

# A Systematic Literature Review on the Relationship Between Quality of Work and Intentions to Retire Among Individuals Aged 50 and Older

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**Summary.** Europe, notably in countries like Lithuania, is facing substantial demographic shifts due to aging, impacting various systems, including the labor market. In this context understanding retirement intentions is crucial. Quality of work is a key determinant of retirement intentions, yet other factors such as financial situation, health, or family pressures also play a role, and a comprehensive understanding of their interactions remains a research gap. Therefore, the aim of this study was to conduct a systematic literature review of research on the relationship between retirement intentions and quality of work, with a specific focus on potential control factors, moderators and mediators of this relationship. This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA). Articles were electronically retrieved from Scopus, Web of Science, ScienceDirect, and EBSCO databases. Studies selected were full-text, peer-reviewed articles in English from 2003 to 2023, which used quantitative methodologies and focused on the relationship between retirement intentions and quality of work for workers aged 50+. The quality of the selected publications was assessed using the Appraisal Tool for Cross-Sectional Studies – AXIS tool. Of

**Received:** 2023-10-20. **Accepted:** 2023-12-21.

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the initial 776 sources, after removing duplicates and irrelevant articles, 91 were fully screened, and 17 met the criteria for inclusion in the systematic review. This systematic literature review provided further insights into the relationship between retirement intentions and quality of work, highlighting the roles of moderators, mediators, and control factors in this relationship.

**Keywords:** intentions to retire, quality of work, systematic literature review, aging.

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### **50 metų amžiaus ir vyresnių darbuotojų darbo kokybės ir ketinimų išeiti į pensiją ryšys: sisteminė literatūros apžvalga**

**Santrauka.** Europoje stebimas visuomenės senėjimas, kuris veikia darbo rinką, tad darosi aktualu suprasti ketinimo išeiti į pensiją reiškinį. Tarp įvairių ketinimo išeiti į pensiją veiksnių išsiskiria darbo vietos kokybė, tačiau yra mažai informacijos apie galimas jos sąveikas su kitais veiksniais. Tikslas – atlikti sisteminę tyrimų, kuriuose analizuojamas ketinimo išeiti į pensiją ir darbo vietos kokybės ryšys, apžvalgą, skiriant dėmesio galimiems kontroliniams šio ryšio veiksniais, mediatoriams ir moderatoriams. Išanalizuota 17 straipsnių, atrinktų iš Scopus, Web of Science, ScienceDirect ir EBSCO duomenų bazių. Apžvalga suteikė įžvalgų apie ketinimo išeiti į pensiją ir darbo vietos kokybės ryšį, išryškinant šio ryšio moderatorių, mediatorių ir kontrolinių veiksnių vaidmenį.

**Pagrindiniai žodžiai:** ketinimas išeiti į pensiją; darbo vietos kokybė; sisteminė literatūros apžvalga; senėjimas.

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## **Introduction**

The aging phenomenon, driven by low birth rates and increased longevity, is significantly affecting the demographic structure across Europe, leading to a higher proportion of older people. In the EU, the population aged 65+ is set to rise from 26.3% (2019) to 43.5% (2070). Lithuania and Latvia are projected to have the highest decline in labor supply within the EU by 2070. The percentage of the older adults in Lithuania, which stood at 19.8% in 2019, is forecasted to nearly double, hitting 32.9% by 2070 (European Commission, 2021), which will put a huge strain not only on the labor market, but also on social security, pension, and other systems. Staying in the labor market is crucial for both society and individuals' functioning, as the employment rate is one of the four components of Active aging (United Nations, 2019). At the same time, a simple increase in retirement age to counter rapid aging may not be a one-size-fits-all solution. It is obvious that the statutory retirement age cannot be increased indefinitely, and the real possibility to increase it varies a lot, depending on the region. According to the Eurostat (2021), healthy life years at birth in the Baltic states, being 60 at best, do not even reach the retirement age. For instance, a 65-year-old in Sweden can expect to live free from disability for another 14 years, whereas Lithuanian residents can expect it to be more than two times shorter (Eurostat, 2021). What is more, recent events in France, where pension reform and an increase in retirement age resulted in notable unrest (Drake, 2023), show that these type of changes are not welcomed by the public. Thus, the current situation calls for a new approach promoting retention of employees beyond retirement age without imposing legislation that forces them to do so. Understanding the factors influencing retirement intentions becomes essential in this context.

Work is not only important as a source of income, but also as a way of structuring and making sense of life and is an important part of a person's identity (Lent & Brown, 2013). Moreover, the contemporary labor market facilitates active participation and presents numerous transitional pathways from employment to retirement, such as part-time work opportunities. However, Stynen et al. (2016) determined that roughly half of the older workforce intends to cease employment upon reaching the mandatory retirement age. Additionally, Van Solinge and Henkens (2014) found that 81% of older employees aim to retire even before the age of 65. So, overall, retirement is considered as a more favorable option than staying active in the labor market beyond retirement age. This suggests that the benefits an older worker expects from staying employed do not outweigh the anticipated effort. Consequently, the decision-making process involved needs further analysis.

In general, there is consensus that retirement is more complex than a sudden status change from worker to retiree. Thoughts, plans, expectations, and wishes are linked to action to retire or stay in the labor market past the retirement age (Topa et al., 2009). Two competing models of retirement have been proposed: the two-phase and the three-phase models (Nivalainen, 2022). The two-phase model conceptualizes stages of decisions (or intentions) and actions (Solem et al., 2016). Three-phase models distinguish between preferences (or thoughts), decisions (or intentions) and actions (Topa et al., 2009) or expectations, intentions, and actions (Prothero & Beach, 1984). However, many agree that preferences and decisions are related (Topa et al., 2009) and in various studies a wish to retire at a certain age is conceptualized both as a retirement preference (Örestig et al., 2013) and as a retirement intention (Carr et al., 2016). Therefore, the two-phase model, which does not distinguish between preferences and decisions, appears to be conceptually sound and more pertinent than the alternative. This also suggests that an individual's purposeful desire and intention to retire (or to maintain employment beyond retirement age), regardless of the term used, are both equally relevant.

