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Older Workers and Labour Market Exclusion Processes

A Life Course perspective

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Chapter 8

Working Conditions and Retirement Preferences: The Role of Health and Subjective Age as Mediating Variables in the Association of Poor Job Quality with Early Retirement



Nadia Steiber and Barbara Haas

Introduction

Against the backdrop of population ageing, extending working life has become a policy priority. Decisions around the *timing of retirement* have been studied in relation to factors such as health and pension wealth in the in the context of different institutional set-ups (e.g., Ebbinghaus & Hofäcker, 2013; Hofäcker, 2015), while much less is known about the role played by *working conditions* (Schreurs et al., 2011; Carr et al., 2016; Steiber & Kohli, 2017). In this chapter, we develop a theoretical model that links working conditions with men's and women's retirement preferences via their physical and psychological health (as has been done in some previous research) but also via their subjective age and longevity expectations (breaking new ground).

Individuals of the same chronological age differ in their biological age and they also differ in how they experience their own pace of ageing. The subjective experience of ageing has become a central construct in gerontological research (Kotter-Grühn et al., 2016). How old people feel, i.e., people's subjective age is linked to well-known indicators of successful ageing such as a better physical functioning, mental health and cognitive performance (Keyes & Westerhof, 2012; Stephan et al., 2013, 2015; Kwak et al., 2018). Moreover, those who feel younger actually tend to live longer (Uotinen et al., 2005; Westerhof et al., 2014). In other words, subjective age, referring to how individuals experience themselves as younger or older than

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their actual age (Kwak et al., 2018), is a good measure of people's health status and it is a powerful predictor of longevity (Westerhof & Wurm, 2018).

It is well established that working conditions are core to the promotion and maintenance of health among older workers (Karasek et al., 1981; Demerouti et al., 2001). And it has been argued that for this reason (health impairment process) working conditions affect people's preferred retirement timing (Carr et al., 2016). Our hypothesis is that, in addition to health, *subjective age* is also a central variable in retirement decisions that mediates the relationship between working conditions and individuals' preferred retirement timing. Poor working conditions show a negative impact on people's health which in turn encourages or forces them to retire at an earlier age. Moreover, poor working conditions may affect subjective age directly or indirectly (via health) and we hypothesise that those who expect to have a shorter remaining life expectancy also prefer an earlier retirement, all else being equal. In this chapter, we validate our theoretical model based on data from the Austrian *PUMA Survey* (Seymer, 2017; Seymer & Weichbold, 2018) in which we collected original data on respondents' chronological and subjective age, health status, working conditions and retirement preferences.

Our findings from regression analyses suggest that individuals' subjective age is shaped by both self-rated health and working conditions. These two factors show independent effects on subjective age. Subsequently, we find that both self-rated health and subjective age affect people's preferred timing of retirement. Overall, we conclude that working conditions, self-rated health and subjective age affect retirement preferences. In particular, our findings suggest that improved working conditions – both directly as well as via improved health and well-being – help delaying the timing of labour market exit. Hence, policy-makers seeking to extend working life would be well advised to address job quality issues more broadly, i.e. going beyond health prevention measures.

Theoretical Model

Earlier research on the impact of working conditions, that was based on a 'demands and resources approach' (Demerouti et al., 2001; Schaufeli & Bakker, 2004), has shown that job demands and job resources are relevant predictors of older people's health and well-being (Demerouti et al., 2001; Vanajan et al., 2020). In this study, we investigate the impact of job demands and resources on individuals' subjective age (SA) and their retirement preferences. Job demands refer to aspects of the job "that require sustained physical and/or psychological effort" (Bakker & Demerouti, 2007, 312) and drain workers' energy and mental resources such as long working hours, high work pressure, psychological strain at work, or job insecurity. Job resources such as job control, task discretion, task variety, and learning opportunities at work are job attributes "that stimulate personal growth, learning and development" and they may mitigate negative effects of job demands (ibid., see also Schaufeli & Taris, 2014). Based on the main tenets of the 'demands and

resources approach', as outlined in Schaufeli and Bakker (2004), we assume that working conditions shape retirement decisions via the following pathways: First, high levels of job demands and low levels of job resources can lead to physical and/or mental exhaustion and subsequently poor physical and mental health outcomes (e.g., cardiovascular disease, muscular pain, depression), which in turn encourage or necessitate workers to retire at an earlier age ('health impairment process', see e.g., Hofäcker, 2015; Steiber & Kohli, 2017). A second pathway focuses on job resources associated with high quality jobs that may spark a 'motivational process' (work engagement). High quality jobs that offer many job resources such as decision latitude and learning opportunities increase levels of work enjoyment and self-actualisation in the job and in turn encourage older workers to continue working until a higher age (for supportive evidence, see e.g., Steiber & Kohli, 2017; Blekesaune & Solem, 2016). Conversely, job demands such as high workloads, time pressure, and physical or mental job strain may reduce job satisfaction and work engagement and may thus encourage older workers to retire at an earlier age, even if these job demands show no effects upon health (see also Siegrist et al., 2007, Carr et al., 2016).¹ Based on previous research, we would assume that job resources are associated with preferences for a higher retirement age (Carr et al., 2016; Steiber & Kohli, 2017), whereas job demands are associated with intentions to retire earlier (Schreurs et al., 2011). Overall, and based on these two pathways, we would assume that health plays a role as a partial mediator in the link between working conditions (job demands/resources) and older workers' preferred age of retirement (Fig. 8.1).

Going beyond this model and prior research, we include subjective age (SA) as a mediator in the relationship between working conditions and preferred retirement timing. That is, we hypothesise that older workers who experience poor working conditions tend to feel older than their peers of the same chronological age who enjoy better working conditions. There is a lack of prior research on the association

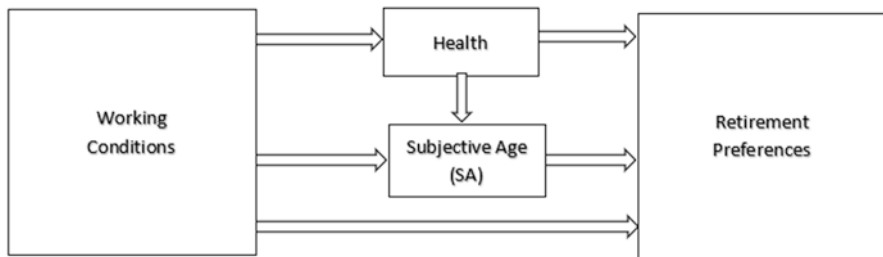


Fig. 8.1 Illustration of theoretical model

¹The demands and resources model furthermore assumes that demands and resources interact, i.e. that job resources moderate the association of job demands with health outcomes. However, empirical support for the interactive relation between demands and resources has been weak and cannot be tested with the data at hand.

of working conditions with SA (Kotter-Grühn et al., 2016). This association may – in part – be mediated by the health of older workers, i.e. be part of the ‘health impairment process’ discussed above. However, working conditions may also affect SA directly, for example when workers enjoy their professional activities in the sense that it gives them a feeling of competence, skill development and therefore a sense of youthfulness.

