Self-employment and job satisfaction: evidence for older people with disabilities in Europe

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Abstract The aim of this study is to analyse and compare the levels of job satisfaction reported by self-employed and salaried workers (aged 50–64) by disability status across Europe. Particular attention is paid to testing whether the effect of self-employment on job satisfaction is greater for disabled workers as compared to non-disabled ones. Using the first two waves (2004 and 2007) of the Survey of Health, Ageing and Retirement in Europe (SHARE) for eleven countries, we estimate job satisfaction equations for older workers with and without disabilities. The results show that self-employed persons are more satisfied with their jobs. However, there is no evidence that the association between self-employment and job satisfaction is different for disabled and non-disabled older persons. Policy makers can promote self-employment among older workers with disabilities to increase their employment and income rates and levels of job satisfaction.

Keywords Self-employment · Disability · Older individuals · Europe

Introduction

Self-employment has contributed significantly to economic development in recent decades and has become a significant source of job growth in many industrialized countries (OECD 2000). At a European level, self-employment

accounted for 14.1% of total employment in 2008, i.e. 0.2 percentage points lower than the share reached the year before (European Commission 2009). Despite the establishment of actions and regulations by governments and policy makers to support equal opportunities and the integration of disabled people into the workplace, disabled individuals are still at a significant disadvantage in the labour market in all European countries (OECD 2003). This group is characterised by lower labour participation and income rates, higher unemployment levels, greater presence in low-skilled jobs and lower educational levels than the rest of population. The situation is even worse for older people with disabilities. The employment rates of people with disabilities drop much faster with age than employment rates of people without disabilities. For example, the employment rates of older people with disabilities (aged 50–64) are only a little above 50% those of their non-disabled counterparts (OECD 2003). The inevitable ageing process of the European population will have a substantial effect on disability prevalence in the working-age population and on their labour market participation.

Within this context, McFarlane (1998) points out that it is essential to understand the current employment options for disabled people, which include supported employment, early return-to-work strategies and self-employment, among others. Although the promotion of self-employment is included in the European Employment strategy (mainly through subsidies and transfer programs to individuals), self-employment is especially significant for disabled people due to the fact that it could help to prevent their social exclusion and narrow the gap between employment rates for disabled people and the population as a whole (Boylan and Burchardt 2002). In a similar vein, Doyel (2002) concludes that self-employment is a *true* option for disabled people and that it is crucial for vocational

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rehabilitation counsellors to learn the realities of small business training, development, and ownership in order to support this important employment option for the disabled population. The existing literature on self-employment and disability is very limited owing to the fact that most studies on disability and employment have excluded self employment from their analysis. However, the few previous studies have shown that disabled people are more likely to be self-employed than non-disabled people in almost all European countries (e.g. Cowling and Taylor 2001; Boylan and Burchardt 2002; Piggott et al. 2005; Pagan 2009). This is partly a reflection of the fact that older people are more likely to be self-employed and that disability rises with age. Several studies have examined the relationship between self-employment and job satisfaction (e.g. Naughton 1987; Blanchflower and Oswald 1998; Benz and Frey 2008a; Lange 2009), but not specifically with reference to disabled people. This lack of studies on the use of self-employment among people with disabilities contrasts with the promotion of this type of work by the European Union.

To fill this gap in the literature, this study analyses and compares the levels of job satisfaction reported by self-employed and salaried workers by disability status. We will test two different hypotheses: (a) the self-employed are more likely to have greater levels of job satisfaction than their salaried counterparts, and (b) the effect of self-employment on job satisfaction is different for non-disabled and disabled individuals.

With regards to the relationship between self-employment and job satisfaction, we may assume that self-employed individuals may be privileged in terms of resources and working conditions that make them more satisfied with their jobs as compared to salaried workers. Many studies support the idea that even though the self-employed make less money, work more hours, and experience more work-related stress than the wage employed, they are more satisfied with their jobs because they want to be their own boss and enjoy the freedom, flexibility and work environment that self-employment provides (e.g. Buttner 1992; Kaufmann 1999; Blanchflower 2004; Benz and Frey 2008a; Benz and Frey 2008b). Individuals derive procedural utility from being self-employed because it gives them a higher measure of self-determination and freedom. Procedural utility means that people not only value outcomes, but also the conditions and processes leading to outcomes (Benz and Frey 2008b). This previous literature leads us to establishing our first hypothesis about a positive relationship between self-employment and job satisfaction. However, we may suppose that this positive effect of self-employment and job satisfaction may be different for non-disabled and disabled individuals. As noted earlier, self-employment can be very attractive for disabled individuals because it may present a unique opportunity to

create employment circumstances specifically tailored to their personal situation, degree of mobility, speed of production, stamina, health and accommodation needs (Griffin and Hammis 2002). In the work of Boylan and Burchardt (2002) for the British case, disabled people with musculo-skeletal problems are more likely to be self-employed than employees. In many cases, self-employment may be seen as a survival strategy for those disabled people who cannot find any other means of earning an income (e.g. those with psychological and mental problems who suffer from the most negative social attitudes and have the lowest probability of employment). These circumstances may lead to observe a differential in terms of job satisfaction between non-disabled and disabled individuals who are self-employed. As a result, we establish our second hypothesis concerning the existence of a different effect of self-employment on job satisfaction by disability status.

