When we were young: how labour market attachment during mid-life affects labour market exit

Received 21 August 2023
Revised 26 September 2023
Accepted 26 September 2023

Gülin Öylü
Department of Culture and Society, Division Ageing and Social Change, Linköping University, Norrköping, Sweden
Chiara Natalie Focacci
Department of Culture and Society, Division Ageing and Social Change, Linköping University, Norrköping, Sweden; HEC-ULg Management School, University of Liege, Liege, Belgium and European University Institute, Fiesole, Italy
Luis Serratos-Sotelo
Department of Culture and Society, Division Ageing and Social Change, Linköping University, Norrköping, Sweden and Department of Economic History, Centre for Economic Demography, Lund University School of Economics and Management, Lund, Sweden
Andreas Motel-Klingebiel
Department of Culture and Society, Division Ageing and Social Change, Linköping University, Norrköping, Sweden, and
Susanne Kelfve
Department of Culture and Society, Division Ageing and Social Change, Linköping University, Norrköping, Sweden and Aging Research Center, Karolinska Institutet and Stockholm University, Stockholm, Sweden

Abstract

Purpose – In this paper, the authors attempt to understand how labour market attachment during the ages of 30–59 influences individuals' transition out of the labour market.
Design/methodology/approach – Using high-quality Swedish register data, the authors follow individuals born in 1950 and observe their labour market attachment during mid-life and their exit from the labour market.
Findings – The authors find evidence that labour market attachment in different stages of the career is differently related to exit from the labour market. At the age of 30, as well as between the ages 50–59, low attachment is related with earlier exit from the labour market. On the contrary, low labour market attachment

The research programme EIWO is funded by the Swedish Research Council for Health, Working Life and Welfare (FORTE), (grant number: 2019-01245) More information on the research programme and the programme consortium can be found at http://www.eiwoproject.org/

International Journal of Sociology and Social Policy
Vol. 43 No. 13/14, 2023
pp. 245-262
Emerald Publishing Limited
0144-333X
DOI 10.1108/IJSSP-08-2023-0189

during the ages 40–49 is related with later exit from the labour market. However, regardless of age, lower labour market attachment increases the risk of work-related benefit receipt in the exit year. The authors also find evidence that gender, migration status and childhood socioeconomic disadvantages may represent obstacles to longer working lives, while high education is a consistent factor in avoiding early exit from the labour market. **Originality/value** – This study provides insights on the link between labour market attachment in different stages of the career and the exit from the labour market as well as work-related benefits dependency in the year of exit.

Keywords Ageing, Social inequality, Labour market exit, Labour market attachment, Education, Sweden
Paper type Research paper

Introduction

Pension reforms and active ageing policies have increased the participation of older workers in the labour market in most of the industrialised countries (Kuitto and Helmdag, 2021). However, risks of early exit and precarious work remain, especially for people with low education, women and migrants (Möhring, 2016; McAllister *et al.*, 2019). Life course theory suggests that the advantages and disadvantages experienced throughout individual life courses affect later life outcomes (Naegele and Walker, 2021; Von Bonsdorff *et al.*, 2009), such as earlier life conditions, including childhood conditions, and career breaks (Kendig *et al.*, 2016; Hoven *et al.*, 2018). This challenges active ageing policies that focus on late working life and has increased the policy and research attention on the link between earlier life course and late working life outcomes (Foster and Walker, 2013; Hofäcker, 2015).

An aspect that deserves attention is how the years of mid-career develop in an individual's working life. Labour market attachment, in the form of employment/unemployment trajectories can affect individuals' transition out of the labour market. The literature shows that labour market attachment throughout the life course affects the late working life outcomes of individuals such as lower earnings of older workers with career breaks and job losses (König *et al.*, 2019; Heisig and Radl, 2017). When it comes to the link between labour market attachment history and the timing of the exit, the direction of the association is rather mixed as exit is not only through pension receipt but also through various alternative pathways such as unemployment, disability or illness (Thern *et al.*, 2022; Öylü *et al.*, 2023). Employment breaks and part-time work can lead to late exit due to insufficient pension accumulation (König, 2017; Dingemans and Möhring, 2019). On the other hand, individuals with low attachment and employment break histories are more likely to exit early through unemployment, disability and sickness (Thern *et al.*, 2022; Visser *et al.*, 2016; Bennett and Moehring, 2015). Moreover, no answers have been provided regarding at what stage in life [potential] obstacles make the biggest difference (European Commission, 2021). Heisig and Radl (2017) explain that the link between employment breaks during the life course and financial status in late working life is curvilinear as individuals in their 30s can compensate for employment breaks with new employment during the rest of the working careers and individuals in their 60s can compensate for income losses with pensions, while employment breaks during the 50s have more severe financial consequences in later life. However, there is insufficient knowledge about the link between the timing of the employment breaks and the labour market exit.

Sweden is an interesting case for examining the link between labour market attachment and exit, due to its flexible retirement age for earnings-related national pensions as well as availability of work-related benefits and income-tested pension benefits (OECD, 2019). Individuals can receive the earnings-related national pension from the age of 61 [1]. Pension amount increases with the additional years worked. Although there is no mandatory retirement age in Sweden, there are age thresholds for guarantee-pension as well as work-related benefits coverage and employment protection. Individuals working in Sweden are insured for unemployment, sickness and work-related disability until the age of 65[1] (Arbetsförmedlingen, 2022; Försäkringskassan, 2021). The coverage for the employment protection act regarding the terminations of employment ends at the age of 67[1] (Riksdag 2016). Moreover, guarantee-pension,

for those without sufficient pensions, are available starting from the age of 65[1] (Pensionsmyndigheten, 2022).

Sweden has a higher labour force participation of older workers compared to other OECD countries (OECD, 2022). This is attributed to a series of pension reforms that occurred in the 1990s, including a shift from a defined benefit pension system to a pension system with elements of a pay-as-you-go notional defined contribution, a mandatory funded defined contribution and an income-tested defined benefit; an increase in statutory retirement ages; a tightening of eligibility requirements for social security benefits, as well as active labour market policies (Focacci *et al.*, 2023; Palme and Laun, 2018; McAllister *et al.*, 2019; OECD, 2019). Sweden continues to implement policies to further increase the labour force participation of older workers and has recently introduced measures to raise the statutory retirement age, which will be further increased in synchronisation with the rise in life expectancy (Pensionsmyndigheten, 2022). However, the increase in the retirement age and stricter eligibility criteria have raised concerns about a potential rise in inequalities in late working life (Jensen *et al.*, 2019; McHale *et al.*, 2020). In particular, the concern is that certain groups, such as women or people with low education, exiting the labour market early without pensions, or being employed in precarious jobs due to lower employability, disability, or unemployment (McAllister *et al.*, 2020). Many factors has been suggested to interact with late working life, such as previous life course (Genelyte *et al.*, 2021), working conditions (Böckerman and Ilmakunnas, 2020), discrimination in the labour market (Loretto and White, 2006; Duncan and Loretto, 2004), in addition to individual decision for labour market participation and receipt of pension.

