marcaletti et al. (2023)	Explores the relationship between training participation and job quality among older workers	Employability theory; Job quality framework	Quantitative study; regression analysis

Low et al. (2024)	Investigates the role of digital and AI-related skills in career resilience of older workers	Human capital theory; Career resilience framework	Quantitative study; structural equation modelling (SEM)
Xie et al. (2023)	Examines how digital training affects autonomy and employability of older workers	Self-determination theory; Digital competence framework	Quantitative study; survey data; structural equation modelling (SEM)
Meng et al. (2022)	Analyses the impact of age discrimination and managerial attitudes on job loss risk	Age discrimination theory; Labour market theory	Longitudinal quantitative study; regression analysis
Binyamin & Brender-Ilan (2022)	Examines communication climate and its impact on attitudes toward middle-aged workers	Organizational communication theory	Quantitative study; survey data; structural equation modelling (SEM)
Jensen et al. (2023)	Investigates the relationship between age stereotypes and HR practices	Ageism theory; HRM perspective	Quantitative study; survey data; regression analysis
Neupane et al. (2022)	Defines and analyses sustainable employability as a multidimensional construct	Sustainable employability theory	Conceptual study
Verdonk et al. (2023)	Critically examines existing definitions of sustainable employability	Critical perspective; Sustainability framework	Conceptual analysis
Mazumdar et al. (2023)	Explores bridge employment and its effects on attitudes of older workers	Life course theory; Career transition theory	Quantitative study; survey data; regression analysis
Hallpike et al. (2024)	Investigates strategies for optimizing career sustainability in later life	Career sustainability theory	Qualitative study; interviews
Sousa-Ribeiro et al. (2023)	Examines post-retirement employment and factors influencing continued work	Active ageing theory; Work engagement theory	Quantitative study; survey data; structural equation modelling (SEM)

Table 1 summarizes the main characteristics of the analysed studies, including their research focus, theoretical background, and methodological approaches. The results indicate a strong dominance of quantitative research designs, particularly survey-based studies employing regression analysis and structural equation modelling techniques.

In relation to RQ3, the analysis indicates that the current literature contains several important research gaps. Although age management is frequently linked to employability, retirement and the extension of working life, the concept of workforce sustainability is often addressed only indirectly. This suggests the need for future studies to examine age management more explicitly as a strategic tool for supporting long-term organizational sustainability. Another underdeveloped area concerns the impact of digital transformation, automation and artificial intelligence on older workers. Future research should therefore focus more systematically on how digital competencies, technological change and lifelong learning influence the employability, productivity and inclusion of older employees. The findings also point to a lack of empirical evidence on the effectiveness of specific age management practices, such as flexible work arrangements, intergenerational knowledge transfer, health promotion and inclusive HR policies. Further research should adopt a more integrative and comparative approach, combining individual, organizational and policy-level perspectives. Such an approach would allow for a deeper understanding of how age management practices differ across institutional and cultural contexts and how they contribute to sustainable workforce development.

DISCUSSION

This study aimed to systematically map the current state of research on age management in the context of workforce sustainability and to identify key research trends, conceptual perspectives, and gaps that can inform future research. The findings provide a comprehensive overview of how this research field has developed and how it is currently structured.

The analysis of publication activity (RQ1) indicates that research on age management and workforce sustainability has gained attention relatively recently, particularly after 2022. The sharp increase in publications observed in 2023 suggests a growing recognition of demographic ageing as a critical issue for labour markets and organizations. Although a slight decline in publication output was observed in subsequent years, the overall trend points to a stabilization of research activity, indicating that the topic is gradually becoming an established area of scholarly inquiry. This development reflects broader socio-economic challenges, including population ageing, labour shortages, and the need to extend working lives. The thematic and keyword analyses (RQ2) reveal that the literature is strongly centred on labour market participation of older workers, retirement processes, and employment-related outcomes. Core themes such as older workers, retirement, employment, and productivity dominate the research field, highlighting the economic dimension of workforce ageing. At the same time, the presence of themes related to skills, health, and management indicates that the literature incorporates organizational and individual perspectives. The co-occurrence network and thematic map further demonstrate that the field is characterized by a relatively high degree of conceptual cohesion, with strong interconnections between key themes. Motor themes such as employment, productivity, and skills represent the core of the research area, suggesting that these topics are both well-developed and central to the existing literature. In contrast, themes such as health, workplace opportunities, and bridge employment are positioned as emerging or underdeveloped, indicating areas where further research is needed. The results also highlight the multidimensional nature of the research field, combining economic, organizational, and socio-demographic perspectives. However, despite this diversity, the literature remains somewhat fragmented, with limited integration across different levels of analysis. There is a noticeable imbalance between macro-level studies focusing on labour market structures and policies and micro-level research examining individual experiences and workplace dynamics.