In order to do this, we estimate a job satisfaction model (based on random-effects linear models) initially for all older workers, and later for the non-disabled and disabled individuals. We take data from the Survey of Health, Ageing and Retirement in Europe (SHARE) that was carried out in 2004 and 2007. In addition, we compare in this study the personal and job characteristics of self-employed and salaried workers by disability status in Europe, paying particular attention to the relationship between some health indicators and self-employment.

The contribution of this study is twofold. This study contributes to increasing the empirical evidence of the particular situation of the disabled population at older ages in terms of job satisfaction within a European context. As a result of the aging population and the fact that many disabilities are age-related, a study on job satisfaction levels of older people with disabilities gains importance. Furthermore, job satisfaction may be associated positively with productivity. Second, the results may contribute to promoting and carrying out specific measures and actions aimed at improving the levels of job satisfaction of older workers with disabilities.

Methods

Sample

The data for this study come from the Survey of Health, Ageing and Retirement in Europe (SHARE), which is a multidisciplinary and cross-national panel database of microdata on health, socio-economic status and social and family networks of individuals aged 50 or over. We use information from the first two waves (2004 and 2007) for eleven European countries (Austria, Germany, Sweden, The Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland and Belgium). The existence of harmonized data,

thanks to the use of the same questionnaire and methodology in all participating countries, is one of the main advantages of this database. Based on probability samples in all participating countries, the SHARE represents the non-institutionalized population aged 50 and older, wherein spouses are also interviewed if they are younger than 50 (using a Computer Assisted Personal Interview, CAPI). The country-average of household response rate is 61.8% for the total sample, ranging from 38.8% (Switzerland) to 81% (France). Within households, the individual response rate varies from 79.7% in Italy to 93.3% in France, whereas for the whole sample this rate is 85.3% (see Börsch-Supan and Jürges (2005) and <http://www.share-project.org> for more details). The original samples in 2004 and 2007 for the eleven European countries analysed consist of 28,517 and 27,984 respondents, respectively. We restricted our sample to individuals with ages ranging from 50 to 64, i.e. 14,284 in 2004 (8,324 non-disabled + 5,960 disabled) and 13,584 individuals in 2007 (8,333 non-disabled + 5,251 disabled) (see Appendix Table 5). The percentages of disabled (non-disabled) individuals who were employed in 2004 and 2007 were 46.9 (62.8%) and 51% (66.3%), respectively. By age groups, 31.2% (29.2%) of workers aged 50–54 are disabled in 2004 (2007). In 2004 (2007), this percentage increases to 36.4% (33.6%) and 39.4% (35.6%) for the age group 55–59 and 60–64, respectively. After taking into account the missing information on the key variable *job satisfaction*, the total number of disabled individuals employed (in 2004 or 2007) is 5,121 (=855 self-employed + 4,266 employees), whereas for the non-disabled this number is 10,179 (=2,025 self-employed + 8,154 employees). After excluding individuals with missing information on some explanatory variables (particularly for the variable *monthly gross income*), the final samples used in the estimation process for older workers with and without disabilities consist of 3,223 and 5,959 observations, respectively. Owing to data limitation for some countries, our estimation results are based on Europe-wide data covering responses from eleven countries, rather than data for single economies. To start with, we have tested the validity of using the panel structure of our database through the Lagrange-Multiplier test for random effects which confirms that the panel dimension offers better estimation results for both samples.

Measures

In the employment section of the SHARE questionnaire, respondents were asked: *All things considered, I am satisfied with my job. Would you say you strongly agree, agree, disagree or strongly disagree?* According to Clark and Oswald (1996), the answer to this question on job satisfaction can be considered as a proxy measure of the utility from work and is taken as the dependent variable in

this article. To facilitate the interpretation of the results shown in the next section, we code the answers of this question as follows: 1 strongly disagree; 2 disagree; 3 agree; and 4 strongly agree.

The measure of disability has been constructed from two questions that have been used in previous studies (e.g. Gannon 2005; Jones et al. 2006; Gannon and Munley 2009) and are included in the health section of the SHARE questionnaire: *Do you have any long-term health problems, illness, disability or infirmity? (Yes/No)*. Those who answer *Yes* can be defined as people with disabilities. In addition, the follow-up question, *For the past six months at least, to what extent have you been limited because of a health problem in activities people usually do? (Severely limited/Limited, but not severely/Not limited)* would allow us to determine the degree of severity of the disability. However, there are problems of sample sizes that impede us from using it and carrying out a more detailed analysis. The main effect of not using the severity measure is that we will have a disabled population with greater heterogeneity than in other definitions (especially with respect to the administrative definitions). In addition, these subtypes of disability do not correspond to any standard subgroups of the World Health Organization (WHO) definition of disability.