It is also quite evident that the decision making process resulting in the intention to retire is likely to be swayed by a variety of factors related to the immediate working environment. Research shows that undesirable job characteristics, such as stressful psychosocial work environment, high workload, and low control are associated with thoughts about early retirement (Carr et al., 2016). In contrast, an interesting work environment, appreciative colleagues, and development opportunities are linked to a lower intention to retire (Van Dam et al., 2009). Of course, work characteristics encompass many aspects, but in the broadest sense, quality of work is defined as "the set of work features which foster the well-being of the worker" (Green, 2006, p. 9). In empirical research, the terms "job quality" or "work quality" are used to describe various "working and employment conditions, such as the physical workload, the imposed work pressure, the incentive structure, and the perceived job stability" (Schnalzenberger et al., 2014, p. 142), and authors state that "no encompassing and operational definition of job quality is available" (Schnalzenberger et al., 2014, p. 142). Two models of quality of work have received significant attention: the demand-control model and the effort-reward imbalance model

(Siegrist et al., 2007). In this review, we conceptualize quality of work as the work conditions that enhance or maintain employee well-being. This is described in terms of effort-reward imbalance, the demand-control ratio, or a multifaceted set of work attributes, such as physical workload, work pressure, and the incentive structure.

Over the past several decades, the quality of work emerged as one of the principal factors explaining retirement intentions, with several systematic reviews devoted to examining this relationship (e.g., Browne et al., 2019; Woźniak et al., 2022). What is more, the popularity of work quality in the context of retirement intentions is likely driven by existing theoretical models that comprehensively analyze specific work characteristics and their role in employee's well-being. But in addition to quality of work, the literature has identified other factors contributing to retirement intentions. These factors include financial situation (Le Blanc et al., 2019), health status (Nivalainen, 2022), occupational class (Virtanen et al., 2017), perceived pressure from immediate family (Van Dam et al., 2009), among others. So, while the relationship between the quality of work and retirement intentions has been explored, there remains a gap in understanding how other factors influencing retirement intentions might interact with workplace quality. To the best of our knowledge, no systematic literature analysis, which has examined the relationship between retirement intentions and quality of work, has also focused on potential moderating, mediating or control factors of this relationship.

The **aim** of this study is to conduct a systematic literature review of research on the relationship between retirement intentions and quality of work, with a specific focus on potential control factors, mediators and moderators of this relationship.

## **Methods**

This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) (Page et al., 2021).

### ***Study selection***

Articles were searched electronically in the following databases: Scopus, Web of Science, ScienceDirect, and EBSCO. The search was conducted using keywords combined with logical operators: (((retirement) OR (retire)) AND ((intention) OR (wish) OR (decision))) AND (((((work) OR (job) OR (employment)) AND (quality)) OR ((effort) AND (reward))) OR ((demand) AND (control))). Searches were conducted between the 7th and 15th of August 2023. For most databases, keywords were divided into two searches. However, for ScienceDirect, three searches were used due to a limitation in the number of logical operators. Specific combinations of keywords, additional limiters for each database, and the number of studies found in each database are presented in Table 1.

Table 1. Search phrases for each database

Database	Search phrase	Additional limiters	Items found
Scopus	1. Searched 07/08/2023: TITLE-ABS-KEY (((retir*) AND ((intention) OR (wish) OR (decision))) AND (((work) OR (job) OR (employment)) AND (quality)) OR ((effort) AND (reward))) AND PUBYEAR > 2002 AND PUBYEAR < 2024 AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")) 2. Searched 15/08/2023: TITLE-ABS-KEY (((retir*) AND ((intention) OR (wish) OR (decision))) AND ((demand) AND (control))) AND PUBYEAR > 2002 AND PUBYEAR < 2024 AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English"))		First search: 190 Second search: 40
Clarivate Analytics Web of Science	1. Searched 07/08/2023: TS=((retir*) AND ((intention) OR (wish) OR (decision))) AND (((work) OR (job) OR (employment)) AND (quality)) OR ((effort) AND (reward))) 2. Searched 15/08/2023: TS=((retir*) AND ((intention) OR (wish) OR (decision))) AND ((demand) AND (control)))	Published 01/01/2003 – 08/08/2023	First search: 224 Second search: 67
Ebsco <sup>1</sup>	1. Searched 07/08/2023: TI (((retir*) AND ((intention) OR (wish) OR (decision))) AND (((work) OR (job) OR (employment)) AND (quality)) OR ((effort) AND (reward))) OR AB (((retir*) AND ((intention) OR (wish) OR (decision))) AND (((work) OR (job) OR (employment)) AND (quality)) OR ((effort) AND (reward))) OR SU (((retir*) AND ((intention) OR (wish) OR (decision))) AND (((work) OR (job) OR (employment)) AND (quality)) OR ((effort) AND (reward))) 2. Searched 15/08/2023: TI (((retir*) AND ((intention) OR (wish) OR (decision))) AND ((demand) AND (control))) OR AB (((retir*) AND ((intention) OR (wish) OR (decision))) AND ((demand) AND (control))) OR SU (((retir*) AND ((intention) OR (wish) OR (decision))) AND ((demand) AND (control)))	Published 01/01/2003 – 31/12/2023; Peer reviewed	First search: 182 Second search: 30
Science Direct <sup>2</sup>	1. Searched 07/08/2023: (((retirement) OR (retire)) AND ((intention) OR (wish) OR (decision))) AND (((work) OR (job) OR (employment)) AND (quality)) 2. Searched 07/08/2023: (((retirement) OR (retire)) AND ((intention) OR (wish) OR (decision))) AND ((effort) AND (reward)) 3. Searched 15/08/2023: (((retirement) OR (retire)) AND ((intention) OR (wish) OR (decision))) AND ((demand) AND (control))	Search in title, abstract or author-specified keywords; Published 2003–2023	First search: 20 Second search: 1 Third search: 3