In a next step, we assume that a higher SA will be associated with preferences for retiring earlier. Individuals who feel older than they actually are may be less eager to work until a high age, because they may (soon) feel too old to be part of the active workforce, either because they feel unfit to continue working until a high age, because they feel too old to keep up with the physical or skill-related requirements of the job, or because they feel too old to deal with organisational or technological change. Moreover, those who feel older than they are may have a lower estimate of their remaining life expectancy and may for this reason prefer to spend more of their remaining years in retirement. A study based on Dutch data suggests that subjective life expectancy is predictive of people’s retirement intentions: Those who expect to live until a high age tend to prefer a later retirement (van Solinge & Henkens, 2010). An economic hypothesis in this direction is based on the life-cycle model, according to which individuals who feel young and expect to be long-lived will prefer retiring at a later age than those who feel older and expect to die earlier, because the former require a greater pension wealth to finance more years of retirement (Hurd et al., 2004). This model, which has been developed in the US context, is unlikely to be applicable in the Austrian context, however, where private and occupational pensions are secondary to the public pension.

In what follows, we attempt to test our theoretical model using survey data from Austria. We will first study the determinants of SA with a specific focus on working conditions and health as the main predictors. Subsequently, we study the determinants of older workers’ preferred age of retirement with a specific focus on the direct and the indirect effects of working conditions (as illustrated in Fig. 8.1).

Data

We use data from the first Austrian PUMA survey that was conducted in spring 2016 by the national statistical office of Austria (Seymer, 2017). The survey was based on a random sample among 4,000 households that participated in the Austrian Labour Force Survey (Mikrozensus) in the second quarter of the year 2016. The persons aged 16–74 who participated in the Labour Force Survey (computer-assisted telephone survey, CATI), were invited to participate also in an online-survey that was designed by a group of researchers from Austrian universities. Those who agreed to participate (1,548 respondents) received an invitation (postal letter) to participate in the online-survey and the log-in details (push-to-web design), and within two weeks a reminder. The majority of potential survey participants were

offered a small pre-incentive.² The survey consisted of about 100 items, covering respondents' sociodemographic characteristics, employment status, self-rated health, working conditions, and attitudes on a set of topics (e.g., future plans, taxes, retirement plans). The final survey sample of those responding to the online-survey involved 1,051 respondents aged 16–75.

Within this survey, we designed a module that collected data on respondents' chronological and subjective age (SA), health status and working conditions in the current or last job (see Box 8.1 for detail). The sample of analysis was restricted to those aged 45–75, who were either already retired (26% of this age group), inactive or in (self-)employment.³ The age restriction reduced the sample to 530 persons with valid information on basic socio-demographic characteristics (gender, age, education), financial situation, the composition of their household (i.e., co-residence with a partner, children living in- or outside the household) and their SA. Sample sizes remained largely intact in models that investigated the association of SA with self-rated health (SRH, Table 8.2, N = 528), but were somewhat reduced when analysing the association of SA with physical and mental health (Table 8.3, N = 508), current or past working conditions (Table 8.4, N = 508), while they were more strongly reduced when analysing the impact of current working conditions on SA (Table 8.5, N = 354) and retirement preferences (Table 8.11, N = 348) among a restricted sample of the still professionally active population in this age group.

Measures and Plan of Analysis

In the first part of the analysis, subjective age (SA) is the central dependent variable. To measure individuals' SA we first asked survey respondents: “Do you feel older or younger than you actually are or do you feel the same as your real age?” and subsequently: “How old do you feel?” We used the numerical answer (age in years) to the follow-up question as our indicator of SA. Using linear regression analysis, we study the association of SA with a set of health variables (i.e. self-rated health, physical and mental health issues; see Box 8.1 for detail).

Subsequently, we investigate the impact of working conditions on SA, again using a linear model. For a set of job quality indicators that are available for respondents' last or present job, this analysis can be carried out for a pooled sample of

²Experimental survey design in which one group was offered a coin worth EUR 2, a second was offered a coin worth EUR 5, and a third was offered a shopping voucher worth EUR 10 (Seymer & Weichbold, 2018).

³The lower age cap is based on prior research which shows that younger persons have not yet formed concrete retirement preferences. Based on the same rationale, in the European Social Survey Round 5 the preferred age of retirement is only asked of those who have reached age 45.

Box 8.1 Overview of Items and Variables

Subjective age (SA) and longevity expectations

- “Do you feel older or younger than you actually are or do you feel the same as your real age?” I feel... (1-younger than my real age, 2-the same as my real age, 3-older than my real age, 9-Don’t know). Follow-up to all: “How old do you feel?” I feel_____ years old. We used the numerical answer to the follow-up question as our indicator of subjective age (SA).
- “How likely do you think it is that you will live until age 80?” (0-very unlikely to 10-very likely)

Health

- *Self-rated health*: “How is your general health?” (5-point scale: very good, good, fair, bad, very bad), creation of dummy variable 1 = not in good health.
- *Physical health problems*: “How often, if at all, did you experience the following health problems within the last 12 months?” A-headache, B-back pain, C-muscle pain (5-point scale: daily, several times a week, several times a month, less often, never), creation of three dummy variables 1 = daily or multiple times per week.
- *Mental health problems*: Index based on 5 items: “How often within the last two weeks, did you experience the following?” A-difficulties focusing, B-being nervous or restless, C-fatigue or the feeling of having little energy, D-being down or having a sense of hopelessness, E-difficulties falling asleep or sleeping through the night (5-point scale: never, on same days, on more than half of all days, almost every day), summative index based on a Cronbach’s alpha of 0.73, rescaled to values between (0) no mental health issues and (1) many/recurrent mental health issues.

Working conditions (past or present)

- *Physical work strain*: “My occupational activities are/used to be physically strenuous” (4-point scale: fully agree, agree, disagree, strongly disagree), creation of dummy variable 1 = agree
- *Mental work strain*: “My occupational activities are/used to be psychologically or emotionally strenuous” (4-point scale: fully agree, agree, disagree, strongly disagree), creation of dummy variable 1 = agree
- *Intrinsic job quality*: Index based on 3 items: “In my work/job I often learn/ed new things”; “My work/job allows/allowed for skill-development and self-actualisation”; “My work/job is/was monotonous (reversed) (4-point scale: fully agree, agree, disagree, strongly disagree), summative index based on a Cronbach’s alpha of 0.75 (continuous variable), which was rescaled to values between (0) low intrinsic job quality and (1) high intrinsic job quality.

