ORIGINAL INVESTIGATION

Can personality predict retirement behaviour? A longitudinal analysis combining survey and register data from Norway

Morten Blekesaune · Vegard Skirbekk

Abstract This study investigates how far personality can predict the timing and routes of people's retirement. It uses a large comprehensive Norwegian survey, with larger sample size than earlier related studies, providing estimates of personality based on the five-factor model. The survey data are matched with administrative data, allowing observations of retirement over the 2002–2007 period. The analysis distinguishes between the disability and the non-disability retirements. Retirement is investigated using discrete time, competing risk, logistic regression models amongst individuals aged 50–69. Results indicate that personality predicts disability retirement but not non-disability retirement. Neuroticism increases the risk of disability retirement in women. Agreeableness and extraversion may prevent disability retirement, whereas openness may increase the risk of disability in men. Personality effects are generally consistent across models controlling, or not controlling, for well-known predictors of retirement behaviour including education, income and occupational group. The main exception is that poor health explains the effect of neuroticism on women's disability retirement.

Keywords Personality traits · Five factor model · Retirement · Disability · Longitudinal data

M. Blekesaune (✉)
Department of Sociology and Social Work, University of Agder,
Post Box 422, 4604 Kristiansand, Norway
e-mail: morten.blekesaune@uia.no

V. Skirbekk
International Institute for Applied Systems Analysis,
Schlossplatz 1, 2361 Laxenburg, Austria

Introduction

Personality may be defined as a set of characteristics possessed by individuals, which affects their cognitions, motivations and behaviour in various situations (Ryckman 2000). Hence, we could expect personality to affect the timing and routes of people's retirement. There is little previous research, however, investigating this relationship (Feldman and Beehr 2011). The goal of this study is to identify whether personality characteristics can predict retirement. We start by defining the personality traits we investigate, and then discuss how the existing literature can help us understand how and why personality traits may affect retirement. We review research on personality and work (particularly job success), and work and retirement. We analyse data from a Norwegian survey from 2002 in combination with register information about retirement over subsequent years (2002–2007).

A common categorisation of personality dimensions is the 'Big Five' (John and Srivastava 1999) or the five-factor model (McCrae and Costa 1999). Given our data, the five personality factors can be described as follows: *Neuroticism*—a tendency to be worried, touchy, nervous and strenuous (also labelled emotional instability); *Openness*—a tendency to be imaginative, creative and unconventional; *Conscientiousness*—a tendency to be well-organised, systematic and self-disciplined (i.e. to show planned rather than spontaneous behaviour); *Agreeableness*—a tendency to be friendly, warm, considerate and non-cynical; and *Extraversion*—a tendency to be active, forthcoming, dominant and extrovert (i.e. to seek stimulation and the company of others).

We analyse retirement as a transition from work being a main activity to it, being a minor activity in people's lives, and not as a transition between jobs. Seen this way,
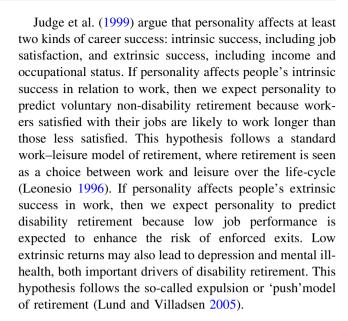
retirement is simultaneously an end of working life and a beginning of the so-called third or fourth age (Laslett 1991). Personality may affect the timing of people's retirement because it affects how successful or well-adapted people are in their jobs (Judge et al. 1999) and how risky or optimistically they anticipate a life without work (Bailey and Hansson 1995). These effects are not always easily predictable. For instance, openness could imply that one is more positive in relation to fundamental life changes, which would imply lower fear of entering retirement. On the other hand, openness might also affect work productivity and increase an individual's willingness to adjust to new job requirements (Filer and Petri 1988), which would delay retirement. The net effect is thus unknown.