Notes: <sup>1</sup> The search was performed in these EBSCO databases: Academic Search Ultimate, APA PsycArticles, APA PsycInfo, Business Source Ultimate, Central & Eastern European Academic Source, Computers & Applied Sciences Complete, eBook Academic Collection (EBSCOhost), eBook Collection (EBSCOhost), eBook Open Access (OA) Collection (EBSCOhost), EconLit with Full Text, Education Source, ERIC, European Views of the Americas: 1493 to 1750, GreenFILE, Health Source – Consumer Edition, Health Source: Nursing/Academic Edition, Historical Abstracts with Full Text, Humanities International Complete, Library, Information Science & Technology Abstracts, Literary Reference

*Center, Literary Reference eBook Collection, MasterFILE Premier, MasterFILE Reference eBook Collection, MEDLINE, Newspaper Source, OpenDissertations, Regional Business News, SocINDEX with Full Text, Teacher Reference Center;* <sup>2</sup> due to the limits on the maximum number of Boolean operators, three searches were performed instead of two.

### ***Inclusion/exclusion criteria***

The inclusion of studies was based on the following criteria: full-text, peer-reviewed scientific articles in English, published between 2003 and 2023; quantitative methodologies conducted on a sample of working individuals aged 50 and older (studies involving a wider age range are included if separate analysis (or moderation) with 50+ subjects was done); the study analyzed the relationship between retirement intentions and the quality of work. Considering retirement intentions, we included studies that measured individual's purposeful desire or intention to retire (or to remain in the labor market beyond retirement age), regardless of the term used. Studies that explore general attitudes towards retirement or retirement actions were not included. Regarding the quality of work, studies were selected for inclusion if they met any of the following criteria: authors explicitly stated that the quality of work was assessed; effort-reward imbalance was measured; both demand and control factors were evaluated; or multiple attributes of work, such as physical workload, work pressure, and the incentive structure, were examined. Articles that specifically focused on individuals with illnesses or disabilities were excluded, as these factors could distinctly affect retirement intentions. Literature reviews, meta-analyses, systematic literature reviews, and theoretical articles were not considered.

The agreement of two raters: Cohen's Kappa = 0.73 for title and abstract screening, and Kappa = 0.74 for eligibility assessment based on full text.

### ***Data extraction***

Data extraction was conducted by 2 researchers, with certain portions addressed individually. The information extracted from the selected articles includes: the aim of the study, countries where the study was conducted, dataset used, representativeness of the sample, whether it was a random sample, study design, timing of the study, sample size, gender distribution, age range, mean age, professions (or business areas) of respondents, the sectors of the companies represented, terms describing the intention to retire and quality of work, assessment methods for retirement intentions and quality of work, control variables (and significance), as well as moderating/mediating variables (and significance).

### ***Quality assessment***

The quality of the selected publications was assessed using the Appraisal Tool for Cross-Sectional Studies – AXIS tool (Downes et al., 2016). The tool is designed for quantitative studies and addresses the most critical quality aspects of research, such as

study design, reporting quality, and risk of bias. Each study was given a score ranging from 0 to 20, with higher scores indicating greater study quality. Quality assessment was performed by two reviewers. Their evaluations were in agreement for 65–100% of the items in each study. Overall, the agreement across all studies was 84.1%, Cohen's  $Kappa = 0.62$ .

## Results

### Search results

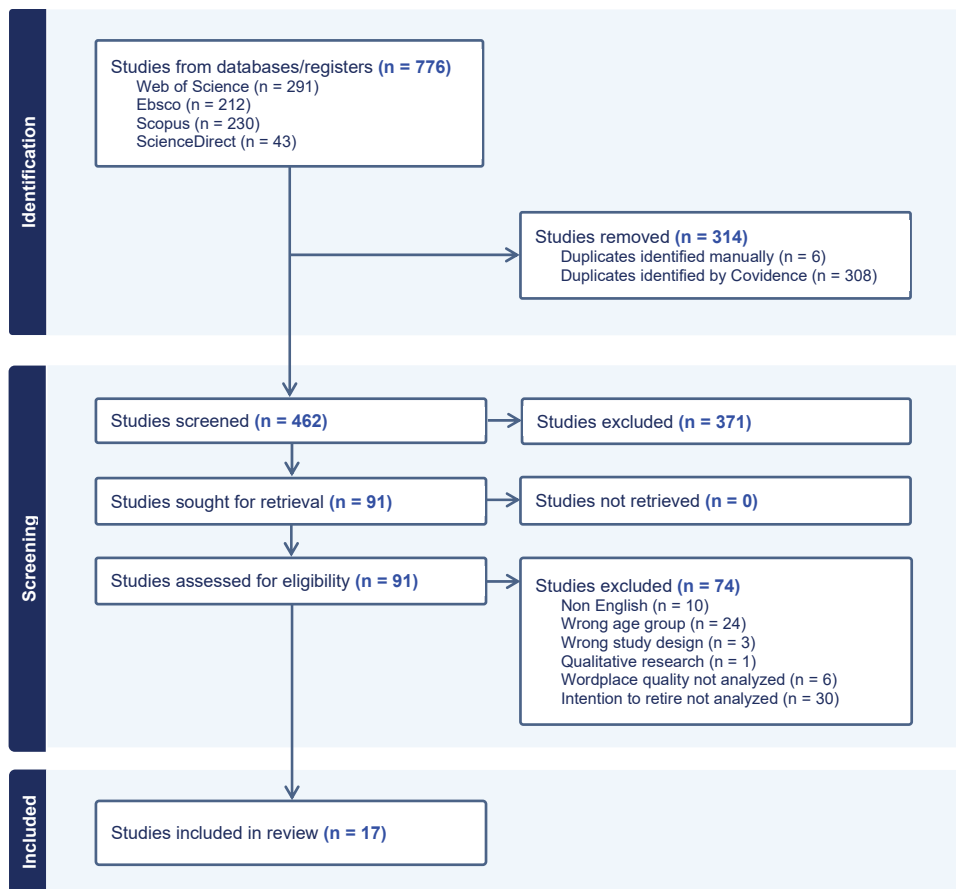


Figure 1. PRISMA flow chart for studies included in the systematic review.