(continued)

Box 8.1 (continued)

- *Time pressure*: “I often do/did not have enough time to finish my work tasks” (4-point scale: fully agree, agree, disagree, strongly disagree), creation of dummy variable 1 = agree

Working conditions (present)

- *Employment insecurity*: “How likely do you think it is that you will lose your job within the next 12 months and will have to search for a new job for at least four weeks?” (5-point scale: from not at all likely, to very likely), used as a continuous variable.
- *Work stress*: “I feel stressed at work” (4-point scale: fully agree, agree, disagree, strongly disagree), creation of dummy variable 1 = agree
- *Employee-led time flexibility*: Index based on 4 items: “At work, I can come and go when I want”; “At work, I have the possibility to take a day off if necessary”; “My work schedule is reconcilable with my social and family responsibilities”; “My supervisor(s)/employer(s) are considerate of my responsibilities in private life” (4-point scale: fully agree, agree, disagree, strongly disagree), summative index based on a Cronbach’s alpha of 0.74 (continuous variable), rescaled to values between (0) highest employee-led time flexibility to (1) lowest employee-led time flexibility.

Retirement preference

- “At what age would you like to retire or would you have liked to retire?”
At age ____.

Financial situation

- “How would you rate your current income situation? With the current income... (1-I can very easily manage, 2-I can manage fairly well, 3-I have some difficulties managing, 4-I have severe difficulties managing).
Creation of dummy variable 1 = (severe) difficulties managing.

active and retired respondents (larger sample).⁴ Here we focus on three measures of *job demands* and a composite measure of *job resources*. Concerning demands, we assess physical work strain based on respondents’ agreement to the statement “My occupational activities are/used to be physically strenuous”, and mental work strain

⁴Prior research shows that retrospective accounts of specific job characteristics are highly consistent with reports of the same characteristics when the person had still done the job (Beehr & Nielson, 1995). Based on such findings, we assume that retrospective information about the characteristics of the last job before retirement is accurate.

based on respondents' agreement to the statement "My occupational activities are/used to be psychologically or emotionally strenuous" (Box 8.1 for detail). Time pressure was assessed based on respondents' agreement to the statement "I often do/did not have enough time to finish my work tasks". Concerning resources, we computed a summative intrinsic job quality index, based on three items that capture learning and skill development opportunities at work, self-actualisation and task variety (Box 8.1 for detail).

Another set of job quality indicators is only available for those currently active: in this analysis we have the chance to investigate the impact of employment insecurity and work stress on SA (for detail on measures, see Box 8.1). Moreover, we assess the impact of employee-led time flexibility on SA, based on a summative index which captures different dimensions such as flexibility regarding the daily work schedule ("At work, I can come and go when I want"), the possibility of taking time off at one's own discretion ("At work, I have the possibility to take a day off if necessary"), employer support for work-life reconciliation ("My supervisor(s)/employer(s) are considerate of my responsibilities in private life"), and the implications of the work schedule for work-life reconciliation ("My work schedule is reconcilable with my social and family responsibilities").

Having assessed the associations of SA with health, on the one hand, and with working conditions, on the other hand, separately, in a next step, the aim is to ascertain the degree to which health acts as a mediator in the link between working conditions and SA. This is done based on a set of nested regression models, in which we try to 'explain away' an initial effect of working conditions in the base model by adding controls for different dimensions of self-assessed health.

In the second part of the analysis, retirement preferences are the explanandum (i.e., the dependent variable). More precisely, in line with Round 5 of the European Social Survey, we measured respondents' preferred age of retirement by asking: "At what age would you like or would you have liked to retire?" (e.g., as used by Hofäcker, 2015; Steiber & Kohli, 2017). Our aim is to study the determinants of the variation in preferred ages of retirement across workers, arguing that in order to understand workers' rationales it is important to study reported preferences rather than actual retirement behaviours. This is in line with a constrained choice model of labour supply, which accounts for the fact that a persons' preferred retirement timing may not be put into practice due to various constraints (e.g., financial constraints, health constraints, demand-side constraints, see Steiber & Kohli, 2017).

There has been ample policy debate about a linkage of the legal retirement age with life expectancy. If people are increasingly living longer and healthier until a higher age, whereas fertility rates decline or remain at a rather low level, so the argument, we need to extend working life in line with increases in life expectancy. Against this backdrop, we seek to test if those who expect to live longer in fact prefer retirement at a later age. In this context, we also study the link between SA and retirement preferences, assuming that those who feel younger than they actually are will also be happy to work until a higher age.

Using linear regression analysis, we study the association of retirement preferences 1-with a set of health variables, 2-with SA and longevity expectations, and

3—with a set of working conditions as described above. And subsequently, we investigate the degree to which the impact of working conditions on the preferred retirement timing is mediated by health and/or subjective age. All analyses, the descriptive accounts in the following section and the regression analyses, are weighted (based on age, education, gender, employment status and place of residence in urban or rural areas) in the aim to correct for a potential response bias in the online survey (i.e., toward more highly educated individuals).

Descriptive Results

Our data suggest that in Austria workers aged 45 and above, on average, prefer to retire at age 61.9 in the case of men and at age 59.9⁵ in the case of women. On average, men thus prefer retiring around 3 years before the legal retirement age of 65, whereas women prefer retiring at an age that is closer to the legal retirement age of 60.⁶ This is broadly in line with the results from the European Social Survey (2010/2011) for many other European countries (Hofäcker, 2015).⁷ About 55% of men and about 60% of women aged 45–75 report feeling younger than they are, whereas only about 3–4% report feeling older than they are (Table 8.1). The share of persons feeling younger than they are increases with chronological age. The

Table 8.1 Descriptive results regarding subjective age (SA) and longevity expectations

	Men 45–75	Men 45–59	Men 60–75	Women 45–75	Women 45–59	Women 60–75
Younger	55.3%	47.9%	63.7%	60.3%	56.5%	64.8%
Same	41.1%	45.5%	36.3%	36.6%	38.5%	35.2%
Older	3.6%	6.7%	0.0%	3.1%	5.0%	0.0%
N	306	202	97	252	183	60
Mean subjective age	52.9	46.6	60.0	49.7	45.6	58.1
Mean subjective age gap	−5.9	−5.0	−7.1	−6.6	−5.6	−7.9
N	294	193	94	241	178	54
Mean likelihood living until age 80	68%	60%	77%	71%	71%	72%
N	306	203	96	253	183	60

Source: Austrian PUMA Survey (2016/Q2)

⁵For men, we find a mean of 61.9 with a standard deviation of 5.2. For women, we find a mean of 59.9 with a standard deviation of 3.3.

