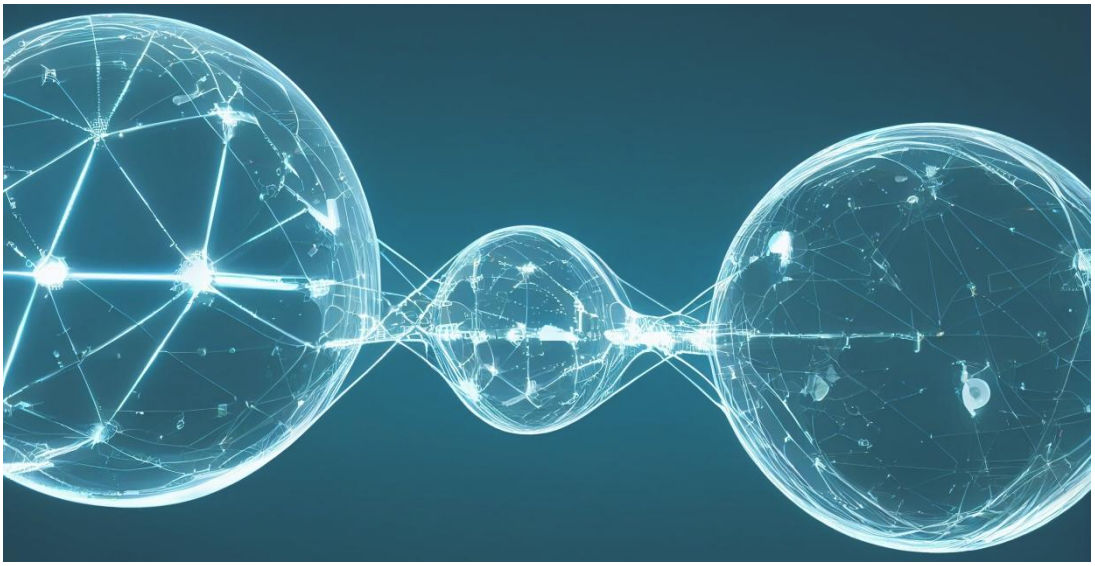
DIGITALIZATION, MEDIA, AND OLDER WORKERS

Conceptual framework for Working Group 5

COST Action 21107: Work inequalities in later life redefined by digitalization (DIGI-net)



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Introduction

Working Group 5 examines how digitalisation and media shape the employment of older workers. The focus is not on one national case, nor on a separate description of Ireland, Romania, Albania, Türkiye, Hungary, and Czechia. The aim is to build a WG5-wide conceptual framework that can be used across these contexts while still allowing national differences to matter. The framework, therefore, treats countries as settings in which shared processes appear in different forms: uneven digital infrastructure, different welfare and labour market institutions, varied media systems, and different public debates about ageing, work, and technological change.

Across Europe and neighbouring contexts, longer working lives have become a policy concern. Eurofound (2025) reports that the number of workers aged 55 and above in the EU increased substantially between 2010 and 2023, while the retention of older workers in the labour force also increased. At the same time, older workers remain exposed to long-term unemployment, age discrimination, health-related exits from work, and unequal access to sustainable working conditions (Eurofound, 2025). Digitalisation adds another layer to these issues. Digital tools can support older workers through flexible work, task redesign, health monitoring, access to information, and new forms of participation. The same processes can also intensify exclusion when training is missing, digital skills are assumed rather than supported, or older workers are portrayed as unable to adapt (Komp-Leukkunen et al., 2022).

WG5 adds a media dimension to this wider debate. The media do not simply describe older workers. Media representations participate in the production of social meaning (Neary & Ringrow, 2018). They can make older workers visible as experienced, adaptable, and diverse. They can also reproduce narratives of decline, dependency, technological incompetence, or intergenerational competition. These images matter because they influence how older workers are seen by employers, colleagues, policymakers, and older workers themselves. Research on corporate and news media shows that older employees are often represented ambivalently: positively in terms of warmth, reliability, and trustworthiness, but negatively in relation to competence, adaptability, and technological ability (Kroon et al., 2018). This ambivalence is especially relevant to employability because competence judgments often carry greater weight in hiring, training, retention, and promotion decisions than softer evaluations such as loyalty or warmth (Van Dalen et al., 2010).

The framework proposed here brings together three central domains: digital transformation of work, media representation, and employment in later life. It asks how digitalisation changes work and employability; how media and public discourse frame older workers in this change; and how organisational, institutional, and individual conditions mediate the outcomes. It is built around the premise that digitalisation does not affect older workers uniformly. Its effects depend on access to skills and support, the quality of work, exposure to

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ageism, social class, gender, education, occupation, migration background, region, and health. Older workers are therefore not treated as a homogeneous group. Their experiences of digitalised work are shaped by the life course and by intersecting forms of advantage and disadvantage (Shields, 2008; McCosker et al., 2023).

