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Working conditions in post-retirement jobs:

A European comparison

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Abstract

Working conditions in post-retirement jobs: A European comparison
A relatively new phenomenon in the Netherlands, as well as in other Western countries, is the emergence of a workforce of retirees. Retirement no longer necessarily means an abrupt and permanent withdrawal from the job market. Instead, a growing group of older adults remains active in paid employment after their retirement. With the growing labor force participation of retirees, questions arise regarding the individual and societal forces that are at play: who works in old age, why, what are the consequences, and under what conditions do retirees work? Academic research has made great progress towards a better understanding of the determinants and consequences of working after retirement. However, working conditions in post-retirement jobs remain largely unexplored. Therefore, using information on working conditions such as job demands, job control, and work hours, we investigate whether working retirees can be categorized by the quality of their jobs. Using data from the Survey of Health, Ageing and Retirement in Europe, we perform latent class analysis on a sample of 2,926 working retirees in eleven European countries. The results point to the existence of two subgroups of working retirees. The first is confronted with high-quality jobs, while the second subgroup participates in low-quality jobs. Subsequent (multilevel) logit analysis suggests that classification in the one or the other group is predicted by the socio-economic status of working retirees and by the context of poverty in old age in the countries in question. We conclude that working after retirement in a high-quality job may be conceptually different from working in a low-quality job.

Samenvatting

Arbeidsomstandigheden van werkende gepensioneerden: Een Europese vergelijking
Het ontstaan van een arbeidsmarkt voor gepensioneerden is een relatief nieuw fenomeen in zowel Nederland als in andere westerse landen. Pensionering is niet langer altijd een abrupt en definitief einde van de arbeidsloopbaan. De groep ouderen die na pensioen actief blijft in een betaalde baan groeit, en dit roept vragen op over individuele en maatschappelijke factoren die bepalen wie er doorwerkt na pensioen, waarom, en in wat voor werkomstandigheden. Wetenschappelijk onderzoek op dit vlak heeft zich vooral toegespitst op de determinanten en gevolgen van werken na pensionering, terwijl veel minder aandacht is besteed aan de omstandigheden waaronder gepensioneerden werken. In dit Netspar Industry Paper onderzoeken we of we gepensioneerden kunnen indelen in groepen op basis van de kwaliteit van het werk. We kijken daarbij naar factoren zoals hoe zwaar het werk fysiek en mentaal is, de controle die men heeft over de werkzaamheden en het aantal uren dat men werkt. We gebruiken data van de 'Survey of Health, Ageing and Retirement in Europe' (SHARE), dat informatie bevat over 2926 gepensioneerden met een betaalde baan in elf Europese landen. Uit de resultaten blijkt dat deze gepensioneerden in twee groepen kunnen worden verdeeld: een groep met ongunstige werkomstandigheden tegenover een groep met gunstige werkomstandigheden. De eerste groep werkt veelal voltijds en heeft vaak fysiek en mentaal zwaar werk. De tweede groep werkt over het algemeen in deeltijd en heeft veel minder te maken met fysiek en mentaal zware taken. Tot welke groep een werkende gepensioneerde behoort, blijkt samen te hangen met sociaaleconomische status en armoede onder ouderen in het land waarin men leeft. We concluderen dat werken na pensionering in een baan met gunstige werkomstandigheden inherent anders kan zijn dan onder ongunstige werkomstandigheden.

1. Introduction

Working after retirement is increasingly common in many Western societies. Following a period at the end of the twentieth century in which early retirement was widespread, nowadays working lives are increasingly extended beyond the public retirement age. With increasing participation rates of the workforce after retirement, questions about the conditions in which retirees work are gaining in importance. Research in the United Kingdom suggests a division among working retirees, in which privileged older workers, with a high level of autonomy in their retirement, are contrasted with disadvantaged older workers, who tend to end up in low-quality work at the end of their careers (Flynn, 2010; Lain, 2012). Similarly, different groups in old age have been noted in the United States, where well-off older workers are clearly in a better position than a poorer less advantaged group (Falkingham & Johnson, 1992). In spite of potentially increasing inequalities in living standards after retirement (Komp, Van Tilburg, & Broese van Groenou, 2010), little is known about the specific working conditions and the quality of jobs among populations of working retirees (Wahrendorf, Akinwale, Landy, Matthews, & Blane, 2017). In this study, we examine whether it is possible to categorize working retirees by the quality of their post-retirement employment, and investigate whether socio-economic status channels working retirees into different types of jobs.

The emergence of what could be called a labor market for working retirees is a relatively recent development in the Netherlands. Labor force participation of older adults in the Netherlands is increasing as a result of changing pension policies, such as the abolishment of early retirement arrangements and the increasing public pension age. In 2003, one out of five older adults aged between 60 and 65 participated in a paid job; this had increased to 55% by 2017. Also the labor force participation of adults older than the traditional public pension age of 65 increased over the years. For retirees aged 65 to 70, it steadily increased from 7% to almost 15% between 2003 and 2017. For retirees aged 70 to 75, it increased from 3% to 7% in the same time period (all statistics are derived from Statistics Netherlands, 2018).

