

Job Satisfaction and Self-Employment: Autonomy or Personality?

*Thomas Lange
Bournemouth University*

Abstract

Most studies in the economics discourse argue that the impact of self-employment on job satisfaction is mediated by greater procedural freedom and autonomy. Values and personality traits are considered less likely to explain the utility difference between self-employed and salaried workers. Psychology scholars suggest that entrepreneurial satisfaction also depends, at least in part, on specific values and personality traits. Utilising a large dataset derived from the 2006 European Social Survey, this study performs a complementary analysis by taking personality traits, personal values and indicators for workers' autonomy explicitly into account. The empirical findings add further strength to economists' argument that, net of values and personality traits, autonomy and independence are the mechanisms by which self-employment leads to higher levels of job satisfaction. These results hold true for both, male and female sub-samples even when a multitude of socio-demographic characteristics, personal values and personality traits are controlled for.

JEL classification: J28, L26

1. Introduction

Numerous studies have tried to link, compare and disentangle the determinants of job satisfaction. These are important inquiries because job satisfaction has been shown to serve as a strong predictor for such behaviours as workers' commitment, motivation, absenteeism, quitting intentions, and other affective responses to aspects of the job or the employer (Cotton and Tuttle 1986; Clark et al. 1998; Judge et al. 2000; Saari and Judge 2004; Gazioglu and Tansel, 2006; Lange 2008).

Among the many empirical results from this burgeoning literature, it has been noted that the self-employed enjoy higher job satisfaction than employees (Eden, 1975; Naughton, 1987; Blanchflower and Oswald 1998; Benz and Frey 2004). As an explanation for this differential, studies in the economics discourse pay particular attention to greater freedom and autonomy of the self-employed compared with workers in dependent, salaried employment. Interestingly, economists generally consider it less likely that personality traits may drive the utility difference between self-employed and employed workers (Hundley 2001; Benz and Frey 2008a), even though variables on psychological attributes or deeply engrained personal values are rarely explicitly taken into account.

Research in the management and psychology literature, to take a very different example, suggests that entrepreneurial satisfaction¹ may depend, at least in part, on specific values and personality characteristics such as optimism, low levels of depression, confidence and low levels

of risk aversion (Cooper et al. 1988; Bradley and Roberts 2004; Berings et al. 2004). In addition, this literature has argued that the motivation to enter self-employment is predisposed by the need for success and achievement, creativity and preferences for novel activities, and risk-taking propensities (McCelland, 1965; Brockhaus, 1980; Krueger et al., 2000). However, it should be noted that most of these findings, although insightful in many ways, derive from investigations that are often based on small, non-representative data samples. It follows that respective empirical results cannot be generalised.

Against this background, two groups of studies emerge, alternatively emphasising personality traits and job characteristics, respectively. What remains unclear is the relative contribution of greater freedom and autonomy, as compared to workers' psychological attributes, that leads to the higher job satisfaction levels of the self-employed. What is more, existing studies rarely use large nationally representative data that adequately measure both concepts.

In an attempt to shed further light on these issues, the present study utilises data from the 2006 European Social Survey², which captures observations for a large number of European countries. The survey provides a rich, cross-sectional source of respondents' economic, demographic and personal characteristics, including information on several personality traits, personal values as well as information on workers' ability to exercise autonomy in the workplace. The data set is thus particularly suited for the purpose of this analysis.

The remainder of this paper is organised as follows: a brief summary of the reported values and personality traits of the self-employed and previous research on the link between self-employment and job satisfaction is provided in section 2. Section 3 introduces the data, econometric framework and data limitations, followed by the results and respective interpretations in section 4. Section 5 provides some concluding remarks.

2. Self-Employment and Job Satisfaction: Some Previous Findings

The notion that job satisfaction is associated with specific personal characteristics dates back to the work of Super (1953, p. 190) who observed, by reference to earlier job satisfaction theories, that "work satisfaction and life satisfaction depend upon the extent to which the individual finds adequate outlets for his abilities, interests, personality traits, and values." Even earlier, Schumpeter (1934, p.93) described seemingly common personality traits and values of entrepreneurs, noting that "there is the will to conquer; the impulse to fight, to prove oneself superior to others, to succeed for the sake, not of the fruit of success, but of success itself."

A substantial volume of studies has since tried to explore the personal characteristics of individuals who enter self-employment. Although this extensive literature has identified a plethora of personal traits, there appears to be at least a broad consensus that success and achievement motivation (Meyer et al. 1961; McCelland 1965, 1987; Collins et al. 2004), relatively low risk aversion (Hornaday and Bunker 1970; Brockhaus 1980; Saravathy et al. 1998; Stewart and Roth 2001), and independence, autonomy and an ability to influence organisational events (DeCarlo and Lyons 1979; Mescon and Montanari 1981; Van Gelderen and Jansen 2006; Benz and Frey 2008a) feature prominently as important entrepreneurial attributes. Arguably consistent with the public perception of an entrepreneur and in line with the Schumpeterian view of the entrepreneur as a bold and imaginative *creator*³, a number of studies have also identified optimism, confidence, creativity and innovative tendencies as important personality traits (Hull et al. 1980; Mueller and Thomas 2000; Danziger and Valency 2006).⁴

In the specific context of self-employment and job satisfaction, a large number of studies support the notion that the self-employed enjoy higher levels of job satisfaction, compared with

salaried, organisationally-dependent employees. However, a smaller literature base is devoted to identifying specific explanatory factors. As mentioned earlier, most economists appear to be content with the explanation that autonomy and procedural freedom account for higher job satisfaction of the self-employed. So note Benz and Frey (2008a, p. 362) that “individuals derive procedural utility from being self-employed because it gives them a higher measure of self-determination and freedom. In contrast, persons in dependent employment have to obey orders given by their superiors.” Beyond the economics discourse, Bradley and Roberts (2004) show that lower levels of depression amongst the self-employed serve as a useful predictor of comparatively higher job satisfaction. This finding is consistent with general subjective well-being research, which displays a particularly strong association between satisfaction and mental health (Wheaton, 1990; Thomas and Gangster, 1995). High levels of optimism have also been shown to positively affect an entrepreneur’s level of satisfaction (Cooper and Artz 1995), corroborating Blanchflower and Oswald’s note that “self-employed people may be intrinsically more optimistic and cheerful than others” (Blanchflower and Oswald 1998, p. 49). Berings et al. (2004) report that a range of personality traits influence enterprising processes and preferences, which in turn are strongly correlated with outcome variables such as job satisfaction and workers’ motivation.