⁶Actual retirement ages in Austria at the time of the survey were 61.6 in the case of men and 59.1 in the case of women (data from *Pensionsversicherungsanstalt* for 2015).

⁷According to data from Round 5 of the European Social Survey fielded in 2010/2011, the mean preferred retirement age among German men aged 45 and above was 61.7 and the mean preferred retirement age of German women age 45 and above was 60.9 (Hofäcker, 2015).

average subjective age in the male sample is 52.9 and 49.7 in the female sample. On average men feel about 5.9 years younger than they are, and women feel about 6.6 years younger than they are. This gap between individuals' chronological and their subjective age increases in higher age groups: men aged 60 and above feel 7.1 years younger than they are, their female counterparts 7.9 years. When asked about their estimate of the chances that they will live until age 80, the average estimate is 68% in the case of men and 71% in the case of women. Among men, but not among women, we observe a positive age gradient in survival probabilities.

Multivariate Results

The Association of Health with Subjective Age

We find a strong association between people's rating of their own health status (SRH) and how old they feel (SA). On average, those who report being in fair or bad health feel 5 years older than those who report being in (very) good health – at the same chronological age (Table 8.2). The association between self-rated health (SRH) and subjective age (SA) is substantially stronger among men than women.⁸ A person's chronological age is the strongest predictor of his or her SA. The older the person, the older he or she feels. However, being in bad health raises a person's SA beyond the average of individuals of the same chronological age.⁹

The results from the regression analyses furthermore suggest that mental health problems are among the strongest predictors of a person's SA (see Table 8.3). Those who scored highest on the mental health scale (Box 8.1 for detail) reported feeling more than 8 years older than those of the same age who scored lowest, with similar results for men and women.¹⁰ Other health conditions that are found to be associated with feeling older are frequent muscle pain and headache, especially among men. Men who report frequent muscle pain tend to feel more than *four years* older compared to their counterparts of the same chronological age but without muscle pain. Interestingly, the link between the occurrence of back pain and men's SA appears to be reverse. Men with frequent back pain tend to feel younger than those of the same age who do not report having back pain. This is likely related to manual activities, which may cause the back to hurt but which may at the same time be related to feelings of strength and youthfulness. For women, poor mental health is the only health issue that shows an association with SA, while we do not find associations with back pain, muscle pain or headache.

⁸An interaction effect between gender and SRH is statistically significant at $p < 0.05$.

⁹Moreover, we find that those who have children who do not live in the household anymore tend to feel older than those without children. Holding a person's health status constant, no further significant differences are found depending on the person's activity status (in employment versus retired or otherwise inactive), educational attainment, financial situation, co-residence with children/partner, citizenship, or residence in urban or rural areas.

¹⁰The interaction effect between gender and mental health is statistically not significant.

Table 8.2 The association of self-rated health (SRH) with subjective age (SA)

	All	Men	Women
Female	-0.870 (0.658)		
Chronological age	0.836*** (0.057)	0.837*** (0.074)	0.827*** (0.076)
Lives with partner in HH	1.234 (0.775)	1.679 (1.139)	1.090 (0.996)
Has children who do not live in HH (ref: has no children)	2.467* (0.961)	3.534** (1.297)	0.716 (1.257)
Has children who live in same HH	1.527 (0.868)	1.230 (1.193)	1.457 (1.150)
A-levels (Matura) (ref: lower education)	0.593 (0.826)	0.688 (1.000)	0.435 (1.238)
Tertiary degree	0.636 (0.666)	0.794 (0.936)	0.609 (0.986)
Financial situation fairly easy (ref: very easy to manage)	-0.057 (0.818)	-0.082 (1.148)	-0.145 (1.076)
Financial situation difficult	0.972 (1.210)	0.339 (1.484)	1.926 (1.804)
Active (ref: inactive, retired)	-1.200 (0.937)	-0.921 (1.184)	-1.745 (1.455)
Self-rated health (SRH) fair/bad (ref: good)	5.005*** (0.776)	6.491*** (0.977)	3.305** (1.174)
Residence in urban are (ref: rural)	-0.299 (0.697)	-0.066 (0.863)	-0.744 (1.020)
Austrian citizenship (ref: no)	-0.697 (1.842)	-0.080 (1.416)	-1.488 (3.513)
Constant	0.623 (3.803)	-1.323 (4.303)	2.675 (6.265)
Observations	528	291	237
R-squared	0.703	0.747	0.652

Standard errors in parentheses, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

For each table concerned, please note that *the age variable is not centered, hence the intercept does not refer to average preferences.*

The Association of Working Conditions with Subjective Age

When we analyse the impact of working conditions that are/were prevalent in respondents' current or past job on how old they feel (SA), our findings from a regression analysis (Table 8.4) suggest that the *intrinsic quality of people's jobs* plays an important role in this regard. Those who feel that the job allows/ed them to learn new things and to self-actualise tend to feel about *three years younger* on average compared to those of the same age who scored lowest on the intrinsic job

Table 8.3 The association of physical and mental health issues with subjective age (SA)

	All	Men	Women
Back pain, multiple times per week	-0.663 (0.915)	-2.730** (1.049)	1.473 (1.158)
Muscle pain, multiple times per week	2.165** (0.799)	4.429*** (1.058)	-0.043 (1.026)
Headache, multiple times per week	2.228 (1.281)	3.587* (1.631)	-0.041 (1.652)
Mental health problem	8.300*** (1.791)	9.284*** (2.537)	7.033** (2.638)
Constant	-1.829 (3.617)	-0.603 (4.248)	2.103 (5.235)
Observations	508	281	227
R-squared	0.710	0.754	0.696

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, activity status, residence in urban/rural area, citizenship (see Table 8.2)

Standard errors in parentheses, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

quality index (Box 8.1 for detail on index construction). Another aspect of people's working conditions that is shown to be associated with a higher SA is the occurrence of time pressure at work, at least among women: those who felt that they tended to have enough time to finish their work tasks reported feeling about *two years younger* compared to their peers of the same age who are/were under *time pressure* at work. No significant association with SA was found for women's and men's evaluation of their professional activity as *physically straining or psychologically/emotionally straining*.

For the female sample, we find that still being active in one's job (as compared to being retired or otherwise professionally inactive) is associated with feeling almost *three years younger* (Table 8.4). When we restrict the sample for the analysis carried out in Table 8.4 to those who are currently still active, we find a significant impact of time pressure at work for both women and men (of similar magnitude of about 2.4 years, not shown).

Another aspect of working conditions that was only surveyed among those currently still active (therefore the lower sample size), namely *employee-led time flexibility* is shown to play a central role in shaping SA (Table 8.5). Those who cannot come and go when they want, do not have the possibility to take a day off if necessary and those whose work schedule is hardly reconcilable with their responsibilities in private life (lowest index value, see Box 8.1 for detail) tend to feel about 5 years older than those of the same age with more self-determined time flexibility.¹¹

¹¹ The interaction effect between gender and time flexibility is statistically not significant.