While working after retirement is on the rise in some countries like the Netherlands, it is still an exception in other countries. Figures based on the 'Survey of Health, Ageing & Retirement in Europe' project (SHARE, 2004-2015) show that on average 10% of older adults between the age of 60 and 75 work in a paid job after their retirement. The variation in prevalence of working after retirement across countries is presented in Figure 1. For instance, it is quite exceptional to work after retirement in countries such as Slovenia, Spain, Greece, and Poland. In these countries, no

Figure 1. Prevalence of working after retirement across 17 European countries
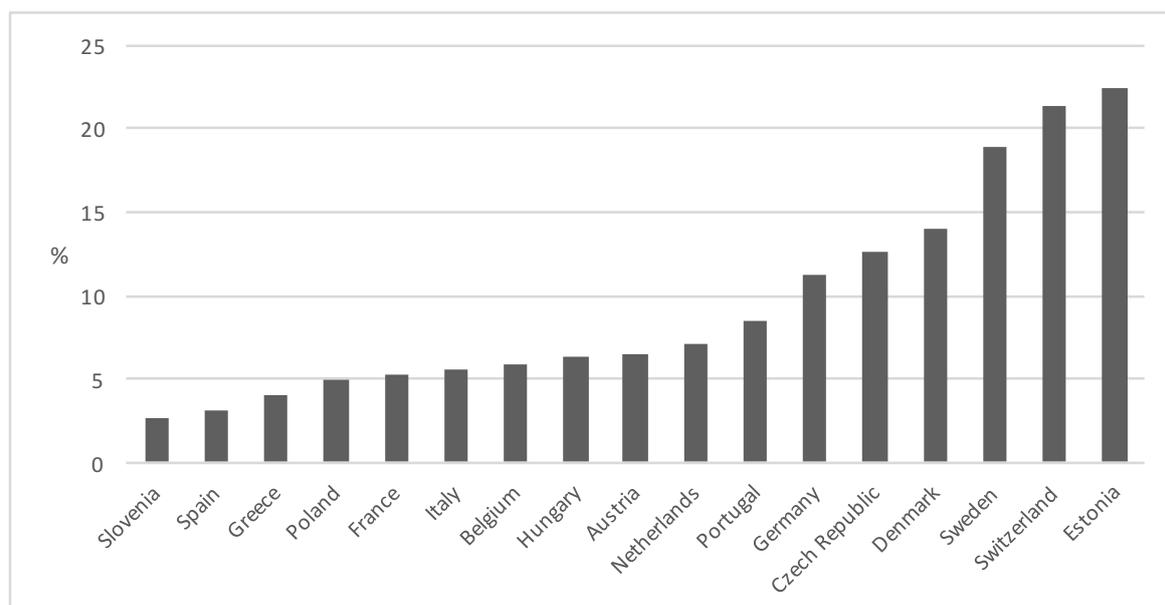
(Source: own calculations using SHARE waves 1, 2, 4, 5, and 6).

more than 5% of retirees work in a paid job. By contrast, working after retirement is relatively common in Estonia, Switzerland, and Sweden, where about one out of five older adults participate in a paid job after retirement. To better understand what drives older adults to continue working after retirement, academic research increasingly focuses on this relatively new phenomenon. However, most research investigates working after retirement in a specific country instead of comparing it cross-nationally (for an overview of country-specific studies, see: Alcover, Topa, Parry, Fraccaroli, & Depolo, 2014).

The current study contributes to the literature on working after retirement in three ways. First, we take a country-comparative approach and compare working after retirement across eleven European countries. The great diversity in definitions and measures of working after retirement in existing country-specific research hinders the comparability of the results across country borders (Alcover et al., 2014). Additionally, countries are known to differ widely in their pension contexts, which has implications for the likelihood of working beyond retirement age (Dingemans, Henkens, & Van Solinge, 2017). Therefore, we use data from

SHARE, which provides information on adults aged 50 years and over in various European countries. We constructed a harmonized measure of working after retirement, defined as participation in paid work while also receiving a pension income (Dingemans et al., 2017; Parry & Bown Wilson, 2014).

Second, we extend the existing research on working after retirement by examining the quality of post–retirement employment. To date, most research has explored the determinants of working after retirement, and increasingly scholars also examine the consequences for well–being in later life. Specifically, in this study, we add to this literature by investigating whether working retirees can be categorized by the quality of their post–retirement jobs. Accounting for these subpopulations may be crucial to better understand the complex dynamics of the concept of working after retirement (Flynn, 2010). Using latent class analysis (LCA), we analyze to what extent working conditions are alike among working retirees. Guided by theoretical arguments, we specifically focus on physical and mental job demands, job control (Shultz, Wang, Crimmins, & Fisher, 2010), and the number of work hours (Moen, 2007). Third, we analyze the importance of socio–economic status in predicting who is working under specific working conditions (i.e., membership of certain subpopulations as revealed by the LCA). This analysis will improve our insight into how stratification processes translate into different working conditions in old age.

2. Literature review: who works after retirement?

Much of the existing research on working after retirement has focused on the individual-level question of who works after retirement (e.g., Cahill, Giandrea, & Quinn, 2011; Gobeski & Beehr, 2009). These studies consistently show that young retirees with strong educational backgrounds participate in paid work (Komp et al., 2010; Wang, Zhan, Liu, & Shultz, 2008). Also, a U-shaped relationship is found for working after retirement against income status (Giandrea, Cahill, & Quinn, 2009). This means that retirees with low as well as high income status are likely to work after retirement, although probably for different reasons. Following a life course approach, many studies also conclude that the decision to work after retirement is embedded in the broader social environment. For instance, with regard to the family domain, the combination of gender and marital status seems to be important. In particular, divorced women tend to work after retirement, because they are likely to be economically vulnerable in retirement (Pleau, 2010). Also the organizational context plays an important role. Actual decisions to deploy retirees are taken by employers who are very selective on the employability of retirees (Oude Mulders, Van Dalen, Henkens, & Schippers, 2014).

What the post-retirement work consists of remains something of a 'black box' in the existing literature. One exception is the study by Wahrendorf et al. (2017), which compared the working conditions of workers above state pension age with the former working conditions of full-time retirees; it concluded that working retirees were more likely to participate in jobs with favorable psychosocial working conditions and with a somewhat lower number of working hours. Additionally, working retirees were shown to perceive their work as less physically demanding and stressful than their pre-retirement jobs (Henkens & Van Solinge, 2014). Little is known, however, about diversity within populations of working retirees. While average working conditions might improve after retirement, there are questions on the prevalence of post-retirement work in unfavorable working conditions and its distribution across socio-economic groups and countries. This is particularly important, because unfavorable working conditions have been found to have a negative impact on well-being and job satisfaction in general (Hausser, Mojzisch, Niesel, & Schulz-Hardt, 2010), and on the productivity and task performance of working retirees in particular (Müller et al., 2015). Therefore, in this study, we combine academic literature on working conditions with academic literature on working after retirement to take a first step towards unraveling the variation in working conditions among the population of working retirees.