The focus of this paper is to understand the link between the labour market attachment during mid-life and labour market exit. Using a three-step methodology and high-quality Swedish registry data between 1950 and 2018 (n = 93,506), we aim to shed light on how labour market attachment during different phases in mid-life (ages 30, 40–49 and 50–59) affects individuals' labour market exit, as well as the dependency on work related benefits in the exit year.

Data

For our analysis, we use data from several Swedish national registers compiled by Statistics Sweden (SCB) (SCB, 2023b). These include the longitudinal integrated database for health insurance and labour market studies (LISA) (SCB, 2019) between the years 1990 and 2018 and the population and housing census (SCB, 2023a). Our study population covers individuals born in 1950, registered in Sweden all years between 2010 and 2018, and with at least one-month income statement in a year between the years 2010 and 2018. We chose the cohort 1950 as this cohort was aged 68 in the most recent year of the dataset (2018), and hence no longer eligible for employment protection in 2018. We selected individuals with at least one month income statement records between the ages of 60 (one year younger than the earliest pension eligibility age, 61) and 68 (one year older than the employment protection age, 67) to include individuals who were active in the labour market near the ages of pension eligibility.

Labour market attachment

To measure individuals' labour market attachment during the years of mid-life, we consider their employment status at three different stages of their career. These are labour market attachment at the age of 30, labour market attachment between the ages 40 and 49 and labour market attachment between the ages 50 and 59. As the LISA register starts in 1990 (SCB, 2019), we used the FoB register (SCB, 2023a) to identify the labour market attachment at the age of 30. Therefore, the labour market attachment variable at the age of 30 has different categories compared to the labour market attachment in the 40 and 50s.

The categories of employment status at age 30 are: worked between 1 and 34 h per week, worked 35 h or more per week, not employed and students, and missing information. The categories of labour market attachment between 40–49 and 50–59 are: individuals who were always employed [2], employed for 5 or more consecutive years, employed for less than 5 consecutive years; always not employed and not in Sweden for part of the time.

Labour market exit

We measure our main outcome, labour market exit, in three different ways. First, we use age at the labour market exit as a linear variable. This is a straightforward measure that is generated from data on the individual's year of birth and year of labour market exit (discrete values between 60 and 68). Analysing exit in a linear form allows us to observe the differences in the timing of exit in continuous years among older workers. This is relevant for late work in Sweden given as pension income increases with the number of years of employment, even if individuals are eligible for pensions after the age of 61. The second outcome is a binary variable of early exit (exit before the age of 65 or not). We set 65 as the early exit threshold as 65 is the age of eligibility for the guarantee pension and the end of unemployment and disability insurance in Sweden. Finally, we look at different categories of labour market exit between the age thresholds of 60 and 67 based on the following rationale: 61 is the official age of eligibility for the state pension for those born before 1958 in Sweden [3]; 65 is the official age of exit with guarantee pension for those with low pension entitlements, and 67 is the age limit for employment protection for the termination of contracts by the employer. We define nine categories based on the individual's year of exit from the labour market, defined as the last calendar year in which an individual has received an income statement (kontrolluppgift), and whether an individual has received work-related benefits in the year of exit. For instance, while individuals categorised as "exit at 60 without benefits" did not received work-related benefits in 2010 in which they exited the labour market; individuals categorised as "exit at 60 with benefits" received work-related benefits in 2010 in which they exit the labour market. Work-related benefits include benefits related to work other than active participation in the labour market such as sickness and unemployment benefits. Therefore, the receipt of work-related benefit signals a limitation in the possibility to work full-time [4] (SCB, 2019). This indicator allows us to measure the level of activity, involuntary non-participation and precariousness of an individual who is in the labour market with an income statement. Work-related benefits include unemployment, sickness, disability benefits, parental allowance, child-care allowance and study compensation. In practice, however, work-related benefits for our study population mostly correspond to sickness, disability and unemployment benefits. Only 3% of the study population received work-related benefits other than disability, unemployment and sickness benefits, such as parental allowances. While other studies have focused on pension receipt to define labour market exit, this definition allows us to clearly distinguish between individuals who, in old age, are or are not active in the labour market, as well as whether their labour market attachment is characterised by dependency on work-related benefits, just before exiting labour market.

Individual-level controls

The literature shows that an individual's gender, level of education, migration status and childhood socio-economic status are associated with both employment outcomes over the life course and labour market exit (Baert, 2018; McAllister *et al.*, 2020; Hoven *et al.*, 2018; Skedinger, 2018). Therefore, our main control variables include gender (male or female), education (primary, secondary, or higher education) and migration status (foreign or native born). We also include two measures of childhood socio-economic conditions (measured at the age of 10) in line with previous literature (Hiyoshi *et al.*, 2015; Hemmingsson *et al.*, 2007). The

first variable is "crowded house", which is a proxy for precarious living conditions. The variable indicates whether the individual spent his or her childhood in a crowded house or not, defined in the Swedish data as more than two people per room [5]. The second variable is the occupation sector of the household head. The head of the household is defined as the person who owned or rented the house, which was generally the father. The categories for the occupation sector of the head of the household include agriculture and forestry; industry, trade and transport; entrepreneurs in the liberal professions such as doctors and lawyers; business supervisors, technicians; military; not employed; and missing information.

Summary statistics

Summary statistics for the working sample are presented in Table 1. About 49.3% of the individuals in the sample are female and 44.3% have a secondary education. In addition, most individuals were born in Sweden (88.8%). Most individuals (60.5%) worked 35 h per week or more at the age of 30 years 21.3% of individuals worked between 1 and 34 h per week, while 9.7% did not work at all. Regarding the labour market attachment between the working ages of 40 and 49 years, we note that 84.6% of the individuals were always employed during this period, compared to 0.3% of the population who were always not employed. Further, 8% were employed for at least 5 consecutive years with periods of occupational inactivity, while 3.7% alternated between employed and not employed several times during the decade considered. A similar pattern is observed for labour market attachment between the ages of 50 and 59 years. Most of the individuals lived in a non-crowded house (71.4%) at the age of 10. Individuals were mostly raised by workers in industry, trade, or transport (45.0%), office supervisors and technicians (25%) and workers in agriculture and forestry (14.4%). Only 0.9% (857 individuals) and 0.9% (836 individuals) were raised, respectively, by individuals in the military or liberal professionals such as doctors and lawyers.

