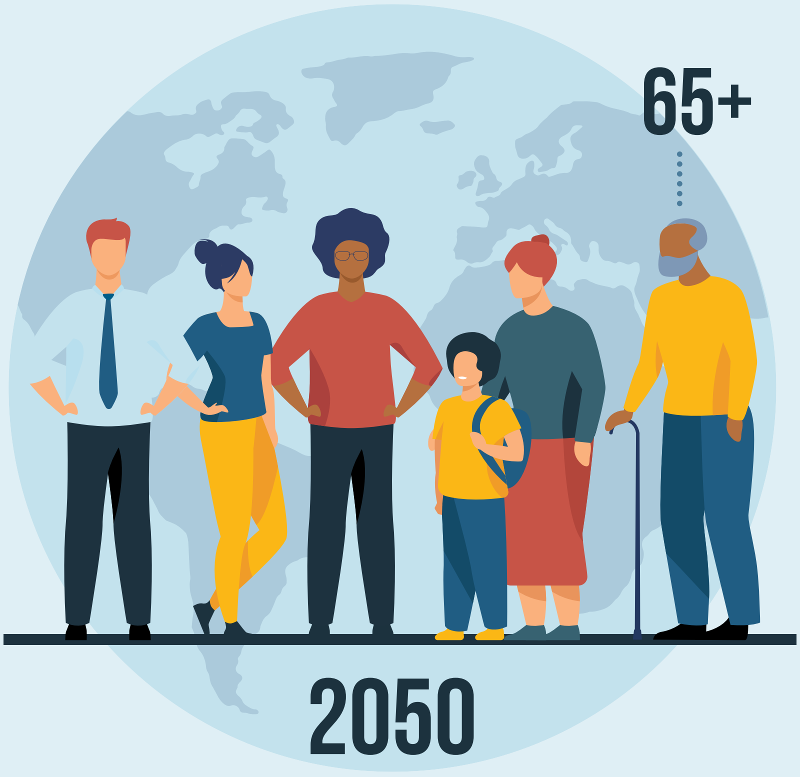
# PRODUCTIVE LONGEVITY: WHAT CAN THE WORLD BANK DO TO FOSTER LONGER AND MORE PRODUCTIVE WORKING LIVES?




Rethink Social Protection and Jobs in an Actively Aging World

WORLD BANK GROUP
Social Protection & Jobs

**What is Productive Longevity?** Productive longevity refers to the productive participation of older ("mature") workers in economic activity. Globally, population aging is raising pressures on countries to develop policy to increase and sustain welfare throughout and beyond the demographic transition from young to old. All else equal, an older population will increase dependency rates and lower economic growth. To stem this impact, it will be important to increase the productivity and participation of all potential workers across the lifecycle, including older workers. Productive longevity may also directly benefit older people's mental and physical health by keeping them socially and intellectually engaged, in addition to providing income.

**Why should policy makers care?** Low and middle-income countries (L/MICs) will see rapidly increasing old-age populations in the coming decades. Many L/MICs are now "getting old before getting rich," and the transitions are happening fast. Mature workers can, and in many cases already do, continue to make significant contributions as workers and entrepreneurs in the modern context of rapidly shifting skills needs. Increasing life expectancy can potentially increase the incentives and ability of people to retain or increase their productivity and remain active longer. Harnessing this productivity can have significant positive impacts on growth and other areas including pension sustainability and health and care services. This will require policies that incentivize workers to remain active and employers to retain and hire them, and encourage investment to enhance their productivity further. Tapping into the labor potential of mature workers should form part of a broad-based agenda that also promotes youth and women's productive participation. Younger countries, for whom this agenda is less urgent, may still learn from other countries' sometimes painful experiences in building lifelong learning and social protection systems that foster fiscally sustainable and growth-friendly transitions.

**What does this note cover?** Recognizing that this agenda spans virtually all of the World Bank's policy areas, this brief focuses on policies under the purview of the World Bank's Social Protection and Jobs (SPJ) agenda, especially those related to employment and skills development. Within the Bank, the productive longevity agenda is nascent. Although L/MICs are experiencing significant and rapid demographic changes, albeit at different stages, the policy agenda is still largely being shaped in high-income countries (HICs) and the evidence base for L/MICs is thin. The brief outlines implications for the SPJ agenda, both in terms of closing the diagnostics and evidence gap and mainstreaming aging in operational work.

# CONTENTS

# PRODUCTIVE LONGEVITY: WHAT CAN THE WORLD BANK DO TO FOSTER LONGER AND MORE PRODUCTIVE WORKING LIVES?[1]

**The global population is aging and at an accelerating speed.** By 2050, one in six people of the world's population will be at least 65 years of age, resulting from rapidly declining fertility rates and increasing life expectancy. Nearly four out of five of these older people will be living in what are currently low- and middle-income countries (L/MICs) (United Nations, 2019). All else equal, more older people implies fewer workers, more dependents, and additional public and private expenditures on pensions, health, and long-term care. While many L/MICs are currently experiencing population dividends, these windows of opportunity are rapidly narrowing. Aging L/MICs risk "getting old before getting rich," raising pressures for policy reforms that can sustain growth and welfare across generations.

**This note focuses on employment and related policy interventions—at the core of the World Bank's Social Protection and Jobs (SPJ) agenda—aimed at fostering productive work among "mature workers", loosely defined as adults above 55.** Aging will require reform across a vast range of areas, including policies relating to labor markets, skills investments, and social protection. In parallel, other mega-trends such as globalization, climate change, and fast-moving technological change, are also fostering rapidly shifting skills demand, which will require continuous up- and reskilling, opening opportunities and raising challenges for an aging workforce. To sustain growth, increasing the "effective work force" with higher productivity and, where possible, employment rates will be critical. This translates into an SPJ agenda focused

1 This brief was authored by Sara Johansson De Silva and Yang Huang and is a deliverable under the Global Social Protection & Jobs Aging working group's activities led by Himanshi Jain. The policy sections draw significantly on a background paper prepared for the World Bank's Healthy Longevity Initiative (Johansson de Silva and Santos, 2023). These briefs were produced under the guidance of Loli Arribas Banos, Practice Manager, Global Social Protection & Jobs team, and Gustavo Demarco, Pensions & SI lead. We thank the peer reviewers Prof. Shereen Hussein, Philip O'Keefe, Matteo Morgandi, and John Giles for their feedback, including helpful inputs to draft versions of the note. Our thanks also to Agastya Yeachuri who provided research assistance.

on raising human capital in all generations, supporting labor market engagement across the pool of potential workers, and providing social protection across the life cycle.

**Reforms should include policies that can extend productive working lives and increase labor force participation and productivity of mature workers—here referred to as "productive longevity."** The agenda does not aim to increase employment rates across all older workers but to stimulate longer working lives where possible and retain productivity toward the end of working lives. The gains from capitalizing on improved mature worker labor contributions can be significant: projections for OECD countries suggest increases in GDP to the tune of 0.4 percentage points per year, aside from other impacts on pension sustainability and health, among others (Kotschy & Bloom, 2023).

**Engaging older generations does not crowd out work for younger generations.** Policymakers may worry over the "lump of labor fallacy"—the notion that extending working lives will reduce opportunities for other age groups (Worthington et al., 2018). In high-income countries (HICs), employment rates for young and older cohorts are positively linked, however (Böheim, 2019; Gruber et al., 2009; Munnell & Wu, 2012). The cost of inaction may in fact be high across generations, leading to aggregate job losses, worker and skills gaps, worsened health and incomes, high fiscal pressures, and suboptimal productivity and competitiveness.

**Aging provides opportunities for individuals, firms, and economies.** Firms with age-diverse workforces reap productivity payoffs (OECD, 2020). With better health and longevity, more workers may wish to remain active, and social and cognitive stimulation offered by work may help them remain healthy even longer. Policy and programs should ensure that they have the flexibility and incentives to do so and that all workers realize their productive potential (World Bank, 2022). The "silver economy"—economic activities serving older people's needs—presents large and rapidly growing market opportunities (Worthington et al., 2018).

This note presents some stylized facts about work in old age and a conceptual framework for identifying constraints and policy interventions that can help foster productive longevity. On this basis, it summarizes the, admittedly limited, policy evidence available and outlines the implications for World Bank work.