Table 8.4 The association of working conditions with subjective age (SA), part 1

	All	Men	Women
Active (ref: inactive, retired)	-1.811 (1.028)	-0.818 (1.384)	-2.844* (1.432)
Physical work strain	0.900 (0.724)	0.366 (1.015)	1.787 (0.947)
Psychological/emotional work strain	0.583 (0.691)	0.012 (0.887)	0.846 (0.924)
Intrinsic job quality	-3.030* (1.395)	-4.108* (2.076)	-3.853* (1.822)
Time pressure at work	1.913** (0.686)	1.586^a (0.919)	2.210** (0.817)
Constant	2.883 (3.920)	-0.424 (5.447)	6.747 (5.335)
Observations	508	280	228
R-squared	0.686	0.691	0.696

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, residence in urban/rural area, citizenship (see Table 8.2)

^aThe test for an interaction effect between gender and time pressure at work shows a non-significant effect, suggesting the absence of a gender difference

Standard errors in parentheses, ** p < 0.01, * p < 0.05

Table 8.5 The association of working conditions with subjective age (SA), part 2

	All	Men	Women
Employment insecurity	0.097 (0.507)	0.350 (0.729)	0.128 (0.697)
Employee-led time flexibility	-5.013* (2.113)	-2.511^a (1.992)	-7.790* (3.717)
Work stress	-0.734 (0.454)	-0.859 (0.580)	-0.568 (0.692)
Constant	3.332 (5.467)	1.218 (6.286)	2.083 (6.776)
Observations	354	187	167
R-squared	0.482	0.551	0.459

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, activity status, residence in urban/rural area, citizenship (see Table 8.2)

^aThe test for an interaction effect between gender and time pressure at work shows a non-significant effect, suggesting the absence of a gender difference

Standard errors in parentheses, * p < 0.05

Finally, no significant associations with SA are found for work stress (“I feel stressed at work”) and employment insecurity (probability of losing job within 12 months).

In a next step, we investigate the degree to which the impact of working conditions on SA (as shown in Tables 8.4 and 8.5) is mediated by health. In other words, we ask if working conditions still show an effect of SA, once we control for respondent’s self-reported health status.

Health as a Mediator?

When we run the basic model on the association of working conditions with SA (Model 1 in Table 8.6) and compare it with a model that controls for self-rated health (Model 2) and a set of mental and physical health conditions (Model 3), we see that the size of the initial effect for intrinsic job quality is reduced from -3.2 to -2.1 and loses statistical significance (this mediating role appears to be particularly relevant for men but less so for women, see Table A1 in the appendix). Similar results are found for employee-led time flexibility (Table 8.7). When we run the

Table 8.6 Health mediating the impact of working conditions on subjective age (SA), part 1

	(1)	(2)	(3)
	All	All	All
	Baseline	Control for SRH	Control for SRH, mental and physical health
Active (ref: inactive, retired)	-1.685 (1.097)	-1.806 (0.956)	-1.664 (0.862)
Physical work strain	0.937 (0.737)	1.354* (0.654)	1.497* (0.650)
Psychological/emotional work strain	0.527 (0.713)	-0.077 (0.630)	-0.272 (0.603)
Intrinsic job quality	-3.231* (1.449)	-2.351 (1.449)	-2.051 (1.477)
Time pressure at work	2.050** (0.711)	1.730** (0.592)	1.372* (0.569)
Constant	2.830 (4.053)	-3.662 (3.523)	-4.355 (3.390)
Observations	483	483	483
R-squared	0.682	0.739	0.749

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, residence in urban/rural area, citizenship (see Table 8.2)

Standard errors in parentheses, ** $p < 0.01$, * $p < 0.05$

Table 8.7 Health mediating the impact of working conditions on subjective age (SA), part 2

	(1)	(2)	(3)
	All	All	All
	Baseline	Control for SRH	Control for SRH, mental and physical health
Employment insecurity	0.083	-0.174	-0.205
	(0.514)	(0.446)	(0.459)
Employee-led time flexibility	-4.494*	-3.269	-2.823
	(2.276)	(2.162)	(2.081)
Work stress	2.552	0.565	-0.032
	(1.489)	(1.399)	(1.439)
Constant	0.751	-3.245	-2.449
	(5.545)	(4.906)	(4.781)
Observations	343	343	343
R-squared	0.480	0.553	0.564

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, activity status, residence in urban/rural area, citizenship (see Table 8.2)

Standard errors in parentheses, * $p < 0.05$

basic model on the association of time flexibility with SA (Model 1) and compare it with a model that controls for self-rated health (Model 2) and a set of mental and physical health conditions (Model 3), we see that the effect of time flexibility is reduced from 4.5 to 2.8 and loses statistical significance. This evidence for mediation is to be interpreted with caution, however, as we only observed an initial effect for women but not for men (Table 8.5), the former of which does not appear to be mediated by health (see Table A2 in the appendix). Notably, the coefficient for time pressure is also reduced in size (comparing Model 1 with Models 2 and 3 in Table 8.6) but remains statistically significant (suggesting that there is a direct effect). Moreover, once we control for subjective health (Models 2 and 3 in Table 8.6), a significant effect of physical work strain on SA emerges, suggesting that those in physically strenuous jobs tend to feel healthier on average, but once we keep health status constant, they tend to feel older than their counterparts in jobs that involve no physical strain (for tentative evidence for gender differences in this regard, see Table A1 in the appendix).

Overall, the results displayed in Tables 8.6, 8.7, A1, A2 may be taken as weak evidence for a mediating role of health in the association of working conditions – such as *intrinsic job quality* and *employee-led time flexibility* – with SA. Notably, some working conditions such as *time pressure at work* and *physical work strain* remain a central independent predictor of SA, irrespective of their potential impact on people’s mental or physical health.

The Determinants of Retirement Preferences

This part of the analysis is concerned with the determinants of retirement preferences and thus focuses on the still active sample of workers aged 45 and above. Due to the more limited sample sizes, we reduce the number of covariates in the regressions. We present some indicative findings about the impact of working conditions, but hope that future research will be able to draw on larger sample sizes for more in-depth analyses of the issues at hand (unfortunately the European Social Survey does, to date, not include a measure of subjective age together with working conditions and retirement preferences in the same survey wave).