Empirical strategy

To identify the link between labour market attachment during the years of mid-life and the labour market exit, we propose a three-step methodology. The first step is of the form:

$$AR_i = \beta_0 + \beta_1 LM\,A1_i + \beta_2 LM\,A2_i + \beta_3 X_i + \epsilon_i \quad (1)$$

where AR is the individual's age of labour market exit (in years 60–68); LM A1 is our first measure of labour market attachment, a set of indicator variables that capture if the individual was (a) not working, (b) working 1–34 h, or (c) working 35 h or more at age 30; LM A2 is our second measure of labour market attachment, a set of indicator variables that capture the employment status of the person between the ages 40–59, whether they were (a) always employed, (b) mostly employed, (c) mostly not employed, or (d) always not employed; X is a vector of individual-level controls that include gender, educational attainment, migration status and childhood socioeconomic status (measured by parental occupation and housing conditions). The main goal of this first step is to provide an easy-to-interpret estimate of the relation between labour market attachment and age of exit. By estimating this model using Ordinary Least Squares (OLS) regression, we get estimates in years that provide a clear picture of the relationship in question.

In the second step, we analyse the probability of early exit, which is of the form:

$$PR(ER_i = 1) = f\,(LM\,A1_i, LM\,A2_i, X_i) \quad (2)$$

where PR(ERi = 1) denotes the probability that individual exits the labour market before the age of 65, which is in itself determined as a function of the same explanatory variables as in equation (1). Modelling the above though a probit model, given the binary nature of the

Measurements of labour market attachment	*n*	%
Employment status at age 30		
Worked 1–34 h per week	19,920	21.30
Worked 35+ hours per week	56,559	60.49
Not employed	9,061	9.69
Students	3,316	3.55
N.A. during the period	4,650	4.97
Between the ages of 40–49		
Always employed	79,061	84.55
Employed more than 5 consecutive years	7,517	8.04
Employed less than 5 consecutive years	3,498	3.74
Not employed in the period	283	0.30
N.A. during the period	3,147	3.37
Between the ages of 50–59 years		
Always employed	81,613	87.28
Employed more than 5 consecutive years	7,282	7.79
Employed less than 5 consecutive years	2,821	3.02
Not employed in the period	507	0.54
N.A. during the period	1,283	1.37
Types of Exit from the Labour Market	***n***	**%**
EXIT 1 = Exit at 60, without benefits	714	0.76
EXIT 2 = Exit at 60, with benefits	967	1.03
EXIT 3 = Exit at 61, without benefits	1,317	1.41
EXIT 4 = Exit at 61, with benefits	1,167	1.25
EXIT 5 = Exit between 62 and 64, without benefits	10,059	10.76
EXIT 6 = Exit between 62 and 64, with benefits	6,138	6.56
EXIT 7 = Exit at 65, without benefits	9,860	10.54
EXIT 8 = Exit at 65, with benefits	3,480	3.72
EXIT 9 = Exit between 66 and 67	15,532	16.61
EXIT 10 = Exit after 67 (still active in 2018)	44,272	47.35
Individual Controls	***n***	**%**
Gender		
Male	47,391	50.68
Female	46,115	49.32
Education		
Primary education	18,593	19.88
Secondary education	41,401	44.28
Higher education	33,512	35.84
Swedish background		
Foreign born	10,476	11.20
Native born	83,030	88.80
Overcrowded house		
Crowded house	16,385	17.52
Non-crowded house	66,716	71.35
N.A.	10,405	11.13
Occupation sector of the household head		
Agriculture, forestry, etc.	13,463	14.40

Table 1.
Summary statistics

(*continued*)

Individual Controls	*n*	%
Industry, trade, transport and services	42,078	45.00
Entrepreneurs in the liberal professions (doctors, lawyers, etc.)	836	0.89
Business supervisors, technicians, office and trading staff, etc.	23,351	24.97
Military	857	0.92
Not employed	2,773	2.97
N.A.	10,148	10.85

Note(s): The population includes individuals born in 1950, registered in Sweden in all years between 2010 and 2018, and with at least one month of income statement in a year between 2010 and 2018 ($n = 93{,}506$)
Source(s): Author's calculations based on Swedish national registers

Table 1.

outcome, this part of the analysis focuses on the occurrence of an outcome of interest for many policymakers and how our measures of labour market attachment increase or decrease the probability of early exit.

Finally and to give a fully detailed picture of the many ways in which individuals can exit the labour market, we allow our model to analyse type of exits based on labour market exits in different age groups and benefit receipt in the exit year. Our model is of the form:

$$PR(exit = h|LMA1_i, LMA2_i, X_i) = p_{i,h} \tag{3}$$

where the probability of individual i exiting from the labour market in the category h, $p_{i,h}$, is a function of the same explanatory variables used in equations (1) and (2). Each probability function is then estimated via a multinomial probit model. The main aim of this step is to analyse the relationship between labour market attachment and exit transitions, allowing each type/age of exit to be a categorical outcome by itself. In the next section, we present the results from our analysis.

Findings

The results of our estimation of the link between labour market attachment during mid-life and the age of labour market exit, as defined in equation (1), are presented in the first two columns on Table 2. The results based on the full model (column 2) show that compared to those who were fully employed at age 30, those who were studying at the time exited the labour market on average 0.20 years later, while those who were not employed at the time exited the labour market about 0.12 years earlier. Compared to those who were fully employed during the ages 40–49, those who had spells of non-employment exited the labour market later (0.13 years for those employed characterised for more than 5 consecutive years and 0.08 years for those employed for less than five consecutive years). On the other hand, we observe that the effect is reversed for the labour market attachment during the ages 50–59. Those who had unstable employment, by some spells of non-employment during the period, exited the labour market earlier than their always-employed counterparts. Those who were employed more than 5 years (but less than 10) exited labour market on average 0.29 years earlier than those who were always employed, while those who had continuous employment for less than 5 years during the period ended up exiting the labour market around 0.6 years earlier than those who were always employed.

Moreover, women exited the labour market at a younger age than men; while higher education is linked with a later labour market exit (0.18 years for secondary and 0.72 years for post-secondary education). Older workers who were born outside of Sweden exited the labour market on average 0.18 years earlier than native Swedes.