In order to identify the employment status of the individual in his/her main job, we use the answers to the question: *In general, how would you describe your current job situation?* (Retired, employed or self-employed (including working for family business), unemployed and looking for a job, permanently sick or disabled, homemaker, and other (rentier, living off own property, student, doing voluntary work)). If the person responds “employed or self-employed”, the follow-up question: *In your main job are you an employee or self-employed?* allows us to distinguish between both employment statuses. Personal and job variables included in the job satisfaction equations are those traditionally used in the previous literature (e.g. Clark 1997; Sloane and William 2000; Diaz-Serrano and Cabral 2005; Clark et al. 2008). The variable “monthly gross income” (in logarithms) is based on the income earned by individuals from their jobs before taxes and adjusted by the purchasing power parity. The dummy variable “pension claims” equals 1 if the respondent is entitled to at least one pension (public and/or private) in the future, and zero otherwise.

To measure the respondent’s health status we create a dummy variable with five categories and based on the question: *Would you say your health is:* (1) *Excellent*, (2) *very good*, (3) *good*, (4) *fair* and (5) *poor*?. The inclusion of the individual’s health status in job satisfaction equations allows us to control for productivity differences, regardless of the disability status of the individual worker (Johnson and Lambrinos 1985; Baldwin and Johnson 1994 and

Baldwin and Johnson 1995). Information on any doctor visit and number of doctor visits in the last 12 months is taken from the question: *How many times in total have you seen or talked to a medical doctor about your health?*. Along these same lines, we use the questions: *During the last twelve months, have you been in a hospital overnight? (yes/no)* and *How many nights altogether have you spent in hospitals during the last twelve months?* to construct the variables “any night in hospital in the last twelve months” and “number of nights in hospital in the last twelve months”. The variable “being obese” is constructed from the variable “Body Mass Index (BMI)” and generated by the SHARE team itself by using the formula: $\text{weight}/(\text{height})^2$ where weight (kilograms) and height (meters) are self-reported by the individual. If the BMI is 30 or higher the individual is considered obese (according to the World Health Organisation). The dummy variable “low physical activity” is equal to 1 if the individual *never or hardly ever* is engaged in activities requiring a vigorous (e.g. sports or heavy housework) or moderate (e.g. gardening, cleaning the car, or doing a walk) level of energy, and zero otherwise. We also include other health indicators in our analysis such as being depressed (question: *In the last month, have you been sad or depressed? (yes/no)*) and experiencing fatigue (question: *In the last month, have you had too little energy to do the things you wanted to do? (yes/no)*).

Statistical analysis

To estimate the determinants of job satisfaction for non-disabled (N) and disabled individuals (D), we apply the theoretical framework developed by Clark and Oswald (1996) which is based on the definition of the individual's utility from working as follows:

$$U_j = F(r, h, i, w) \quad j = N, D \quad (1)$$

where the utility of the individual j (U_j) is a function of income (r), hours of work (h) and i and w are a set of variables measuring the individual and job characteristics, respectively. The estimation of this utility function has been habitually carried out using satisfaction (in our case job satisfaction) as a proxy, through the utilization of different models. To control for unobserved individual effects, we have estimated separately for each group the following GLS random-effects model on job satisfaction (Baltagi and Song 2006):

$$y_{it} = \beta_j X_{it} + u_i + e_{it} \quad (2)$$

where y_{it} denotes individual i 's job satisfaction in each group at time t , X_{it} represents the vector of individual and job characteristics, β_j is the vector of coefficients to be estimated, u_i is the unobservable individual-specific random effect, and e_{it} is the remainder disturbance. These

individual-specific effects represent the unobservable characteristics that stay constant over time but differ among individuals, such as intelligence, optimism/pessimism, and introversion/extroversion. Psychologists have found that personality accounts for up to 70–80 percent of subjective well-being, and this points to the importance of being able to control for individual-specific effects. All estimated coefficients were obtained through a pooled sample for each group in the years 2004 and 2007.

Following the psychology literature (e.g. Schwartz 1995; Ng 1997), we assume that satisfaction scales are created as if they were cardinal measures of the underlying subjective states. By contrast, economists usually assume that satisfaction answers are only ordinally comparable (e.g. Van Praag 1991; Ferrer-i-Carbonell and Frijters 2004). Nevertheless, Ferrer-i-Carbonell and Frijters (2004) provide extensive evidence that assuming cardinality or ordinality of happiness makes little difference on estimation results. In addition, the interpretation of the econometric results is simpler when we assume cardinality of the satisfaction scale. To test whether job satisfaction is an ordinal or cardinal variable, we have also estimated our job satisfaction equations using ordered probit models with random effects and the results are quite similar to those shown in Table 4. These estimations are available upon request. The descriptive analysis included in the next section has been obtained using the sample weight available in the SHARE in order to reflect population characteristics and correct for the possible lack of representativeness of the sample. Apart from including self-employment as a dummy variable, we control for a set of individual (gender, age, native versus foreigner, marital status, children in household, education and health status) and job characteristics (monthly gross income, job tenure, hours of work, occupation, industry, other job and pension claims), and other characteristics (country of residence and year of interview).