Personality and work

Research shows that personality is correlated with job-related factors such as job performance (Judge et al. 1999) and career choice (Page et al. 2008). Hence, personality could also be correlated with the timing of retirement and the pathways towards retirement because more successful and more satisfied workers are likely to retire later than those who are less successful and less satisfied with their work. In empirical research, neuroticism appears to be the most consistent predictor of job success amongst the Big Five personality traits. Tett et al. (1991) found that, in a meta-analysis, neuroticism was adversely correlated with job performance. Later research has confirmed this finding; for example, individuals high in neuroticism have significantly lower earnings (Gelissen and de Graaf 2006; Judge et al. 1999; Sutin et al. 2009).

Other studies find that conscientiousness also predicts job performance, whereas agreeableness is related to work-related interpersonal skills (Barrick and Mount 2005; Hurtz and Donovan 2000; Salgado 1997). Sutin et al. (2009) find that emotionally stable as well as extrovert and conscientious individuals report higher income and higher job satisfaction. Seibert et al. (2001) find that extrovert individuals obtain more promotions than non-extrovert individuals, whereas Nyhus and Pons (2005) find agreeableness to be negatively associated with income.

Personality is also correlated with career choice (Page et al. 2008), career satisfaction (Judge et al. 2002), and how individuals adjust to career transitions (Lounsbury et al. 2003). Neuroticism and an absence of conscientiousness and extraversion are correlated with indecision regarding career choices (Page et al. 2008). Individuals high in extraversion and conscientiousness and low in neuroticism report higher satisfaction with their work (Judge et al. 2002). In a meta-analysis, Kanfer et al. (2001) find that conscientiousness, openness, extraversion and agreeableness can all predict shorter spells of unemployment.

Judge et al. (1999) argue that personality affects at least two kinds of career success: intrinsic success, including job satisfaction, and extrinsic success, including income and occupational status. If personality affects people's intrinsic success in relation to work, then we expect personality to predict voluntary non-disability retirement because workers satisfied with their jobs are likely to work longer than those less satisfied. This hypothesis follows a standard work–leisure model of retirement, where retirement is seen as a choice between work and leisure over the life-cycle (Leonesio 1996). If personality affects people's extrinsic success in work, then we expect personality to predict disability retirement because low job performance is expected to enhance the risk of enforced exits. Low extrinsic returns may also lead to depression and mental ill-health, both important drivers of disability retirement. This hypothesis follows the so-called expulsion or 'push' model of retirement (Lund and Villadsen 2005).

Personality and retirement

While several studies have investigated relationships between personality, age and job success, few studies focus explicitly on the relationship between personality and retirement (Feldman and Beehr 2011). No consensus has been established on the latter issue, possibly due to the relatively small samples investigated so far (e.g. Löckenhoff et al. 2009; Sutin et al. 2009; Sutin and Costa 2010). Still, some expectations have been proposed about the personality–retirement relationship. For example, older workers may find that they do not perform or adapt to job requirements as well as younger workers. Such perceptions could vary by personality types. Feldman and Beehr (2011) argue that individuals who are highly conscientious may view any drop in performance as a sign of poor fit, whereas individuals who are highly agreeable may be more attuned to positive social feedback than to negative task feedback in their jobs. If so, conscientiousness may be associated with early retirement, whereas agreeableness may be associated with later retirement.

We have only found three empirical studies on the relationship between personality and retirement. Löckenhoff et al. (2009) examined associations between the Big Five personality traits and retirement in a longitudinal survey ($N = 367$) and found that individuals low in conscientiousness retire earlier than more conscientious individuals. Robinson et al. (2010) investigated a UK online survey ($N = 386$) of respondents who were either retired or close to retirement. Neuroticism was related to a negative view of circumstances leading to retirement, while conscientiousness was related to aspirational reasons for retirement. Filer and Petri (1988) suggest that openness and social skills are associated with later retirement, net of

cognitive and physical demands and other job characteristics. They did not directly study individual personality traits but proxied personality traits from the job-level characteristics.

Hypotheses

From previous research, we expect neuroticism to speed up retirement, not only primarily because of its affiliation to poor mental health, but also because of its association with low job performance. Feldman and Beehr (2011) argue that individuals high in neuroticism may have negative perceptions of both work and retirement. For these reasons, we expect neuroticism to be associated with disability retirement but perhaps not with non-disability retirement.