Regression analyses suggest that women prefer retiring about 1.7 years earlier on average compared to men (Table 8.8). Among male respondents aged 45 and above, self-rated health (SRH) is shown to be a central determinant of retirement preferences: We find a strong association between SRH and men's preferred age of retirement (Table 8.8). Those who report being only in fair or bad health prefer retiring almost *three years* earlier compared to their counterparts of the same age who report being in good health. Among female workers, we find preferred ages of retirement to rise with chronological age, suggesting that women tend to postpone their preferred age of retirement the older they get. Moreover, we find more highly educated women to prefer later retirement than less highly educated women. Finally, in line with the results for men, we find a significant association of SRH with retirement preferences.

Regarding physical and mental health issues, our findings suggest that those who reported frequent back pain and in particular those with mental health issues reported wanting to retire earlier compared to those who did not report such health problems (Table 8.9). Formal tests for interaction effects suggest the absence of a gender difference in this regard. Due to low sample sizes, results from the pooled analyses cannot be replicated in the separate analyses for women and men in terms of statistical significance.

Regarding working conditions, our results confirm earlier research (e.g., Steiber & Kohli, 2017) which has shown that incumbents of jobs of high *intrinsic quality* tend to prefer a later retirement. This finding holds for male but not for female respondents (Table 8.10): Men whose jobs allow for skill development and self-actualisation and offer variety prefer retiring more than *four years* later compared to men whose jobs lack in these qualities. For men, we also find an association of physical work strain with preferences for an earlier retirement (Table 8.10). In subsequent analyses, we investigate the association of employee-led time flexibility, which has shown strong links with SA in our previous analysis (Table 8.5), with retirement preferences, finding that those who enjoy such flexibility tend to prefer retiring almost 3 years later (Table 8.11). We do not find associations of retirement preferences with psychological/emotional work strain, employment insecurity or work stress (not shown).¹²

¹²To limit the number of covariates, these variables, which showed non-significant effects, were omitted.

Table 8.8 The association of self-rated health (SRH) with preferred ages of retirement (RETPREF)

	All	Men	Women
Female	-1.704** (0.549)		
Chronological age	0.361* (0.170)	0.407 (0.225)	0.281*** (0.056)
Lives with partner in HH	-0.553 (0.948)	-1.641 (1.795)	0.162 (0.589)
Has children who do not live in HH (ref: has no children)	-2.858 (1.917)	-4.478 (2.612)	-0.424 (0.749)
Has children who live in same HH	-0.095 (1.162)	-0.195 (1.451)	0.705 (0.688)
A-levels (Matura) (ref: lower education)	0.637 (0.646)	0.113 (0.990)	1.585* (0.713)
Tertiary degree	1.214 (0.738)	0.142 (1.197)	2.040*** (0.522)
Financial situation fairly easy (ref: very easy to manage)	1.551 (0.831)	2.024 (1.233)	0.588 (0.542)
Financial situation difficult	1.079 (0.929)	1.250 (1.400)	0.425 (0.827)
Self-rated health (SRH) fair/bad (ref: good)	-2.215*** (0.502)	-2.896*** (0.808)	-1.539** (0.520)
Residence in urban are (ref: rural)	0.458 (0.719)	1.257 (0.824)	0.190 (0.604)
Austrian citizenship (ref: no)	-1.153 (0.798)	-1.919 (1.324)	-0.713 (1.108)
Constant	44.282*** (6.785)	44.043*** (8.673)	44.815*** (3.334)
Observations	370	201	169
R-squared	0.259	0.276	0.267

Standard errors in parentheses, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Our results displayed in Table 8.12 furthermore show a significant association of people's SA with their preferred retirement timing. As we had hypothesised, we find both women and men to prefer an earlier retirement when they feel older subjectively. Those who feel 5 years older than their counterparts of the same chronological age, for example, prefer an age at retirement that is about 1 year higher (Model 1 in Table 8.12, no significant gender difference, cf. Table A3 in the appendix). Model 2 furthermore suggests that those who are more confident that they will live until age 80 (longevity expectations) also prefer a later retirement. If we compare the power of SA and longevity expectations for explaining the variance in retirement preferences based on the R2 (admittedly a rather crude indicator), we may conclude that SA appears to be the stronger predictor. Finally, if we include both

Table 8.9 The association of physical and mental health with preferred ages of retirement (RETPREF)

	All	Men	Women
Back pain, multiple times per week	-1.260*	-1.982	-1.223
	(0.545)	(1.133)	(0.621)
Muscle pain, multiple times per week	-0.429	0.677	-0.690
	(0.510)	(0.953)	(0.548)
Headache, multiple times per week	1.099	1.746	0.523
	(1.025)	(1.649)	(0.837)
Mental health problem	-3.032*	-3.165	-2.314
	(1.213)	(1.976)	(1.176)
Constant	44.847***	44.741***	46.602***
	(7.096)	(8.795)	(3.253)
Observations	362	199	163
R-squared	0.261	0.259	0.309

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, residence in urban/rural area, citizenship (see Table 8.8)

Standard errors in parentheses, *** $p < 0.001$, * $p < 0.05$

Table 8.10 The association of working conditions with preferred ages of retirement (RETPREF), part 1

	All	Men	Women
Physical work strain	-0.731	-1.963*	0.294
	(0.545)	(1.001)	(0.566)
Intrinsic job quality	2.601*	4.422*	0.091
	(1.292)	(1.945)	(1.356)
Time pressure at work	0.064	0.491	-0.464
	(0.673)	(0.986)	(0.512)
Constant	42.673***	42.229***	45.421***
	(7.243)	(9.208)	(3.127)
Observations	363	198	165
R-squared	0.248	0.282	0.242

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, residence in urban/rural area, citizenship (see Table 8.8)

Standard errors in parentheses, *** $p < 0.001$, * $p < 0.05$

SRH and SA in one model (Model 4), we find that both variables show independent effects on retirement preferences, suggesting that SA works as a mediator in the association of SRH with retirement preferences (as hypothesised; cf. Fig. 8.1), while retaining an independent effect.

Table 8.11 The association of working conditions with preferred ages of retirement (RETPREF), part 2

	All	Men	Women
Employee-led time flexibility	2.942*	2.882^a	2.876^a
	(1.367)	(2.128)	(1.744)
Constant	43.708***	41.682***	45.476***
	(7.788)	(11.190)	(3.175)
Observations	348	185	163
R-squared	0.248	0.262	0.273

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, residence in urban/rural area, citizenship (see Table 8.8)

^aThe test for an interaction effect between gender and time pressure shows a non-significant effect (absence of a gender difference)

Standard errors in parentheses, *** p < 0.001, * p < 0.05

Table 8.12 The association of SA and SRH with preferred ages of retirement (RETPREF)

	(1)	(2)	(3)	(4)	(5)
	All	All	All	All	All
Subjective age (SA)	-0.206**			-0.164*	
	(0.070)			(0.076)	
Subjective % of living to age 80		0.355**			0.242*
		(0.118)			(0.122)
Self-rated health (SRH) fair/bad (ref: good)			-2.350***	-1.452**	-1.818***
			(0.526)	(0.531)	(0.544)
Constant	43.517***	41.663***	43.352***	43.742***	42.482***
	(6.525)	(7.212)	(7.037)	(6.571)	(7.160)
Observations	353	353	353	353	353
R-squared	0.285	0.262	0.268	0.296	0.280

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, urban/rural area, citizenship (see Table 8.8)

Standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05

Health and Subjective Age as Mediators?