Results

Descriptive analysis

Table 1 shows the mean job satisfaction levels of self-employed and salaried workers and the differences between both by disability status in the eleven European countries analysed. In almost all cases, the mean job satisfaction scores of self-employed older individuals (disabled or not) are higher than those for their salaried counterparts, except in Greece where there is a statistically significant negative difference (−0.08 and −0.35 for the non-disabled and disabled samples, respectively). In addition, we detect significant differences in the mean job satisfaction of older people with disabilities (and without

disability) across European countries. For the disabled sample, the highest levels of job satisfaction among the self-employed are reported by those working in Denmark (3.79), Switzerland (3.74), Sweden (3.56) and The Netherlands (3.48) (i.e. northern countries), whereas those working in Greece (2.82), Spain (3.11) and Italy (3.18) (i.e. southern countries) reported the lowest levels. Looking at the mean job satisfaction differential by employment status, we observe that for the non-disabled sample the highest differentials in favour of self-employed workers are found in Austria (0.29), Germany (0.26), Italy (0.26) and The Netherlands (0.22), whereas for the disabled sample they are found in Switzerland (0.32), Denmark (0.29) and Sweden (0.20). Furthermore, we observe that in all countries (except in Denmark) the job satisfaction scores of the non-disabled individuals are greater than those obtained for the disabled ones, particularly in Austria (0.32), Italy (0.29) and Spain (0.25). If we replicate the same analysis for the salaried workers, we obtain the same result, i.e. there is a job satisfaction premium in favour of salaried older workers without disability, especially in France (0.26), Belgium (0.16) and Austria (0.14). Although all these results seem to support our first hypothesis (i.e. the self-employed have higher levels of job satisfaction than employees), we have to take into account that we are not controlling for other variables which may affect the levels of job satisfaction reported by individuals.

Examining the personal, household and job characteristics for self-employed and salaried older people by disability status may help us to explain and understand these higher levels of job satisfaction reported by self-employed individuals and shed further light on the validity of our two hypotheses. According to Table 2, 31.3% of the disabled self-employed are females, as compared to 48% of disabled employees. Self-employed people (disabled or not) are more likely to be older, married, and living in households

with a higher number of members and children than their salaried counterparts. Self-employed people without disabilities live in wealthier households (in terms of net income) as compared to their disabled counterparts (7.829 versus 5.629). The educational levels of the non-disabled self-employed are quite similar to those attained by their disabled counterparts. With regards to the health indicators, in general older workers with disabilities are more likely to report health problems than older workers without disabilities, independent of their being self-employed or salaried workers. However, the self-employed are less likely to report health problems such as any doctor and hospital visits in the last 12 months and low physical activity. In addition, a lower percentage of self-employed people without disabilities have been depressed in the last month (25.9%) in comparison with 29.6% of non-disabled employees. We only find a significant difference between self-employed and employees in the health status category *very good* for both samples. As we can observe, a high proportion of older workers with disabilities enjoy “very good” and “good” health status (27.2% for self-employed and 25.8% for employees). This finding is very interesting because people usually associate disability with having bad health status (e.g. total blindness is not necessarily related to very poor health status). Overall, these results show that self-employed workers at older ages are less likely to report negative health indicators (except for the indicator “low physical activity”) as compared to salaried counterparts and this may positively affect their levels of job satisfaction.

According to Table 3, there are significant differences in favour of employees in the mean monthly gross income (in logarithms) in both samples. For the non-disabled sample, the income differential is -0.254 , even greater than that obtained for the disabled sample (-0.199). Overall, self-employed older workers (disabled or not) are more likely to have higher tenure and work longer hours per week as

Table 1 Mean job satisfaction of self-employed (Self) and salaried (SA) workers by disability status

	Non-disabled					Disabled				
	Self	N	SA	N	Diffe.	Self	N	SA	N	Diffe.
Austria	3.67	73	3.38	305	0.29*	3.35	25	3.24	173	0.12*
Germany	3.59	163	3.33	797	0.26*	3.38	85	3.25	576	0.13*
Sweden	3.62	139	3.49	1,121	0.13*	3.56	102	3.36	773	0.20*
Netherlands	3.53	173	3.31	1,011	0.22*	3.48	69	3.31	463	0.17*
Spain	3.36	156	3.17	443	0.19*	3.11	87	3.08	238	0.03
Italy	3.47	232	3.21	488	0.26*	3.18	81	3.25	207	-0.07
France	3.37	149	3.38	947	-0.01	3.30	77	3.12	479	0.18*
Denmark	3.67	92	3.55	870	0.12*	3.79	73	3.51	570	0.29*
Greece	2.99	528	3.07	748	-0.08*	2.82	119	3.17	162	-0.35*
Switzerland	3.73	136	3.54	499	0.19*	3.74	65	3.42	227	0.32*
Belgium	3.53	184	3.39	925	0.14*	3.29	72	3.23	398	0.06
Total	3.45	2,025	3.32	8,154	0.13*	3.29	855	3.23	4,266	0.06*

Note Individuals aged 50–64.
(*) Difference between self-employed and salaried workers is significant at $P < 0.05$.
Weighted data