Extraversion and agreeableness are expected to delay retirement—extraversion because of its affiliation to job performance, agreeableness because of its affiliation to interpersonal skills. We also expect openness to be associated with later retirement, since some research indicates it is associated with shorter unemployment spells (Kanfer et al. 2001), perhaps also with late retirement (Filer and Petri 1988). These traits might affect both disability and non-disability retirements.

Conscientiousness might also delay retirement because of its association with job performance but speed up retirement, because of high personal job requirements in highly conscientious individuals (Feldman and Beehr 2011). Hence, no unidirectional expectation can be made.

The literature on personality and work typically does not distinguish between men and women. However, research on retirement behaviour indicates that both job and family-related characteristics may affect men and women differently (Dahl et al. 2003; Blekesaune and Solem 2005). For these reasons, we will investigate the associations between personality and retirement behaviour separately for men and women, and test if these results diverge significantly.

Method

Data

The empirical analysis uses survey data from the first wave of the Norwegian Ageing and Generation Survey (NorLAG) collected in 2002 (some were interviewed in 2003) (Holmøy 2003). NorLAG is largely representative of the national population aged 40–79 but oversamples smaller municipalities. Respondents were recruited from 24 municipalities and six Oslo townships using the national person register which includes all legal residents. The survey includes both a computer-assisted telephone interview and a postal questionnaire. These data were later combined with register information on retirement for those willing to participate in a later wave of data collection. The overall response rate (from all data sources) includes 52% of the original (person register) sample of the age groups investigated here (50–69 years). The analysis includes employees from the 2002 survey aged 50–69 years when at 'risk' of retirement. The final sample includes 1,277 individuals (596 men and 681 women), shrinking to 1,272 in a final analysis because of missing information about health.

The survey includes information about personality using a Big Five personality scheme developed and validated by Engvik (1993). This is a 20-item scale which asks respondents to indicate which out of two contrasting labels (warm–cold, active–passive, etc.) best characterise him/her, separated by seven points ticked by the respondent in the mailed questionnaire. The five personality traits are measured by four items each, out of which two plus two have opposite wordings (they are negatively correlated) to reduce response bias. We use additive indices standardised (i.e. mean 0 and standard deviation 1) for the whole sample (40–79 years). Reliability (Chronbach alpha) is slightly lower for Extraversion (0.59) than for Openness (0.69), Agreeableness (0.70), Neuroticism (0.72) and Conscientiousness (0.75) in the final sample.

Institutional characteristics

Retirement is identified by the take-up of one of three pension types: disability pension (available to all residents given certain medical requirements and screening), a voluntary early retirement scheme (known as the AFP), and old-age pension which is available to (nearly) all residents from age 67.

Only employees (private and public sector) are investigated; the self-employed are excluded since they cannot access a non-disability pension before age 67. About 80% of all Norwegian employees just below pensionable age work in organisations that offer early retirement (AFP) from age 62, including the entire public sector and much of the private sector (Midtsundstad 2004). Some of these employees, most typically women, may not fulfil individual requirements (i.e. working for a minimum of 10 years after age 50). We do not have data about individual pension entitlements, but we do have data about public sector work.

The register data do not distinguish well between early retirement and old-age pension, and these pensions are consequently analysed together. The main analytical distinction is thus between disability and non-disability retirements—the first typically seen as non-voluntary retirement, whereas the second as a more voluntary retirement. All three pensions can be combined with income work and are graded accordingly. Pension grades below 50% (only relevant for non-disability retirement), indicating that the person is entitled to work

more than 50% of a normal (37.5 h per week) job, are not investigated.

In international comparison, Norway has many disability pensioners but few unemployed, which probably reflects the characteristics of its national benefit system (OECD 2006). Disability pension is a relatively common pathway of retirement in Norway and functions de facto as a type of early retirement since very few re-enter employment. Enforced exits are to a considerable extent associated with disability retirement.