The objectives of this conceptual framework are fourfold. First, it defines the concepts needed for WG5: digitalisation, media representation, digital inclusion, ageism, digital ageism, employability, sustainable work, and intergenerational learning. Second, it maps the relationships between these concepts. Third, it identifies analytical dimensions that can guide empirical work across WG5 countries without reducing the framework to a country-by-country comparison. Fourth, it offers propositions and methodological routes for future research, policy analysis, media analysis, and organisational practice.

Key concepts and definitions

This section defines the main terms used in the framework. The aim is to keep the concepts clear before explaining how they relate to one another in later sections.

Older workers

There is no single agreed-upon definition of "older worker" (McCarthy et al., 2014). Some studies use 45+, others 50+, 55+, or categories linked to pension systems and retirement pathways. For WG5, older workers are best understood as people in the later stages of working life who are affected by age norms in employment, training, recruitment, representation, and digital adaptation. A practical threshold of 50+ can be used when empirical data require a clear cut-off, but the framework should not treat age as only chronological. Age also functions as a social category. A 52-year-old applicant may already be perceived as "too old" in some sectors, while a 67-year-old professional may be seen as highly employable in another. The meaning of age is therefore produced through labour markets, workplace cultures, media narratives, and policy categories.

This characterisation matters because rigid age cut-offs can risk treating older workers as a homogeneous group. Research on digital inclusion shows substantial variation among older adults in needs, motivations, skills, confidence, and life-course experience, while work on ageism warns against assumptions based only on chronological age (McCosker et al., 2023; Bae & Choi, 2023). A framework about older workers should not imply that all people above a given age share the same needs, skills, health status, interests, or relationship to technology. It should instead ask when and how age becomes relevant: in recruitment, retraining, algorithmic screening, media stories about labour shortages, advertising, public debate about pensions, or workplace conversations about digital change.

Digitalisation and digitisation

Digitalisation is often used loosely, so the framework distinguishes it from digitisation. Gradillas and Thomas (2025) define digitisation as the creation of digital artefacts through technical processes such as conversion, representation, and enhancement. Scanning a

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paper document, creating a digital record, or adding sensors to a physical object are examples of digitisation. Digitalisation refers to the transformation of social and economic environments through the adoption, application, and use of digital artefacts (Gradillas & Thomas, 2025). In work contexts, this includes digital communication, data-driven management, automated systems, online services, remote work, platform work, and AI-supported decision-making.

This distinction is important for WG5 because older workers may be affected by both. Digitisation can change the tools and records used in a workplace. Digitalisation changes the organisation of work itself: how tasks are allocated, how workers communicate, how performance is measured, how customers and citizens are served, and how skills are valued. Parviainen et al. (2017) note that digital transformation can involve changes at process, organisational, business-domain, and societal levels. WG5 is especially concerned with the workplace and societal levels, because media and digital systems influence not only work practices but also public understandings of who belongs in the digital economy.

Digital divide, digital inclusion, and digital literacy

The digital divide is not only a matter of having or not having access to a device. Van Dijk (2013) argues for a relational view of digital inequality in which unequal access to ICTs is linked to social resources, personal and positional inequalities, and participation in society. Digital inequalities include motivation, material access, skills, use, and outcomes. For older workers, a device and an internet connection do not guarantee meaningful participation in digitalised work. Workers may have limited access to training, may use a narrow range of applications, may lack confidence, or may be excluded from higher-value digital tasks.

Digital inclusion refers to the conditions under which people can access, learn, use, and benefit from digital technologies in ways that are meaningful to them. McCosker et al. (2023) show that older adults are not a uniform group of digital learners. Their motivations, life course experiences, confidence, needs, and capabilities differ. This insight is central for WG5. Digital inclusion policies and workplace training should not be designed around a generic "older worker" assumed to be either digitally incapable or simply in need of basic skills. Some older workers may need foundational support. Others may need advanced or job-specific digital training. Others may need confidence-building, peer support, assistive design, or recognition of existing expertise.

Digital literacy is therefore understood as a situated social competence. It includes technical skills, but also the ability to evaluate information, communicate online, protect privacy, use digital tools strategically, and adapt to changing systems. It is shaped by prior work histories, education, health, income, language, occupation, and the support available in workplaces and families. A situated approach avoids blaming older workers for digital exclusion and instead asks which social, organisational, and technological conditions make digital participation possible.

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Media representation and media framing

Media representation refers to the ways older workers are portrayed through language, images, narratives, genre conventions, and platform logics (Van Selm & I.J.M. Van Der Heijden, 2014). These representations appear in news stories, public campaigns, advertising, workplace communication, entertainment media, social media, recruitment platforms, and AI-mediated information systems. Cultural gerontology is useful here because it treats ageing as socially narrated and culturally meaningful, not only as biological or demographic change (Twigg & Martin, 2015).

Media framing matters because public stories about older workers can define what seems normal, desirable, risky, or outdated (Chong & Druckman, 2007). A media frame that presents older workers as blocking younger people's opportunities may encourage zero-sum thinking about employment. A frame that presents older workers as loyal but technologically weak may appear positive on the surface while still undermining employability. A frame that presents older workers only as vulnerable can erase their agency. A frame that presents them only as exceptionally successful can also be misleading if it ignores structural barriers faced by less advantaged workers.