	Age of exit coefficients		Early exit (−65) marginal effects	
	No controls	Full model	No controls	Full model
Labour market attachment measures				
Employment status at age 30				
Worked 1–34 h per week	ref.cat	ref.cat	ref.cat	ref.cat
Worked 35+ hours per week	0.203***	0.016	−0.031***	−0.005
	(0.018)	(0.021)	(0.003)	(0.004)
Student	0.446***	0.199***	−0.067***	−0.037***
	(0.041)	(0.041)	(0.007)	(0.008)
Not employed	−0.212***	−0.116***	0.027***	0.010**
	(0.028)	(0.028)	(0.006)	(0.005)
N.A. during the period	0.147***	0.140***	−0.038***	−0.042***
	(0.041)	(0.044)	(0.007)	(0.008)
Between the ages of 40–49				
Always employed	ref.cat	ref.cat	ref.cat	
Employed more than 5 consecutive years	0.017	0.130***	0.003	−0.023***
	(0.040)	(0.027)	(0.005)	(0.005)
Employed less than 5 consecutive years	0.080***	0.081**	0.018**	−0.024***
	(0.028)	(0.040)	(0.007)	(0.007)
Not employed in the period	−0.016	0.047	0.062**	−0.016
	(0.135)	(0.134)	(0.027)	(0.023)
N.A. during the period	0.021	0.028	−0.004	−0.017
	(0.058)	(0.058)	(0.007)	(0.011)
Between the ages of 50–59				
Always employed	ref.cat	ref.cat	ref.cat	ref.cat
Employed more than 5 consecutive years	−0.327***	−0.287***	0.054***	0.057***
	(0.028)	(0.028)	(0.005)	(0.006)
Employed less than 5 consecutive years	−0.665***	−0.595***	0.091***	0.094***
	(0.044)	(0.043)	(0.009)	(0.009)
Not employed in the period	−0.159	−0.022	0.034*	0.032
	(0.102)	(0.101)	(0.019)	(0.020)
N.A. during the period	−0.187**	−0.261***	0.020*	0.064***
	(0.081)	(0.080)	(0.012)	(0.017)
Individual-level controls				
Gender				
Male		ref.cat	ref.cat	ref.cat
Female		−0.367***	0.048***	0.050***
		(0.017)	(0.003)	(0.003)
Educational attainment				
Primary education		ref.cat	ref.cat	
Secondary education		0.182***	−0.018***	−0.026***
		(0.019)	(0.004)	(0.004)
Higher education		0.715***	−0.089***	−0.096***
		(0.021)	(0.004)	(0.004)
Swedish background				
Native born		ref.cat	ref.cat	ref.cat
Foreign born		−0.183***	0.020***	0.018**
		(0.048)	(0.004)	(0.009)

Table 2.
Age of exit and the likelihood of early exit (−65)

(*continued*)

	Age of exit coefficients		Early exit (−65) marginal effects	
	No controls	Full model	No controls	Full model
Childhood conditions				
Overcrowded house				
Non-crowded house		ref.cat	ref.cat	ref.cat
Crowded house		−0.064***	0.022***	0.010***
		(0.019)	(0.004)	(0.004)
N.A.		0.022	0.021***	0.013
		(0.125)	(0.004)	(0.024)
Model/Outcome	Age of exit		Early exit (−65)	
	No controls	Full model	No controls	Full model
Occupation sector of the household head				
Industry, trade, transport and services		ref.cat	ref.cat	ref.cat
Agriculture, forestry, etc.		0.523***	−0.067***	−0.067***
		(0.021)	(0.004)	(0.004)
Entrepreneurs in the liberal professions		0.305***	−0.067***	−0.040***
		(0.076)	(0.013)	(0.014)
Business supervisors, technicians, etc.		0.016	−0.022***	0.003
		(0.018)	(0.003)	(0.004)
Military		−0.013	−0.039***	−0.011
		(0.075)	(0.014)	(0.015)
Not employed		0.059	−0.003	−0.005
		(0.043)	(0.008)	(0.008)
N.A.		0.000	−0.001	−0.014
		(0.131)	(0.005)	(0.024)
Constant		65.975***		
		(0.027)		
Observations	93,506	93,506	93,506	93,506
R-squared		0.035		

Note(s): The table shows OLS regression results (1st and 2nd columns) and marginal effects generated using a probit model (3rd and 4th columns). The population includes individuals born in 1950, registered in Sweden in all years between 2010 and 2018, and with at least one month of income statement in a year between 2010 and 2018 (n = 93,506). Standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Source(s): Author's calculations based on Swedish national registers

Table 2.

Older workers who lived in a crowded house during their childhood exited the labour market about 0.06 years earlier than those who grew up in non-crowded houses. Finally, the occupation sector of the household head during childhood seems to matter only for two categories: relative to the children of those employed in industry, trade, transport and services, the children of those employed in agriculture exited about 6 months later, and the children of those who were employed as entrepreneurs in the liberal professions exited 0.3 years later. No significant effect was found for an unemployed household head.

The results for the likelihood of early labour market exit (−65) based on the full model (column 4 of Table 2) show similar results. Being a student at age 30 decreases the probability of early labour market exit, while being unemployed at the same age increases the probability of early exit, compared to those who were fully employed at the same age. Again, while low labour market attachment during ages 40–49 reduces the probability of early exit from the labour market, low labour market attachment during the ages 50–59 has the opposite effect, that is, increasing the probability of early exit from the labour market.

We observe that higher educational attainment and having a household head who was employed in the agricultural or liberal arts sector during childhood all decrease the probability of early labour market exit. On the other hand, being a woman, being an immigrant, or experiencing hardship during childhood (measured by crowded house) all increase the probability of early labour market exit.

Finally, the results for the likelihood of labour market exit in different age groups and benefit receipt in the year of labour market exit are presented in Table 3. Being registered as a student at the age of 30 consistently decreases the probability of exiting the labour market up to the age of 65 and increases the probability of exiting after the age of 65. Unemployment at the age of 30 increases the likelihood of labour market exit with work-related benefit receipt at the ages of 62–65 and exit at the age of 65 but decreases the likelihood to exit after the age of 67 compared to those working full time at the age of 30.

Similar to the results of the previous models, low labour market attachment during the ages 40–49 is linked with late exit from the labour market. Moreover, individuals with low labour market attachment during ages 40–49 are more likely to exit with work-related benefits both at the ages 62–64 and at the age of 65. Again, we observe that there is a general change of direction, that is, that the effect of having non-consecutive employment during the ages 50–59 is linked with the likelihood of early labour market exit. On the other hand, individuals who had employment breaks at the ages of 50–59 are more likely to exit with work-related benefits receipt compared to individuals who were always employed and less likely to exit after the age 65 which is the limit for work-related benefits and the start of eligibility of guarantee pension. On the other hand, individuals who were not employed during all the years between the ages 50–59 are more likely to exit after the age of 67 compared to individuals who were always employed between 50 and 59.

We also find that women are more likely to exit the labour market early compared to men for all categories of exit types except the labour market exit at the age of 60 without work related benefits. Compared to those with only primary education, those with secondary or post-secondary education are more like to exit after the age of 66. The foreign-born are more likely to exit labour market early in all categories except the two earliest ones without benefits (60/no benefits, 61/no benefits), similar to women.

We further find that living in a crowded house during childhood increases the likelihood of exiting the labour market at the ages of 62–64 with benefits and at the age of 65, both with and without benefits, and decreases the likelihood of exiting after the age of 67. Finally, compared to the occupation of the household head in industry, trade, transport and services during childhood, the occupations of liberal profession entrepreneurs and business supervisors during childhood are linked with exit after the age of 67 and exit with benefit receipts.