3. Theoretical framework

Working conditions of post-retirement jobs
Various theoretical models of psychosocial working conditions have been presented in previous research to identify stressful and harmful work. The general premise of these models is that high job demands can be harmful for physical and psychological health (Bakker & Demerouti, 2007; Karasek, 1979; Siegrist, 1996). High job demands, such as a heavy physical workload or time pressure, are characterized by the high level of energy required of the worker. It is argued, however, that it is not only the job demand in itself but also the interplay with other working conditions that can be particularly harmful. Job control – a person's freedom to decide how to undertake the work – is argued to be important in this respect (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Karasek & Theorell, 1990).

For example, the demand-control model (Karasek, 1979) postulates that job demands are harmful when the level of job control is low (Hausser et al., 2010; Karasek & Theorell, 1990). This means that the health of individuals is particularly threatened when they do not experience freedom in terms of how to deal with high demands. Moreover, Shultz et al. (2010) have shown that job control is more important for older than for younger workers as a tool to deal with high job demands. The underlying mechanism is that, when older adults are confronted with age-related cognitive decline, this can be compensated by a certain degree of freedom in how to execute demanding tasks. In a similar vein, job control has been shown to be a valuable resource for task performance among working retirees (Müller et al., 2015). Following this literature, we expect physical and mental job demands as well as job control to be central indicators of post-retirement job quality.

Another working condition that is increasingly important after retirement is the number of working hours, with an increasing preference for part-time arrangements during old age (Lain & Vickerstaff, 2014; McNair, 2006). Based on various studies in the American context, Moen (2007) argues that older workers and retirees do not want to work full-time, instead preferring 'not so big jobs' (p.31). Instead of the 'big' full-time jobs, which often have high job demands and little schedule control (Moen, 2007), older adults desire part-time jobs that can be combined with other activities that are increasingly important in old age, such as spending time with family and caregiving demands. Additionally, demanding jobs require much physiological and/or psychological energy. Participation in such jobs on a full-time basis, compared with smaller part-time arrangements, could be problematic because there is less time for recovery (Kiss, De Meester, & Braeckman, 2008).

To summarize, in line with the 'big' and 'not so big' jobs that Moen (2007) describes in the American context, we will test whether such a distinction also exists in the European population of working retirees. Based on working conditions such as physical and mental job demands, job control, and working hours, we explore the quality of post-retirement jobs and investigate whether working retirees can be categorized accordingly.

Stratification in different post-retirement jobs
The categorization of working retirees may not be random but is most likely to rely upon stratification forces (Ekerdt, 2010). Commonly used stratification markers in research on working after retirement refer to socio-economic status, which may channel retirees into different post-retirement jobs.

The model of strategic selection (Moen & Chermack, 2005) postulates that dissatisfied older workers with unfavorable working conditions tend to leave the workforce (Moen, 2007). In this vein, it has been shown that older adults tend to retire early when the quality of their work is poor (Elovianio et al., 2005; Siegrist, Wahrendorf, Knesebeck, Jürges, & Borsch-Supan, 2006).This may be the case in particular when there is no financial motive to stay in work (McNair, 2006). In the case of working after retirement, we could argue that those with a high educational background and high pension income are most likely only to select or accept jobs with favorable work conditions, rather than low-quality jobs. In addition, "retirees who have higher levels of education are likely to have more choices in choosing a bridge job" (Wang, Adams, Beehr, & Shultz, 2009). By contrast, for less educated and low-income retirees, who are more likely to feel financially forced to remain in paid labor, there may be no option other than to accept a low-quality job when more favorable ones are unavailable. Additionally, it is likely that low-income retirees continue to work in pre-retirement jobs with unfavorable working conditions, as mobility across sectors seems to be rather limited (Fourage, Bijlsma, & Montizaan, 2017).We expect retirees with a high educational background and high pension income to be less likely to participate in jobs with unfavorable working conditions than their less educated and lower income counterparts.

Previous research has shown that not only individual, but also national circumstances enable or constrain behavioral outcomes in post-retirement years (Dingemans et al., 2017). Various theoretical frameworks, such as Moen and Chermak's (2005) model of strategic selection and the life course notion of 'agency within structure' (Settersten & Gannon, 2005), postulate that national contexts produce opportunities and constraints on the strategic selections and choices of older adults. Not only

the choice of whether to work after retirement, but also the selection of a specific post-retirement job is likely to be embedded in the broader context. Following the arguments for individual socio-economic status, we expect the likelihood of working in unfavorable conditions to be higher in countries with high rather than low levels of old-age poverty. In such countries, the need for income from paid work to make ends meet in retirement is likely to be higher (Kolev & Pascal, 2002; Yang, 2011), which forces retirees to accept unfavorable working conditions in the absence of better alternatives. As a result, working after retirement may be seen as an indicator of disadvantage in these countries.

4. Data and methods

Data

We used data from Waves 1, 2, and 4 of the 'Survey of Health, Ageing and Retirement in Europe' (SHARE). The third wave of SHARE was excluded because of its specific format, as it focused on life histories. Waves 5 and 6 were excluded because these did not ask a large proportion of working retirees about the quality of their jobs. In the current study, working after retirement was measured by focusing on the income sources of older adults. Retirement, here, was conceptualized as receiving a form of public and/or occupational pension income. Respondents who did not receive any form of pension income, i.e. those who were still in their main careers, were excluded. Retirees who received income from paid work in addition to their pension income were classified as working retirees. Because pensions can be claimed as early as 60 in most countries and working after retirement is often found to start shortly after career exit (Kail & Warner, 2013; Maestas, 2010), we selected working retirees in the age range between 60 and 75. To make optimal use of the SHARE data, we stacked the data of the three selected waves (2004, 2006, and 2011). The analytical sample used in this study consisted of 2,926 working retirees in eleven European countries, namely Austria, Belgium, the Czech Republic, Denmark, Estonia, France, Germany, Italy, the Netherlands, Sweden, and Switzerland. The mean age was 67, and 47% of respondents were women.