Media representation is therefore not a secondary concern. It is part of the social environment in which employment decisions are made. Representations can influence employer expectations, policy priorities, workplace norms, and older workers' own sense of belonging in digitalised workplaces.

Ageism, workplace ageism, and digital ageism

Ageism refers to stereotypes, prejudice, and discrimination based on age. In the workplace, it can appear in recruitment, training, promotion, dismissal, task allocation, performance evaluation, humour, informal interaction, and assumptions about adaptability. Bae and Choi (2023) emphasise that workplace ageism is not only directed at older workers, although older workers are often the focus. Ageism can affect people of any age, but in the context of WG5, the concern is how ageist assumptions about later working life interact with digitalisation and media.

Digital ageism refers to age bias in digital technologies and AI systems (Chu et al., 2022). It can occur when older people are excluded from design processes, when datasets underrepresent diverse older adults, when technologies for older people are narrowly focused on health and dependency, or when algorithmic systems reproduce age-based assumptions. Chu et al. (2022) show that digital ageism can operate through cycles of representation, design, technology, and allocation. This is directly relevant to employability. AI systems are increasingly used in recruitment, performance management, training recommendations, and service delivery. If these systems are built on biased assumptions or unrepresentative data, they may reproduce age-based exclusion while appearing neutral.

Rosales and Fernández-Ardèvol (2020) also show that ageism can be embedded in digital platforms through design teams, methods, usability assumptions, and corporate values.

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Older people may be treated as marginal users, late adopters, or exceptions. For older workers, this can affect access to job platforms, online training, digital HR systems, public employment services, and workplace technologies.

Employability, sustainable work, and job quality

Employability refers to the capacity to obtain, keep, and move within work. For older workers, employability is not only an individual trait. It is shaped by employer demand, skills recognition, health, care responsibilities, discrimination, access to training, job quality, and institutional rules. Sustainable work refers to work that people can continue over time without harm to health, dignity, income security, or participation. Eurofound (2025) links the retention of older workers to job quality, working conditions, health, care support, flexible retirement, digital skills, hybrid work, and human resource practices.

This framework treats employability as relational. Older workers may be highly capable, but their employability can be constrained by ageist media narratives, employer assumptions, lack of training, algorithmic filters, or poor-quality jobs. Conversely, digitalisation can support employability when it reduces physical strain, allows flexible work, supports communication, and provides meaningful learning opportunities (Komp-Leukkunen et al., 2022).

Intergenerational learning and inclusion

Intergenerational learning refers to reciprocal knowledge exchange between workers of different ages. It should not be reduced to younger workers teaching older workers digital skills. Older workers often hold tacit organisational knowledge, sectoral expertise, client knowledge, and problem-solving strategies. Younger workers may bring familiarity with newer digital tools or platform practices. Rupčić (2018) argues that intergenerational knowledge transfer can reduce conflict and strengthen organisational learning when it is embedded in a culture of respect and mutual understanding.

Inclusion goes beyond diversity. Randel (2025) defines inclusion in relation to fair treatment, being valued for who one is, and participation in decision-making. For WG5, an age-inclusive digital workplace is one in which older workers are not merely helped to "catch up" but are included in decisions about technologies, training, work design, media communication, and organisational change.

Analytical dimensions

The framework identifies five analytical dimensions. These dimensions are interrelated rather than separate variables.

Digital transformation of work

The first dimension concerns how work is changing through digitalisation. This includes the introduction of digital communication systems, online services, automation, AI, platform work, hybrid work, monitoring technologies, digital HR systems, and new skill requirements. Komp-Leukkunen et al. (2022) show that workplace digitalisation creates both opportunities

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and challenges for older workers. It can increase work participation by reducing physical demands, enabling remote work, supporting health monitoring, and improving access to information. It can also increase pressure, technostress, skill obsolescence, surveillance, and exclusion from tasks that are considered digitally advanced.

The same technology can have different effects depending on job design and support. Hybrid work may help a worker with health limitations or care responsibilities, but it can also increase isolation if informal learning is tied to office presence. Digital training can improve confidence, but only if it is accessible, relevant, and not framed as remedial because of age. AI-supported decision-making can reduce some forms of subjective bias, but it can also encode ageist patterns if training data reflect previous discrimination.

Media narratives and symbolic boundaries

The second dimension concerns the symbolic construction of older workers. Media narratives define which images of ageing and work circulate in public life. Kroon et al. (2018) show that older employees in news and corporate media are often represented through mixed stereotypes: warm and reliable, but less competent, less adaptable, and less technologically capable. These portrayals can be damaging because employability is often evaluated through competence, flexibility, and learning potential.

The framework treats media as a field in which symbolic boundaries are drawn (Lamont et al., 2015). Older workers may be placed inside or outside the imagined future of work. They may be represented as a cost, a risk, a mentoring resource, a vulnerable group, a burden on younger generations, or an exception who succeeds despite age. These frames shape the cultural conditions under which digitalisation is interpreted.