Conclusion

Using Swedish registry data, this study investigated the link between labour market attachment in different stages of the career, and labour market exit and benefit receipt in the exit year. The results show that being employed or a student at the age of 30 increases the age of exit compared to those who were not employed at the age of 30; having low labour market attachment between the ages of 40–49 also increases the age of exit compared to those who have always been employed. On the contrary, low labour market attachment between the ages of 50–59 decreases the age of labour market exit. Low attachment in all the age groups is linked with benefit receipt in the exit year. We also find evidence that gender, migration status and childhood socio-economic disadvantages may be barriers to longer working lives, while high education is a consistent factor in avoiding early exit from the labour market.

Table 3.
The likelihood of exit from the labour market for different age groups and benefit receipt in the exit year

Exit age	Labour market exit in different ages and with or without benefit receipt in the exit year									
	60		61		62–64		65		66–67	After 67
Benefits	Without (1)	With (2)	Without (3)	With (4)	Without (5)	With (6)	Without (7)	With (8)	Without (9)	Without (10)
Labour market attachment measures										
Employment status at age 30										
Worked 1–34 h per week					*ref. cat*					
Worked 35+ hours per week	−0.000	0.000	0.002*	−0.001	−0.001	−0.005**	0.001	−0.001	0.001	0.004
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.003)	(0.002)	(0.004)	(0.005)
Student	−0.002	0.001	−0.005**	0.000	−0.023***	−0.009*	−0.018***	0.002	0.016**	0.036***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.006)	(0.005)	(0.006)	(0.004)	(0.007)	(0.009)
Not employed	0.001	0.000	−0.001	0.002	0.002	0.008**	0.007*	0.005**	0.005	−0.028***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)	(0.003)	(0.004)	(0.002)	(0.005)	(0.006)
N.A. during the period	−0.003**	−0.000	−0.000	−0.002	−0.040***	−0.001	0.006	0.014***	0.023***	0.003
	(0.001)	(0.002)	(0.002)	(0.002)	(0.005)	(0.005)	(0.007)	(0.004)	(0.008)	(0.010)
Between the ages of 40–49										
Always employed					*ref. cat*					
Employed more than 5 consecutive years	−0.001	0.002	−0.003*	0.001	−0.031***	0.008***	−0.013***	0.008***	0.001	0.027***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)	(0.003)	(0.004)	(0.002)	(0.005)	(0.006)
Employed less than 5 consecutive years	0.001	0.003*	−0.002	0.002	−0.036***	0.004	−0.004	0.013***	0.005	0.014
	(0.002)	(0.002)	(0.002)	(0.002)	(0.005)	(0.004)	(0.006)	(0.004)	(0.007)	(0.009)
Not employed in the period	0.009	0.005	−0.001	0.003	−0.018	−0.017*	−0.024	−0.006	0.022	0.027
	(0.008)	(0.005)	(0.008)	(0.005)	(0.021)	(0.010)	(0.019)	(0.009)	(0.024)	(0.031)
N.A. during the period	0.002	0.001	−0.002	0.001	−0.022***	0.001	−0.001	0.011**	0.002	0.007
	(0.003)	(0.002)	(0.003)	(0.003)	(0.009)	(0.006)	(0.008)	(0.005)	(0.010)	(0.013)
Between the ages of 50–59										
Always employed					*ref. cat*					
Employed more than 5 consecutive years	0.002**	0.020***	−0.001	0.019***	−0.037***	0.049***	−0.034***	0.008***	−0.030***	0.003
	(0.001)	(0.002)	(0.001)	(0.002)	(0.004)	(0.004)	(0.003)	(0.003)	(0.004)	(0.006)
Employed less than 5 consecutive years	0.003*	0.036***	0.001	0.018***	−0.038***	0.064***	−0.041***	0.026***	−0.011	−0.058***
	(0.002)	(0.004)	(0.003)	(0.003)	(0.006)	(0.006)	(0.005)	(0.005)	(0.007)	(0.010)

(*continued*)

Table 3.

Exit age	Labour market exit in different ages and with or without benefit receipt in the exit year									
	60		61		62–64		65		66–67	After 67
Benefits	Without (1)	With (2)	Without (3)	With (4)	Without (5)	With (6)	Without (7)	With (8)	Without (9)	Without (10)
Not employed in the period	−0.001	0.015**	−0.005	0.019***	−0.067***	0.051***	−0.078***	−0.005	0.012	0.059***
	(0.003)	(0.006)	(0.005)	(0.007)	(0.010)	(0.014)	(0.008)	(0.007)	(0.018)	(0.023)
N.A. during the period	0.009*	0.007*	0.014*	0.000	0.027*	0.010	−0.023**	−0.013***	−0.011	−0.020
	(0.005)	(0.004)	(0.008)	(0.003)	(0.015)	(0.009)	(0.010)	(0.004)	(0.013)	(0.018)
Individual-level controls										
Gender										
Male					*ref. cat*					
Female	−0.002***	0.003***	0.004***	0.005***	0.019***	0.020***	0.012***	0.018***	0.004	−0.084***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.003)	(0.004)
Educational attainment										
Primary education					*ref. cat*					
Secondary education	0.001	−0.002**	0.004***	−0.006***	−0.004	−0.019***	−0.010***	−0.012***	0.012***	0.036***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.004)
Higher education	−0.002**	−0.008***	−0.002	−0.011***	−0.026***	−0.048***	−0.038***	−0.028***	0.010***	0.153***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.003)	(0.002)	(0.004)	(0.005)
Swedish background										
Native born					*ref. cat*					
Foreign born	−0.001	0.002	−0.002	0.006**	0.000	0.012**	0.007	0.006	0.028***	−0.058***
	(0.002)	(0.002)	(0.002)	(0.003)	(0.007)	(0.006)	(0.007)	(0.004)	(0.009)	(0.011)
Childhood conditions										
Overcrowded house										
Non-crowded house					*ref. cat*					
Crowded house	0.001	−0.000	−0.002	−0.001	0.004	0.008***	0.006*	0.003*	−0.001	−0.018***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.004)

(*continued*)

Table 3.