Measures

The working conditions found in post-retirement employment are divided across three dimensions. First, we assessed the extent to which a job was perceived to be demanding. In SHARE, respondents were asked whether they strongly agreed, agreed, disagreed, or strongly disagreed with the following statements: a) 'My job is physically demanding', and b) 'I am under constant time pressure due to a heavy workload.' The answers to these two statements were used as indicators of physical and mental job demands, respectively. Second, the extent to which respondents felt in control of their job was assessed by the statement: 'I have very little freedom to decide how I do my work', with the same answer format ranging from strongly agree to strongly dis-agree. Because these three respective statements were used in a latent class analysis, in which it is customary to dichotomize items, we recoded their ordinal measurement scales into a dummy format indicating whether respondents (strongly) agreed (1) or (strongly) disagreed (0) with the statement. Third, we assessed how many hours the respondents worked per week. We created three categories, namely small part-time

jobs of 1 to 16 hours per week, large part-time jobs of 17 to 32 hours per week, and full-time jobs of 33 or more hours per week.

Measures of educational background and pension income were taken from the imputations file provided by SHARE (see Christelis, 2011). For educational background, SHARE researchers had constructed a variable following the ISCED-97 classification (International Standard Classification of Educational Degrees) and imputed missing values. Following Wahrendorf et al. (2017), we constructed a variable distinguishing low (pre-primary, primary, or lower secondary education), middle (secondary or post-secondary education), and high (first and second stage of tertiary education) educational background. For pension income, we totaled income from old age, early retirement, and survivor pensions, private and occupational pensions, disability pension benefits, unemployment benefits insurance, and social assistance, as calculated and imputed by the SHARE team. To deal with the wide distribution and outliers, we constructed pension income quartiles. Furthermore, we controlled for age, gender, marital status, and health. Age was calculated based on the year of birth reported by the respondent. Gender was determined by a dummy variable indicating whether the respondent was female (1) or male (0). Marital status was determined by asking respondents whether they were currently married or in registered partnership, never married, divorced, or widowed. Finally, health was measured by a count variable constructed by the SHARE team and reflects the number of chronic diseases that respondents reported.

Finally, at the macro level, we measured old-age poverty using the 'severe material deprivation rate' from Eurostat (2008). Specifically, we took the statistics for severe material deprivation among the population aged 60 years and older. Material deprivation refers to economic strain, which Eurostat (2008) defined as "the enforced inability to afford a set of indicative material standards, considered by most people to be desirable or even necessary to lead an adequate life." Instead of looking at a relative poverty measure (Price, 2006), such as the risk of poverty, material deprivation was measured by looking at objective and absolute criteria, such as the inability to afford mortgage or rent payments, a protein-rich meal every second day, or unexpected financial expenses. The proportion of the population unable to afford at least four of the eleven criteria is reflected in the severe material deprivation rate. We calculated the mean over the years 2004 to 2011, which cover the period of data collection of the three waves included in our sample. The descriptive information of the independent variables is presented in Table 1.

Table 1. Means and standard deviations for the covariates.

	Mean	SD
Age (range: 60–75)	66.89	3.82
Female	0.47	0.50
Educational background		
Low	0.28	0.45
Middle	0.42	0.49
High	0.30	0.46
Mean pension income per quartile		
1st quartile	573.77	314.16
2nd quartile	1221.47	508.59
3rd quartile	2335.57	676.94
4th quartile	7284.53	7938.91
Marital status		
Married (or registered partnership)	0.71	0.45
Never married	0.05	0.22
Divorced	0.12	0.32
Widowed	0.12	0.33
Number of chronic health conditions (range: 0–14)	1.47	1.32
Country		
Austria	0.06	0.24
Germany	0.07	0.26
Sweden	0.13	0.34
Netherlands	0.05	0.21
Italy	0.05	0.22
France	0.05	0.23
Denmark	0.06	0.25
Switzerland	0.12	0.32
Belgium	0.05	0.22
Czech Republic	0.14	0.35
Estonia	0.20	0.40
Severe deprivation rate, 65+ population (range: 0.7–8.0)	3.88	2.86

Source: SHARE, waves 1, 2, and 4.

Analytical strategy

First, latent class analysis (LCA) was performed to test whether working retirees could be categorized by the quality of their post-retirement jobs. LCA helps to find complex patterns of associations among a set of observed variables, in this case variables regarding physical and mental job demands, job control, and work hours. We started with exploratory LCA to determine the best-fitting model from an empirical point of view. Next, we used our theoretical framework to guide our decision on the final model (Wang & Hanges, 2011). The result of the LCA is a clustering of more or less similar working retirees into several groups based on their working conditions in

post-retirement jobs. Second, we performed (multilevel) logit analyses to further understand the differences between the subgroups of working retirees (as identified by the LCA) in terms of socio-economic status and across countries. We constructed the dependent variable by assigning each individual in the sample to one of the groups based on the results from the LCA. Because our sample of working retirees was likely to be a selective group of retirees, we followed a Heckman procedure to control for this selectivity (Heckman, 1979). See the technical appendix for more detailed information on the analytical approaches used in this study.

5. Results

Latent class analysis: co-occurrence of job quality indicators
Descriptive information on the observed variables for the latent class analysis is presented in Table 2. About two out of five working retirees reported their post-retirement job to be physically demanding (39%). A smaller group of about one out of four working retirees felt that they were under constant time pressure due to a heavy workload (24%), and another one out of four reported having very little freedom to decide how they did their work (23%). Most working retirees were employed in small part-time jobs with a maximum of 16 work hours per week (40%), while approximately one out of three working retirees participated in full-time jobs for more than 32 hours per week (36%).