## Aging and labor markets in developing and developed countries

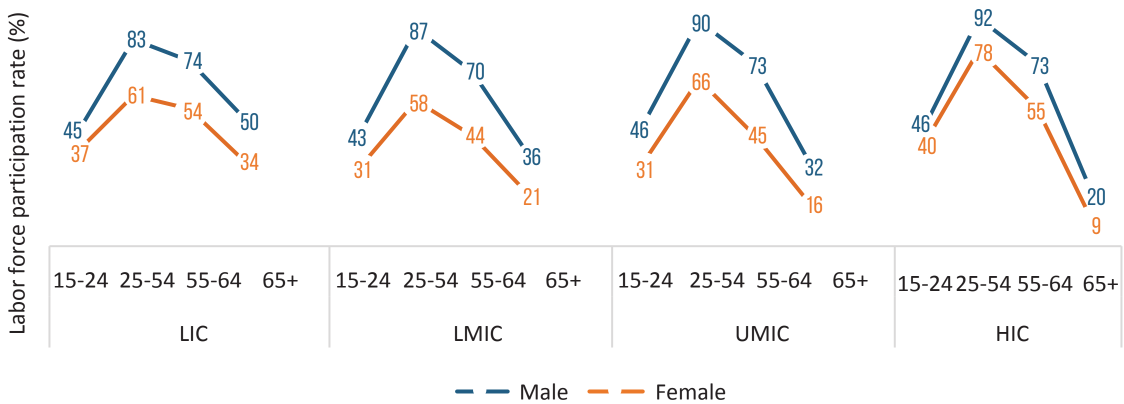
The context for aging and employment is diverse across and within countries. Nonetheless, a few salient features of mature workers' productive participation in labor markets can be summarized as follows.

1. **Mature workers are less likely to be employed than prime-age workers.** Labor force participation is lower as workers reach age 55 and drops significantly at age 65+ and above. The life cycle pattern generally holds whether they live in low-income countries (LICs), lower middle-income countries (LMICs), upper middle-income countries (UMICs), or HICs, although the level of participation differs significantly across these groups (Figure 1).

2. **Women live longer but are less engaged in (paid) work than men.** Only 17 percent of the global female workforce is active at age 65+, compared to 31 percent of males. Yet women outlive men (by five years on average) and have as high or higher levels of human capital.[2]

3. **Mature workers in poorer countries are more likely to work than those in wealthier countries.** The average labor force participation rate of 65+ in LICs is 42 percent, while that of HICs is 14 percent, showing that, lacking pensions and with limited savings capacity, older individuals must continue to support themselves in LICs, whereas some workers in richer countries can afford to leave labor markets.[3] A protection and productivity agenda is therefore more urgent for L/MICs.

**Figure 1:** Labor force participation rates by age, gender, and country income group.




*Source:* Estimates based on ILOSTAT 2020

4. **There is significant diversity in mature worker participation, even within developing countries.** China is a good example: at age 60-64, 80 percent of urban women, likely working in the formal sector, with pensions and possibly some financial resources, have retired, compared to 30 percent of rural women and fewer than 20 percent of rural men (Giles et al., 2023).

5. **Those with the highest longevity leave work earlier.** A corollary of the previous points is that females in HICs enjoy the highest life expectancy rate (83 years) but are the least likely to work at older ages (participation rates at 9 percent at age 65+). Again, China illustrates within-country discrepancies. Chinese women outlive men by nearly six years on average,[4] and life expectancy is significantly higher in urban than rural areas but urban women drop out the earliest.

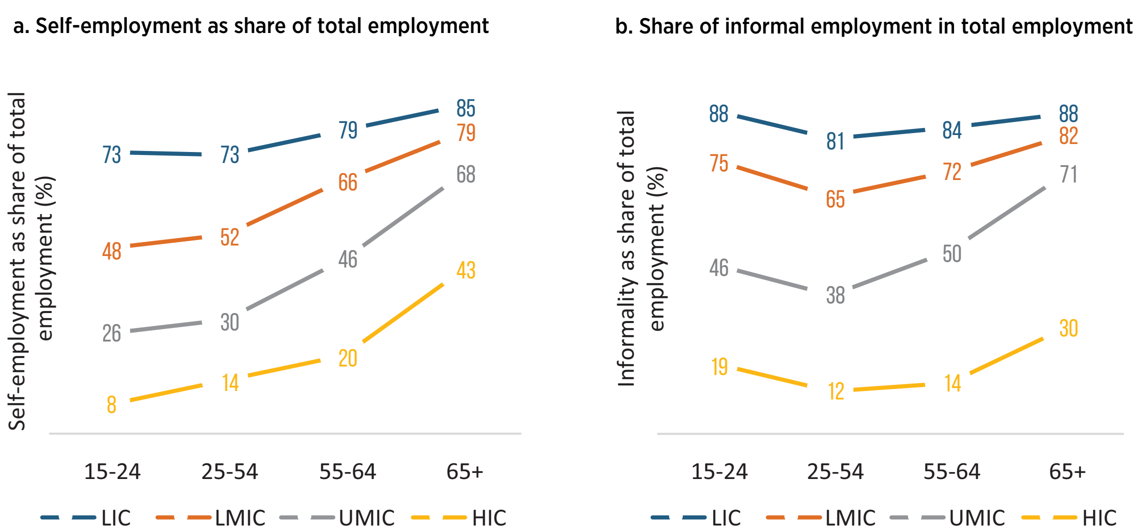
2 In middle-income countries such as Chile, Malaysia, Mexico and Turkey, the gender gap in labor force participation for workers aged 55-64 is above 30 percentage points, compared to around 11 percent in EU27 countries (OECD older worker scoreboard).

3 Estimates based on ILOSTAT 2020.

4 Estimates based on United Nations, D. o. E. a. S. A., Population Division. (2022). *World Population Prospects 2022, Online Edition*.

6. **Mature workers are more likely to be self-employed and work informally (Figure 2, a and b).** Self-employment rates increase with age. Informality rates are also higher for mature workers than other groups (in LICs, at par with youth). A desire to use skills and to become entrepreneurs can motivate mature workers to take up independent work. "Push" factors likely also play a role if regulatory or discriminatory constraints render self-employment the only option to remain active (Holmquist & Sundin, 2022). Rapidly expanding education systems in L/MICs have also increased the human capital gap between older and younger cohorts, partly excluding the former from wage opportunities in the modern urban sector (Moroz et al., 2021).

**Figure 2:** **Self-employment and informality rates by age and country income group**




*Source:* Estimates based on ILOSTAT 2020.

7. **There is no clear evidence regarding the relative productivity of older workers.** Aging will at some point involve cognitive decline, but the onset and speed of descent varies significantly across individuals. Some abilities improve up until high age (Veríssimo et al., 2022), and older workers often compensate for cognitive speed with experience or important socioemotional competencies that are in high demand (Doerwald et al., 2016). Whether focused on establishment productivity or individual productivity, studies of worker productivity and age do not consistently identify a negative correlation, and some in fact point to maintained or even increased productivity, especially for more demanding tasks (Börsch-Supan et al., 2021; Viviani et al., 2021). From a policy perspective, a key conclusion is that age-related declines in abilities can be influenced with investment in physical and mental health and skills (Desjardins & Warnke, 2012; Institute of Medicine, 2012).

**These findings indicate a multipronged policy agenda.** Those aged 65 and above are less likely than prime-age workers to be working. However, in poorer countries, many do remain active, perhaps even longer than they should. Workers in higher-income countries and higher-income groups (typically the urban formal sector) are more likely to be able to afford retirement, but these are also potentially groups for which extending working lives may make the most sense. Mature workers appear also to have significant productivity potential, at least until higher ages. Over the foreseeable future, most of the world's active mature workers will be self-employed in developing countries. Raising their productivity and protecting them from old age poverty needs to be a key priority.

## Fostering productive longevity – what's the problem, and what could work?

**Policy should focus on raising both productivity and participation among mature workers.** Effective policy interventions will identify the most binding constraints for longevity and use effective approaches to address them. This section presents a framework for these constraints and effective policy options, but with **two caveats**.

**First, the evidence of what works to promote productive longevity is thin, especially in LMICs.** Relatively solid evidence on constraints is not matched by research evidence on good policy practices. Knowledge gaps on impact are especially wide for L/MICs for whom this agenda is beginning to take shape. What is available generally reflects reforms affecting workers who are part of some social protection schemes and other regulatory systems (although even there, labor market impact is not systematically studied) and efforts to increase hiring rates in the formal sector. How to foster productive aging in L/MIC contexts with high informality, where the "employer" side is missing, remains an understudied area.