Source SHARE 2004 and 2007

Table 2 Personal and household characteristics of self-employed (Self) and salaried (SA) workers by disability status in Europe

	Non-disabled			Disabled		
	Self	SA	Diffe.	Self	SA	Diffe.
Female	0.328	0.434	−0.106*	0.313	0.480	−0.167*
Age	56.32	55.60	0.720*	56.98	55.96	1.020*
Married	0.789	0.755	0.035*	0.798	0.754	0.045*
Household size	2.686	2.540	0.146*	2.643	2.430	0.213*
Children in household	1.326	1.132	0.194*	1.305	1.029	0.276*
Household net income/10000	7.829	6.864	0.965*	5.629	6.541	−0.912*
Educational level						
Primary education	0.218	0.173	0.045*	0.215	0.177	0.038*
Secondary education	0.503	0.535	−0.032*	0.503	0.563	−0.060*
Tertiary education	0.279	0.292	−0.013	0.282	0.260	0.022
Health measures						
Any doctor visit in last 12 months	0.701	0.794	−0.093*	0.871	0.941	−0.070*
No of doctor visits in last 12 months	2.625	3.426	−0.801*	3.557	7.339	−3.782*
Any night in hospital in last 12 months	0.043	0.060	−0.017*	0.152	0.132	0.020
No nights in hospital in last 12 months	0.259	0.320	−0.061	1.114	1.283	−0.169
Obese (BMI $\geq$ 30)	0.119	0.122	−0.003	0.182	0.195	−0.013
Low physical activity	0.051	0.032	0.019*	0.066	0.044	0.022*
Depressed last month	0.259	0.296	−0.037*	0.466	0.446	0.020
Fatigue last month	0.203	0.198	0.005	0.349	0.337	0.012
Self-reported health status						
Very good	0.243	0.203	0.040*	0.063	0.049	0.014*
Good	0.369	0.383	−0.014	0.209	0.209	0.000
Fair	0.347	0.360	−0.013	0.419	0.431	−0.012
Bad or very bad	0.041	0.054	−0.013	0.309	0.311	−0.002

Note Individuals aged 50–64.
 (*) Difference between self-employed and salaried workers is significant at $P < 0.05$.
 Weighted data

Source SHARE 2004 and 2007

compared to salaried workers. For occupations, we detect significant differences between self-employed and salaried individuals. For example, self-employed individuals with disabilities are more likely to be legislators and managers (21.2%), followed by professionals (15.1%) and technicians and associate professionals (15%). By industry, the self-employed (disabled or not) are more likely to be working in agriculture and fishing, construction, wholesale and retail trade, hotels and restaurants and other activities in comparison to the salaried workers. This different distribution of the self-employed (non-disabled and disabled) across occupations and industries (with different working conditions, legislations, etc.) may affect the levels of job satisfaction reported by workers in a different way.

Econometric analysis

We turn now to the results obtained from the estimation of the job satisfaction equation for the whole sample as well as for non-disabled and disabled workers (Table 4). It is worth noting that the loss of observations in the estimation process as compared to those used in Table 1 leads to

having a lower percentage of self-employed individuals (in the non-disabled sample, we move from 20 to 12%, whereas for the disabled sample this percentage moves from 17 to 8%), slight differences in the distribution of the working hours (for the variables “working 30–39 h” and “more than 41 h”) and overrepresentation of individuals residing in countries such as Sweden and Denmark (for both samples), and the opposite result in Switzerland (for both samples) and Greece (only in the non-disabled sample).

To test the second hypothesis of self-employment and job satisfaction possibly being different for disabled and non-disabled workers, we have estimated our job satisfaction equation for the whole sample (non-disabled + disabled) and included two additional regressors, i.e. “disabled” (1 if person is disabled) and an interaction term between the variables “self-employed” (1 if the individual is self-employed) and “disabled”). The coefficient of the variable “self-employed” is positive and significant at the 1% level, i.e. being self-employed increases the level of job satisfaction by 0.108 points. In contrast, being disabled reduces the levels of job satisfaction by 0.035 points. The

Table 3 Job characteristics of self-employed (Self) and salaried (SA) workers by disability status in Europe