Using LCA, we tested whether we could divide post-retirement jobs into subgroups based on the observed variables in Table 2. The results of this analysis pointed to a two-class model (see technical appendix), which was in line with our theoretical expectation. Working retirees can thus be divided into two separate classes when it comes to the quality of their jobs. In Table 3, we present the group sizes of the two classes. Our results show that the first class contained 61% of the working retirees versus 39% in the second class. Table 3 also presents the probability that a working retiree agrees with the statements on working conditions, separate by class. For example, for working retirees in the first class there was a 25% chance that they experienced their job to be physically demanding and only a 5% chance that they experienced constant time pressure due to heavy workload. In addition to the low job demands, working retirees in class 1 had a 17% chance of experiencing little freedom to decide how to do their work, and a 55% chance of working in small part-time jobs. In class 2, the chance of experiencing physical and mental job demands was 62% and 53%, respectively. Furthermore, working retirees in the second class had a

Table 2. Descriptive information of the observed variables for the latent class analysis.

	%
My job is physically demanding	39.38
I am under constant time pressure due to a heavy workload	24.29
I have very little freedom to decide how I do my work	23.11
Work hours	
< 16	40.49
17–32	23.00
33 >	36.40

Source: SHARE, waves 1, 2, and 4.

Table 3. Division of working conditions across the two classes (N=2926).

	Class 1 Low-strain jobs	Class 2 High-strain jobs
Probability of agreeing with the following statements:		
My job is physically demanding	25%	62%
I am under constant time pressure due to a heavy workload	5%	53%
I have very little freedom to decide how I do my work	17%	33%
Work hours – across categories		
< 16	55%	18%
17–32	24%	22%
33 >	21%	60%
Group size	61%	39%

Source: SHARE, waves 1, 2, and 4.

33% chance of experiencing low job control and a 60% chance of working in full-time jobs.

Taken together, the results of the LCA indicate a clear divide between high and low quality jobs after retirement. Following the demand-control model, which points to the harmful combination of high job demands and low job control (Karasek, 1979; Müller et al., 2015), we assigned the following labels to the two classes: class 1 involved 'low-strain jobs', and class 2 involved 'high-strain jobs.'

Logit analysis: further understanding of the two classes
Table 4 presents the results of the logit analysis to predict participation in high (1) versus low (0) strain jobs, which helps us to better understand who works in what kind of post-retirement job. We started in the first model by accounting for the clustering of working retirees in the eleven European countries in our sample using a logit model with country-fixed effects.

Austria was taken as the reference category. The Czech Republic and Estonia did not significantly differ from Austria. By contrast, working retirees were less likely to work in high strain jobs in the Netherlands as compared to Austria. We calculated predicted probabilities by country and found that approximately 20% of working retirees worked in a high strain job after retirement in the Netherlands and Denmark, compared to approximately 50% in Italy and Estonia. In Model 2 of Table 4, we included individual-level stratification markers to check whether compositional differences across countries could explain the differences we found in Model 1. Although the coefficients change slightly, we conclude overall that the country differences remain in terms of the chance of working in high-strain versus low-strain jobs.

Table 4. Logit models to predict the participation in high- versus low-strain jobs.

	Model 1		Model 2		Model 3[a]	
	OR	SE	OR	SE	OR	SE
Age			0.95 *	0.02	0.96 **	0.02
Female			0.86	0.11	0.91	0.09
Educational background						
Low (ref)						
Middle			0.75 *	0.09	0.73 **	0.08
High			0.65 *	0.13	0.60 **	0.09
Pension income						
1st quartile						
2nd quartile			0.81 #	0.09	0.83 #	0.09
3th quartile			0.61 **	0.11	0.68 **	0.10
4th quartile			0.52 **	0.11	0.60 **	0.09
Marital status						
Married (ref)						
Never married			0.80	0.16	0.79	0.15
Divorced			0.92	0.15	0.88	0.13
Widowed			0.73 *	0.11	0.70 *	0.10
Number of chronic health conditions			0.93 *	0.03	0.94 *	0.03
Country						
Austria (ref)						
Germany	0.40 **	0.10	0.41 **	0.11		
Sweden	0.50 **	0.11	0.55 #	0.19		
Netherlands	0.31 **	0.08	0.27 **	0.08		
Italy	1.57 #	0.38	1.19	0.32		
France	0.53 *	0.13	0.41 **	0.11		
Denmark	0.31 **	0.08	0.36 **	0.12		
Switzerland	0.44 **	0.10	0.62	0.24		
Belgium	0.53 *	0.12	0.47 **	0.11		
Czech Republic	0.77	0.15	0.57 *	0.13		
Estonia	1.22	0.25	1.06	0.32		
Severe material deprivation rate, 60+ population					1.13 **	0.05
Country (var)					0.29	0.08

Source: SHARE, waves 1, 2, and 4 (N=2877).
*** p<0.01, * p<0.05, # p<0.10*
Note: Standard errors are corrected for clustering of cases in countries. The models are furthermore controlled for survey year and for selection into the sample of working retirees (lambda, Heckman approach).
[a] Model 3 is a multilevel logit model in which the country-fixed effects of the logit models 1 and 2 are replaced by a variance term.

The results in Model 2 show that educational background and pension income relate to the chance of working in a high-strain job. The higher the educational background, the lower the odds of working in a high-strain versus a low-strain job. Similarly, we