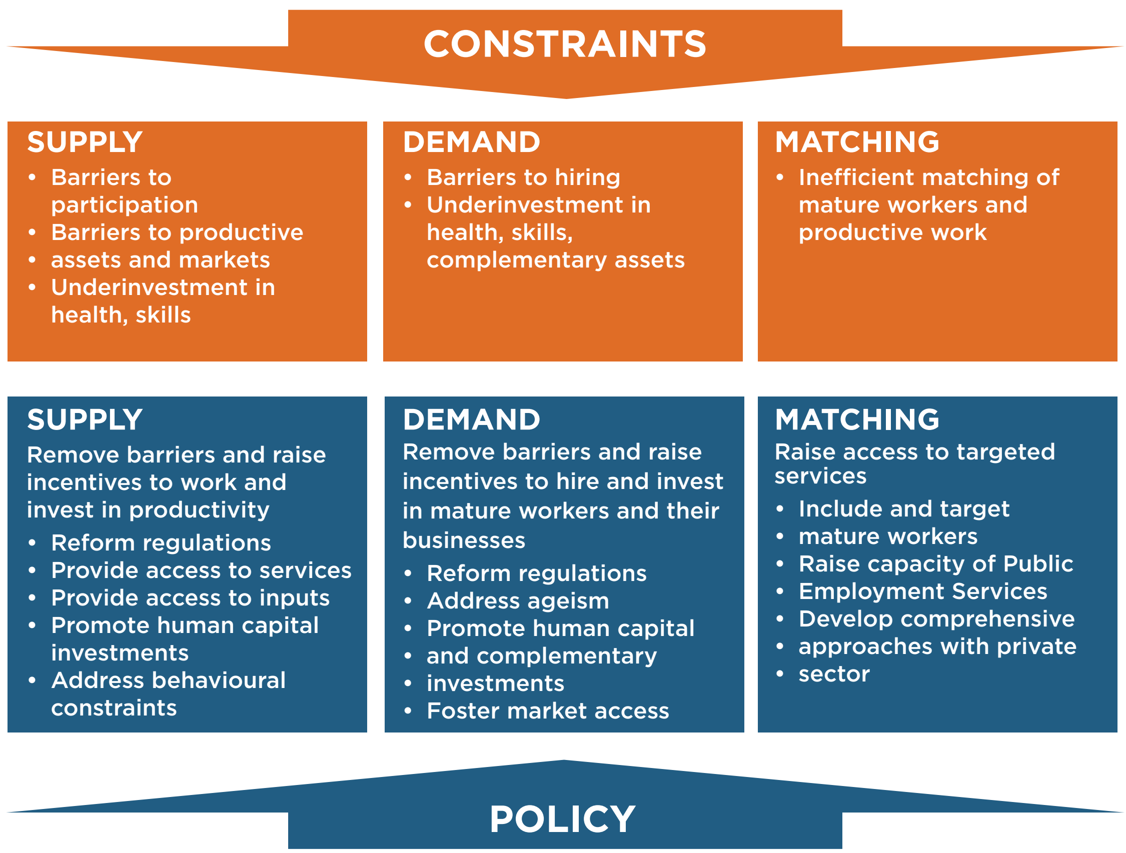
**Second, this policy agenda will have limited reach, especially in poorer and younger countries.** In countries where older populations have low levels of human capital (and where younger populations have benefited from more schooling and better health), raising the older population's productivity more than marginally is challenging. Since many older people are already working merely to survive, and often in physically and mentally strenuous occupations, policy cannot increase employment rates much further. Other policy options, such as raising women's and youth's access to productive opportunities, may be much more cost-effective and politically palatable in youthful countries.

**The lack of an institutional home for this multisectoral agenda will likely limit progress.** Even where aging is more urgent, central policy areas, including lifelong learning, are fragmented across many different government and private sector stakeholders. Without a clear vision of which ministry/government agency has the mandate for investing in the human capital of mature workers (country practices vary), it is difficult to operationalize strategies.

## Constraints and policies for productive longevity – a framework

**Mature workers' participation in productive work, whether as self-employed or employees, is constrained by different barriers and disincentives.** Figure 3 provides a conceptual framework presenting broad categories of policy interventions that can address supply and demand-side constraints and help match workers with adequate jobs and opportunities. The framework is an analytical tool and does not purport to present an exhaustive list of constraints or policy interventions; some constraints are also binding for both workers and employers. For each bucket of constraints, regulatory restrictions, formal and informal institutions, and social norms influence mature workers' incentives and capacity to access productive opportunities and firms' capacity and willingness to employ older workers and invest in their human capital. Therefore, different regulatory and other policy reforms and interventions can help remove barriers and create the right incentives.

**Figure 3:** Constraints to productive longevity and possible policy solutions




*Source:* Adapted from (Johansson de Silva & Santos, 2023)

**Supply-side barriers limit mature workers from accessing productive opportunities as employees or entrepreneurs.** They include direct regulatory barriers to work, such as mandatory retirement, or disincentives, such as high taxation of labor income at older ages. Entrepreneurs may face specific age-related barriers to productive assets or markets, such as discrimination from financial institutions or clients. Declining human capital, due to skills obsolescence or worsening health, risks reducing productivity levels. Behavioral limitations including internalized "ageism"—perceptions and biases around older people's characteristics and capabilities—can prevent older workers from pursuing opportunities or investing in maintaining or increasing their own productivity.

**Demand-side barriers reduce the hiring rate of and investment in mature workers in firms.** Employers are similarly affected by regulatory constraints related to pensions and employment legislation. Formal and informal institutional constraints, e.g., social contributions and so-called "seniority wages", may increase mature workers' costs above their productivity levels. Finally, ageism can reduce employers' willingness to retain or hire mature workers or invest in their productive capacity.

**Whether private or public, job matching and career guidance services are often not adapted to mature workers' needs and constraints.** As a result, vacancies with jobs relevant for mature workers may co-exist with high unemployment or involuntary inactivity among mature workers.

**The framework centers on the idea that suboptimal investment in the human capital of mature workers is a critical constraint to their employability and capacity to contribute to their own and others' welfare.** Mature workers underinvest in their human capital—their health and skills—due to, among other things, norms, lack of affordable opportunities, or information gaps. The same is often true for their current or potential employers. Human capital investment over the entire life cycle is crucial in the rapidly changing skills demand.

## Motivating mature workers and entrepreneurs to remain active in labor markets and invest in their health and skills

**On the labor supply side, policies may focus on removing barriers and increasing incentives to work and invest in productivity, whether as employees or entrepreneurs.** This requires reforms to institutional frameworks (pensions, other social welfare programs, taxation) that facilitate continued participation, societal norms that promote participation, and continued investment in health and skills.

### BARRIERS TO PARTICIPATION

**Regulatory barriers outright prohibit or make it too costly for mature workers to continue working.** Institutional constraints affect formal sector workers. For example, formal sector retirement ages are low in many East Asia and Pacific countries despite high and increasing life expectancy (World Bank, 2016). In China, retirement is mandatory at age 60 for men and 55 for women (OECD, 2019b). Implicit tax rates on work, in combination with pension and second-earned income, are often high (Butrica et al., 2006). There is significant evidence from Central Europe, the Western Balkans, and South Africa that receiving pension income, even with low adequacy, lowers incentives to remain active (Baird et al., 2018; Bussolo et al., 2015; Gragnolati et al., 2011). More flexible work arrangements, e.g., fixed-term contracts, are legally limited in many developing countries.[5]

**Reforms can focus on incentive-compatible social insurance systems and labor taxation.** Evidence from Austria and Germany shows that raising retirement ages can postpone retirement and increase participation, but complementary reforms may be needed to close parallel loopholes to early labor market exit through unemployment or disability programs (Lorenz et al., 2020). Governments in Europe and elsewhere have learned that pension reforms are complex and politically costly to implement and sustain (Fouejieu et al., 2021). However, L/MICs can learn from these mistakes when building their social protection systems. Tax credits related to pension income have been carried out in OECD countries (e.g., Sweden) with a positive impact on participation (Laun, 2017). A balance can be struck between giving individual choice and promoting productive longevity by giving individuals the choice to retire at an early age or later in life with actuarial adjustments to their pension benefits depending on the age at which they choose to retire.

**Lack of affordable quality child and long-term care services is a significant barrier to paid employment for many in the older generation, who provide care services in their households.** Across the globe, the older generation is engaged in unpaid work; women, in particular, care for grandchildren, elderly parents, or even spouses[6] (Ferranna et al., 2022). In many developing countries, early family formation means that many become grandparents comparatively early in life with decades of potentially productive working years ahead of them.[7] Where care services are not accessible, there is often a trade-off between grandparents' and mothers' work,[8] which reduces the participation of the older generation.[9] Lower physical stamina and higher vulnerability to crime and violence are significant constraints for women's participation in labor markets and similarly affect mature workers (ILO, 2017; NCST, 2011).