The initial effect of *intrinsic job quality* on men’s preferred age of retirement (Table 8.13, Model 1) is reduced in size when controlling for SRH (Model 2) and to a somewhat lesser degree when controlling for SA (Model 3). This may be taken as an indication of a mediating role of SRH in the association of intrinsic working conditions with men’s retirement preferences. In other words, the results suggest that intrinsic job quality affects men’s preferred age of retirement in part because it affects workers’ health. Note, for women, no initial effect was found in Table 8.10, for this reason the analysis in Table 8.13 is limited to the male sample.

Table 8.13 The association of working conditions with preferred ages of retirement (RETPREF) and the mediated role of self-rated health (SRH) and subjective age (SA), part 1

	(1)	(2)	(3)	(4)
	Men	Men	Men	Men
Physical work strain	-2.332*	-2.700**	-2.439*	-2.641**
	(1.004)	(0.972)	(0.989)	(0.956)
Intrinsic job quality	4.258*	2.381	3.249	2.331
	(2.103)	(1.934)	(2.035)	(1.965)
Time pressure at work	0.059	-0.370	-0.275	-0.459
	(0.440)	(0.538)	(0.536)	(0.571)
Self-rated health (SRH) fair/bad (ref: good)		-2.974**		-1.844*
		(1.010)		(0.853)
Subjective age (SA)			0.240*	-0.181
			(0.111)	(0.113)
Constant	41.647***	43.968***	42.310***	43.587***
	(8.855)	(8.233)	(8.145)	(8.151)
Observations	188	188	188	188
R-squared	0.290	0.324	0.333	0.344

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, urban/rural area, citizenship (see Table 8.8)

Standard errors in parentheses, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Similar as in the case of intrinsic job quality, the initial effect of *employee-led time flexibility* (Table 8.14, Model 1) is halved in size and rendered statistically insignificant, when controlling for SA and/or SRH (Models 2–4). In this case, mediation appears to work equally well via SA as it does via SRH. In other words, the results suggest that a lack of employee-led time flexibility encourages workers to retire about 3 years earlier, in part because such working conditions make workers feel less healthy and subjectively older. Physical work strain by contrast appears to affect men's preferred retirement age, irrespective of their health status or subjective age (Table 8.13, showing similar effect sizes across Models 1–4). Those who feel that their jobs are physically strenuous prefer to retire about 2.6 years earlier on average (Model 4).

Summary of Results

To date, only a few studies have investigated the impact of specific working conditions on retirement decisions (e.g., Siegrist et al., 2007; Schreurs et al., 2011; Carr et al., 2016; Steiber & Kohli, 2017). Going beyond the available literature, this

Table 8.14 The association of working conditions with preferred ages of retirement (RETPREF) and the mediated role of self-rated health (SRH) and subjective age (SA), part 2

	(1)	(2)	(3)	(4)
	All	All	All	All
Employee-led time flexibility	3.040*	1.869	1.766	1.273
	(1.377)	(1.445)	(1.387)	(1.432)
Self-rated health (SRH) fair/bad (ref: good)		-1.926***		-1.094*
		(0.566)		(0.551)
Subjective age (SA)			-0.198**	-0.172*
			(0.075)	(0.078)
Constant	43.103***	43.092***	43.491***	43.433***
	(8.210)	(8.091)	(7.591)	(7.587)
Observations	331	331	331	331
R-squared	0.254	0.275	0.299	0.305

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, urban/rural area, citizenship (see Table 8.8)

Standard errors in parentheses, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

study has developed a theoretical model which links working conditions – defined as job demands and resources – with men’s and women’s preferred ages of retirement, with self-rated health (SRH) and subjective age (SA) as central mediators. This theoretical model was tested based on a sample of older workers aged 45 and above, living in Austria. Our results from regression analyses support contentions that working conditions such as high intrinsic job quality (e.g., learning and development opportunities, task variety), employee-led time flexibility, time pressure, and physical work strain affect people’s SA (i.e. how old they feel) and subsequently, our results show that a higher SA is associated with preferences for an earlier retirement.

The effects of working conditions on SA are found to be in part *indirect* (via health), for example in the case of intrinsic job quality and employee-led time flexibility, whereas there is also evidence for direct effects that are not fully mediated by health, such as for example in the case of time pressure and physical work strain. The effects of job resources on retirement preferences are found to be in part *indirect* (via health and subjective age), while we also find some evidence for *direct* effects on the part of some jobs demands. For example, the experience of physical work strain affects retirement preferences, over and above health and SA. This suggests that working conditions can have a motivating effect on older workers, which encourage them to extend their working life, irrespective of their health status or their sense of youthfulness.

Overall, the study has contributed to the state of knowledge on the role of working conditions for the timing of retirement. We found that some working

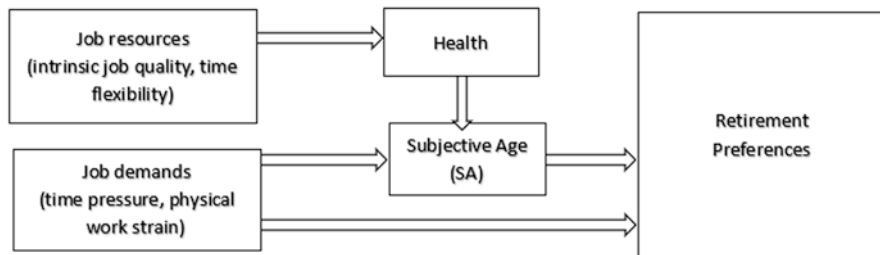


Fig. 8.2 Illustration of refined theoretical model

conditions – in particular job demands such as physical work strain – show a *direct* association with how old people feel (showing independent effects on SA, controlling for health) and they furthermore show a *direct* effect on people’s preferred retirement timing (an association that remains significant and substantial when controlling for self-rated health and subjective age). This suggests that policy interventions directed at extending working life need to go beyond (physical) health prevention measures. In terms of job resources, the largest effects on SA and on retirement preferences were found for the *intrinsic quality of jobs* in terms of learning and development opportunities and for *employee-led time flexibility* (time autonomy and support for work-life reconciliation). These conditions plausibly affect peoples’ health status and sense of youthfulness and subsequently their motivation to stay employed until a high age. Based on results from our empirical analysis, our theoretical model can thus be refined as illustrated in Fig. 8.2.