	Non-disabled			Disabled		
	Self	SA	Diffe.	Self	SA	Diffe.
Ln(monthly gross income)	7.004	7.258	−0.254*	6.895	7.094	−0.199*
Tenure	22.47	20.29	2.180*	21.00	20.20	0.800*
Hours of work						
<30	0.173	0.178	−0.005*	0.223	0.228	−0.005
30–39	0.099	0.314	−0.215*	0.108	0.330	−0.222*
40	0.165	0.229	−0.064*	0.120	0.201	−0.081*
>40	0.563	0.279	0.284*	0.549	0.241	0.308*
Occupation						
Legislators and managers	0.184	0.096	0.088*	0.212	0.071	0.141*
Professionals	0.169	0.176	−0.007*	0.151	0.143	0.007
Technicians and associate professionals	0.113	0.179	−0.066*	0.150	0.191	−0.042*
Clerks	0.019	0.141	−0.122*	0.025	0.150	−0.125*
Service and market sales workers	0.131	0.123	0.008*	0.133	0.139	−0.006
Skilled agricultural and fishery workers	0.155	0.013	0.142*	0.119	0.018	0.101*
Craft and related trades workers	0.168	0.100	0.068*	0.149	0.090	0.061*
Plant and machine operators	0.024	0.067	−0.043*	0.026	0.076	−0.050*
Elementary occupations	0.037	0.105	−0.068*	0.035	0.122	−0.087*
Industry						
Agriculture and fishing	0.089	0.010	0.079*	0.060	0.017	0.043*
Mining, quarrying, energy and water	0.013	0.021	−0.008*	0.003	0.030	−0.027*
Manufacturing	0.129	0.175	−0.046*	0.157	0.178	−0.021
Construction	0.100	0.077	0.023*	0.149	0.053	0.096*
Wholesale and retail trade	0.229	0.079	0.150*	0.178	0.060	0.118*
Hotels and restaurants	0.041	0.024	0.017*	0.038	0.028	0.010
Transport, storage and communication	0.040	0.052	−0.012*	0.038	0.058	−0.020*
Banking and finance	0.086	0.108	−0.022*	0.115	0.090	0.025*
Public administration	0.043	0.115	−0.072*	0.009	0.116	−0.107*
Education	0.010	0.126	−0.116*	0.014	0.124	−0.110*
Health and social work	0.091	0.125	−0.034*	0.079	0.138	−0.059
Other activities	0.129	0.088	0.041*	0.160	0.108	0.052*

Note Individuals aged 50–64.
 (*) Difference between self-employed and salaried workers is significant at $P < 0.05$.
 Weighted data

Source SHARE 2004 and 2007

coefficient of the interaction term “self-employed*disabled” is negative but not significant at conventional levels. Namely, the effect of self-employment on job satisfaction is the same for non-disabled and disabled individuals. Therefore, this result rejects our second hypothesis about a different effect of self-employment on job satisfaction by disability status.

Looking at the job satisfaction equations for the non-disabled and disabled samples, we observe that for both samples, self-employed older individuals exhibit higher job satisfaction scores than those in salaried employment, after controlling for a set of personal and job characteristics. Again, we obtain a positive result in both samples for our first hypothesis. Being self-employed increases the level of job satisfaction of older people with disabilities by 0.097 points. The magnitude of the coefficient of this dummy variable is statistically the same in the non-disabled and disabled

sample and is in line with the results obtained previously for the interaction term in the whole sample. Once more, we obtain empirical evidence to reject our second hypothesis.

The rest of the explanatory variables included in the job satisfaction equations show the expected sign according to the existing literature on job satisfaction. For example, workers (disabled or not) with ages ranging from 60 to 64 have greater job satisfaction scores as compared to younger workers. For both samples, we do not find a significant effect of being native or having children in the household on job satisfaction. Being married or cohabiting has a positive effect on non-disabled workers’ job satisfaction scores. Healthier older workers (disabled or not) enjoy their work much more than less healthy older workers. With respect to job characteristics, the monthly gross income variable (in logarithms) has a positive effect on job satisfaction scores but the coefficient is only significant at the

Table 4 Overall job satisfaction regressions for the whole sample and by disability status (Random-Effects GLS, non-standardised coefficients)

	All Coef.	Non- disabled Coef.	Disabled Coef.
Self-employed	0.108 ^c	0.101 ^c	0.097 ^b
Disabled	−0.035 ^b	–	–
Self-employed * disabled	−0.012	–	–
Individual characteristics			
Female	0.011	0.025	−0.016
Age			
50–54	−0.109 ^c	−0.138 ^c	−0.063 ^a
55–59	−0.098 ^c	−0.099 ^c	−0.093 ^c
60–64 (reference)	–	–	–
Native	0.106 ^b	0.046	0.165 ^a
Married/cohabiting	0.032 ^a	0.053 ^b	−0.005
Children in household	−0.011 ^a	−0.008	−0.018 ^a
Educational level			
Primary (reference)	–	–	–
Secondary	−0.019	−0.041	0.006
Tertiary	−0.025	−0.034	−0.022
Health status			
Excellent (reference)	–	–	–
Very good	−0.089 ^c	−0.105 ^c	−0.062
Good	−0.170 ^c	−0.170 ^c	−0.198 ^c
Fair	−0.226 ^c	−0.176 ^c	−0.269 ^c
Poor	−0.202 ^c	−0.207	−0.219 ^c
Job characteristics			
Ln(monthly gross income)	0.043 ^c	0.043 ^c	0.037
Job tenure	−0.001	−0.001	0.000
Job tenure squared	0.000	0.000	0.000
Hours of work			
<30	−0.013	−0.048 ^a	0.046
30–39	−0.022	−0.051 ^b	0.020
40 (reference)	–	–	–
41+	−0.010	−0.021	0.021
Occupation			
Legislators and managers (reference)	–	–	–
Professionals	−0.037	−0.030	−0.056
Technicians/associate professionals	−0.058 ^b	−0.099 ^c	0.010
Clerks	−0.099 ^c	−0.111 ^c	−0.077
Service and market sales workers	−0.055 ^a	−0.099 ^c	0.043
Skilled agricultural and fishery workers	−0.107	−0.149	−0.016
Craft and trade workers	−0.096 ^c	−0.078 ^b	−0.117 ^a
Plant and machine operators	−0.126 ^c	−0.171 ^c	−0.051
Elementary occupations	−0.209 ^c	−0.242 ^c	−0.140 ^b
Industry			
Agriculture (reference)	–	–	–
Manufacturing	0.117	0.063	0.200
Electricity	0.021	−0.038	0.109
Construction	0.015	−0.066	0.183
Wholesale and retail trade	−0.026	−0.037	−0.042
Hotels and restaurants	−0.048	−0.125	0.083