**Access to quality care services is an essential and potentially win-win policy approach.** Subsidized child- and long-term care services help reduce unpaid work that falls on mature workers. Evidence from Brazil and Spain shows that providing affordable childcare helps increase grandparents' employment and earnings (Attanasio et al., 2017) and can motivate them to delay retirement (Costa-Font & Vilaplana-Prieto, 2022). Other forms of publicly funded

---

5 According to the WB employing workers' database, half of the world's countries have limits on fixed term contracts.

6 A study of time use in OECD, China, and India shows time spent on unpaid work increases after age 60, as time spent on paid work falls (Ferranna, M., Sevilla, J., Zucker, L., & Bloom, D. E. (2022). *Patterns of Time Use Among Older People*) , and studies from Brazil, Mexico, and Thailand show a strong negative correlation between grandmothers' care obligations and work (Schmieder, J. (2021). Fertility as a driver of maternal employment. *Labour Economics*, 72, 102048.

7 In countries like Mexico, India, and Nigeria, grandparents are below 60 years of age on average – The Economist. (2023). The age of the grandparent has arrived". *The Economist*.

8 For example, in a study of Mexico, the death of a cohabiting grandmother led to a 27 percent reduction in the chances of her daughter being active, and reduced earnings by 53 percent. - Marcos, M. A. T. (2023). Grandmothers and the gender gap in the Mexican labor market. *Journal of Development Economics*, 162, 103013.

9 In Bangladesh, big-push economic inclusion programs were less effective for participants over 50 (especially women), due to their limited agency in terms of time - Andrews, C., de Montesquiou, A., Arévalo Sánchez, I., Dutta, P. V., Paul, B. V., Samaranayake, S., Heisey, J., Clay, T., & Chaudhary, S. (2021). The State of Economic Inclusion Report 2021: The Potential to Scale. In: The World Bank.

services also matter—in Peru, access to safe and efficient transportation has been shown to increase vulnerable groups' employment and earnings  (Martinez et al., 2020).

**Internalized ageist notions limit mature workers' incentives to continue to seek opportunities.** They may consider themselves too old to do certain jobs, change jobs, earn promotions, engage in entrepreneurial activities, or invest in skills (Vickerstaff & Van der Horst, 2021).

**Self-employed mature workers may be disproportionately excluded from productive assets and inputs.** Lack of digital literacy may render older adults less willing to invest in new, especially smart, technologies (Moroz et al., 2021). As informal entrepreneurs, mature workers have less access to finance due to ageism in financial institutions, their, often, low earnings, and lack of collateral.[10] Public programs promoting entrepreneurship and broader economic inclusion programs rarely target the older populations' productive opportunities, especially not in L/MICs where entrepreneurship programs overwhelmingly focus on increasing labor market entry (youth) rather than delaying exit (mature workers).

**Programs that assist senior entrepreneurs could address specific needs, including digital skills, risk aversion, and internalized ageism.** Programs to support senior entrepreneurs are emerging in HICs, focusing on targeted microfinance, digital skills, mind-set training, mentoring, and age-diverse business networks, although there is no evidence of impact (Isele & Rogoff, 2014). In L/MICs, lessons from targeted interventions for women who face multiple constraints, including those related to norms and agency, include adapting to time constraints and providing comprehensive support, mentoring and role models (Isele & Rogoff, 2014; Martin & Omrani, 2019).

**Community-based programs focused on mobilizing older people across various areas hold promise.** Common across Asia are Older People Associations (OPAs) programs that activate older people to support many aspects of elderly life: health, social care, legal rights, community voice, and livelihoods and later life work. OPAs have shown promise in helping older adults transition to better jobs (higher income, more diversified, less physically demanding and more stimulating, fostering improved mental and physical health), and in strengthening communities (reduced dependency burden, local multiplier effects, social integration).

## INVESTING IN HUMAN CAPITAL

**Underinvestment in mature workers' human capital development reduces their productive potential.** Even in developed countries, access to adult training is low for young adults, and falls monotonically with age.[11] Continuous investment in learning is likely to be even lower in developing countries; workers in developing countries accumulate only half as much human capital during work as those in developed countries (Jedwab et al., 2021). The age-training gap may reflect high opportunity costs, lack of training options, insufficient basic skills including

10 A qualitative study involving old age people in India, Tanzania, Bangladesh, and Ethiopia found that high costs and lack of information, and high risk aversion, prevented them from accessing finance – HelpAge International and Cordaid. (2011). Making a living last longer – Insights into older people's livelihood strategies. H. I. a. Cordaid.

11 Eurostat data for Albania, Bosnia-Herzegovina, North Macedonia, Serbia, and Turkey – all five middle-income countries – show that participation in training for the age group 55-64 is below 10 percent.

digital skills, information constraints, and psychosocial constraints (internalized ageism). Likewise, poor health is a significant drag on productivity, including non-communicable diseases and mental health conditions.[12]

**Adapted training modes are likely to increase uptake and learning.** Mature workers can learn new skills but do so more effectively through informal and self-paced learning and work-integrated approaches (Knowland & Thomas, 2014; Picchio, 2021; Thomas et al., 2020). For the unemployed or inactive workers, this could include internships or apprenticeships. Subsidizing training for individuals (e.g., through vouchers) may lower barriers, but uptake can be lower in older age groups (Van den Berg et al., 2018) and among low-skill individuals, although these are the groups that are most in need of training (OECD, 2019a). This suggests that targeting and outreach are critical when providing information and guidance (OECD, 2019a).

**The health agenda falls mainly outside the social protection purview but is central to productive aging.** Countries will need to build systems that efficiently prevent and manage non-communicable diseases and mental health conditions optimally. Widening access to social and health insurance will help aging workers reduce threats to their livelihoods and mitigate long-term consequences for productivity and work from health events. Examples of low-cost interventions targeting depression and stress management among small-scale entrepreneurs suggest potential additional impacts on the productivity of aging self-employed workers who are more likely to suffer from depression and anxiety (Saraf, 2019).

## Motivating firms to retain, hire, and invest in mature workers

**Labor demand-side policies should help remove barriers and raise incentives to hire and invest in mature workers.** Employers need the incentives to retain or hire mature workers, adapt working situations to increase their productivity and willingness to work, and continue to invest in their productivity. In addition to regulatory reform and human capital investments addressed above, policy reform can focus on making employing and investing in mature workers more profitable.

### CLOSING THE GAP BETWEEN LABOR COSTS AND PRODUCTIVITY

**Formal and informal practices may raise the cost of mature workers beyond their productivity.** In the formal sector, “seniority wages,” i.e. wages that increase with age irrespective of productivity, are prevalent also in developing countries (Donovan et al., 2020)[13] and have been

12 Depression is estimated to affect between 30-48 percent of the elderly population in fragile states such as Ethiopia, Uganda and Sudan, compared to around 10 percent in the US - Nakua, E. K., Amissah, J., Tawiah, P., Barnie, B., Donkor, P., & Mock, C. (2023). The prevalence and correlates of depression among older adults in greater kumasi of the ashanti region. *BMC Public Health*, 23(1), 763.

13 Wages also appear to rise even more sharply with tenure in some L/MICs compared to HICs - Donovan, K., Lu, W. J., & Schoellman, T. (2020). Labor Market Dynamics and Development. *Yale University Economic Growth Center Discussion Paper*(1071).

shown to discourage hiring.[14] Social contributions and benefits often increase steeply with tenure and wages, rendering mature workers expensive.

**Performance-based wages together with regulatory reform can help align labor costs with productivity, but direct subsidies have smaller impacts.** In countries where seniority wages have been engrained, governments have promoted and subsidized the implementation of performance-based compensation models (Japan, the Republic of Korea, and Singapore) (OECD, 2019b). Reforms to lower labor costs with payroll tax cuts and implement more flexible employment regulations can increase formal employment (Latin America, Central and Eastern Europe) but several countries have also seen little to no impacts (Pagés, 2017). More generally, these changes need to be accompanied by broader reforms to ensure that workers remain protected against shocks. Wage subsidies intended to stimulate hiring older workers have been shown to delay early retirement but have too high deadweight losses[15] to be cost effective (Belgium, Finland) (Boockmann, 2015; Vodopivec et al., 2019).