A total of 776 studies were identified. After removing 314 duplicates, 462 articles remained for screening. Following the screening of titles and abstracts, 371 studies were considered irrelevant. Of the remaining 91 full-text articles that were screened, 74 were excluded for various reasons, the most common being that they did not analyze the

Table 2. Description of the studies included

Reference	Country in which the study conducted	Data set used:	Is sample representative?	Was random sampling applied?	Study design	Start and end date of data collection	Population description	Total number of participants	N(%) of females	Min. - max. age	Mean (SD) age	Occupation or industry	Sector
Aidukaitė & Blaziene, 2021	Multiple (Europe)	Survey conducted by the authors	Yes	Yes	Cross-sectional	2019	Working older (50+) employees in Lithuania, Latvia, and Estonia	2015	nd(61.2)	50-nd	nd	Different	Private and public
Carr et al., 2016	United Kingdom	ELSA db	Yes	Yes	Longitudinal	2004–2009	Working people aged 50+ living in private households in England	3462	nd(51.2-52.9 (different numbers reported))	50-69	58-58.7(4.1)	Different	Private and public
DalBianco et al., 2015	Multiple (Europe)	SHARE db	Yes	Yes	Longitudinal	2004–2011	50-59 years old working people from 12 European countries	10807	5248(48.6)	50-59	nd	Different	Private and public
Desmette & Gaillard, 2008	Belgium	Survey conducted by the authors	No	No	Cross-sectional	nd	French-speakers in Belgium working in private organizations	352	nd(42)	50-59	nd	Different	Private
Grmanova & Bartek, 2022	Multiple (Europe)	SHARE db	Yes	Yes	Cross-sectional	2019–2020	Unclear	5342	2925(54.75)	nd	nd	Different	Private and public
Henkens & Leenders, 2010	Netherlands	Survey conducted by the Netherlands Interdisciplinary Demographic Institute	No	No	Cross-sectional	2001	Dutch older workers (50+) and their spouses	2892	2195(24)	50-65	54.6(2.81)	Different	Private and public



Reference	Country in which the study conducted	Data set used:	Is sample representative?	Was random sampling applied?	Study design	Start and end date of data collection	Population description	Total number of participants	N(%) of females	Min. - max. age	Mean (SD) age	Occupation or industry	Sector
Hodgkin et al., 2017	Australia	Survey conducted by the authors	No	No	Cross-sectional	nd	Australian older healthcare workers	295	nd(94.3)	55-71	59(3)	Healthcare personnel (nurses and allied health-care workers)	Public
Laires et al., 2019	Multiple (Europe)	SHARE db	Yes	Yes	Cross-sectional	2015	Employed persons aged 50-65 in 14 European countries	11790	6105(51.8)	50-65	56.3(nd)	Different	Private and public
Neupane et al., 2022	Finland	National-level survey among Finnish postal services employees	No	No	Cross-sectional	2016	Finnish postal services employees aged $\geq 50$ years	1965	781(40)	50-nd	56.3(3.43)	Postal services employees	Public
Nilsson et al., 2011	Sweden	Swedish National Institute of Working Life study db	No	No	Cross-sectional	2004	Respondents aged 55-64 years, employed in the healthcare sector in Sweden	1792	nd(84)	55-64	59 (median) (nd)	Healthcare personnel	Public
Nivalainen, 2020	Finland	QWLS db	Yes	Unclear	Cross-sectional	2008 - 2016	Working 50-62 years old Finnish persons	803	nd(57)	50-62	57.4(2.5)	Different	Private and public
Prakash et al., 2019	Finland	2IS db	No	Unclear	Cross-sectional	2016	Finnish postal services employees aged $\geq 50$ years	1466	587(40)	51-nd	58.4(3.4)	Postal services employees	Public

Reference	Country in which the study conducted	Data set used:	Is sample representative?	Was random sampling applied?	Study design	Start and end date of data collection	Population description	Total number of participants	N(%) of females	Min. - max. age	Mean (SD) age	Occupation or industry	Sector
Schmalzberger et al., 2014	Multiple (Europe)	SHARE db	Yes	Yes	Longitudinal	2003	Employed Europeans aged 50-65 in 10 countries	5639 (baseline)	nd(48.2)	50-65	55.3(3.73)	Different	Private and public
Siegrist et al., 2007	Multiple (Europe)	SHARE db	Yes	Yes	Cross-sectional	2004	Employed men and women aged >50 in 10 European countries	6836	3316(48.5)	50-65	nd	Different	Private and public
Sousa-Ribeiro et al., 2023	Sweden	SLOSH db	Yes	Yes	Longitudinal	2010 - 2016	Older workers (in Sweden)	1510 (baseline)	nd(59)	50-55 (baseline)	52.65(1.7)	Different	Private and public
Taylor et al., 2016	Australia	Online survey conducted by the authors	No	Yes	Cross-sectional	2013 - 2014	Australian women aged 50-70 and participating in two superannuation funds	1043	1043(100)	50-70	58.6(nd)	Emergency services, higher education, research and public sectors	Unclear
Wahrendorf et al., 2013	Multiple (Europe)	SHARE db	Yes	Yes	Cross-sectional	2004 - 2005	Employed Europeans aged 50+ in 11 countries	6398	2840(44.4)	50-64	nd	Different	Private and public

Note: nd – no data; db – database.

2tS – “Towards a Two Speed Finland Survey (2tS)” (collected from the Finnish postal service employees); ELSA – The English Longitudinal Study of Ageing; SHARE – The Survey of Health, Ageing and Retirement in Europe; SLOSH – The Swedish Longitudinal Occupational Survey of Health; Iida – The Iida Cohort Study (German Cohort Study on Work, Age, Health and Work Participation); QWLS – Statistics Finland’s 2008 cross-sectional, interview-based Quality of Working Life Survey.

intention to retire. Ultimately, 17 studies were included into the systematic review (see Figure 1).