Some groups, such as police and military personnel, can retire as early as age 57 and are typically not allowed to continue in their ordinary job after 60. Hence, the analysis censures non-disability retirement before 62 years. These individuals are part of the analysis until their early retirement but any retirement before 62 years is set to missing in the longitudinal data file (explained below), meaning that it does not affect the results.

Statistical analysis

The statistical analysis is done by discrete-time proportional-odds (logistic regression) models. The analysis distinguishes between disability and non-disability using multi-nominal logistic regression models. The timing of retirement is classified by the take-up of a pension by the end of each calendar year: 2002, 2003, 2004, 2005, 2006 and 2007. An individual retiring in 2004 is thus investigated in 2002, 2003 and 2004 but not in 2005, 2006 or 2007 when already retired (censored). Each year the respondent can retire is represented with a (new) record (line) in the longitudinal data matrix. The respondent's age is the only explanatory variable changing between the years (records) of the data matrix; all other characteristics were measured in 2002 (fixed in time). All statistical models control for four age variables because age variation is different for disability and non-disability retirements: age 50–61 (continuous), age above 62 (dummy), age 62–66 (continuous), and age 67 or above (dummy). The age variables are centred at 62 years, meaning that variation below 62 is negative (<0) and variation above 62 is positive (>0). Notice that disability retirement has (nearly) empty cells for age 67 plus, whereas non-disability retirement has empty cells for age below 62.

Since personality is a new factor in research on retirement behaviour, we also investigate how far it overlaps with more established predictors of retirement, including education and income level (in the standard model) and occupational group and health (in follow-up analyses). Education is measured by the number of years it typically takes to acquire one's highest level of education. Income is measured by the deciles of the working population aged 50–66. Occupation is measured by the first digit of the ISCO-code using nine dummy variables representing the 10 occupational groups.

Health is measured by mental and physical health based on Short Form (SF) 12 (Ware et al. 1996).

Results

Descriptive statistics are presented in Table 1. On average, 4.4% of the men and 5.1% of the women retired in each year under risk (having not retired by the beginning of the year), a majority with a non-disability pension. The mean age is 57. A majority of the women worked in the public sector, whereas a majority of the men were private sector employees.

There are some correlations between the five personality traits investigated (Table 2). The highest correlations are between openness and extraversion (0.36) and between agreeableness and conscientiousness (0.32). Neuroticism is negatively correlated with mental health (−0.36).

Table 3 presents the result for disability and non-disability retirements with statistical control for age, sector, education, income and other personality traits. Neuroticism predicts (early) disability retirement in women but not in men. Openness to experience predicts (early) disability retirement in men but not in women. Both agreeableness and extraversion are correlated with a low risk of disability retirement in men, whereas no similar effects are found in women. All gender differences are statistically significant (indicated by the rightmost column). None of the five personality traits can predict (more voluntary) non-disability retirement.

Since personality is a new factor in retirement models, we also investigate how far the associations between

Table 1 Descriptive statistics for the observation years using percentages or means and standard deviations (in brackets)

	Men		Women		Range	
Any retirement	4.4%		5.1%			
Disability	1.1%		1.7%			
Non-disability	3.3%		3.4%			
Age	57.2	(4.6)	56.7	(4.6)	50	69
Public sector	44.1%		70.6%			
Education (years)	14.0	(2.6)	13.7	(2.6)	5	21
Income (deciles)	6.7	(2.5)	4.6	(2.6)	1	10
Neuroticism	−0.2	(1.0)	0.1	(1.0)	−2	3
Openness	0.0	(0.9)	−0.1	(1.1)	−3	2
Conscientiousness	−0.1	(0.9)	0.1	(1.1)	−3	2
Agreeableness	−0.2	(0.9)	0.2	(1.0)	−4	2
Extraversion	−0.1	(1.0)	0.0	(1.0)	−3	2
Ph health	52.1	(7.0)	55.2	(1.0)	−3	2
Physical health	56.6	(5.6)	0.0	(1.0)	−3	2
# Individuals	596		681			
# Observations	2,847		3,102			