Exit age	Labour market exit in different ages and with or without benefit receipt in the exit year									
	60		61		62–64		65		66–67	After 67
Benefits	Without (1)	With (2)	Without (3)	With (4)	Without (5)	With (6)	Without (7)	With (8)	Without (9)	Without (10)
N.A.	0.011	0.004	−0.009	−0.001	0.010	−0.004	−0.039**	−0.005	0.021	0.013
	(0.007)	(0.006)	(0.006)	(0.006)	(0.018)	(0.014)	(0.015)	(0.010)	(0.022)	(0.028)
Occupation sector of the household head										
Industry, trade, transport and services					*ref. cat*					
Agriculture, forestry, etc.	−0.004***	−0.003***	−0.005***	−0.004***	−0.033***	−0.018***	−0.024***	−0.006***	−0.043***	0.140***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.003)	(0.002)	(0.004)	(0.005)
Entrepreneurs in the liberal professions	−0.002	0.006	−0.005	−0.005	−0.007	−0.027***	−0.009	−0.022***	−0.014	0.085***
	(0.003)	(0.005)	(0.003)	(0.003)	(0.011)	(0.008)	(0.011)	(0.005)	(0.013)	(0.017)
Business supervisors, technicians, etc.	0.001	0.000	0.002*	−0.001	0.007***	−0.008***	−0.004	−0.005***	−0.005	0.012***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.004)
Military	0.004	0.004	0.001	0.003	−0.004	−0.020**	0.000	0.005	−0.006	0.012
	(0.004)	(0.005)	(0.004)	(0.005)	(0.011)	(0.008)	(0.011)	(0.007)	(0.013)	(0.017)
Not employed	−0.003*	0.003	−0.005**	−0.001	−0.003	0.003	−0.012**	0.007*	−0.007	0.018*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.006)	(0.005)	(0.006)	(0.004)	(0.007)	(0.010)
N.A.	−0.005	−0.002	0.013	−0.002	−0.018	0.005	0.049*	0.006	−0.040**	−0.006
	(0.003)	(0.005)	(0.015)	(0.007)	(0.017)	(0.017)	(0.026)	(0.013)	(0.020)	(0.030)
Observations	93,506	93,506	93,506	93,506	93,506	93,506	93,506	93,506	93,506	93,506

Note(s): The table shows marginal effects generated using multinomial probit model. The population includes individuals born in 1950, registered in Sweden in all years between 2010 and 2018, and with at least one month of income statement in a year between 2010 and 2018 (n = 93,506). Standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Source(s): Author's calculations based on Swedish national registers

Five main conclusions can be drawn from our interpretation of the results. First, the timing of low attachment during the career of individuals matters for the exit from the labour market. Individuals who experience employment breaks during the ages 40–49 are less likely to exit early compared to those who were always employed during this age. This is in line with the compensation hypothesis that states that career breaks reduce pension receipts and might lead to a postponed exit (König, 2017). On the other hand, lower labour market attachment during the ages 50–59 is associated with increased risk of early exit from the labour market. This may be related to age discrimination in the hiring process, rather than to any particular characteristics or behaviours of the workers during their unemployment spells (Lössbroek *et al.*, 2021). In line with Heisig and Radl (2017) argument, there might be worse labour market consequences following job loss for individuals in their 50s. Policies aiming to reduce early exits from the labour market could aim to reduce the barriers faced by older workers who want to find a new job during their late working life.

Second, low labour market attachment history of individuals is linked with benefit receipt in the exit year independent of when in the career the low attachment is experienced or at what age the exit occur. This shows that even if individuals who has employment breaks, exit later in order to compensate loss of the career years and have sufficient pension accumulation (König, 2017; Dingemans and Möhring, 2019), they have a higher risk to be dependent on work-related benefits, which is in line with the increase in economic and social inequality as a result of extended working lives (Qi *et al.*, 2019; McAllister *et al.*, 2019). Therefore, active ageing policies should consider the quality of work and employability of older individuals in addition to the timing of the labour market exit.

Third, labour market exit is associated with earlier life circumstances possibly dating back to childhood in line with previous research showing that childhood conditions are associated with employment outcomes in later life (Brandt and Hank, 2014). We included two measures of childhood conditions in our models, (a) housing conditions and (b) the occupation of the household head when individuals were 10-year-old. While living in a crowded house during childhood is associated with both early exit and benefit receipt in the exit year, living in a household where the head's occupation is entrepreneur and liberal professions and business supervisors is associated with late exit and a lower likelihood of benefit receipt in the exit year.

Fourth, education plays an important role for prolonged working life. Both being a student at the age of 30 and having a higher education reduce the risk of exiting the labour market early. This is in line with previous studies that have shown that individuals with higher education exit labour market later (McAllister *et al.*, 2020). Higher education is often associated with late exit due to its link with less physically demanding jobs and reduced risk of disability and sickness (Thern *et al.*, 2022), higher employability and reduced risk of unemployment (Nivorozhkin, 2008). Therefore, policies aiming at extending working life should focus on raising educational attainment and implementing lifelong learning programmes.

Finally, in line with the previous literature, women and immigrants are consistently at risk of early exit from the labour market (Hess *et al.*, 2016). Several mechanisms, including job insecurity and higher entry/re-entry barriers to the labour market, has been suggested to contribute to this disadvantage (Manhica *et al.*, 2015). From a policy perspective, addressing the challenges and potential discrimination faced by women and immigrants might contribute to active ageing policies.

Overall, this study shows that, in line with the life course theory, the earlier life course, including childhood conditions and career history, as well as socio-demographic characteristics, are relevant for both the timing of labour market exit and involuntary non-participation, such as unemployment or disability. Policies aimed at increasing participation and tackles with social inequalities in late working life should therefore also focus on factors related to the earlier life course as well as socio-economic characteristics, including working

conditions (Böckerman and Ilmakunnas, 2020), discrimination in the labour market (Harnois, 2015), training, employability and health status of employees (Naegele and Walker, 2021) in addition to financial incentives to work.

Although our dataset based on Swedish registers (SCB, 2023b) is nationally representative, unobtrusive (Costa and Serra, 2023) and contains rich information in terms of the number of years and individual characteristics, there are several limitations regarding our data. Firstly, even though we can track the labour market history of individuals between 1990 and 2018, we are only able to observe whether they were in paid work or not during a particular year. We do not have data on the number of hours individuals worked or the type of contract, both of which are crucial components of labour market attachment. Secondly, we are unable to monitor the labour market attachment history of migrant workers; hence, we had to classify them as "not in Sweden" in the variable for labour market attachment. Finally, given the absence of direct indicators of childhood socioeconomic conditions in our dataset, we utilised crowded households and occupational status of household head as proxies for childhood socioeconomic status, in accordance with the existing literature (Hiyoshi *et al.*, 2015; Hemmingsson *et al.*, 2007).

Further studies could broaden and enhance our understanding of the link between labour market attachment during mid-life and labour market exit, by (a) investigate how labour market attachment during mid-life affects the forms and mechanisms of labour market exit, such as voluntary exit versus exit through unemployment or disability and (b) examine mediating factors in the link between labour market attachment during mid-life and the timing and form of the labour market exit, e.g. pension accumulation, unemployment risk and employability.