WG5 should therefore analyse not only whether older workers are represented positively or negatively, but also how they are represented. Positive stereotypes can still be limiting (Kroon et al., 2016). For example, the image of the older worker as a wise mentor may recognise experience but still exclude that worker from innovation, retraining, or digital leadership. The task is to identify whether representations allow older workers to appear as diverse participants in digitalised work, rather than as symbols of decline or nostalgia.

Organisational mediation

The third dimension concerns workplace practices. Digitalisation does not affect workers directly. Its effects are mediated by organisational decisions: who receives training, who is consulted before new systems are introduced, which tasks are automated, how performance is measured, how errors are tolerated during learning, and whether older workers are offered internal mobility.

Chen and Gardiner (2019) find that work demands, learning and development opportunities, job autonomy, recognition and respect, mentoring opportunities, supportive organisational climate, and social support influence older workers' decisions to continue working. These factors matter for digitalisation because new technologies can either

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increase demand or provide resources. A poorly implemented digital system may raise workload and stress. A well-supported system may increase autonomy, reduce physical strain, or make knowledge sharing easier.

Organisations also mediate media narratives. Workplace communication can repeat stereotypes about older workers' digital reluctance, or it can present age diversity as part of competence (Wang & Shi, 2024). Recruitment materials, internal newsletters, employer branding, and corporate media contribute to the symbolic environment of work. Organisational mediation, therefore, links media representation to concrete employment outcomes.

Intersectional and life-course inequalities

The fourth dimension concerns heterogeneity among older workers. Age intersects with gender, education, occupation, class, region, migration background, ethnicity, disability, health, care responsibilities, and employment history. Shields (2008) argues that intersectionality requires attention to how social identities are mutually constituted and embedded in power relations. In WG5, this means that the category "older worker" should always be opened up: older women in low-paid service work, older rural workers, older migrants, older workers with disabilities, older professionals, and older unemployed jobseekers may face very different digital and media-related barriers.

A life-course perspective helps explain why these differences emerge. Digital skills and confidence are shaped by earlier access to education, occupational trajectories, work interruptions, exposure to technology, health, care roles, and accumulated resources. McCosker et al. (2023) show that older adults' digital inclusion depends on life experiences, needs, motivations, and capabilities. This applies strongly to work. Workers who have had digital training throughout their careers may experience new tools as a continuation of previous learning. Workers who have been in low-digital or precarious jobs may face a compressed demand to learn quickly in later life, often without adequate support.

Intersectionality also matters for media. Some older workers are more visible than others. Professional, white, middle-class, healthy, and urban older workers may be more likely to appear in narratives of successful ageing and lifelong productivity. Older workers in physically demanding jobs, informal work, unemployment, low-paid care, or rural economies may be absent or represented as problems.

Outcomes: employability, dignity, and participation

The fifth dimension concerns outcomes. WG5 should examine not only whether older workers remain employed, but also the quality and meaning of that employment. Outcomes include access to recruitment, retention, training, promotion, job quality, work-life balance, well-being, income security, confidence, social inclusion, and dignity. Eurofound (2025) shows that job quality profiles differ among older workers, with some in empowered jobs and others in high-risk jobs associated with poorer well-being and financial insecurity.

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Media and digitalisation also shape subjective outcomes. Older workers may internalise stereotypes about being too old to learn, or they may resist them through peer learning and workplace support. Digital systems can increase autonomy, but they can also make workers feel monitored, replaceable, or invisible. Media representation can affect whether older workers see themselves as legitimate participants in digital work futures.

The framework, therefore, treats outcomes as both material and symbolic. Employment without dignity, training without inclusion, or visibility without agency are insufficient markers of success.

Theoretical foundations

This section outlines the theoretical perspectives that support the framework. Together, they explain why digitalisation and media representation should be analysed as social, cultural, and organisational processes, rather than only as technical changes.

Cultural gerontology

Cultural gerontology provides the basis for understanding ageing as culturally meaningful. Twigg and Martin (2015) argue that culture is constitutive of social relations and identities and that age studies must attend to subjectivity, representation, embodiment, time, and space. This perspective allows WG5 to analyse older workers as culturally represented subjects, not only as demographic units or labour market participants.

The advantage of cultural gerontology is that it links media, identity, and everyday experience. It helps explain why depictions of older workers as outdated or frail can have consequences beyond media content. Such depictions can influence confidence, workplace interaction, and social visibility. Cultural gerontology also warns against reducing later life to burden or decline. This is important for WG5 because digitalisation is often presented as future-oriented, while older age is often associated with the past, decline, or technological difficulty. The framework challenges this opposition by treating older workers as active participants in digitalised work, rather than as people who are naturally outside technological change.

Stereotype content model and productivity perceptions

The stereotype content model distinguishes between warmth and competence. Kroon et al. (2018) show that media portrayals of older employees often follow an ambivalent pattern: older workers are seen as warm, trustworthy, and reliable, but less competent in terms of adaptability and technological ability. Van Dalen et al. (2010) similarly find that older workers are perceived more positively on soft qualities such as reliability and commitment, while younger workers are rated more positively on hard qualities such as flexibility, new technology skills, willingness to learn, and mental or physical capacity. Because hard qualities carry greater weight in productivity evaluations, positive warmth stereotypes may not protect older workers from exclusion.