## ADDRESSING AGEISM

**Ageism, affects hiring and investment in workers.** There is significant evidence that mature workers possess many of the socioemotional skills valued by employers (Doerwald et al., 2016; Mourshed et al., 2021), use experience to increase efficiency (Backes-Gellner et al., 2011), and are just as able to learn new skills as the younger generation but with a different learning approach (Picchio, 2021). Yet, age remains the most commonly reported reason for work-related discrimination in OECD countries (OECD, 2020). A survey of employers in Brazil, India, Italy, Singapore, the UK, and the US, showed that two in five managers expected older workers to resist new technology, more than one in four thought them unable to learn new skills, and one in five thought them incapable of working with other generations (Mourshed et al., 2021).

**Information campaigns may help improve the image of mature workers.** Whereas anti-age discrimination laws exist in some developing countries (Ghosheh, 2008), high informality and weak enforcement reduce their reach. In Germany, soft approaches to address discrimination, such as information campaigns addressed to the public, including mature workers themselves, employers, colleagues, clients, and suppliers, have effectively increased the retainment of mature workers (Homrighausen & Lang, 2019). Evidence from social media campaigns and infotainment approaches in Sub-Saharan Africa show these can be effective in influencing social norms to a targeted audience (Banerjee et al., 2019a, 2019b). Hence, information campaigns could be a cost-effective approach to influence ageist views and practices that senior entrepreneurs face in accessing markets or inputs, whether from clients or service providers such as financial institutions while also affecting mature workers' self-perception and career investment.

14 Firm-level analysis for East Asian countries shows a strong an negative correlation between seniority wages and hiring in age group 50-64 - Zwick, T. (2009). Why pay seniority wages? *ZEW-Centre for European Economic Research Discussion Paper*(09-005).

15 Deadweight losses occur if firms higher subsidized workers from an age group that they would have hired from anyway.

## MOTIVATING FIRMS TO INVEST IN RAISING MATURE WORKER PRODUCTIVITY

**Firms underinvest in skills development, especially for mature workers.** According to the World Bank's enterprise surveys, only one in four firms in low-income countries and one in three firms in middle-income countries provide any training, and only to a minority of workers.[16] Data from European countries show that firms prefer to fill skill gaps with recruitment instead of training existing staff (Quintini, 2023). Lack of opportunities for upskilling and reskilling put mature workers at a disadvantage. Additional complementary investments, including technology tools, more ergonomic working conditions, health interventions, and organizational changes such as mixed-age working teams or more flexible work arrangements, can help workers stay healthy and motivated to work and invest in skills. Firms that adapt workplace conditions and organizations to aging workforces reap significant benefits.[17] Yet, very few firms implement or plan to implement specific programs (training, mentoring, mixed-age teams, unbiased recruitment, phased retirement) to adapt to a mature workforce (1 in 20 in OECD countries, according to a recent survey (Root et al., 2023)).

**The evidence on promoting investment in worker skills, including governance and finance mechanisms, is mixed.** Many L/MICs have established training funds that are funded via private-public partnerships but with little progress on upskilling. Several training funds are now being reformed to better reflect market needs (Palmer, 2022). Direct financial incentives to firms to invest in skills for older workers can increase both jobs and earnings (Germany) but need to be well-targeted to reduce deadweight losses (Picchio, 2021). There is a dearth of studies on how to foster investment in health and any subsequent impact on productivity or worker retention (Poscia et al., 2016), although it is clear that health interventions, access to health services, and support for healthy lifestyles can impact both productivity and employment (Anger et al., 2015; Prinz et al., 2018). Again, low-cost information campaigns and guidance to firms, especially small and medium-sized enterprises (SMEs), on addressing health issues or skills investment and showcasing the benefits of age-inclusive workplace practices may raise awareness and incentives.[18]

## IMPROVING JOB MATCHING

**Public labor market policy interventions are often not well adapted to mature workers.** For example, public employment services often set official retirement ages as the upper age limit for program eligibility, effectively excluding older age groups. Other potential difficulties include mobility constraints (getting to a service center) or lack of digital capacity to handle online services,[19] an especially important constraint when L/MICs are expanding their e-government services. Training modalities are unlikely to be adapted to what is known about

16 Estimates based on WB Enterprise Surveys.

17 A famous example includes simple and low cost modifications to work environment organization undertaken by BMW, a car manufacturer, resulting in a remarkable surge in productivity - EU-OSHA. (2016). Healthy Workplaces for All Ages: Promoting a sustainable working life.

18 Many governments in OECD countries provide employers, especially SMEs, with health-related guidance and toolkits.

19 A study of self-service tools offered by employment services in the US showed these to be least used by older age groups due to lower digital skills - D'Amico, R., Dunham, K., Goger, A., Lea, C., Rigg, N., Ude, S., & Wiegand, A. (2009). Findings from a Study of One-Stop Self-Services: A Case-Study Approach.

old-age learning. Without specific policies targeting mature workers' constraints and needs, their access to services will be limited.

**Intermediation services could be strengthened to provide relevant and unbiased services to mature workers seeking jobs and/or career changes.** Public employment services could revise age criteria to increase access to different forms of support, strengthen capacity to help workers overcome their specific constraints (mobility, digital, training needs), and provide targeted information on labor market and training opportunities. Comprehensive and locally anchored approaches, founded on private-public sector collaborations to retain and reintegrate mature workers, have proven effective in Germany (OECD, 2019b).

## Five takeaways for productive aging

**First, a research agenda on policy impact is emerging, but with significant gaps.** The evidence for L/MICs is limited. Most research focuses on HICs but is not entirely conclusive on what works, perhaps especially on adult learning systems. More information on mature workers' work, aspirations, constraints, and policies that might increase their productive opportunities are needed to inform policy.

**Second, given the information gaps, governments could adopt an "aging" lens through sectoral approaches.** The mature workforce is generally overrepresented in agricultural and informal sectors. Policies directed at these sectors may be particularly effective in reaching them.

**Third, expanding effective lifelong learning (LLL) systems is a transversal priority.** To tap into rapidly shifting opportunities and demand for labor, goods and services, all countries, irrespective of income levels and demographic situation, will need to increase and sustain human capital across individuals' lifecycles. Leveraging knowledge and financing from the private sector will be critical as well as stimulating enterprise-based learning. It will also be essential to develop effective means of increasing skills development in the informal sector. In all countries, rich and poor, low-skill workers are the ones in greatest need of re- and upskilling, but this group is significantly harder to reach with LLL.

**Fourth, productive longevity begins in youth.** It will be more difficult to raise productivity once it has fallen significantly, than to moderate a decline over time. Therefore, human capital and complementary investments need to start early and be maintained throughout workers' lives.

**Fifth, L/MICs will face more challenging choices and trade-offs than HICs regarding policy priorities.** L/MICS may find the highest payoffs to (i) raising productivity and protection of mature workers in the informal sector and (ii) increasing employment and productivity in other groups with poor labor market outcomes, including women of all ages. High informality renders reforms to social insurance, employment regulations and taxation toothless from the perspective of activating the workforce. Stimulating female labor force participation and investing in human capital in children and youth may be more cost effective than extending the working lives of those who arguably already work too long, activating those who have been out of the labor market for some time, or investing heavily in skills development for mature workers with very little basic education. For these groups, policy can center on strengthening human capital with health and strategic skills development, supporting productivity of self-employment, and ensuring inclusion in social safety nets.

**Governments may start off by identifying "win-win" and "quick-win" policies (built on diagnostics).** While building the foundations for lifelong-learning, quick-win policies may include information campaigns to address ageist norms, increase information on learning needs and opportunities, adapt criteria for access to different publicly supported services related to productive opportunities, and tailor career guidance services for different age groups. Quick-win policies would emphasize retaining workers more than creating jobs for the unemployed or inactive. Good and affordable child or long-term care services that free up labor force participation for adults while increasing quality investment in early childhood or elderly welfare are clear win-win policies that could be prioritized. The public sector, representing a significant share of formal work in LMICs, can lead the way in institutional reform.

# What does this imply for the World Bank's work in this area?

**An aging world but a policy agenda in its infancy.** Productive longevity touches all SPJ areas but also many other policy areas. It is an inherently cross-sectoral question and needs to be addressed as such. From the SPJ perspective, productive longevity is only now emerging as a policy agenda, with a limited number of diagnostics pieces and operations. Pension reform is an exception, but its objectives have focused on fiscal sustainability rather than labor force participation. A report published in 2021 by the Independent Evaluation Group (IEG) concluded that there was significant scope to increase and strengthen the World Bank's work on aging (World Bank, 2021b). Recommendations included increasing institutional focus and cross-sectoral coordination, systematically using diagnostics to understand the aging process, applying an aging lens, including lifelong learning, and engaging countries on the agenda. Specifically related to productivity, the IEG found that the work on lifelong learning is still at the incipient stage and only partially integrated into the aging work. Against this background, this section below summarizes existing diagnostic and operational work on productive longevity, loosely based on the framework above, and outlines potential future directions.