### ***Description of studies***

Most of the studies included (see Table 2) were conducted in Europe. Only 2 of the 17 studies (11.8%) were conducted outside Europe (Australia). A significant proportion of studies (7 or 41.2%) covered more than one country. A significant number of studies used data from international or national databases and the most common (6 out of 17 studies, 35.3%) data source was the Survey on Health, Ageing and Retirement in Europe (SHARE) database.

Most of the studies (58.8%) analyzed representative samples (see Table 2), and the same proportion of the studies analyzed the data collected using some type of random sampling. The vast majority (76.5%) of studies applied a cross-sectional study design. While most of the samples were large (with a min. sample size of 295 and a max. of 11790), only three studies had a sample size of less than 1,000. However, the populations within these samples were very diverse. Studies covering workers from different sectors and genders were prevalent, but there were also samples that were homogeneous in terms of occupation (e.g., Finnish postal workers) or gender (women only). The lower age limit for most of the studies was 50 years, but the upper age limit varied from 55 to 71, with most covering workers up to 65 years old.

### ***Conceptualization and measurement of intentions to retire and quality of work***

The terms used to describe intentions to retire did not differ much across studies (see Table 4). Most commonly, authors have used the terms “retirement intentions” or “intentions to retire,” but some studies have used the terms including “retirement preferences” (Carr et al., 2016), “desire to retire” (Grmanova & Bartek, 2022), “decision to retire” (Nilsson et al., 2011), or a combination of several terms (e.g., Dal Bianco et al. (2015) used both “intended early retirement” and “desire to retire as soon as possible”).

Most of the studies used single-item measurements to measure intentions to retire (see Table 3). For example, in SHARE project intention to retire is measured in six studies by asking: “Thinking about your present job, would you like to retire as early as you can from this job?” (SHARE, 2020). Three studies used two items to measure the intention to retire, for example, Nilsson et al. (2011) in their survey asked whether respondents wanted to work until 55–59, 60–64, 65, or  $\geq 66$  years of age, and whether participants believed they could work until those age brackets. Only one study used a multiple-item scale (Henkens & Leenders, 2010), comprising four questions about preferred retirement age, and intentions to retire or to continue working.

Where quality of work is concerned, there is a much wider range of concepts (see Table 3) among the studies that were selected for the analysis. The terms “working con-

ditions,” “job characteristics,” “quality of work” and others were used by the authors. Some of the studies used theory-related constructs like effort-reward imbalance. While almost all studies used multiple-item tools to measure the quality of work, only one study (Grmanova & Bartek, 2022) used two items.

### ***Links between the quality of work and intentions to retire***

All but two studies found a significant link between quality of work and intentions to retire (see Table 3). No association between quality of work and intentions to retire was found in studies by Desmette and Gaillard (2008) and Hodgkin and colleagues (2017).

The general consensus suggests that the quality of work plays an important role in forming retirement intentions. However, when analyzing particular quality of work factors, evident discrepancies can be found after comparing the results of different studies (see Table 3). A prime example of such inconsistencies are the findings related to the physical working environment or physically demanding work. Five studies failed to find a link between physical aspects of quality of work and intentions to retire, but 4 studies managed to establish such a relationship. Similar inconsistencies were observed for autonomy, social support, financial rewards, and other factors. The effort-reward imbalance factors predicted intentions to retire in most studies, except in the study by Hodgkin et al. (2017).

### ***Moderators, mediators, and control variables of the link between quality of work and intentions to retire***

Only 3 studies (see Table 3) included mediators between the quality of work and intentions to retire: burnout may be considered a mediator in the relationship between quality of work and retirement intentions (Henkens & Leenders, 2010); job control and job support mediated the link between work-life satisfaction and intention to retire (Prakash et al., 2019); the associations between social position and retirement intentions might be partly mediated by the experience of work stress, however in this study, the mediational effect wasn't fully tested (Wahrendorf et al., 2013).

Eight studies (47%; see Table 3) analyzed moderation effects or carried out a similar analysis (e.g., regression analysis in separate groups). The obtained results suggest that gender could be an important moderator of the association between quality of work and intentions to retire, as one study found a moderating effect (Neupane et al., 2022), two studies (Dal Bianco et al., 2015; Schnalzenberger et al., 2014) conducted analyses separately for gender, and only one study (Carr et al., 2016) did not find any moderating effect. Individual studies also found age (Carr et al., 2016) and type of contract (Taylor et al., 2016) to moderate the quality of work and intentions to retire relationship. Two studies (Hodgkin et al., 2017; Siegrist et al., 2007) tested interactions among various aspects of the quality of work, yet neither found any significant result. Given that many

Table 3. Results from included studies

Reference	Terms to describe IR	IR measurement	Terms to describe WQ	WQ measurement	WQ aspects that predicted IR	WQ aspects that didn't predict IR	All moderators of the IR and WQ link	Significant moderators of the IR and WQ link	All mediators of the IR and WQ link	Significant mediators of the IR and WQ link	All control variables of the IR and WQ link	Significant control variables of the link IR and WQ
Aidukaite & Blažienė, 2021	Decision (not) to stay longer in the labor market, intentions to stop/continue working after reaching the retirement age	Unclear	Working conditions	Unclear	Physical working conditions, work intensity, working time arrangements, social environment, job-related prospects****	Unclear	-	-	-	-	-	-
Carr et al., 2016	Retirement preferences, preferred number of years until retirement	Single item	Working conditions, job characteristics (physical job demands, psychosocial demands and decision authority)	Multiple items	Psychosocial demands, decision authority, recognition**	Physical demands, social support	Interactions between job demands and job resources, sex, age	-	-	-	DC, EC, HC, SC	Unclear
Dal Bianco et al., 2015	Intended early retirement, desire to retire as soon as possible	Single item	Quality of work, work quality	Multiple items	Physically demanding work** stress, freedom**, possibility of skills development, support, recognition**	Adequate salary, career prospects, job security	Gender***	Unclear, models were specified for males and females separately	-	-	CC, DC, EC, SC	Unclear
Desmette & Gaillard, 2008	Early retirement intentions, intentions to retire early	Two items	Job characteristics (physical strain of the job, autonomy at work)	Multiple items	None	Physical job strain, autonomy, private conflict	-	-	-	-	DC, EC, HC, RC, SC	EC, HC, RC