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This theoretical lens is central for WG5. Media representations that praise older workers as loyal or experienced may still contribute to employability problems if they imply lower competence. The framework, therefore, examines ambivalent ageism, not only explicitly negative ageism.

Digital divide and situated digital literacies

Digital divide theory explains how access, skills, use, and outcomes are linked to wider inequalities. Van Dijk (2013) emphasises that digital inequality is relational and tied to social positions and resources. McCosker et al. (2023) add that digital literacy is situated: it depends on life experiences, motivations, needs, and learning contexts. Together, these approaches prevent an individualising account of digital exclusion.

For WG5, this means that digital skills gaps should not be interpreted as evidence that older workers are less capable. Instead, the framework asks what kinds of digital exposure, training, relevance, confidence, and support have been available across the life course. It also asks whether digital systems are designed around assumptions that fit some workers better than others.

Life course and cumulative disadvantage

A life-course perspective connects earlier work and learning histories to later-life employability. It shows how digital disadvantage can accumulate. A worker who has had limited access to formal training, lower job autonomy, poor-quality work, or interrupted employment may enter later working life with fewer recognised digital skills and less bargaining power. Digitalisation can then intensify existing disadvantages rather than create a new problem from scratch.

This perspective also supports attention to transitions: unemployment, retraining, health changes, caring responsibilities, migration, sectoral shifts, and retirement pathways. Older workers' relationship to digitalisation may change across these transitions. A worker may be digitally confident in one job but become vulnerable when seeking re-employment through online platforms or algorithmic recruitment systems.

Intersectionality

Intersectionality provides the analytic basis for examining differences within the category of older workers. Shields (2008) warns that intersectionality should not be reduced to adding identity categories together. Social identities are mutually constitutive and shaped by power relations. For WG5, this means that age cannot be analysed separately from gender, class, education, occupation, migration background, disability, and region.

An intersectional approach also helps identify invisibility. Some groups may be absent from media representation, excluded from datasets, or overlooked in policy design. This is especially relevant in digital systems, where underrepresentation can lead to poor design and biased outcomes.

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Digital ageism and AI bias

Digital ageism extends ageism into technological systems. Chu et al. (2022) show that age bias in AI can be produced through representation, design, technology, and allocation. If older adults are represented as unhealthy, dependent, or technologically incompetent, they may be excluded from design processes or included only as users of care technologies. This produces data gaps and reinforces narrow markets for older adults' digital needs.

WG5 should apply this lens to employment-related technologies: recruitment platforms, CV-screening systems, workplace analytics, algorithmic scheduling, training recommendation systems, and digital public employment services. Age bias in these systems may be difficult to detect because it is often indirect, mediated through proxies such as career gaps, years of experience, salary history, training history, or platform behaviour.

Job demands-resources and inclusion

The Job Demands-Resources perspective (Bakker & Demerouti, 2007) helps explain how digitalisation can create strain or support. Digital tools can increase demands through constant availability, monitoring, new skill requirements, and fast-paced change. They can also provide resources through autonomy, flexibility, assistive technologies, better information, and communication support. Whether digitalisation becomes a demand or resource depends on work design, training, managerial support, and worker agency.

Inclusion theory adds that support is not enough if workers are not valued and included in decisions. Randel (2025) links inclusion to fair treatment, being valued, and participation in core decision-making. For WG5, this means that older workers should be involved in digital transition processes, not only trained after decisions have already been made.

Proposed framework

The proposed framework conceptualises the relationship between digitalisation, media, and older workers' employability as a dynamic system. Digitalisation changes work. Media narratives frame ageing, competence, and technological change. Organisational and institutional practices mediate how these forces affect older workers. Outcomes feed back into future representations, policy decisions, and technological design.

Framework model

The model organises the framework into four parts: inputs, mediating processes, moderating conditions, and outcomes. This structure shows how digitalisation and media representation move through workplaces and institutions before affecting older workers' employment, inclusion, and dignity.

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Figure 1 presents the WG5 framework as a cyclical model. Inputs such as digitalisation, media representation, policy context, and life-course resources are translated through mediating processes in workplaces, media, and digital systems. These processes shape outcomes for older workers, while outcomes feed back into future representations, organisational practices, and technological design.