Notes

1. These age thresholds are relevant for the study population of this study (cohort 1950). For individuals born in 1959 and later new age, thresholds apply (Pensionsmyndigheten, 2022).
2. An individual who is recorded as having at least one month income statement or self-employment in a given calendar year is identified as employed in that particular year.
3. The recent change from 61 to 62 does not affect the cohorts used in this analysis.
4. Work-related benefits corresponds to the variable called "SocInk" in LISA (see https://www.scb.se/contentassets/f0bc88c852364b6ea5c1654a0cc90234/lisa-bakgrundsfakta-1990-2017.pdf)
5. The threshold is set by the Swedish population and housing census FoB.

References

Arbetsförmedlingen (2022), "Unemployment benefit", available at: https://arbetsformedlingen.se/other-languages/english-engelska/arbetslos—vad-hander-nu/ersattning-fran-a-kassa (accessed 30 December 2022).

Baert, S. (2018), "Hiring discrimination: an overview of (almost) all correspondence experiments since 2005", in Gaddis, S.M. (Ed.), *Audit Studies: Behind the Scenes with Theory, Method, and Nuance*, Springer International Publishing, pp. 63-77.

Bennett, J. and Moehring, K. (2015), "Cumulative (dis) advantage? The impact of labour market policies on late career employment from a life course perspective", *Journal of Social Policy*, Vol. 44 No. 2, pp. 213-233, doi: 10.1017/S0047279414000816.

Böckerman, P. and Ilmakunnas, P. (2020), "Do good working conditions make you work longer? Analyzing retirement decisions using linked survey and register data", *The Journal of the Economics of Ageing*, Vol. 17, 100192, doi: 10.1016/j.jeoa.2019.02.001.

Brandt, M. and Hank, K. (2014), "Scars that will not disappear: long-term associations between early and later life unemployment under different welfare regimes", *Journal of Social Policy*, Vol. 43 No. 4, pp. 727-743, doi: 10.1017/s0047279414000397.

Costa, D. and Serra, R. (2023), "Eating in a total institution considering history, nutrition, and gender issues", *Social Sciences*, Vol. 12 No. 1, p. 23, doi: 10.3390/socsci12010023.

Dingemans, E. and Möhring, K. (2019), "A life course perspective on working after retirement: what role does the work history play?", *Advances in Life Course Research*, Vol. 39, pp. 23-33, doi: 10.1016/j.alcr.2019.02.004.

Duncan, C. and Loretto, W. (2004), "Never the right age? Gender and age-based discrimination in employment", *Gender, Work and Organization*, Vol. 11 No. 1, pp. 95-115, doi: 10.1111/j.1468-0432.2004.00222.x.

European Commission (2021), *The 2021 Ageing Report, Economic and Budgetary Projections for the EU Member States (2019-2070)*, EU Economic and Financial Affairs, Brussels, pp. 158-170.

Försäkringskassan (2021), "Sickness compensation", available at: https://www.forsakringskassan.se/english/sick/sick-for-one-year-or-longer/sickness-compensation (accessed 1 December 2021).

Focacci, C.N., Öylü, G., Motel-Klingebiel, A. and Kelfve, S. (2023), "The value of pension reforms for late working life: evidence from Sweden", *International Journal of Sociology and Social Policy*, Vol. 43 Nos 13/14, pp. 79-89, doi: 10.1108/IJSSP-02-2023-0038.

Foster, L. and Walker, A. (2013), "Gender and active ageing in Europe", *European Journal of Ageing*, Vol. 10, pp. 3-10, doi: 10.1007/s10433-013-0261-0.

Genelyte, I., Heuer, A. and Motel-Klingebiel, A. (2021), *Exclusion and Inequality in Late Working Life: National Country Context: Sweden*, Linköping University Electronic Press, Linköping.

Harnois, C.E. (2015), "Age and gender discrimination: intersecting inequalities across the lifecourse", in *At the Center: Feminism, Social Science and Knowledge*, Emerald Group Publishing, pp. 85-109.

Heisig, J.P. and Radl, J. (2017), "Adding scars to wrinkles? Long-run effects of late-career job loss on retirement behavior and personal income", *Work, Aging and Retirement*, Vol. 3 No. 3, pp. 257-272, doi: 10.1093/workar/wax006.

Hemmingsson, T., Essen, J.v., Melin, B., Allebeck, P. and Lundberg, I. (2007), "The association between cognitive ability measured at ages 18-20 and coronary heart disease in middle age among men: a prospective study using the Swedish 1969 conscription cohort", *Social Science and Medicine*, Vol. 65 No. 7, pp. 1410-1419.

Hess, M., König, S. and Hofäcker, D. (2016), "Retirement transitions under changing institutional conditions: towards increasing inequalities? Comparing evidence from 13 countries", in *Delaying Retirement*, Springer, pp. 363-378.

Hiyoshi, A., Udumyan, R., Osika, W., Bihagen, E., Fall, K. and Montgomery, S. (2015), "Stress resilience in adolescence and subsequent antidepressant and anxiolytic medication in middle aged men: Swedish cohort study", *Social Science and Medicine*, Vol. 134, pp. 43-49, doi: 10.1016/j.socscimed.2015.03.057.

Hofäcker, D. (2015), "In line or at odds with active ageing policies? Exploring patterns of retirement preferences in Europe", *Ageing and Society*, Vol. 35 No. 7, pp. 1529-1556, doi: 10.1017/S0144686X1400035X.

Hoven, H., Dragano, N., Blane, D. and Wahrendorf, M. (2018), "Early adversity and late life employment history—a sequence analysis based on SHARE", *Work, Aging and Retirement*, Vol. 4 No. 3, pp. 238-250, doi: 10.1093/workar/wax014.

Jensen, N.K., Brønnum-Hansen, H., Andersen, I., Thielen, K., McAllister, A., Burström, B., Barr, B., Whitehead, M. and Diderichsen, F. (2019), "Too sick to work, too healthy to qualify: a cross-country analysis of the effect of changes to disability benefits", *Journal of Epidemiology and Community Health*, Vol. 73 No. 8, pp. 717-722, doi: 10.1136/jech-2019-212191.

Kendig, H., Loh, V., O'loughlin, K., Byles, J. and Nazroo, J.Y. (2016), "Pathways to well-being in later life: socioeconomic and health determinants across the life course of Australian baby boomers", *Journal of Population Ageing*, Vol. 9 No. 1, pp. 49-67, doi: 10.1007/s12062-015-9132-0.

König, S. (2017), "Career histories as determinants of gendered retirement timing in the Danish and Swedish pension systems", *European Journal of Ageing*, Vol. 14 No. 4, pp. 397-406, doi: 10.1007/s10433-017-0424-5.

König, S., Johansson, B.E. and Bolin, K. (2019), "Invisible scars or open wounds? The role of mid-career income for the gender pension gap in Sweden", *Frontiers in Sociology*, Vol. 4, p. 84.