Strength and Limitations

To the best of our knowledge, this is the first analysis that investigates the association of working conditions, physical and mental health as well as subjective age with retirement preferences. To date, there is a lack of research on the association of working conditions with subjective age (Kotter-Grühn et al., 2016), plausibly due to a lack of survey data covering all of these aspects. Future studies will hopefully be able to draw on survey data of larger scale and collected using a survey mode which is less likely to exclude older individuals with a higher subjective age and a lower SRH than online surveys which may lead to a sample bias in favour of healthier individuals. Another limitation of this study pertains to the fact that due to the, in part, relatively small sample sizes in the analyses of retirement preferences, the multivariate analyses presented seek to test part of our theoretical model, but due to their limited power remain exploratory in nature. Our results on potential gender

differences remain tentative due to the low sample sizes, this aspect will be a fruitful avenue for future research.

Conclusions

In terms of *policy recommendations*, we conclude that an improvement in working conditions would not only be conducive to the health of older workers, but would also help to extend working life (Ogg & Rašticová, 2020), not least because healthier workers who enjoy good working conditions tend to feel younger and would be willing to work until a higher age. A central aspect here appears to be the *intrinsic quality of jobs* for older workers, in terms of job resources that increase well-being at work, help workers to maintain a sense of youthfulness and encourage them to stay part of the active work force until a higher age. Central components of such ‘good jobs’ are learning and development opportunities at work that tend to be less available to or accessible for older workers. To increase subjective health and decrease subjective age, state-and-employer-subsidised re-training opportunities for older workers might be a remedy against early retirement preferences.

An important policy discourse in this context is the fiscal necessity of extending working life and the notion that in ageing populations the legal retirement age needs to be pushed up for *all* workers. However, if some workers – in particular those in jobs that involve poor working conditions or a low intrinsic job quality – feel older, expect to live less long and in fact do on average live less long than other more privileged workers, the issue of fairness emerges. Older workers today are not generally healthier compared to earlier generations and they are certainly not *all* in more rewarding and less demanding occupations. In fact, there is a high degree of social inequality in these regards alongside a high and potentially growing level of inequality in healthy life expectancy (Olshansky et al., 2012, 2015). If *all* workers are obliged to retire at the same higher age if they want to avoid severe pension cuts, irrespective of their health status and their remaining life expectancy, less privileged older workers face the economic necessity to continue working in jobs that further undermine their well-being (Phillipson, 2019). Given socio-economic and gender differences in how older workers feel in terms of their health and subjective age, there is no one-size-fit-all statutory pension age. More flexibility in terms of the eligibility for pension entitlements would improve the situation of those in lower-skilled occupations, who tend to be exposed to high job demands and a lack of resources in terms of learning opportunities, job control and self-determined flexibility. As long as the quality of jobs for less privileged older workers cannot be improved, one may call for a right for older workers in jobs of poor quality who wish and need to retire in their sixties to be able to retire earlier than those who wish to and can work until a higher age (Macnicol, 2015).

Appendix

Table A1 Health mediating the impact of working conditions on subjective age (SA), part 1, by gender

	(1)	(2)	(3)
	Men	Men	Men
	Baseline	Control for SRH	Control for SRH, mental and physical health
Active (ref: inactive, retired)	-0.575 (1.406)	-1.551 (1.229)	-1.819 (1.056)
Physical work strain	0.217 (1.024)	0.966 (0.843)	1.237 (0.798)
Psychological/emotional work strain	-0.249 (0.918)	-0.706 (0.812)	-1.020 (0.714)
Intrinsic job quality	-4.348* (2.184)	-1.688 (1.943)	-0.650 (1.932)
Time pressure at work	1.562 (0.967)	0.755 (0.765)	0.392 (0.704)
Constant	0.310 (5.504)	-7.796 (4.590)	-4.632 (4.055)
Observations	266	266	266
R-squared	0.691	0.770	0.797
	(1)	(2)	(3)
	Women	Women	Women
	Baseline	Control for SRH	Control for SRH, mental and physical health
Active (ref: inactive, retired)	-2.874 (1.600)	-2.190 (1.441)	-2.081 (1.290)
Physical work strain	1.840 (0.969)	2.062* (0.920)	2.256* (0.923)
Psychological/emotional work strain	1.043 (0.952)	0.446 (0.930)	0.303 (0.966)
Intrinsic job quality	-4.261* (1.910)	-4.302* (1.948)	-3.849 (1.988)
Time pressure at work	2.420** (0.824)	2.517** (0.789)	2.130** (0.747)
Constant	6.562 (5.534)	2.229 (5.026)	0.699 (5.003)
Observations	217	217	217
R-squared	0.696	0.727	0.734

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, residence in urban/rural area, citizenship (see Table 8.2)

Standard errors in parentheses, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table A2 Health mediating the impact of working conditions on subjective age (SA), part 2, by gender

	(1)	(2)	(3)
	Men	Men	Men
	Baseline	Control for SRH	Control for SRH, mental and physical health
Employment insecurity	0.394 (0.716)	-0.418 (0.583)	-0.199 (0.580)
Employee-led time flexibility	-1.114 (1.924)	0.336 (1.860)	0.346 (1.980)
Work stress	2.525 (1.739)	0.985 (1.577)	1.675 (1.757)
Constant	-1.443 (6.464)	-8.682 (6.076)	-5.255 (6.048)
Observations	182	182	182
R-squared	0.557	0.664	0.688
	(1)	(2)	(3)
	Women	Women	Women
	Baseline	Control for SRH	Control for SRH, mental and physical health
Employment insecurity	0.059 (0.697)	0.101 (0.679)	0.037 (0.667)
Employee-led time flexibility	-7.525* (3.428)	-7.268* (3.424)	-6.960* (3.134)
Work stress	2.634 (2.324)	1.311 (2.308)	0.823 (2.253)
Constant	-0.452 (7.072)	-0.990 (6.812)	0.373 (6.376)
Observations	161	161	161
R-squared	0.458	0.473	0.490

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, activity status, residence in urban/rural area, citizenship (see Table 8.2)

Standard errors in parentheses, * $p < 0.05$

Table A3 The association of subjective age (SA) with preferred ages of retirement (RETPREF)

	All	Men	Women
Subjective age	-0.205** (0.070)	-0.223* (0.100)	-0.129* (0.058)
Constant	43.512*** (6.523)	42.519*** (8.740)	44.394*** (3.249)
Observations	356	193	163
R-squared	0.285	0.283	0.282

Control variables: gender, chronological age, living with partner in household, having children inside/outside the household, education, financial situation, residence in urban/rural area, citizenship (see Table 8.8)

Standard errors in parentheses, *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

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