Table 2 Zero-order correlations between the explanatory variables in the final sample ($N = 1,277$)

	Age	Gen.	Sec.	Inc.	Edu.	Neu.	Ope.	Con.	Ext.	Phy.	Men.
Age											
Gender	−0.05										
Sector	−0.03	0.25*									
Education	0.04	−0.07*	0.18*								
Income	0.11*	−0.38*	−0.18*	0.40*							
Neuroticism	0.01	0.14*	0.05	0.00	−0.03						
Openness	−0.04	−0.11*	−0.01	0.19*	0.19*	−0.15*					
Conscientiousn	0.04	0.08*	−0.02	0.02	0.08*	−0.18*	0.09*				
Agreeableness	−0.02	0.18*	0.08*	−0.04	−0.11*	−0.26*	0.09*	0.32*			
Extraversion	−0.01	0.07*	0.05	0.09*	0.05	−0.26*	0.36*	0.21*	0.26*		
Mental health	0.09*	−0.10*	−0.02	−0.06	−0.01	−0.36*	0.01	0.08*	0.08*	0.18*	
Physical health	−0.06	−0.09*	0.01	0.13*	0.13*	−0.13*	0.06	0.07*	−0.02	0.10*	−0.09*

* $p < 0.05$ (two-sided tests)

personality and retirement are explained by occupation and health. This type of sensitivity is investigated by comparing models with and without statistical control for education and income, as well as (10) occupational groups and (physical and mental) health, reported in Tables 4 (men) and 5 (women). We only present the results for the five personality traits. Model 2 corresponds to the analyses in Table 3 but excludes five individuals who did not report their health. Model 1 is similar to model 2 but does not control for education and income as covariates. Model 3 is also similar to model 2 and Table 3 but includes statistical controls for 10 occupational groups as defined by the first digit of the ISCO-code (using nine dummy variables). Model 4 is similar to model 2 as well but also includes controls for mental and physical health from Short Form (SF) 12 (Ware et al. 1996).

In men (Table 4), openness to experience predicts disability retirement in all models except when not controlling for education and income (in model 1), where the openness effect is not significant. This result indicates that, given certain levels of education and income, openness to experience increases the risk of disability in men. Both (high levels of) agreeableness and extraversion are associated with low risks of disability retirement in men. These effects are not explained or mediated by other factors such as education, income or occupational group (comparing models 1, 2 and 3). Health (as measured by SF-12) can help explain why extraversion seems to inhibit disability in men (comparing models 2 and 4) but only to a minor degree, here estimated to 21% of the effect size (down from −0.488 to −0.386). Not even health can help explain why agreeableness inhibits disability in men, since this effect changes only marginally when controlling for the two measures of health in SF-12.

In women (Table 5), neuroticism predicts disability retirement across all statistical models except when controlling for health (model 4). The neuroticism effect on disability in women does not change when controlling for education, income or occupational group (models 1–3). The neuroticism effect is explained, however, by poor health in neurotic women which picks up almost the entire effect (effect size down from 0.393 to 0.075). SF-12 includes both mental and physical health; the latter also includes an item of general subjective health. When distinguishing between all three (analyses not shown in tables), general subjective health is the most important health measure explaining the association between neuroticism and disability in woman (effect size down from 0.393 to 0.127). Mental health is less important (down from 0.393 to 0.342), whereas physical health is in-between, when excluding its subjective health component (down from 0.393 to 0.250).

When considering further the results in Table 3, notice that some age slopes (i.e. age <62, age 67+) are not estimated due to missing observations (hence, some very large coefficients). Disability retirement increases with age up to 62; thereafter, no clear trends appear. Non-disability retirement jumps at age 67, which used to be the standard retirement age in Norway and still is, for approximately 20% of employees.