Figure 2. Relationship between severe material deprivation rate and the percentage of working retirees in high-strain jobs (calculated on the basis of Model 2 in Table 4).
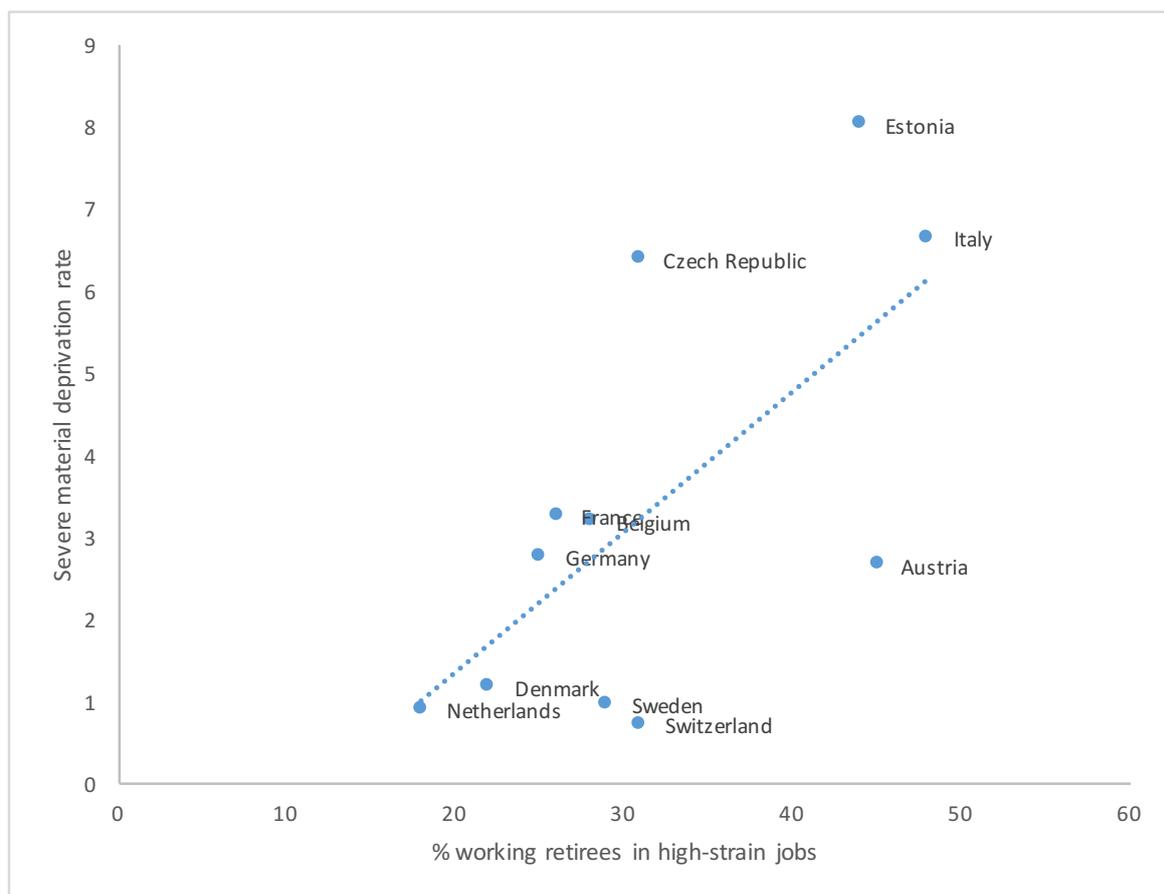
(Source: Eurostat, 2018 & SHARE, waves 1, 2, and 4).

found a negative relationship between pension income and working in a high-strain job. Again, we calculated the predicted probabilities of working in a high-strain job. The probability of a low-educated working retiree working in a high-strain job was 38%, which was higher than the probability for middle (31%) or highly (28%) educated working retirees. For pension income, we found that the probability of working in a high-strain job for working retirees in the lowest pension income quartile was 40%, while it was 26% for those in the highest quartile. In addition, we found age to be negatively associated with working in a high-strain versus a low-strain job. We did not find a relationship between gender and the type of post-retirement job. Divorced and widowed working retirees had a lower probability of working in a high-strain versus a low-strain job than persons who were married or in a registered partnership. Finally, the number of chronic diseases related negatively with working in a high-strain versus a low-strain job.

In Model 3 of Table 4, we present the results of a multilevel logit model including the macro indicator for old–age poverty, namely the rate of severe material deprivation. In line with our expectation, the results show a positive relationship between the percentage of severe material deprivation among the population of 60 years and older and the likelihood of working in a high–strain job. The higher the severe material deprivation rate in a country, the higher the odds of working in a high–strain versus a low–strain job post–retirement. We furthermore illustrate this result in Figure 1, where we relate the severe material deprivation rate to the predicted probabilities of working in a high–strain job per country. The figure shows that the countries where we found the chance of working in a high–strain job to be higher, such as Estonia and Italy, were also found to be countries with a higher percentage of the 60+ population in severe material deprivation. By contrast, countries such as the Netherlands and Denmark were characterized by the combination of a lower likelihood of working in high–strain jobs and lower levels of severe material deprivation.

6. Discussion

In this study, we examined whether and how work quality indicators co-occur in a sample of European working retirees. Combining the literature on working conditions of older workers with the literature on working after retirement, we selected psychosocial working conditions and work hours as important indicators for the categorization of the level of strain that jobs place on the shoulders of working retirees. In this section, we discuss the three major findings that result from our analyses, the implications of the results, and the limitations of the study design.

Main findings
First, the results of the latent class analysis reveal that working retirees in Europe can be divided into two subgroups according to the level of job strain. In line with the conclusion of Wahrendorf et al. (2017) that European working retirees tend to experience favorable working conditions, we find a majority of working retirees participating in low-strain jobs, characterized by part-time work, low physical and mental job demands, and high levels of job control. This supports the assumption often made in the literature on bridge employment that participation in paid work after retirement can be a tool that allows gradual adjustment to life without paid work (Kim & Feldman, 2000; Wang et al., 2009). Nevertheless, a considerable group – two out of five working retirees – is found to participate in high-strain jobs. These jobs are characterized by working conditions that are generally considered undesirable by older workers (Lain & Vickerstaff, 2014; Moen, 2007), such as full-time work, high physical and mental job demands, and low levels of job control. In particular, the intersection of high job demands and low job control may threaten the ability of working retirees to deal with age-related changes, such as cognitive decline (Müller et al., 2015; Shultz et al., 2010), while longer working hours may hamper full recovery from work before a new work shift starts (Kiss et al., 2008). Nevertheless, working for pay may still be a beneficial strategy, as previous research shows that full withdrawal from paid work can accelerate cognitive decline (Bonsang, Adam, & Perelman, 2012). However, other research shows that working in strenuous jobs is harmful to the cognitive abilities in old age (Potter, Helms, & Plassman, 2008) and that the withdrawal from a demanding job might be experienced as a great relief, one that positively affects personal health (Van den Bogaard & Henkens, 2018). More research is needed to better understand the impact of working conditions in post-retirement jobs on mental and physical health.