Kuitto, K. and Helmdag, J. (2021), "Extending working lives: how policies shape retirement and labour market participation of older workers", *Social Policy and Administration*, Vol. 55 No. 3, pp. 423-439, doi: 10.1111/spol.12717.

Lössbroek, J., Lancee, B., Van Der Lippe, T. and Schippers, J. (2021), "Age discrimination in hiring decisions: a factorial survey among managers in nine European countries", *European Sociological Review*, Vol. 37 No. 1, pp. 49-66, doi: 10.1093/esr/jcaa030.

Loretto, W. and White, P. (2006), "Employers' attitudes, practices and policies towards older workers", *Human Resource Management Journal*, Vol. 16 No. 3, pp. 313-330, doi: 10.1111/j.1748-8583.2006.00013.x.

Manhica, H., Östh, J. and Rostila, M. (2015), "Dynamics of unemployment duration among African migrants in Sweden", *Nordic Journal of Migration Research*, Vol. 5 No. 4, pp. 194-206, doi: 10.1515/njmr-2015-0024.

McAllister, A., Bentley, L., Brønnum-Hansen, H., Jensen, N.K., Nylen, L., Andersen, I., Liao, Q., Bodin, T., Mustard, C. and Burström, B. (2019), "Inequalities in employment rates among older men and women in Canada, Denmark, Sweden and the UK", *BMC Public Health*, Vol. 19 No. 1, pp. 1-11, doi: 10.1186/s12889-019-6594-7.

McAllister, A., Bodin, T., Brønnum-Hansen, H., Harber-Aschan, L., Barr, B., Bentley, L., Liao, Q., Koitzsch Jensen, N., Andersen, I., Chen, W.-H., Thielen, K., Mustard, C., Diderichsen, F., Whitehead, M. and Burström, B. (2020), "Inequalities in extending working lives beyond age 60 in Canada, Denmark, Sweden and England—by gender, level of education and health", *Plos One*, Vol. 15 No. 8, p. e0234900, doi: 10.1371/journal.pone.0234900.

McHale, P., Pennington, A., Mustard, C., Mahood, Q., Andersen, I., Jensen, N.K., Burström, B., Thielen, K., Harber-Aschan, L. and McAllister, A. (2020), "What is the effect of changing eligibility criteria for disability benefits on employment? A systematic review and meta-analysis of evidence from OECD countries", *Plos One*, Vol. 15 No. 12, p. e0242976, doi: 10.1371/journal.pone.0242976.

Möhring, K. (2016), "Life course regimes in Europe: individual employment histories in comparative and historical perspective", *Journal of European Social Policy*, Vol. 26 No. 2, pp. 124-139, doi: 10.1177/0958928716633046.

Naegele, G. and Walker, A. (2021), *EIWO's Theoretical Perspectives*, Linköping University Electronic Press, Linköping.

Nivorozhkin, A. (2008), "Layoffs, recalls and unemployment duration: evidence from Sweden", *International Review of Applied Economics*, Vol. 22 No. 6, pp. 725-744, doi: 10.1080/02692170802407692.

OECD (2019), "Pensions at a glance 2019: country profiles-Sweden", available at: https://www.oecd.org/els/public-pensions/PAG2019-country-profile-Sweden.pdf (accessed 1 December 2019).

OECD (2022), "Labour force participation rate", available at: https://data.oecd.org/emp/labour-force-participation-rate.htm (accessed 1 December 2022).

Öylü, G., Kelfve, S. and Motel-Klingebiel, A. (2023), "Late work in Sweden: exit pathways express unequal exclusion risks", *Nordic Journal of Working Life Studies*, Vol. 13 No. 3, doi: 10.18291/njwls.135385.

Palme, M. and Laun, L. (2018), "Social security reforms and the changing retirement behavior in Sweden", in *Social Security Programs and Retirement Around the World: Reforms and Retirement Incentives*, p. 373, doi: 10.3386/w25394.

Pensionsmyndigheten (2022), "Pensionsåldrar och riktålder", available at: https://www.pensionsmyndigheten.se/ga-i-pension/planera-din-pension/pensionsaldrar-och-riktalder#:~:text=Rikt%C3%A5ldern%20f%C3%B6r%20%C3%A5r%202020%2C%202021,till%20tre%20%C3%A5r%20f%C3%B6re%20rikt%C3%A5ldern (accessed 28 December 2022).

Qi, H., Scott, K. and Bengtsson, T. (2019), "Extending working life:experience from Sweden 1981-2011", *Vienna Yearbook of Population Research*, Vol. 17, pp. 99-120, doi: 10.2307/26928905.

Riksdag (2016), Lag (1982:80) om anställningsskydd, SFS, 2016:1271, Stockholm.

SCB (2019), "Longitudinell integrationsdatabas förSjukförsäkrings- och Arbetsmarknadsstudier", available at: https://www.scb.se/contentassets/f0bc88c852364b6ea5c1654a0cc90234/lisa-bakgrundsfakta-1990-2017.pdf (accessed 15 December 2019).

SCB (2023a), "Mikrodata för Folk- och bostadsräkningar (FoB)", available at: https://www.scb.se/vara-tjanster/bestall-data-och-statistik/bestalla-mikrodata/vilka-mikrodata-finns/individregister/folk–och-bostadsrakningar-fob/ (accessed 1 January 2023).

SCB (2023b), "Ordering microdata", available at: https://www.scb.se/en/services/ordering-data-and-statistics/ordering-microdata/ (accessed 1 January 2023).

Skedinger, P. (2018), "Non-standard employment in Sweden", *De Economist*, Vol. 166 No. 4, pp. 433-454, doi: 10.1007/s10645-018-9317-z.

Thern, E., Falkstedt, D., Almroth, M., Kjellberg, K., Landberg, J., Bodin, T., Melin, B. and Hemmingsson, T. (2022), "Educational qualification differences and early labor market exit among men: the contribution of labor market marginalization measured across the working life", *BMC Public Health*, Vol. 22 No. 1, p. 1015, doi: 10.1186/s12889-022-13397-1.

Visser, M., Gesthuizen, M., Kraaykamp, G. and Wolbers, M.H. (2016), "Inequality among older workers in The Netherlands: a life course and social stratification perspective on early retirement", *European Sociological Review*, Vol. 32 No. 3, pp. 370-382, doi: 10.1093/esr/jcw013.

Von Bonsdorff, M.E., Shultz, K.S., Leskinen, E. and Tansky, J. (2009), "The choice between retirement and bridge employment: a continuity theory and life course perspective", *The International Journal of Aging and Human Development*, Vol. 69 No. 2, pp. 79-100, doi: 10.2190/AG.69.2.a.

Corresponding author
Gülin Öylü can be contacted at: gulin.oylu@liu.se