Public sector workers are slightly less likely to retire with a disability pension than private sector employees. Education is associated with a low risk of disability retirement in men but apparently not in women. Income shows a strong negative correlation with disability retirement in both genders ($\chi^2 > 10$, $p < 0.01$) but is not correlated with non-disability retirement. In men, the relationship is curvilinear, with the highest risk of disability

Table 3 Disability and non-disability retirements by individual characteristics, multi-nominal models, logit coefficients in 596 men and 681 women

	Men	Women	Gender difference
Disability			
Age 50–61	0.386***	0.168***	0.218
Age 62+ (d)	0.758	−0.129	−0.887
Age 62–66	0.208	0.012	0.197
Age 67+ (d)	1.038	−37.774	38.811
Public sector (d)	−0.086*	−0.188	0.102
Education (years)	−0.144	−0.025	−0.119
Income (deciles)	0.940*	0.008	0.932*
Income^2	−0.096**	−0.030	−0.066
Neuroticism	−0.133	0.395**	−0.528*
Openness	0.848**	0.093	0.755*
Conscientiousness	−0.370	−0.016	−0.353
Agreeableness	−0.551**	0.077	−0.629*
Extraversion	−0.490*	0.088	−0.578*
Constant	−3.308*	−2.507**	−0.801
Non-disability			
Age 50–61	−0.002	−0.003	0.001
Age 62+ (d)	19.656	−19.005	0.651
Age 62–66	−0.178	−0.080	−0.098
Age 67+ (d)	4.160***	4.475***	−0.315
Public sector (d)	0.031	0.029	0.001
Education (years)	−0.097	0.021	−0.119
Income (deciles)	0.355	0.094	0.261
Income^2	−0.038	−0.015	−0.023
Neuroticism	0.180	0.092	0.088
Openness	−0.073	−0.124	0.051
Conscientiousness	−0.006	0.094	−0.101
Agreeableness	0.133	−0.112	0.245
Extraversion	0.103	0.213	−0.110
Constant	−0.845	−2.163**	1.318

* $p < 0.05$, ** $p < 0.01$ (two-sided tests)

Table 4 Sensitivity analysis comparing four statistical models in (594) men, multi-nominal models, logit coefficients

	Model 1 removing education & income	Model 2 (standard model)	Model 3 adding occupation	Model 4 adding health
Disability				
Neuroticism	−0.200	−0.129	−0.171	−0.332
Openness	0.425	0.847**	0.872**	0.723*
Conscientiousness	−0.281	−0.371	−0.358	−0.503*
Agreeableness	−0.411*	−0.556**	−0.641**	−0.513*
Extraversion	−0.522*	−0.488*	−0.466*	−0.386
Non-disability				
Neuroticism	0.100	0.154	0.191	0.051
Openness	−0.234	−0.090	−0.110	−0.183
Conscientiousness	−0.007	0.005	−0.001	−0.025
Agreeableness	0.228	0.131	0.129	0.188
Extraversion	0.087	0.120	0.207	0.210

* $p < 0.05$, ** $p < 0.01$ (two-sided tests)

Table 5 Sensitivity analysis comparing four statistical models in (678) women, multi-nominal models, logit coefficients

	Model 1 removing education & income	Model 2 (standard model)	Model 3 adding occupation	Model 4 adding health
Disability				
Neuroticism	0.363*	0.393**	0.386**	0.075
Openness	0.019	0.092	0.142	0.141
Conscientiousness	−0.103	−0.017	−0.010	0.080
Agreeableness	0.137	0.078	0.045	−0.152
Extraversion	0.067	0.088	0.091	0.303
Non-disability				
Neuroticism	0.056	0.092	0.114	0.025
Openness	−0.139	−0.124	−0.008	−0.125
Conscientiousness	0.076	0.094	0.120	0.103
Agreeableness	−0.085	−0.112	−0.223	−0.133
Extraversion	0.205	0.213	0.324*	0.232

* $p < 0.05$, ** $p < 0.01$ (two-sided tests)

in men with moderate incomes. In women, the risk of disability decreases nearly linearly with (higher) income deciles; hence, the two coefficients become non-significant due to co-linearity.

Discussion

We have investigated how far the Big Five personality traits can predict retirement behaviour in a sample of Norwegian employees. The results indicate that personality does predict disability retirement but not non-disability retirement. This finding suggests that personality could be more important for potentially vulnerable workers than for less vulnerable workers.