Second, our results show that working retirees in high-strain jobs are most likely to have a low educational background and low pension income. This supports the

idea derived from the model of strategic selection (Moen & Chermack, 2005), that retirees with high socio-economic backgrounds only choose to stay in the labor force when favorable working conditions are available, while those with low socio-economic background have no other option than to remain working, even if this means accepting or staying in work with unfavorable working conditions. Moreover, retirees with high instead of low socio-economic status may have more choice of post-retirement job and can thus opt for the highest-quality job (Wang et al., 2009). Participation in high-strain jobs is thus likely to be at least partially driven by constraints rather than free choice. Apparently, those retirees who are most likely to feel forced to continue working after retirement end up in the worst jobs, which suggests a process of cumulative disadvantage that has also been found in the UK (Flynn, 2010; Lain, 2012) and the US (Falkingham & Johnson, 1992).

Third, the two subgroups of working retirees in high-strain and low-strain jobs are not evenly distributed across the European countries under study. While a majority of working retirees participate in low-strain jobs in countries such as the Netherlands and Denmark, only half of the working retirees in countries such as Estonia and Italy participate in low-strain jobs, which implies that the other half is confronted with unfavorable working conditions. The results of the multilevel analysis suggest that this difference is associated with the level of old-age poverty in the countries concerned. The higher the proportion of severe material deprivation among the 60+ population, the more likely retirees are to participate in a high-strain job after retirement. This is particularly striking in Estonia, where the prevalence of working after retirement is relatively high (see Figure 1; Dingemans et al., 2017). The situation in Estonia may be comparable to that in Russia (Kolev & Pascal, 2002), where working in old age is almost a given due to severe material deprivation during retirement and thus also appears to place a high strain on working retirees. By contrast, working after retirement is mostly an expression of intrinsic motivation in the Netherlands, which is characterized by a relatively generous pension system and low old-age poverty (OECD, 2017). A large majority of working retirees in the Netherlands report working for their enjoyment (Dingemans & Henkens, 2014), and the present study adds to this in that they also often participate in small jobs with favorable working conditions. These results suggest that working after retirement may be a completely different concept in countries such as the Netherlands, where it seems to be an indicator of preference, compared to countries such as Estonia, where it may be an indicator of disadvantage in old age.

Theoretical implications

Our study adds to the conceptualization of working after retirement by revealing two subgroups of working retirees who differ widely in their working conditions. Where previous research mainly focused on the dichotomy of a retiree participating in paid work or not (e.g. Cahill, Giandrea, & Quinn, 2017; Dingemans et al., 2017), a better understanding of diversity among working retirees is critical. The positive notion of choosing to work part-time after retirement, under favorable working conditions, contrasts sharply with the far less pleasant idea of forced continuation in full-time work under unfavorable working conditions. The latter picture corresponds to what (McNair, 2006, p. 490), refers to as 'survivors', reflecting the struggle to deal with life in a sample of pre-retired older adults, and extending this to the post-retirement case.

Future scientific research on this topic is needed to further unravel the diversity among the population of working retirees. With the growing labor force participation of retirees, it is likely that the diversity in jobs and in individual characteristics of working retirees also changes. The labor force of working retirees may increasingly resemble the labor force of workers in the traditional working age, but it is also likely to have its own dynamics. For instance, research could focus on getting a better understanding of the spread of post-retirement employment (of high and low quality) across sectors and industries. From an employment opportunities perspective, some sectors may be more open for retirees than others. Also, some sectors or industries may be more attractive to retirees, because of their specific work tasks, working conditions, and/or labor agreements. In a globalized world, research could also address the preferences and needs to work after retirement of migrant populations and native ethnic minorities (Henkens et al., 2018) and whether ethnic background has implications for their participation in high-quality versus low-quality jobs. Also, ethnic background may have different implications across sectors and countries (i.e., pension systems).

Societal implications

The suggestion that working after retirement in a low-strain job can involve something completely different from working after retirement in a high-strain job may have serious implications for policies on retrenchment of pension systems and extension of working lives. It nuances the notion of post-retirement work as a beneficial tool to reduce poverty in retirement years (Yang, 2011). Although financial security may be increased through added income from paid work to the pension income of retirees from low socio-economic backgrounds (Dingemans & Henkens, 2017), working after

retirement in high-strain jobs could presage negative outcomes such as low levels of well-being and health, as well as low productivity, low task performance, and low job satisfaction, all of which are associated with unfavorable job conditions (Hausser et al., 2010; Müller et al., 2015; Shultz et al., 2010).

While working after retirement is still an exception in some countries, it is increasing in others. Growing numbers of retirees participating in paid jobs add new dynamics to the labor market, but these are likely to differ across sectors, countries, and years. On the one hand, working retirees could help to reduce shortages in the labor market, which is likely to contribute particularly to productivity levels when working in low-strain jobs (Müller et al., 2015). Also retirees could help to satisfy the increasing demands of organizations for a flexible labor force. On the other hand, there are concerns about the displacement of younger workers, especially in the context of high unemployment. Although this may not necessarily be the case for young workers (Fourage et al., 2017), it may harm non-retired older workers who are comparable to the retired labor force in terms of experience and skill.