## What is the World Bank (SPJ) doing to help countries foster productive longevity?

### ADVISORY SERVICES AND ANALYTICS (ASA)

**The World Bank's analytical and policy-oriented work does not comprehensively address productive longevity.** Several regional and country advisory ASA, especially in East Asia and the Pacific, recognize the interplay between labor markets and aging (see **Annex 1** for an overview of recent reports and primary focus in tabular form). Beyond basic diagnostics, labor market aspects are generally not covered, however, and the emphasis is on diagnostics rather than policy proposals to address the impact of aging on labor markets and vice versa. Some examples of country ASA that do cover the implications of aging for labor markets and list policy options include reports on Thailand and Vietnam (Moroz et al., 2021; World Bank, 2021a), Malaysia (World Bank, 2020), and Uruguay (Apella et al., 2020; Rofman & Apella, 2020).

**A few common findings emerge from World Bank reports on aging and labor market policy.** First, across countries, there is a need for more granular data (see Box 1) and employment diagnostics on aging. Second, there is significant diversity in mature workers' situations within countries, particularly between urban formal sector workers and rural or urban informal sector workers. Third, increasing productivity and participation over the life cycle, including youth and women, is likely the most cost-effective approach in the L/MIC context. Fourth, lifelong learning needs to be at the fore of the productive aging agenda, but there is little knowledge on the how-to. Fifth, raising informal sector productivity and protection remains pivotal for this age group.

### Box 1: Data for understanding productive longevity.

In many countries, the lack of comparable data on key life domains at older ages, such as employment, income, consumption, health status, cognition, health care, access to public services, family structure, and more, is a challenge in developing the productive longevity agenda.

Administrative labor market indicators on international data platforms (such as OECD labor force statistics and ILOSTAT) usually do not contain disaggregated information for people over age 65. This aggregated age group – age 65 and above – was usually also adopted by National Statistical offices around the world, which hinders the effort to gain more granular understanding of productive longevity. To help break up the age group in administrative indicators could help shed a light on labor market outcomes of mature workers and facilitate global comparison.

Labor force surveys (LFS) and household surveys exist in many places, but usually cover only a few domains – for instance, LFS can provide insight on labor force participation (both the extensive margin and the intensive margin), but will not allow researchers to monitor or investigate the evolution of health status or cognition and their implications for labor markets.

Firm-level surveys, where they exist, are generally based on formal sector and with limited granularity related to workforce.

Starting in the United States with the Health and Retirement Study (HRS), a new type of survey covering various domains of aging is gaining traction throughout Europe and Asia. More than 30 countries now have HRS-type surveys, including a number of major developing economies (e.g., China, India, Mexico). HRS-type surveys can help advance our understanding of aging in many aspects, including productive longevity, and how different domains impact each other.

## OPERATIONAL WORK

**Many World Bank operations encompass labor markets and aging issues, but as productive longevity has not been the primary objective, it has often not been measured.** A list of relevant projects is provided in **Annex 2**. Placed within our conceptual framework, these operations have almost exclusively focused on removing barriers on the supply side – for instance, pension system reform to increase retirement ages; affordable quality care services to free up labor; or supporting lifelong learning systems (LLL) to increase the productivity of the labor force. There is scant evidence of interventions addressing demand-side or matching constraints.[20] The absence of demand-side projects likely reflects three factors: (i) the limited reach of this agenda in the Bank, (ii) limited evidence of the impact of demand-side interventions as discussed above, and (iii) the lack of demand-side entry points for SPJ. Experience from operations, including pensions reform, care services, and LLL, are discussed below (general labor market reforms as in employment protection legislation or similar reforms are too broad an area to be included here).

**The World Bank has several decades of experience from supporting countries in designing and reforming pension systems in relatively more developed regions, such as ECA and LAC, and increasingly in EAP, MENA, and AFR.** In many cases, financing supports, sometimes paired with technical assistance (TAs), were provided through Development Policy Loans (DPLs) to improve coverage of those in need, build fiscal sustainability of the programs, and provide adequate support to prevent vulnerable groups from sinking into poverty. There are also investment loans that help strengthen pension administration systems. While productive longevity was not the direct policy objective of these operations, it can be a side product when fiscal sustainability issues are addressed through increasing retirement ages and closing gender gaps in retirement ages. The accompanying note in this series on financial protection at older ages discusses Bank support in the pensions area in more detail.

**Long Term Care (LTC) is an emerging area in which the World Bank has started to engage through TAs and financial support, mostly in MICs and HICs, and the demand from clients has been increasing.** Support has included developing assessment toolkits to understand the readiness of LTC institutions and policies, service delivery, and household and gender-related issues in East and South Asia. TAs and financial support were also provided for LTC service delivery, strengthening service quality and management, and supporting fiscal reforms in Chile, Colombia, and China. However, productive longevity was not an explicit objective in these activities. An innovative project in the Chinese province of Guizhou is piloting a potential "win-win" approach, through which the "young-old" who take care of the "old-old" can save the amount of time they spend on care provision in a "time bank" in exchange for future care services. The accompanying LTC note in this series covers sectoral issues and Bank engagement in more detail.

**Projects incorporating lifelong learning (focusing on adult training) are beginning to emerge.** For instance, investment project financing (IPF) and development policy operations (DPO)

20 A few World Bank projects include digital skill upgrading programs for enterprises (targeting Small and Medium Enterprises). These could arguably be considered as demand-side interventions to invest in skills development, but they have not focused on mature workers.

projects have been implemented in UMICs in Latin America and the Caribbean and Europe and Central Asia (e.g., Argentina, Bulgaria, Chile, Poland, Türkiye) to support building or strengthening LLL systems to improve labor productivity. In LIC and LMIC contexts (e.g., Nepal and Pakistan), LLL-related projects have focused more on directly improving literacy and equipping students with foundational skills for LLL in the future. Even for the projects that directly support the LLL agenda in UMICs, projects mainly cover improving the financing model by encouraging the private supply of training, establishing a competency framework, and supporting other institutions that are not explicitly tailored to mature workers.

## What could the World Bank be doing?

**The evidence gaps for impact highlight the critical role of the World Bank in strengthening the analytical agenda.** Teams can assist countries with global, regional, and country-specific assessments of demographic structure, the profile of the older workforce, and relevant institutional and policy readiness for productive longevity. Such analysis would highlight the degree of urgency, main binding constraints, and policy prioritization in different contexts, including identifying the "quick-wins" and "win-wins." Similarly, the Bank can promote developing and implementing new data instruments, including Health and Retirement Survey (HRS)-type databases and matched employer-employee databases, to shed light on productive longevity. The Bank can also support developing global standardized indicators and benchmarking tools that each country can use to measure its progress in various aging-related domains. Pilot interventions can be developed to inform the design of active labor market programs (ALMPs) including training and career guidance services for mature workers and evaluate the impact of sectoral and territorial approaches on different age groups. Lessons from other targeted and tailored approaches, especially youth and women, can inform design. Lessons on success and failure from HICs and other L/MICs (e.g., building sustainable social protection systems, fostering skills development in small firms, combating seniority wages and ageism) can also be documented and shared.

**In countries where productive longevity is a priority, the World Bank should adopt an aging lens.** Given the cross-sectoral nature of the agenda, an aging lens could help promote aging-inclusive operations and other support. The Bank could incorporate lessons learned from mainstreaming gender to guide this process. As a concrete example, aging country CPFs could include key indicators such as employment or social insurance coverage by age; operations results frameworks could likewise be expected to include aging perspectives. Cross-sectoral operations, meanwhile, can go well beyond SPJ or even Human Development—for instance, mechanization in the agricultural sector can improve older farmers' productivity and well-being; the introduction of internet technologies can facilitate low-cost marketing and benefit digital-illiterate older workers; development of land institutions, particularly secure land rental, can provide a source of income for older people and increase labor productivity by transferring land to younger farmers familiar with new technologies and capable of working at larger scale. Aside from the traditional IPF instrument, an aging-focused Development Project Financing (DPF) or an aging pillar within a multisector DPF can be explored to support policy reforms in this cross-sectoral area, especially in UMICs where there is more appetite. Finally, Bank teams can and should focus efforts on reaching out to private sector, local government and civil society, all of whom are critical partners in promoting the participation and productivity of mature workers.