Another finding is that personality affects men's and women's retirements differently. Neuroticism predicts disability retirement in women. This effect hardly changes when controlling for other known (individual and job-related) predictors of retirement—with one exception: women high in neuroticism retire because of poor health. All three measures of health (physical, mental and global subjective health) can help explain this finding. Neuroticism means a tendency to be worried, touchy, nervous and strenuous. Previous research shows that neuroticism is associated with low job performance (Tett et al. 1991),

including low earnings (Gelissen and de Graaf 2006; Judge et al. 1999; Sutin et al. 2009), as well as low job satisfaction (Judge et al. 2002). Hence, there is no surprise that it also predicts disability retirement. The question is rather why neuroticism predicts disability in women but not in men.

Low agreeableness is the most consistent predictor of disability retirement in men. This effect does not change when controlling for other known predictors of retirement. It is even the case when controlling for physical and mental health. Other lines of research indicate that agreeableness is a beneficial trait for employees because it is statistically associated with good interpersonal skills. In a survey of this research, Barrick and Mount (2005) argue that agreeableness matters when the job involves helping, cooperating and nurturing other people; and when working in a team, agreeableness may be the most important personality trait. Contrarily, employees being argumentative, inflexible, uncooperative, uncaring, intolerant or disagreeable (low in agreeableness) are less effective at teamwork and more likely to engage in counterproductive behaviour (op cit.). Agreeableness is also associated with short spells of unemployment (Kanfer et al. 2001), which could indicate that employers appreciate agreeableness in male workers.

In addition, low levels of extraversion are consistently associated with disability retirement. This effect is reduced when controlling for poor health. Some studies show that individuals high in extraversion report high levels of job satisfaction (Judge et al. 2002; Sutin et al. 2009). Some studies also show that individuals high in extraversion obtain more promotions (Seibert et al. 2001), receive comparatively high incomes (Sutin et al. 2009) and have shorter unemployment spells compared to individuals low in extraversion (Kanfer et al. 2001). Extraversion means a tendency to seek stimulation and the company of others. These characteristics are seemingly beneficial for older male workers.

Openness to experience is, somewhat surprisingly, associated with a high risk of disability retirement in men. Openness rises to a significant predictor of disability when also controlling for education and income. We have not found previously published research indicating that openness should be associated with poor job performance or poor job satisfaction. The only previous finding related to openness indicates that this is a beneficial trait, as individuals high in openness tend to have comparatively short unemployment spells (Kanfer et al. 2001). Openness could imply that one is more positive in relation to fundamental life changes. For instance, individuals high in openness may be more willing to consider taking on new goals following retirement. It is still difficult to say why this should affect disability but not non-disability retirement.

Taken together, it appears that personality is more important for disability retirement in men than in women. The sole personality trait predicting disability in woman, neuroticism, probably reflects poor health. In men, by contrast, a set of personality traits seems to predict disability retirement.

Our results do not mimic the sole finding from the only previously published longitudinal analysis on personality and retirement behaviour (Löckenhoff et al. 2009)— that conscientiousness may inhibit disability retirement. Our results indicate that conscientiousness may inhibit disability retirement in men but not in women. This effect rises to statistical significance only when controlling for a range of other factors, including health. When comparing the two studies, one should keep in mind the larger sample of the current study ($N = 1,277$) compared to the previous one ($N = 367$), allowing for greater detail in our analysis. The use of administrative registers for retirement also allows for more exact and less biased measures of retirement than those available in survey data (i.e. lower attrition and less selective report).

This research indicates that personality does affect older workers' employment and retirement, but seemingly differently in men and women. If these findings should be confirmed by further studies from other countries, the next question will be why personality traits affect men and women differently. Future research could investigate whether men tend to have jobs where personality matters more for job satisfaction or job performance, whether there could be gender-specific 'acceptance levels' for different types of personalities in working life, or whether there might be sex-specific responses to certain job characteristics; the latter might also include relationships between personality and job characteristics. Answers to these questions could have important implications for employers and for career counselling.

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