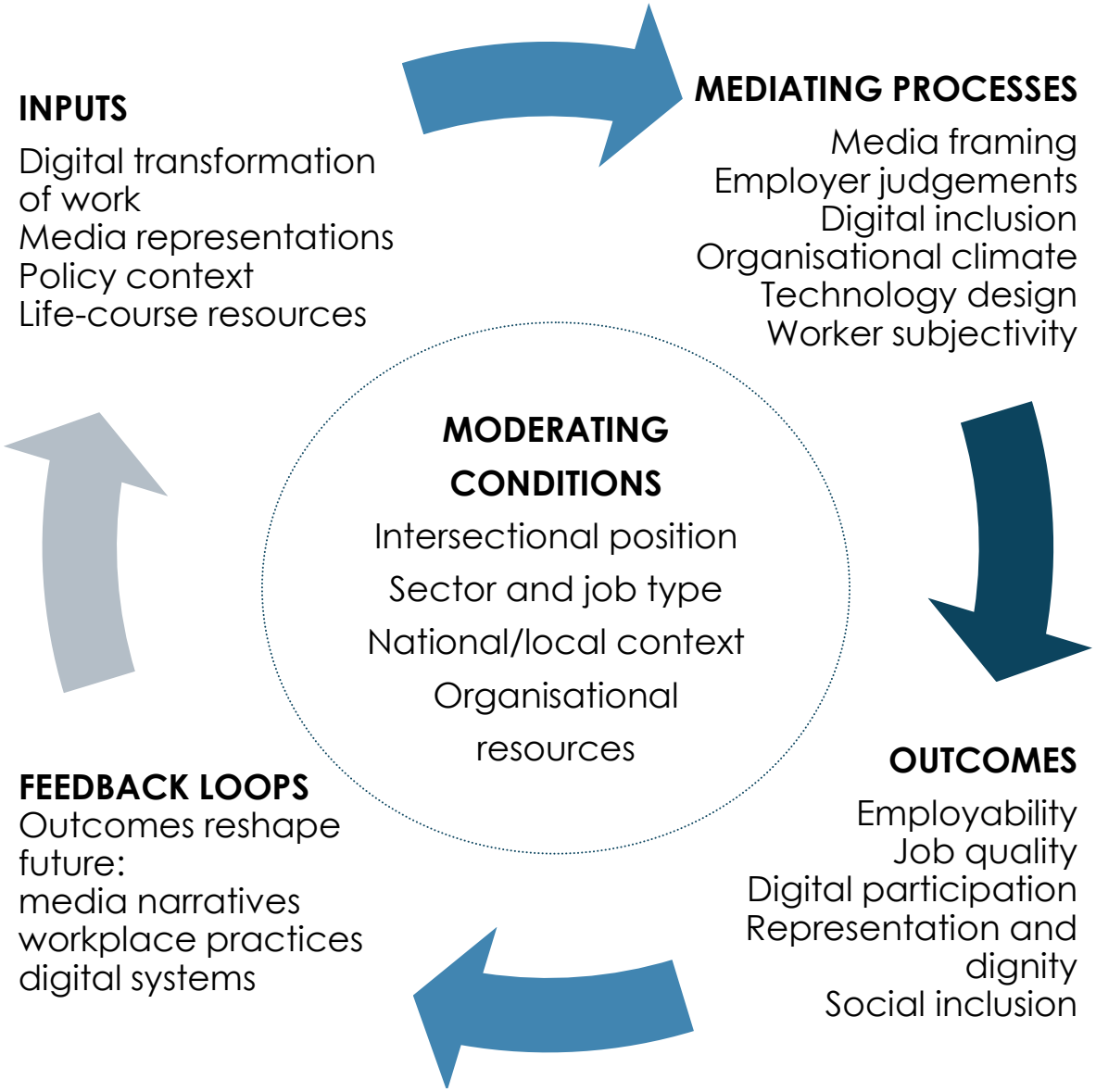

Figure 1 Framework as a cyclical model

Inputs

1. Digital transformation of work: digital tools, AI, platforms, hybrid work, monitoring, automation, and new skill requirements.
2. Media systems and representations: news, advertising, corporate communication, social media, entertainment, and platform content.
3. Labour market and policy context: retirement rules, anti-discrimination law, lifelong learning systems, digital infrastructure, welfare support, and care services.
4. Worker life-course resources: education, occupation, health, income, previous digital exposure, social support, and care responsibilities.

Mediating processes

1. Media framing and stereotyping: narratives of decline, competence, warmth, burden, adaptability, intergenerational competition, or successful ageing.
2. Employer and colleague judgments: assumptions about productivity, learning ability, flexibility, cost, loyalty, or technological competence.
3. Digital inclusion conditions: access, skills, confidence, relevance, usability, training quality, and opportunities for practice.
4. Organisational climate: inclusion, autonomy, recognition, mentoring, psychological safety, and participation in decisions.
5. Technological design and data practices: algorithmic classification, platform usability, representativeness of data, and accessibility.
6. Worker subjectivity: internalised ageism, resistance, confidence, identity, and perceived belonging in digital work.

Moderating conditions

1. Gender, class, education, occupation, ethnicity, migration background, disability, health, and region.
2. Sector and job type, including the distinction between high-digital, low-digital, physical, service, public-sector, platform, and professional work.
3. National and local context, including infrastructure, media systems, labour law, lifelong learning systems, and welfare arrangements.
4. Organisational resources, including size, HR capacity, collective representation, and training budgets.