Table 4 continued

	All Coef.	Non- disabled Coef.	Disabled Coef.
Transport and communication	0.055	0.025	0.109
Banking and finance	0.092	0.037	0.193
Public administration	0.058	0.022	0.123
Education	0.102	0.060	0.178
Health and social work	0.100	0.062	0.155
Other activities	0.113	0.103	0.117
Country			
Austria	−0.194 ^c	−0.171 ^c	−0.193 ^c
Germany	−0.208 ^c	−0.182 ^c	−0.209 ^c
Sweden	−0.072 ^c	−0.049	−0.096 ^b
Netherlands	−0.277 ^c	−0.286 ^c	−0.234 ^c
Spain	−0.361 ^c	−0.294 ^c	−0.444 ^c
Italy	−0.282 ^c	−0.267 ^c	−0.290 ^c
France	−0.265 ^c	−0.198 ^c	−0.366 ^c
Denmark (reference)	–	–	–
Greece	−0.568 ^c	−0.577 ^c	−0.474 ^c
Switzerland	−0.233 ^c	−0.242 ^c	−0.157
Belgium	−0.206 ^c	−0.157 ^c	−0.250 ^c
Other job	−0.019	−0.010	−0.047
Pension claims	0.001	−0.005	0.004
Year			
2004 (reference)	–	–	–
2007	−0.017	−0.015	0.005
Constant	3.395 ^c	3.524 ^c	3.215 ^c
No. of observations	9,182	5,959	3,223

Note Individuals aged 50–64. ^{a,b,c} imply significance at the 10, 5 and 1% levels, respectively. The standard errors are robust

1% level for the non-disabled sample. For both samples, no significant effects of job tenure (and its square) and hours of work (except in the hour categories *less than 30 h* and *30–39 h per week* for the non-disabled sample) are found. In the disabled sample, we find the opposite result for the hours of work but all coefficients are not significant at conventional levels (this might be due to the smaller sample size of the disabled sample). In line with the existing literature, non-disabled workers in the highest positions on the occupational ladder (e.g. legislators and managers, and professionals) are more satisfied with their jobs. For the disabled sample, we only find a significant effect with respect to the reference category (legislators and managers) for craft and trade workers and the elementary occupations. Looking at the country dummies, we observe that the highest levels of job satisfaction for the disabled sample are reported by those older individuals working in Denmark, Switzerland, Sweden and Austria (i.e. northern countries), whereas those working in Spain, France and Greece (i.e. southern countries) reported the lowest levels.

Discussion

This article has analysed the levels of job satisfaction reported by self-employed and salaried older workers (aged 50–64) by disability status in Europe. This analysis makes use of the first two waves of the SHARE (2004 and 2007) to estimate job satisfaction regressions for non-disabled and disabled individuals by using a random-effects linear model. We have proposed two different hypotheses about, first, the positive effect of self-employment on job satisfaction as compared to employees and, second, the possibility that this effect is statistically different for disabled and non-disabled workers. The estimation results show that the self-employed (disabled or not) are more satisfied with their jobs by around 0.10 points compared to their salaried counterparts, even after controlling for other variables. This result corroborates our first hypothesis but rejects our second hypothesis.

According to these results, self-employment may become a means to increase the levels of satisfaction of older people in general and of disabled people in particular, even though they work longer hours and receive lower incomes from work. Self-employment creates work activities and goals that fit disabled people's interests, capabilities and personality (Doyel 2002). According to Benz and Frey (2008b), job satisfaction is (*ceteris paribus*) lower the larger the hierarchy an employee is subject to. This is evidence for procedural utility: people value not only outcomes, but also the processes leading to outcomes. Self-employment provides greater flexibility of work patterns and accommodates individuals' disability by choosing, for example, working hours, type of work, working conditions or environment. As noted earlier, the variable *working hours* in Table 4 had an opposite effect in the non-disabled and disabled samples (shorter working hours reduced the levels of satisfaction reported by non-disabled individuals).