Also in the Netherlands, retirees increasingly decide to participate in paid work, a decision which is often intrinsically motivated and voluntary (Dingemans & Henkens, 2014). A relevant question in light of the changing policy landscape is how preferences and needs for working after retirement will change in the coming years. The majority of the existing studies investigated cohorts of older adults who had access to early retirement arrangements. Retiring at the age of 60 or 62 was no exception. Nowadays, however, early retirement arrangements belong to the past, public pension age is increasing, and individuals are increasingly responsible for their own pension income. Examples of vulnerable groups in this respect are migrants and native ethnic minorities, as these are likely to have limited pension coverage (Henkens et al., 2018). Similarly, the growing group of self-employed workers deserves attention due to their limited accumulation of pension entitlements. Although working after retirement could contribute to the financial well-being of these groups, it makes a difference in what kind of jobs they are channeled (Müller et al., 2015; Van den Bogaard & Henkens, 2018). Therefore, employers and policymakers would benefit from a careful assessment of the working conditions and quality of post-retirement jobs and from examining what the outcomes are at the individual, organizational, and societal level.

Limitations of the study
The strengths of this study lie in our capacity to unravel the existence of various subgroups of working retirees, and its cross-national comparative character. However, the

results should be interpreted with some limitations in mind. First, even though our sample includes many working retirees across various countries, the number of cases in each country was not large enough to investigate whether the latent class analysis would give the same result in all countries. Our sensitivity checks for countries with a sufficient number of cases (the Czech Republic, Estonia, Germany, Sweden, and Switzerland) nevertheless point in the same direction.

Second, the number of countries was limited. As a result, we were unable to investigate multiple country-specific characteristics that could explain the differences between countries in the prevalence of high-strain versus low-strain jobs. Additional research involving a larger number of countries at the contextual level, as well as a larger number of working retirees in the countries at the individual level, is needed to further increase the understanding of country-by-country differences in working after retirement.

A third limitation refers to the selection of working retirees in our sample. Even though we attempt to control for the selection of retirees in the sample of working retirees using a Heckman procedure (Heckman, 1979), we must keep in mind that our study results are based on a sample of 'successful job seekers.' Not all working retirees are able to continue working with their previous employer or to find a job with a new employer after their retirement. Re-entry is difficult, if not impossible, for some groups of retirees, particularly those who have been involuntarily pushed into (early) retirement by their employer (Dingemans, Henkens, & Van Solinge, 2016). The cumulative disadvantage that is unraveled in this study by the focus on working retirees in high-strain versus low-strain jobs may turn out to be even stronger when taking into account that some retirees (most likely those at the bottom of the ladder in terms of social status) have no access to the labor market whatsoever, despite their need for extra income to make ends meet.

Conclusion
Despite these limitations, we conclude that while the majority of working retirees participate in jobs with favorable conditions, working after retirement is not necessarily a successful retirement adjustment strategy, nor is it always a beneficial solution to old age poverty. Given that paid work is available to retirees, it may put a great strain on the shoulders of working retirees, with negative consequences at both the individual and the organizational level (Müller et al., 2015; Shultz et al., 2010). Therefore, to retain and employ retirees successfully, attention should be given to the physical and mental job demands and the level of job control, as well as to the availability of part-time work arrangements.

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Technical appendix

Latent class analysis

We performed latent class analysis (LCA) to test whether working retirees could be categorized by the quality of their post-retirement jobs. LCA is a person-centered analytical approach that "posits that there is an underlying unobserved categorical variable that divides a population in mutually exclusive and exhaustive latent classes" (Lanza & Rhoades, 2013, p. 159). To find the best-fitting model, we compared a series of latent class models with different numbers of classes using goodness-of-fit criteria, such as the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) (Lanza & Cooper, 2016). We started by comparing a one-class with a two-class model. Both AIC and BIC preferred the two-class over the one-class model, indicating that the sample of working retirees consisted of at least two subgroups. Next, we compared the two-class model with the more complex three-class model. While the three-class model was preferred by the AIC (15977.54 versus 15992.69 for the two-class solution), the two-class model was preferred by the BIC (16058.49 versus 16079.54 for the three-class solution). By further considering the meaningfulness of the latent classes, we found that the third class in the three-class model was highly comparable in its interpretation to the second class. Moreover, following our theoretical arguments pointing to the existence of two groups of working retirees, we decided to select the two-class model.

The stability of the LCA solution was confirmed in several sensitivity analyses. To check whether the maximum likelihood solution was correctly identified, we estimated a series of models with randomly generated starting values. Further, we also checked the stability of the final solution using different subsamples (i.e., separate for men and women, different age ranges, specific countries with a sufficient sample size, and step-by-step excluding one of the countries to check for potential outliers). Additionally, we performed the LCA with different measurement scales of the observed variables (job quality items as ordinal variables and work hours as a linear variable). None of the sensitivity checks altered the substantive interpretation of the results.

(Multilevel) logit analyses

Logit models help us better understand who works in what kind of post-retirement job. The dependent variable in the logit analysis was constructed based on maximum posterior probabilities generated by the LCA, which were used to assign working retirees to latent classes. In a first step, we estimated two country-fixed effects logit models to predict participation in high-strain versus low-strain jobs. A country-fixed

effects model is in some cases preferred over a multilevel model, for instance when the number of countries in the sample is relatively small. Also, a country-fixed effects model illustrates the variation across countries by estimating the fixed effects per country. In Model 1, we only included the country dummies, which showed that there was significant variation across the countries in the prevalence of working in a high-strain job. In Model 2, we included education and pension income as well as the control variables. We discuss the results in the main text.

In the second step, we estimated a multilevel logit model in which the country-level variation is captured by a variance term. Such a model provides the opportunity to estimate the relationship between macro-level variables and the individual-level dependent variable, in our case working in a high-strain versus a low strain job. However, from a statistical point of view, the number of countries included in our sample is rather low. This means that we can only add one macro-level variable to the model at the same time.

Sample selection
Generally, it could be argued that our sample of working retirees is a rather selective group of retirees. Therefore, we followed a Heckman procedure to control for this selectivity (Heckman, 1979). Specifically, in our initial sample we included retirees who did not work after retirement as a control group, to estimate the probability of working after retirement. The lambda term that resulted from this Heckman procedure was subsequently added to the final (multilevel) logit models that were estimated for the sample of working retirees only.

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