Reference	Terms to describe IR	IR measurement	Terms to describe WQ	WQ measurement	WQ aspects that predicted IR	WQ aspects that didn't predict IR	All moderators of the IR and WQ link	Significant moderators of the IR and WQ link	All mediators of the IR and WQ link	Significant mediators of the IR and WQ link	All control variables of the IR and WQ link	Significant control variables of the link IR and WQ
Grmanova & Bartek, 2022	Desire to retire early	Single item	Job physical demands, job satisfaction	Two items	Job physical demands, job satisfaction****	-	-	-	-	-	-	-
Henkens & Leenders, 2010	Early retirement intentions, retirement intentions	Multiple items	Job characteristics (workload, physical demands, challenges, opportunities of growth, autonomy, social support)	Multiple items	Workload**, challenge, opportunities of growth	Physical demanding job, autonomy, social support	-	Burnout may be a mediator of the work quality and retirement intentions relationship	Burnout may be a mediator of the work quality and retirement intentions relationship	Burnout may be a mediator of the work quality and retirement intentions relationship	DC, PSC, SC, WC	DC, PSC, SC, WC
Hoogkin et al., 2017	Retirement intentions	Single item	Effort-reward imbalance	Multiple items	None	Effort, reward	Interaction between effort, reward and over-commitment was tested	None	-	-	DC	DC
Laires et al., 2019	Intention of retirement	Single item	Quality of work	Multiple items	Effort-reward imbalance	-	Working conditions, integration policies (the link between multimor-bidity and retirement intentions were moderated)	None	-	-	CC, DC, EC, HC	DC, HC

Reference	Terms to describe IR	IR measurement	Terms to describe WQ	WQ measurement	WQ aspects that predicted IR	WQ aspects that didn't predict IR	All moderators of the IR and WQ link	Significant moderators of the IR and WQ link	All mediators of the IR and WQ link	Significant mediators of the IR and WQ link	All control variables of the IR and WQ link	Significant control variables of the link IR and WQ
Neupane et al., 2022	Intention to retire	Single item	Equality at work, quality of work community	Multiple items	Equality at work, supportive work environment**, flexibility at work**	-	Gender	Gender	-	-	DC, HC, PC, WC	HC
Nilsson et al., 2011	Decision to extend working life or retire	Two items	Work environment	Multiple items	Physical work environment**, mental work environment**, work pace and working time**, managerial and organizational attitude towards older workers**, competence and possibility for skills development**, motivation and work satisfaction**	-	-	-	-	-	EC, HC, SC	EC, HC, SC
Nivalainen, 2020	Retirement intentions	Single item	Work characteristics (job autonomy, job demands)	Multiple items	Employer's support for continued employment, job autonomy	Flexibility in scheduling, physically demanding job, mentally demanding job, time pressure	-	-	-	-	DC, EC, EHC, EMC, RC, SC, WC	DC, EC, EHC, EMC, RC, WC

Reference	Terms to describe IR	IR measurement	Terms to describe WQ	WQ measurement	WQ aspects that predicted IR	WQ aspects that didn't predict IR	All moderators of the IR and WQ link	All mediators of the IR and WQ link	Significant moderators of the IR and WQ link	All variables of the IR and WQ link	Significant mediators of the IR and WQ link	All control variables of the IR and WQ link	Significant control variables of the link IR and WQ
Prakash et al., 2019	Intention to retire	Two items	Working conditions (job support and job control)	Multiple items	Job control, job support	Unclear*	-	Job control, job support (the link between worklife satisfaction and intention to retire was mediated)	Job control, job support (the link between worklife satisfaction and intention to retire was mediated)	DC, HC, PC, WC	DC, HC, PC, WC	DC, HC, PC, WC	Unclear
Schnalzenberger et al., 2014	Intention to retire	Single item	Job quality	Multiple items	Job satisfaction, effort-reward imbalance**, support**, recognition**, adequate earnings**, poor prospects**	Physically demanding job, time pressure, job security	Gender***	-	Unclear	CC, DC, EC, HC, PC, SC, WC	-	CC, DC, EC, HC, PC, SC, WC	Unclear
Siegrist et al., 2007	Intended retirement, intended early retirement	Single item	Quality of work	Multiple items	Effort-reward imbalance, control	-	The interaction between effort-reward imbalance and control was analyzed. Country***	-	None	DC, EC, HC, PC	-	DC, EC, HC, PC	DC, HC, PC
Sousa-Ribeiro et al., 2023	Preferred retirement age	Single item	Effort-reward imbalance	Multiple items	Effort-reward imbalance	-	-	-	-	DC, HC, PC, SC, WC	-	DC, HC, PC, SC, WC	DC, HC, PC, WC



Reference	Terms to describe IR	IR measurement	Terms to describe WQ	WQ measurement	WQ aspects that predicted IR	WQ aspects that didn't predict IR	All moderators of the IR and WQ link	Significant moderators of the IR and WQ link	All mediators of the IR and WQ link	Significant mediators of the IR and WQ link	All control variables of the IR and WQ link	Significant control variables of the link IR and WQ
Taylor et al., 2016	Retirement intentions	Single item	Job satisfaction	Multiple items	Satisfaction with: job security, the work itself**, flexibility to balance commitments**, overall satisfaction**	Satisfaction with: total pay, working hours	Employment status	Employment status	-	-	EC, HC, PC, RC, SC	EC, PC, RC, SC
Wahrendorf et al., 2013	Retirement intentions	Single item	Quality of work, work stress	Multiple items	Effort-reward imbalance, control	-	-	-	Associations between social position and retirement intentions might be partly mediated by the experience of work stress,***	Associations between social position and retirement intentions might be partly mediated by the experience of work stress,***	CC, DC, HC, PC, WC	CC, DC, HC, PC, WC

Notes: IR – intentions to retire; WQ – quality of work.