Following the findings reached in this study, policy makers should continue to find ways to reduce the labour market disadvantage of disabled people and promote self-employment among them as being a positive choice and source of job satisfaction rather than a last resort. Many of the barriers to self-employment are faced by disabled and non-disabled people alike but for disabled people they may be more acute or more difficult to overcome, including: access to start-up capital, interaction with the benefit system, and finding out about and accessing appropriate training and advice (Boylan and Burchardt 2002). Traditionally, governments have concentrated on combating any kind of discriminations against disabled people, but little attention has been paid to these important issues. In many countries, there are bureaucratic barriers to self-employment, wherein administrative laws

and regulations are often restrictive, making it costly for individuals to set up their own businesses. With respect to employment services, many work advisors tend to discourage disabled people from starting up a company because it is very stressful and full of difficulties. Disabled people report a lack of understanding and even active discrimination on the part of financial institutions, business advisers, and the employment services (Boylan and Burchardt 2002). These advisors should take into account the aspirations of disabled people, change their attitudes towards them and move from their position of authority to a position where they are working in collaboration with disabled people (Piggott et al. 2005). Finally, a better combination of benefits and self-employment could make it possible and more attractive for disabled people to be entrepreneurs and still feel economically safe. Flexibility and security (i.e. *flexicurity*) are two important questions for this collective. All these policy actions can contribute to increasing employment opportunities for older people with disabilities and preventing their social and labour exclusion.

Strengths and limitations of the study

With regards to the measure of disability, Gannon and Munley (2009) point out that our definition of disability is a standard measure used in many OECD countries (see, for example, the study of the OECD 2003)—it conforms to the newer social model of disability whereby disability is seen as a consequence of social, attitudinal and environmental barriers that prevent people from participating in society. This model arises from a major shift in thinking about disability. Previously, disability was viewed in terms of a medical model that focused on people's impairments and viewed these people as different from the norm. The measurement of disability in a survey context therefore poses considerable definitional and methodological difficulties. These issues are the subject of widespread debate, not the least of which is with respect to the implications for measurement of a shift from a medical to a social model of disability (Nolan et al. 2003). In addition, the question of the SHARE contains the main objective of the World Health Organization (WHO) definition which relates disability to limitations on daily activities. Our measure of disability is based on the individual's self assessment and it does not refer to an "objective" definition of disability. Some authors such as Chirikos and Nestel (1984) and Kreider (1999) have argued impede that self-assessment may not be a good guide to disability status because it may lead to overestimation (when the individuals try to justify situations of inactivity or limited work activity) or underestimation (when the disability is regarded as a stigma) of the prevalence of disability rates.

However, Burchardt (2000) points out that there are two reasons to believe that this problem is not as serious as it might seem: first, there is some evidence that self-assessed disability is closely related to “harder” measures of disability (e.g. Verbrugge et al. 1994; Ferraro et al. 1997), and second, self-assessment may be a better way of picking up the complex barriers to participation faced by disabled people than assessment by a third party based on fixed criteria.

In order to check the validity of our results, we have tested the existence of a possible problem a selectivity bias in our samples. According to Clark (1997), if dissatisfied disabled individuals can leave the labour market more easily than equally dissatisfied non-disabled individuals, the remaining disabled workers will have higher average levels of job satisfaction because the sample is biased. To test the existence of this problem we have applied the method proposed by Verbeek and Nijman (1992) for random-effects models. This test rejected the relevance of a selectivity bias in all samples. All of the results are available upon request. In addition, to check the sensibility and robustness of our results we have re-estimated all job satisfaction equations without including the variable “monthly gross income”. The results obtained are similar to those shown in Table 4 and do not change the main findings and conclusions.

Finally, an important limitation of this study is that we have to take into account the past life-course of the individual, namely, it is possible that more satisfied people chose self-employment earlier in life before becoming disabled. However, to investigate this question in more detail it is necessary to use a larger longitudinal dataset of persons. In any case, the results of this study (i.e. self-employed individuals (disabled or not) report higher levels of job satisfaction as compared to salaried workers, and the effect of self-employment on job satisfaction is the same for non-disabled and disabled individuals) offer an important step towards understanding the particular situation in terms of job satisfaction of older people with disabilities who are self-employed at a European level.

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Appendix

See Table 5

Table 5 Sample distribution of non-disabled and disabled individuals in 2004 and 2007 by labour force status

	Non-disabled	%	Disabled	%	Total	%
2004						
Employed	5,226	62.8	2,798	46.9	8024	56.2
Self employed	1,098	13.2	494	8.3	1,592	11.1
Employees	4,128	49.6	2,304	38.7	6,432	45.0
Unemployed	356	4.3	316	5.3	672	4.7
Out of labour force	2,723	32.7	2,759	46.3	5,482	38.4
Missing	19	0.2	87	1.5	106	0.7
Total	8,324	100.0	5,960	100.0	14,284	100.0
2007						
Employed	5,527	66.3	2,678	51.0	8,205	60.4
Self employed	1,287	15.4	630	12.0	1,917	14.1
Employees	4,240	50.9	2,048	39.0	6,288	46.3
Unemployed	228	2.7	204	3.9	432	3.2
Out of labour force	2,542	30.5	2,289	43.6	4,831	35.6
Missing	36	0.4	80	1.5	116	0.9
Total	8,333	100.0	5,251	100.0	13,584	100.0

Note individuals aged 50–64

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