Outcomes

1. Employability: recruitment, retention, re-employment, internal mobility, promotion, and access to training.
2. Job quality: autonomy, workload, work-life balance, income security, recognition, and well-being.
3. Digital participation: meaningful use of workplace technologies, confidence, and ability to benefit from digital systems.

4. Representation and dignity: visibility, agency, freedom from stereotypes, and recognition of diverse older workers.
5. Social inclusion: continued participation in work, organisational life, and public debate.

Feedback loops

The framework includes three feedback loops. First, media representations influence employer and worker expectations, which then shape employment outcomes. Those outcomes can become evidence for future media stories, reinforcing or challenging stereotypes. Second, digital systems generate data about workers. If older workers are underrepresented or narrowly represented, future systems may reproduce exclusion. Third, organisational practices shape worker confidence and skill development. Successful inclusion can increase participation and visibility, while exclusion can reduce confidence and confirm ageist narratives.

Conceptual propositions

P1. Media narratives that associate older workers with low technological competence will be associated with lower perceived employability, especially in sectors where digital skills are treated as indicators of general productivity.

P2. Positive portrayals based only on warmth, loyalty, or mentoring will not be sufficient to improve perceived employability if they are paired with negative assumptions about adaptability or digital competence.

P3. Digitalisation will improve older workers' employment outcomes when it is accompanied by accessible training, job autonomy, supportive management, and opportunities to practise new skills in non-punitive settings.

P4. Digitalisation will intensify inequality when older workers face limited access to training, poor usability, algorithmic filtering, high monitoring, or workplace cultures that interpret learning needs as age-related deficits.

P5. The effects of digitalisation and media representation will be stronger for older workers facing intersecting disadvantages, including low income, low formal education, rural location, migrant status, disability, poor health, or gendered care responsibilities.

P6. Intergenerational learning will reduce ageist assumptions when it is reciprocal and institutionally supported, but it may reinforce age hierarchy if it frames younger workers as digital experts and older workers only as recipients of help.

P7. Older workers' digital confidence will be shaped by life-course exposure to digital tools, perceived relevance of digital training, workplace support, and media narratives about age and technological ability.

P8. AI and platform systems used in employment will reproduce digital ageism when older workers are underrepresented in design, data, testing, and evaluation processes.

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Methodological approach

The framework can be developed and tested through a mixed-method, comparative research strategy. Because WG5 is concerned with meanings, representations, workplace practices, and employment outcomes, no single method is sufficient.

Literature review

A structured literature review should map research on digitalisation, media representation, older workers, ageism, digital inclusion, AI bias, job quality, and intergenerational learning. The purpose is not only to summarise findings but to identify conceptual tensions (Snyder, 2019). For example, digitalisation research often focuses on skills and productivity (Parviainen et al., 2022; Chen & Gardiner, 2019; Komp-Leukkunen et al., 2022) while media studies focus on representation and discourse (Van Selm & I.J.M. Van Der Heijden, 2014; Kroon et al., 2018). WG5 needs to connect these fields.

Comparative media analysis

Media analysis should examine how older workers are represented across news, corporate communication, advertising, public campaigns, and digital platforms. A cross-national design can compare dominant frames without producing separate country reports (Downey & Stanyer, 2010). Coding categories may include competence, warmth, cost, adaptability, vulnerability, intergenerational competition, innovation, care, retirement, and digital ability. Visual analysis should also be included, since age is often communicated through images, bodies, clothing, workplace settings, and interaction with technologies.

Interviews and focus groups

Qualitative interviews with older workers can capture lived experiences of digitalisation and media representation (Gill & Baillie, 2018). Focus groups can examine how workers interpret media narratives, workplace communication, and digital training. Interviews with employers, HR professionals, trade unions, journalists, and digital designers can identify how assumptions about age enter organisational and media practices.

Organisational case studies

Case studies can examine how digital tools are introduced in workplaces (Johansson, 2007). They should document training, consultation, management communication, peer support, job redesign, and worker outcomes. Case studies are especially useful for comparing organisations that implement similar technologies but produce different outcomes for older workers.

Survey research

Surveys can measure exposure to ageist media narratives, perceived digital competence, training access, workplace inclusion, internalised ageism, technostress, job quality, and employment intentions. Survey designs should avoid treating older workers as a uniform group. They should include variables (Ponto, 2015) related to gender, education, sector, occupation, migration background, region, health, and care responsibilities.

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Experimental and audit methods

Vignette experiments can test how media frames affect perceptions of older workers' employability (Verneuer-Emre et al., 2022). For example, participants could evaluate older job candidates described with different combinations of digital skills, reliability, adaptability, and age. Audit studies can examine whether job platforms or recruitment systems treat older applicants differently. Algorithmic audits can investigate whether employment-related AI systems use age proxies in ways that disadvantage older workers.

Participatory methods

Participatory methods are especially suitable for WG5 because digital inclusion and media representation should not be studied only from the outside (de Vos et al., 2021). Older workers can contribute to the design of research questions, interpretation of media materials, assessment of digital tools, and development of recommendations. This approach is consistent with the critique of digital ageism: older people should be included in the systems and narratives that affect them.