Control variables: CC – country-level (like country, life expectancy); DC – demographic (like age or gender); EC – economic (like income); EHC – employment history-related (like unemployment experience); EMC – employer-related (like recent layoffs); HC – health-related (like self-rated health); PC – profession or occupation-related (like occupational status); PSC – psychological (like well-being or depressiveness); RC – retirement-related (like attitudes about retirement or being in partial retirement); SC – spouse or partner-related (like marital status, employment status of partner); WC – work-related (like working hours or flexibility at work).

\* the use of analytical methods that do not allow the statistical significance of specific predictors to be assessed; \*\* several models tested, not significant in some models; \*\*\* the moderation or mediation effect not tested, however, some other analyses indicated a moderating effect; \*\*\*\* only univariate analysis performed.

Table 4. Assessment of the study quality

Reference	Aidikaite & Blaziene, 2021	Carr et al., 2016	Dal Bianco et al., 2015	Desmette & Gailard, 2008	Grmano-va & Bartek, 2022	Henkens & Leenders, 2010	Hodgkin et al., 2017	Laires et al., 2019	Neupane et al., 2022	Nilsson et al., 2011	Nivalainen, 2020	Prakash et al., 2019	Schnalzenberger et al., 2014	Siegrist et al., 2007	Sousa-Ribeiro et al., 2023	Taylor et al., 2016	Wahrendorf et al., 2013
1 Were the aims/objectives of the study clear?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
2 Was the study design appropriate for the stated aim(s)?	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3 Was the sample size justified?	Y	N	N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N
4 Was the target/reference population clearly defined? (Is it clear who the research was about?)	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
5 Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?	Y	Y	Y	N	Y	N	N	Y	Y	N	Y	Y	Y	Y	Y	N	Y
6 Was the selection process likely to select subjects/participants that were representative of the target/reference population under investigation?	Y	Y	Y	N	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
7 Were measures undertaken to address and categorise non-responders?	N	N	N	N	N	N	N	N	N	Y	N	N	N	Y	Y	N	Y

Reference	Aidukaite & Blaziene, 2021	Carr et al., 2016	Dal Bianco et al., 2015	Desmette & Gailard, 2008	Grmanova & Bartek, 2022	Henkens & Leenders, 2010	Hodgkin et al., 2017	Laires et al., 2019	Neupane et al., 2022	Nilsson et al., 2011	Nivalainen, 2020	Prakash et al., 2019	Schnalzenberger et al., 2014	Stegrist et al., 2007	Sousa-Ribeiro et al., 2023	Taylor et al., 2016	Wahrendorff et al., 2013		
8 Were the risk factor and outcome variables measured appropriate to the aims of the study?	N	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
9. Were the risk factor and outcome variables measured correctly using instruments/measurements that had been trialled, piloted or published previously?	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
10 Is it clear what was used to determined statistical significance and/or precision estimates? (e.g. p-values, confidence intervals)	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
11 Were the methods (including statistical methods) sufficiently described to enable them to be repeated?	N	Y	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y	N	Y	Y	Y
12 Were the basic data adequately described?	Y	Y	Y	Y	Y	N	N	Y	N	N	Y	N	N	N	N	Y	N	N	N
13 Does the response rate raise concerns about non-response bias?	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	N	Y
14 If appropriate, was information about non-responders described?	N	N	N	N	N	N	N	N	N	Y	N	N	Y	N	N	N	N	N	Y
15 Were the results internally consistent?	N	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y

Reference	Aidukaite & Blaziene, 2021	Carr et al., 2016	Dal Bianco et al., 2015	Desmette & Gailard, 2008	Grmanova & Bartek, 2022	Henkens & Leenders, 2010	Hodgkin et al., 2017	Laires et al., 2019	Neupane et al., 2022	Nilsson et al., 2011	Nivalainen, 2020	Prakash et al., 2019	Schnalzenberger et al., 2014	Stegrist et al., 2007	Sousa-Ribeiro et al., 2023	Taylor et al., 2016	Wahrendorf et al., 2013	
16 Were the results presented for all the analyses described in the methods?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
17 Were the authors' discussions and conclusions justified by the results?	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
18 Were the limitations of the study discussed?	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
19 Were there any funding sources or conflicts of interest that may affect the authors' interpretation of the results?	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
20 Was ethical approval or consent of participants attained?	Y	Y	Y	N	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	N	Y	Y

*Note: Y – yes; N – No*

studies used cross-national samples, it can be hypothesized that the country of residence could be a potential moderator. This assumption aligns with the premise drawn in the study by Siegrist et al. (2007).

Of the studies analyzed, all except 2 included a set of control variables (see Table 3). The most common variables were demographic (e.g., age, gender), health (e.g., self-rated health), economic (e.g., income), and partner-related (e.g., marital status, partner employment status) variables. Employment history-related control variables (e.g., unemployment experience), employer-related control variables (e.g., recent layoffs), and psychological variables (e.g., well-being or depressiveness) were the least frequently examined. At least one study has found that predictors in each group are important in predicting intentions to retire and hence may be considered control variables.

### ***Quality assessment***

The quality assessment (see Table 4) identified several weaknesses in the studies. It should be noted that many AXIS criteria were met by all or almost all studies, but the justification of sample size and information on nonresponders undermined the quality of many studies. Most studies did not specify the rationale for the sample sizes chosen or determine whether they were sufficient for the analysis outlined. However, if we consider that the sample sizes in most analyzed studies were notably large, it can be concluded that the absence of sample size justification, in this case, might not be a cause for concern. Only a few studies provided any information on nonrespondents, making it difficult to assess whether the samples were biased.