# REFERENCES


Andrews, C., de Montesquiou, A., Arévalo Sánchez, I., Dutta, P. V., Paul, B. V., Samaranayake, S., Heisey, J., Clay, T., & Chaudhary, S. (2021). The State of Economic Inclusion Report 2021: The Potential to Scale. In: The World Bank.

Anger, W. K., Elliot, D. L., Bodner, T., Olson, R., Rohlman, D. S., Truxillo, D. M., Kuehl, K. S., Hammer, L. B., & Montgomery, D. (2015). Effectiveness of total worker health interventions. *Journal of occupational health psychology*, 20(2), 226.

Apella, I., Rofman, R., & Rovner, H. (2020). Skills and the Labor Market in a New Era: Managing the Impacts of Population Aging and Technological Change in Uruguay. In: The World Bank.

Attanasio, O., Paes de Barros, R., Carneiro, P., Evans, D., Lima, L., Olinto, P., & Schady, N. (2017). Impact of free availability of public childcare on labour supply and child development in Brazil.

Backes-Gellner, U., Schneider, M. R., & Veen, S. (2011). Effect of workforce age on quantitative and qualitative organizational performance: Conceptual framework and case study evidence. *Organization Studies*, 32(8), 1103-1121.

Baird, S., McKenzie, D. J., & Ozler, B. (2018). The Effects of Cash Transfers on Adult Labor Market Outcomes. *World Bank Policy Research Working Paper*(8404).

Banerjee, A., La Ferrara, E., & Orozco, V. (2019a). The entertaining way to behavioral change: fighting HIV with MTV. *Policy Research Working Paper-World Bank*(8998).

Banerjee, A., La Ferrara, E., & Orozco, V. (2019b). Entertainment, education, and attitudes toward domestic violence. AEA Papers and Proceedings,

Böheim, R. N. (2019). The effect of early retirement schemes on youth employment. *IZA World of Labor.*

Boockmann, B. (2015). The effects of wage subsidies for older workers. *IZA World of Labor*.

Börsch-Supan, A., Hunkler, C., & Weiss, M. (2021). Big data at work: Age and labor productivity in the service sector. *The Journal of the Economics of Ageing*, 19, 100319.

Bussolo, M., Koettl, J., & Sinnott, E. (2015). Golden Aging: Prospects for Healthy, Active, and Prosperous Aging in Europe and Central Asia. In: The World Bank.

Butrica, B. A., Johnson, R. W., Smith, K. E., & Steuerle, C. E. (2006). The implicit tax on work at older ages. *National Tax Journal*, 59(2), 211-234.

Costa-Font, J., & Vilaplana-Prieto, C. (2022). Caregiving Subsidies and Spousal Early Retirement Intentions.

D'Amico, R., Dunham, K., Goger, A., Lea, C., Rigg, N., Ude, S., & Wiegand, A. (2009). Findings from a Study of One-Stop Self-Services: A Case-Study Approach.

Desjardins, R., & Warnke, A. (2012). Ageing and Skills. A Review and analysis of skill gain and skill loss over the lifespan and over time, Paris. In.

Doerwald, F., Scheibe, S., Zacher, H., & Van Yperen, N. W. (2016). Emotional competencies across adulthood: State of knowledge and implications for the work context. *Work, Aging and Retirement*, 2(2), 159-216.

Donovan, K., Lu, W. J., & Schoellman, T. (2020). Labor Market Dynamics and Development. *Yale University Economic Growth Center Discussion Paper*(1071).

EU-OSHA. (2016). Healthy Workplaces for All Ages: Promoting a sustainable working life.

Ferranna, M., Sevilla, J., Zucker, L., & Bloom, D. E. (2022). *Patterns of Time Use Among Older People*.

Fouejieu, A. P., Kangur, A., Martinez, S. R., & Soto, M. (2021). Pension reforms in Europe: How far have we come and gone?

Ghosheh, N. (2008). Age discrimination and older workers: Theory and legislation in comparative context. *Conditions of work and employment series*(20).

Giles, J., Lei, X., Wang, G., Wang, Y., & Zhao, Y. (2023). One country, two systems: evidence on retirement patterns in China. *Journal of pension economics & finance*, 22(2), 188-210.

Gragnolati, M., Jorgensen, O. H., Rocha, R., & Fruttero, A. (2011). Growing Old in an Older Brazil: Implications of Population Aging on Growth, Poverty, Public Finance and Service Delivery. In: The World Bank.

Gruber, J., Milligan, K., & Wise, D. A. (2009). *Social security programs and retirement around the world: The relationship to youth employment, introduction and summary*.

HelpAge International and Cordaid. (2011). *Making a living last longer – Insights into older people's livelihood strategies.* H. I. a. Cordaid.

Holmquist, C., & Sundin, E. (2022). Organizing work and activities to cope with age–the role of entrepreneurship for individuals aged 50+. *Qualitative Research in Organizations and Management: An International Journal*, 17(2), 236-252.

Homrighausen, P., & Lang, J. (2019). *Do informational nudges alter firms' hiring behavior of older workers?*

ILO. (2017). *World Employment and Social Outlook: Trends for women 2017.*

Institute of Medicine. (2012). *Aging and the macroeconomy: Long-term implications of an older population.*

Isele, E., & Rogoff, E. (2014). Senior Entrepreneurship: The New Normal. *Public Policy & Aging Report*, 24(4), 141-147.

Jedwab, R., Romer, P., Islam, A., & Samaniego, R. (2021). *Human Capital Accumulation at Work: Estimates for the World and Implications for Development* (1813-9450). (World Bank Policy Research Working Papers, Issue.

Johansson de Silva, S., & Santos, I. (2023). Productive Longevity: What can work in low- and middle-income countries? (Background study for the World Bank Healthy Longevity Initiative., Issue.

Knowland, V. C., & Thomas, M. S. (2014). Educating the adult brain: How the neuroscience of learning can inform educational policy. *International Review of Education*, 60, 99-122.

Kotschy, R., & Bloom, D. E. (2023). *Population Aging and Economic Growth: From Demographic Dividend to Demographic Drag?*

Laun, L. (2017). The effect of age-targeted tax credits on labor force participation of older workers. *Journal of Public Economics*, 152, 102-118.

Lorenz, S., Pfister, M., & Zwick, T. (2020). Beware of the Employer: Financial Incentives for Employees May Fail to Prolong Old Age Employment. *ZEW-Centre for European Economic Research Discussion Paper*(20-007).

Marcos, M. A. T. (2023). Grandmothers and the gender gap in the Mexican labor market. *Journal of Development Economics*, 162, 103013.

Martin, L., & Omrani, N. (2019). Understanding senior entrepreneur behavior. *Journal of Enterprising Culture*, 27(03), 259-282.

Martinez, D. F., Mitnik, O. A., Salgado, E., Scholl, L., & Yañez-Pagans, P. (2020). Connecting to economic opportunity: The role of public transport in promoting women's employment in Lima. *Journal of Economics, Race, and Policy*, 3, 1-23.

Moroz, H. E., Naddeo, J. J., Ariyapruchya, K., Glinskaya, E. E., Jain, H., Lamanna, F., Laowong, P., Nair, A., Palacios, R. J., & Tansanguanwong, P. (2021). Aging and the Labor Market in Thailand: Labor Markets and Social Policy in a Rapidly Transforming and Aging Thailand: Aging and the Labor Market in Thailand.

Mourshed, M., Jaffer, A., Cashman, H., Ruiz, K. S., & Sikes, J. (2021). *Meeting the World's Mid-career Moment*.

Munnell, A. H., & Wu, A. Y. (2012). Will delayed retirement by the baby boomers lead to higher unemployment among younger workers? *Boston College Center for Retirement Research Working Paper*(2012-22).

Nakua, E. K., Amissah, J., Tawiah, P., Barnie, B., Donkor, P., & Mock, C. (2023). The prevalence and correlates of depression among older adults in greater kumasi of the ashanti region. *BMC Public Health*, 23(1), 763.

NCST. (2011). *Seniority Community Service Employment Program: A resource for SCSEP providers*.

OECD. (2019a). *Individual Learning Accounts: Design is key for success* (OECD Policy Briefs, Issue.

OECD. (2019b). Working Better with Age. https://doi.org/doi:https://doi.org/10.1787/c4d4f66a-en

OECD. (2020). Promoting an Age-Inclusive Workforce. https://doi.org/doi:https://doi.org/10.1787/59752153-en

Pagés, C. (2017). Do payroll tax cuts boost formal jobs in developing countries? *IZA World of Labor*, 345-345.

Palmer, R. (2022). *Global review of training funds: spotlight on levy-schemes in 75 countries* (9231005642).