In relation to research gaps (RQ3), several important limitations of the current literature can be identified. First, the concept of sustainability is often addressed implicitly rather than explicitly. While many studies focus on extending working life or improving employability, fewer studies examine age management as a strategic component of long-term organizational sustainability. This suggests a need for future research to more clearly integrate sustainability frameworks into age management research. Second, the role of digital transformation and technological change remains insufficiently explored. Given the increasing importance of digital skills, automation, and artificial intelligence, future research should

examine how these factors influence the employability, productivity, and inclusion of older workers. This represents a particularly relevant area for further investigation in the context of rapidly evolving labour markets. Third, although the literature acknowledges the importance of health, well-being, and working conditions, these aspects are often treated as secondary factors rather than central research themes. Future studies should therefore place greater emphasis on the relationship between extended working life and individual well-being, including potential trade-offs between productivity and quality of life. Another important gap concerns the limited focus on specific organizational practices and interventions. While age management is frequently discussed at a conceptual level, there is less empirical evidence on the effectiveness of concrete HR practices and managerial strategies. Future research could provide more detailed insights into how organizations can successfully implement age management policies in practice.

Furthermore, the literature shows limited geographical diversity and a lack of comparative studies. Cross-national differences in labour market institutions, cultural norms, and policy frameworks suggest that age management practices may vary significantly across contexts. Future research should therefore adopt a more comparative perspective to better capture these differences. From a theoretical perspective, the findings indicate that the literature draws on a range of theoretical frameworks, including human capital theory, sustainable employability, life course theory, and social exchange theory. However, these frameworks are often applied in isolation, with limited efforts to develop integrative theoretical models. Future research could benefit from combining these perspectives to develop a more comprehensive understanding of age management and workforce sustainability. In addition to theoretical implications, the findings also have important practical relevance. The results suggest that organizations should adopt a more strategic and proactive approach to age management, focusing not only on extending working life but also on enhancing the quality of work, supporting continuous learning, and fostering inclusive workplace environments. Leadership, organizational culture, and HR practices play a critical role in shaping the experiences and outcomes of older workers. However, like any study, this research has several limitations. First, the analysis is based exclusively on the Web of Science database, which may limit the coverage of relevant studies, particularly those published in other databases or in non-indexed journals. Second, the study focuses on a relatively small sample of 19 articles, which reflects the strict inclusion criteria but may limit the generalizability of the findings. Third, the interpretation of thematic structures and research trends is partly subjective, as it depends on the analytical choices made during the bibliometric and content analysis. Despite these limitations, the study provides a valuable contribution by offering a structured overview of the research field and identifying key areas for future investigation. The combination of bibliometric analysis and qualitative interpretation ensures a comprehensive and robust approach to understanding age management in the context of workforce sustainability.

CONCLUSION

This study provides a comprehensive overview of the current state of research on age management in the context of workforce sustainability. The findings show that academic interest in this field has increased in recent years, reflecting the growing importance of demographic ageing, labour shortages and the need to extend working lives. As organizations are increasingly required to maintain the employability, productivity and well-being of an ageing workforce, age management is becoming an important area of both academic research and managerial practice. The analysis identified several dominant research trends, particularly those centred on employment, retirement, productivity and the labour market participation of older workers. At the same time, the findings point to the growing relevance of themes such as skills development, lifelong learning, health, well-being, digital competencies and non-linear career paths. These themes indicate that age management should not be understood only as a response to population ageing, but also as a broader strategic approach aimed at supporting employees throughout different stages of their working lives.

The study also reveals several important research gaps. Existing literature still pays limited attention to the explicit integration of sustainability perspectives into age management research. Although many

studies focus on employability and the extension of working life, fewer studies examine how age management contributes to long-term organizational sustainability. In addition, digital transformation, automation and artificial intelligence remain underexplored in relation to older workers. Future research should therefore examine how technological change affects the skills, adaptability, inclusion and career resilience of ageing employees. Another important gap concerns the limited empirical evidence on the effectiveness of concrete organizational age management practices. Further studies should investigate how specific HR practices, such as flexible work arrangements, lifelong learning, intergenerational knowledge transfer, health promotion and inclusive leadership, contribute to sustainable workforce development. Future research would also benefit from more comparative and multi-level approaches that combine individual, organizational and policy-level perspectives. Such approaches could provide a deeper understanding of how age management practices differ across institutional, cultural and labour market contexts. However, the study has several limitations, particularly those related to the design of the systematic literature review. First, the analysis is based exclusively on the Web of Science database, which may have led to the exclusion of relevant studies indexed in other academic databases. Second, the search strategy relied on a specific combination of keywords and Boolean operators; therefore, studies using alternative terminology related to age management, older workers or workforce sustainability may not have been captured. Third, the inclusion criteria restricted the sample to peer-reviewed journal articles published between 2022 and 2026 and classified within selected Web of Science categories. While these criteria enhanced the relevance, quality and consistency of the analysed literature, they may also have limited the breadth of the review by excluding older studies, conference papers, book chapters and grey literature. In addition, the final sample consisted of a relatively small number of selected studies, which may limit the generalizability of the findings. Finally, although bibliometric analysis provides a structured overview of the research field, the interpretation of thematic structures, clusters and research gaps involves a certain degree of subjectivity and is influenced by the selected keywords, inclusion criteria and analytical procedures. Despite these limitations, the study contributes to the existing literature by providing a structured overview of current research trends, identifying underdeveloped areas and outlining key directions for future research in the field of age management and sustainable workforce development.

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