Task 3.1

Effects of technological progress on the decision to retire

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1. Task description

Older workers are less at ease with the use of digital tools and may experience age-related cognitive decline or technology-related barriers that may push them out of the labour market earlier than the retirement age. This task will assess older workers' behaviours on the labour market using data from EU-LFS (2006, 2012), SHARE, EIBIS, IFR, EU-KLEMS and Employment Protection Legislation (EPL) indexes from the OECD. The differences by gender, institutional and policy settings will be highlighted.

2. Background / Setting

In the context of aging population, there is an increasing need to extend the work time through reforms of the pension system or early retirement and improve the employment participation of higher working age people in order to sustain the pension insurance system and to moderate the potentially adverse effects of demographic change on economic growth.

3. State-of-the-art

Digitalisation in the workplaces change the way tasks are carried out and may affect the employability of older workers. While several papers focus on the link between early retirement and automation (Casas and Román, 2023), referring to the capacity of the new technology to do tasks previously assumed by humans, there is a lack of the effects on early retirement of digital tools (automatic systems, technological devices, electronic tools and resources that generate, process, or store information) (Komp-Leukkunen, 2022). Some existing studies on this topic highlighted however mixed results. Indeed, while some studies stress that the lack of skills in using digital technologies may lower older workers' employability and lead them to retire earlier (Hudomiet and Willis, 2021), others suggest that digital technologies can help older workers to extent their working

lives by reducing the physical job demands and helping them to better manage their health (Nagarajan and Sixsmith, 2021). Considering these mixed results, more research is needed to better understand the early retirement's behaviour of older workers in digitalising workplaces.

4. Advancement compared to the state of the art

We will provide (one of) the first analyses assessing in an EU-wide setting, the implication of the use of digital tools for the decision to retire of older workers in 27 European countries.

The analysis will be at the individual level, taking into account the workplace issues, the private sphere, the health status as well as the socio-demographic characteristics of older workers.

Our dependent variable is early retirement, taking value 1 when retiring before the statutory retirement age and 0 otherwise when remaining working. The main explicative variables are several indicators of digitalisation at the sector/firm size/occupation level. Other determinants of early retirement will be taken into account, such as institutional and social protection policy settings (Wilson et al., 2020).

We will pay attention to the heterogeneity of the effects depending on demographic characteristics, e.g., gender and age.

5. Research to be done

For this task, we will use:

Individual survey data collected in, primarily, SHARE, and we will explore if EU-LFS and EWCS data can be useful

Surveys to capture the intensity of digital tools use across occupations and firms characteristics (business sector and size): primarily EIBIS, and we will explore if IFR, EU-KLEMS data can be useful

Employment Protection Legislation (EPL) indexes from the OECD, MISSOC, PENSREF to capture the institutional and policy settings, social protection systems

6. Methodology

We will use statistical descriptive analysis to describe differences in older workers' employment status across occupations, sectors, and countries.

We will use regression analysis to identify the relationship between older workers' decision to retire and digitalisation in the workplaces, as well as other drivers that comes from work sphere, health status, private sphere.

7. Data sources

- Data at the employee level:
    - Survey of Health, Ageing and Retirement in Europe (SHARE)
    - European Working Conditions Survey (2015, 2021)
    - EU-Labour Force Survey (2019, 2020, 2021
- Data at the firm*sector*country level:
    - EIBIS: European Investment Bank Investment Survey
    - (IFR: International Federation of Robotics)
    - (EU-KLEMS: capital, labour, energy, materials and service data)
- Data at the country level:
    - Employment Protection Legislation (EPL) indexes from the OECD
    - Mutual Information System on Social Protection (MISSOC)
    - Pension systems in the EU (PENSREF)

References

Casas, P. and Román, C. (2023). Early retired or automatized? Evidence from the survey of health, ageing and retirement in Europe. The Journal of the Economics of Ageing, 24, 100443. doi:10.1016/j.jeoa.2023.100443

Hudomiet, P., & Willis, R. J. (2021). Computerization, obsolence and the length of working life. Labour Economics, 77, 102005. doi:10.1016/j.labeco.2021.102005

Komp-Leukkunen, K. (2022). A Life-Course Perspective on Older Workers in Workplaces Undergoing Transformative Digitalisation. The Gerontologist, gnac181. https://doi.org/10.1093/geront/gnac181

Nagarajan, N.R., & Sixsmith, A. (2021). Policy initiatives to address the challenges of an older population in the workforce. Ageing International, 48, p.41-77. doi:10.1007/s12126-021-09442-w

Wilson, D.M., Errasti-Ibarrondo, B., Low, G., O'Reilly, P., Murphy, F., Fahy, A., Murphy, J., 2020. Identifying contemporary early retirement factors and strategies to encourage and enable longer working lives: A scoping review. International Journal of Older People Nursing, 15 (3), e12313. doi:10.1111/opn.12313