### **Discussion**

In this systematic analysis, 17 articles published during the period from 2007 to 2023 and analyzing the relationship between the quality of work and intentions to retire among workers aged 50+ were included. Moving beyond the analysis conducted and conclusions drawn by prior studies (Browne et al., 2019; Woźniak et al., 2022), this systematic review adds a new layer of information on moderators, mediators and control factors that play a role in understanding the mechanisms underlying the relationship between the quality of work and intentions to retire.

When discussing the quality of the studies, it can be noted that most studies included in the review analyzed data from large samples, and a compelling number of them used data from representative and randomly selected samples. But there is a clear lack of studies conducted in non-European contexts. The prevalence of research in Europe is not surprising given that Europe is one of the regions experiencing rapid demographic aging (European Commission, 2021). Nevertheless, ageing is a worldwide megatrend and noticeable country differences, including diverse pension systems, employers' policies on the quality of work, the level of ageism and other cultural or policy factors,

make it impossible to generalize the patterns found in Europe more widely. The importance of longitudinal studies in this area has been indicated by previous systematic reviews (Browne et al., 2019), but once again it became evident in the current review that cross-sectional studies remain to be the most prevalent and research is still far from causal inferences. What is more, just a few studies included people over 65. This age restriction is disappointing, as it is not uncommon for people over 65 to remain active in the labor market, for example, as many as 46.3% of Icelandic men aged 65 and over are still employed (NASEM, 2022). Thus, there persists a need to figure out how retirement decisions are made by those who has already reached retirement age. Finally, as only a few studies provide any information on nonrespondents, there is risk of biased samples and this limits the generalizability of findings even more.

This systematic analysis suggests that quality of work is in fact linked to intentions to retire, as only two of the 17 studies did not confirm this relationship. This broadly replicates the findings of previous systematic analyses (Browne et al., 2019; Woźniak et al., 2022) and theoretical work (Feldman, 1994). While the general proposition that quality of work is related to intentions to retire can be considered to be well supported, the same cannot be said about specific quality of work aspects. There is no clear answer if physical aspects of work quality, autonomy, social support, financial rewards and other variables can be considered as determinants of intentions to retire. These findings may be partly related to the results of the review conducted by Brown and colleagues (2019). In their review they found that different aspects of quality of work have different value in predicting intentions to retire: work resources (negatively) rather than demands are more strongly associated with intentions to retire, while the amount of research that analyzed the role of effort-reward imbalance was deemed to be insufficient by the Brown et al. (2019) review to draw conclusions. This implies that further research on different aspects of quality of work is needed in order to have an evidence-based understanding which work characteristics are the most important for retirement intentions.

The systematic review identified that the relationship between quality of work and intentions to retire may indeed be mediated or moderated by other factors. Unfortunately, there are too few studies to make broader generalizations. A study by Henkens and Leenders (2010), showing burnout to be a mediator of the quality of work and retirement intentions relationship, suggests that the analysis of potential mediators may lead to a better understanding of the psychological mechanisms underlying the association between quality of work and intentions to retire. The analysis of moderators showed that most (but not enough) evidence points to gender as a moderator. Other potential moderators (age, country, type of employment contract) have only been analyzed in single studies, so there is a lack of evidence on their moderating role. A comprehensive analysis of moderators can help explain the reasons why some studies find a relationship and others do not.

The analysis of the control variables revealed a wide variety of factors that are controlled for when studying predictors of intentions to retire. While most studies included demographic, health or economic variables, there is a lack of information on employ-

ment history, employer-related and psychological factors. The wide range of control variables included in the studies should not be surprising given the complex interplay of individual, interpersonal, organizational and cultural variables associated with intentions to retire. The model by Woźniak and colleagues (2022) is an excellent representation of the complex interaction between the social environment at the workplace, job characteristics, employee- and employer-related factors, and cultural context, all of which influence the work ability and eventually affects the intentions to retire. The Woźniak et al. (2022) model and the findings of our review suggest that simple inclusion of control variables in a multiple regression or similar models is not an accurate representation of the true interaction between factors and that we should be looking for moderating and mediating effects. Moreover, the inclusion of too many control variables or unreliably measured control variables can lead to undesirable statistical artefacts (Briere, 1992). Excess of control variables may artificially suppress the effect of the independent variable of interest. In addition, a large number of covariates increases the likelihood of multicollinearity, which can in turn lead to very strange and unjustified effects. Variable measurement error can also lead to changes in the strength or even direction of the relationship (Briere, 1992). Thus, researchers should be very careful in selecting necessary, theoretically sound and reliably measured control variables and be cautious when considering whether they are control variables or whether, based on theoretical assumptions, they should be included as mediators or moderators. On the other hand, more research is needed to show which intention-to-refute predictors are necessary in analyses.

This systematic review highlights the importance of mediating, moderating and control variables, which have not been analysed in previous systematic reviews (Browne et al., 2019; Woźniak et al., 2022). On the other hand, this review has some limitations. Firstly, a broader search is possible, covering a larger number of databases and an extended period of publication. The inclusion of gray literature (e.g., unpublished papers, theses, policy papers) may broaden the variety of studies and help alleviate publication bias, enhance the comprehensiveness and timeliness of the review, promote a more well-rounded portrayal of the existing evidence (Paez, 2017). The fact that only studies published in English were included is also a limitation. The inclusion of studies published in other languages would allow for a broader range of countries to be represented and hence provide better insight into the ways the quality of work and intentions to retire are related in non-European cultures and pension systems. The systematic review is also limited because it focuses only on healthy populations. Finally, people with chronic diseases or disabilities may face specific workplace challenges or retirement decisions, thus a systematic review of studies focusing specifically on these populations would be worthwhile.

## **Acknowledgement**

The research was conducted as a part of the project “Sustainable working-life for ageing populations in the Nordic-Baltic region” (Project No. 139986 financed by NordForsk).

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