Implications and applications

This section translates the framework into practical areas of action. It shows how the concepts above can inform policy, workplace practice, media communication, and digital design.

Policy implications

Policy should address digital inclusion as part of sustainable work. This means linking digital skills policy to anti-discrimination policy, employment services, lifelong learning, care support, and job quality. Eurofound (2025) notes that retaining older workers requires action across digital skills, hybrid and telework, HR practices, healthy workplaces, and occupational safety and health. WG5 adds that policy should also address media and digital representation.

Public employment services should ensure that online job search systems, training portals, and AI-supported tools are accessible to older users and tested for age bias. Lifelong learning schemes should support workers before job loss occurs, not only after unemployment. Anti-ageism campaigns should avoid replacing negative stereotypes with narrow positive stereotypes. A useful campaign would show diverse older workers using and shaping digital tools in varied occupations.

Organisational implications

Employers should treat digitalisation as organisational change, not as a test of individual adaptability. Older workers should be consulted before new systems are introduced. Training should be practical, job-specific, paced appropriately, and available without stigma. Mentoring should be reciprocal. Younger workers may support the use of new tools, while older workers may share tacit knowledge, judgment, client understanding, and organisational memory.

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HR practices should examine whether older workers have equal access to digital training, promotion, hybrid work, internal mobility, and innovation roles. Performance evaluation should not overvalue speed of adoption while undervaluing reliability, judgment, care quality, and problem-solving. Van Dalen et al. (2010) show that hard qualities carry greater weight in productivity evaluations, which may disadvantage older workers when their strengths are framed as soft or secondary.

Media and public communication implications

Journalists, public communicators, and employers should avoid stock narratives of older workers as resistant, dependent, or technologically inept. They should also avoid exceptionalist narratives that celebrate only unusually successful older workers (Kroon et al., 2018; Van Selm & I.J.M. Van Der Heijden, 2014). Better representation would show variation: workers learning new systems, shaping digital practices, facing structural barriers, using experience in digital contexts, and negotiating work alongside health, care, and financial realities.

Media organisations can apply age-sensitive guidelines similar to those used for gender or race representation. These should include attention to visual stereotypes, headline framing, source diversity, and the presence or absence of older workers' own voices.

Digital design and AI implications

Designers of workplace technologies, training platforms, HR systems, and public employment tools should include older workers in user research and testing. Accessibility should include not only disability-related design but also clarity, pacing, error recovery, privacy, trust, and relevance. AI systems used in employment should be assessed for age bias and for proxies that may reproduce age disadvantage.

Digital ageism should be treated as a governance issue. Organisations using algorithmic recruitment or performance tools should document how age-related bias is tested, how older workers are represented in data, and how workers can challenge automated decisions.

Limitations and areas for further research

This framework has several limitations. First, the available research is uneven across countries, sectors, and types of media. Existing reviews note that research on older workers in digitalising workplaces remains fragmented, and Eurofound (2025) shows that policy and labour-market evidence vary across national contexts (Komp-Leukkunen et al., 2022). Second, much of the literature on older adults and digitalisation focuses on access, skills, literacy, and inclusion, while the direct link between media representations and concrete employment outcomes is less developed (McCosker et al., 2023; Kroon et al., 2018). Third, AI and algorithmic ageism remain emerging areas, with existing work calling for more attention to age-related bias in AI systems and digital platforms (Chu et al., 2022; Rosales & Fernández-Ardèvol, 2020). Fourth, the framework should treat invisibility as an analytical

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concern rather than an established fact in every context: intersectional and digital inclusion research suggests that older workers' experiences vary by class, gender, education, health, migration background, region, and occupation, but these differences are not always equally visible in research, media, or policy design (Shields, 2008; McCosker et al., 2023; Eurofound, 2025).

Future research should examine how specific media frames influence employer decision-making, whether digital training changes internalised ageism, how platform work affects older workers, and how AI-based recruitment systems handle age. Research should also examine how older workers are represented visually in digitalisation stories, not only how they are described verbally. Finally, WG5 should pay close attention to the interaction between national context and shared mechanisms. The goal is not to rank countries, but to understand how similar processes are shaped by different institutional and cultural conditions.

Conclusion

WG5's conceptual framework positions digitalisation, media, and older workers within a shared system of work, representation, and inequality. Digitalisation changes tasks, skills, surveillance, communication, and opportunities for flexible work. Media shape the meanings attached to older workers in this transition. Workplaces and institutions mediate whether digital change becomes a resource or a barrier. Older workers' outcomes depend on the interaction between these forces and on life-course and intersectional inequalities.

The framework rejects the idea that older workers are naturally outside digital futures. It also rejects the idea that digital inclusion can be solved only through individual training. Digital participation in later working life depends on accessible systems, fair representation, inclusive workplaces, anti-ageist policy, and meaningful involvement of older workers in decisions about technology and work.

For WG5, the central question is therefore not whether older workers can adapt to digitalisation. The better question is how media, organisations, technologies, and policies define the conditions under which adaptation is possible, valued, and fairly rewarded.

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