Picchio, M. (2021). Is training effective for older workers? *IZA World of Labor*.

Poscia, A., Moscato, U., La Milia, D. I., Milovanovic, S., Stojanovic, J., Borghini, A., Collamati, A., Ricciardi, W., & Magnavita, N. (2016). Workplace health promotion for older workers: a systematic literature review. *BMC Health Services Research*, 16, 415-428.

Prinz, D., Chernew, M., Cutler, D., & Frakt, A. (2018). Health and economic activity over the lifecycle: Literature review.

Quintini. (2023). *Presentation*.

Rofman, R., & Apella, I. (2020). When We're Sixty-Four: Opportunities and Challenges for Public Policies in a Population-Aging Context in Latin America.

Root, J., Schwedel, A., Haslett, M., & Bitler, N. (2023). *Better with Age: The Rising Importance of Older Workers*.

Saraf, P. (2019). A Study of Fragility, Entrepreneurship and Mental Health.

Schmieder, J. (2021). Fertility as a driver of maternal employment. *Labour Economics*, 72, 102048.

The Economist. (2023). The age of the grandparent has arrived". *The Economist*.

Thomas, M. S., Knowland, V. C., & Rogers, C. (2020). The Science of Adult Literacy. Social Protection & Jobs. Discussion Paper No. 2001. *World Bank*.

United Nations, D. o. E. a. S. A., Population Division. (2022). *World Population Prospects 2022, Online Edition*.

United Nations, D. o. E. a. S. A., Population Division (2019). *World Population Ageing 2019: Highlights*.

Van den Berg, G. J., Dauth, C., Homrighausen, P., & Stephan, G. (2018). Informing Employees in Small and Medium Sized Firms about Training: Results of a Randomized Field Experiment.

Veríssimo, J., Verhaeghen, P., Goldman, N., Weinstein, M., & Ullman, M. T. (2022). Evidence that ageing yields improvements as well as declines across attention and executive functions. *Nature Human Behaviour*, 6(1), 97-110.

Vickerstaff, S., & Van der Horst, M. (2021). The impact of age stereotypes and age norms on employees' retirement choices: A neglected aspect of research on extended working lives. *Frontiers in Sociology*, 6, 686645.

Viviani, C., Bravo, G., Lavallière, M., Arezes, P., Martínez, M., Dianat, I., Bragança, S., & Castellucci, H. (2021). Productivity in older versus younger workers: A systematic literature review. *Work*, 68(3), 577-618.

Vodopivec, M., Finn, D., Laporšek, S., Vodopivec, M., & Cvörnjek, N. (2019). Increasing employment of older workers: Addressing labour market obstacles. *Journal of population ageing*, 12, 273-298.

World Bank. (2016). *Live long and prosper: aging in East Asia and Pacific*. The World Bank.

World Bank. (2020). *A silver lining: Productive and inclusive aging for Malaysia*. World Bank.

World Bank. (2021a). *Viet Nam: Adapting to an Aging Society*. World Bank.

World Bank. (2021b). *World Bank support to aging countries: An independent evaluation*. World Bank.

World Bank. (2022). *Adapting Social Protection & Jobs to an Actively Aging World*. W. Bank.

Worthington, H., Simmonds, P., Farla, K., & Varnai, P. (2018). The silver economy: Final report. *Luxembourg: Publications Office of the European Union*. doi, 102759, 685036.

Zwick, T. (2009). Why pay seniority wages? *ZEW-Centre for European Economic Research Discussion Paper*(09-005).

# ANNEX 1: Recent World Bank Advisory Services and Analytics on Aging: an Overview

| Report | Year published | Country/ Region | Anything on productive aging? | Key messages, especially related to productive employment |
|---|---|---|---|---|
| IEG evaluation of World Bank's work on aging | 2021 | Global | Yes | Two key findings:<br>Analytical work on aging is increasing but (i) not closely connected with country needs (ii) does not systematically analyze impact of aging on different population groups despite distributional impact. Examples include specific work on outmigration or female LFPR and gender-age gaps.<br>Operationally, WB has not helped countries prepare for aging, and lacking cross-sectoral approaches.<br>WB does not engage effectively at country level due to (i) lack of cross-sectoral counterpart and (ii) no institutional "home" for aging although it could be housed in, e.g., HCP |
| Aging and the LM in Thailand | 2021 | Thailand/ EAP | Yes, focuses on labor market | Policy focus on: Extending working lives for aging workers, female LFPR, productive migration, and lifelong approaches to learning |
| Vietnam: Adapting to an aging society | 2021 | Vietnam/ EAP | Yes, employment chapter | Foster productive longevity with pension reform, targeted policies including subsidized employment, retraining schemes and subsidies to support training, and tailored job search services. |
| A silver lining: Productive and inclusive aging for Malaysia | 2020 | Malaysia/ EAP | Yes, employment chapter | Foster productive employment with increase training and lifelong learning, and improve work environments that foster productive work for aging workers<br>Regulatory reform to improve incentives to work and distribute benefits equitably, help women improve their opportunities. |

| | | | | |
|---|---|---|---|---|
| When We're Sixty-Four: Opportunities and Challenges for Public Policies in a Population-Aging Context in Latin America. | 2020 | Regional/ LAC | Yes, employment chapter | Policy focus on:<br>Increasing female labor force participation<br>Incentives for later retirement including higher pensions if delayed<br>Flexible work arrangements.<br>Access to adult training, focus on less educated workers and those whose jobs risk automation. |
| Skills and the Labor market in a new era: managing the impacts of population aging and technological change in Uruguay | 2020 | Uruguay/ LAC | Somewhat: lifelong learning | Policy focus on:<br>Promoting "scale effect"<br>Relevant skills in school<br>Lifelong learning including ALMPs, skills training, on-the-job training, intermediation services<br>Protection to workers in the gig-economy |
| The Inverting Pyramid: Pension Systems Facing Demographic Challenges in Europe and Central Asia | 2014 | Regional/ ECA | One chapter, but mostly focused on pensions | Policy (productive working):<br>Adapt to gradual retirement<br>Support employer-based changes towards better working places<br>Access to training, adapted to older workers<br>health and wellbeing |
| Forever Young? Social policies for a changing population in southern Africa | 2016 | Southern Africa/ SSA | No, focuses mostly on investment in youth to raise future (adult) productivity. | Policies to benefit from the demographic window of opportunity:<br>utilizing labor force (youth, women) with inclusive growth policies and social policies that permit investment in the next generation |
| Golden Aging | 2015 | Regional/ ECA | Yes, but limited | Policies: rebalance demographic trends to reduce mortality and facilitate fertility, lifelong learning, mobility and migration<br>legal reform to incentivize longer working lives<br>Social safety nets |
| Live long and prosper | 2016 | Regional/ EAP | Yes, analysis and policy chapter respectively | Policy for those closer to productivity frontier: Increase LFPR, make older workers work longer, and increase immigration. For ALL: increase productivity with investments in human capital. And avoid setting up pensions systems the wrong way. |

# ANNEX 2: List of Projects Reviewed

| Project ID | Country | Project Status | Project Name |
|---|---|---|---|
| | | | **Lifelong learning** |
| P068271 | Republic of Chile | Closed | Chile: Life-long Learning and Training Project |
| P066149 | Republic of Türkiye | Closed | Secondary Education Project |
| P095514 | Argentine Republic | Closed | AR Lifelong Learning Project |
| P125610 | Nepal | Closed | Nepal: School Sector Reform Program Additional Financing |
| P148585 | Romania | Active | Romania Secondary Education Project |
| P154524 | Islamic Republic of Pakistan | Closed | Pakistan: Third Punjab Education Sector Project |
| P160642 | Republic of Cote d'Ivoire | Active | Cote d'Ivoire Higher Education Development Support Project |
| P102160 | Bulgaria | Closed | Development Projects: Social Sectors Institutional Reform Development Policy Loan (SIR DPL II) |
| P115400 | Bulgaria | Closed | Third Social Sectors Institutional Reform Development Policy Loan (SIR DPL III) |
| P112765 | Poland | Closed | Public Finance Management, Employment, and Private Sector Development Programmatic Policy Loan |
| | | | **Long-term care** |
| P159331 | Chile | Closed | TA for phased implementation of National System for Social Care |
| P154716 | China | Active | Anhui Aged Care System Demonstration Project |
| P162349 | China | Active | Guizhou aged care system development program |
| P176408 | Colombia | Closed | Closing the post-pandemic economic and social gender gap in Bogotá |


WORLD BANK GROUP
Social Protection & Jobs