Based on data from the 2006 European Social Survey, some basic cross-tabulations certainly indicate that job satisfaction and all of the above mentioned traits and characteristics point to marked differences between the self-employed and employees (see Table 1).

[Table 1 near here]

However, a more sophisticated statistical analysis, by way of multivariate regressions, is warranted to demonstrate whether these characteristics also serve as robust predictors of job satisfaction. What is more, after controlling for various personal and socio-demographic characteristics the present analysis attempts to identify if it is the ability to enjoy autonomy and exercise greater procedural freedom or workers’ psychological characteristics that act as important explanatory factors in the link between self-employment and job satisfaction. In support of this endeavour, the data, variables and econometric framework are described in the following section.

3. Data and Empirical Framework

The data for this analysis originates from the 2006 European Social Survey (ESS), which covers responses from 25 European countries. The general survey covers a representative sample of approximately 2,000 individuals per country. The ESS contains not only detailed information on job satisfaction and various socio-demographic characteristics, but also unique information on respondents’ levels of optimism, self-confidence, depression, and a range of personal values and beliefs. The latter captures values, which are said to be strongly associated with the self-employed, including whether it is important for the respondents to think of new ideas and be creative (*creativity and innovativeness*), to be successful and have their achievements recognised

(*achievement needs and recognition*), and to seek adventures and live an exciting life (*risk propensity*). Information on the ability to exercise freedom and autonomy in the workplace is also available. A number of studies also uncovered the positive impact of opportunities for ongoing education and training on workers' job satisfaction (Gazioglu and Tansel 2006). Since information on participating in courses, lectures or conferences during the past 12 months is available in the ESS in the form of a dummy variable, this information is also included in the empirical analysis.

By excluding countries with missing information on the main variables of interest, the analysis is restricted to the following 19 countries: Austria, Belgium, Bulgaria, Switzerland, Germany, Denmark, Spain, Finland, France, United Kingdom, Ireland, Netherlands, Norway, Poland, Portugal, Russian Federation, Sweden, Slovakia and Slovenia. The analysis focuses on workers in full-time employment⁵ and excludes workers in agriculture, the fishing industry and the armed forces. Excluding observations with missing or inconsistent values and restricting our sample to individuals between 18 and 65 years of age yields an effective sample of 11,157 observations – 6,282 for male and 4,875 for female workers. All observations span across a pooled data sample. This means that our study concentrates on Europe-wide data covering responses from a number of countries, rather than data for single economies. The downside of this treatment is that potentially important contrasts between more narrowly defined groups may moderate the results, but this is mitigated by including country dummies in the regressions.

Job satisfaction in the ESS is an ordinal-categorical variable on a scale of 0-10, where 0 represents “extremely dissatisfied” and 10 represents “extremely satisfied”. Specifically, the survey question on job satisfaction asks: “*All things considered, how satisfied are you with your present job?*” Economic and socio-demographic controls in the analysis include age, gender, marital status, income, education (including ongoing education and training opportunities) and employment status. The latter is a dummy variable, sub-divided by ‘self-employed’ and ‘employee’, respectively.⁶ Gender is also included as a dummy variable. However, since the gender dummy inclusion alone will not capture the effects of all other factors to vary across women and men, the model is estimated separately for male and female workers. All variables representing personality traits, personal values and autonomy characteristics are categorical in nature, measured on Likert-type scales. The definitions and sample means of all variables used in the empirical analysis are presented in Table 2.

[Table 2 near here]

Adopting a binary logit regression model, the empirical analysis commences by estimating a self-employment probability equation based on a variety of personal and job related characteristics. A latent regression is specified as:

$$\boxed{}$$

(1)

and the observed counterpart to y^* is $y = 1$ if $y^* > 0$. The reduced form of the model is

$$y^* = x\beta + \epsilon$$

(2)

where x is a vector of personal and job related characteristics, and $y = 1$ indicates self-employment.

Next, in recognition of the ordinal, categorical job satisfaction data this study aims to analyse an ordered probit regression was adopted as the model of choice. It is assumed that the subjective measurement of job satisfaction is determined by a transformation of individuals' characteristics into a cardinal latent index, S_i^* , which is interpreted as a proxy for unobserved utility. The index follows the normal distribution with mean μ_i and unit variance [$S_i^* \sim N(\mu_i, 1)$].

In formal terms, S_i^* is given by:

$$S_i^* = \beta'x_i + \epsilon_i$$

,

(3)

$$\beta = (\beta_1, \beta_2, \dots, \beta_k)$$

where x_i is a vector of explanatory variables describing individual characteristics, β represents a vector of parameters to be estimated and ϵ_i is a random error term, which is assumed to be normally distributed.

The cardinal index of unobserved utility is subsequently mapped into observed subjective ordinal evaluations of job satisfaction, y_i , which are determined from the model as follows:

$$y_i = \begin{cases} 1 & \text{if } S_i^* \leq \tau_1 \\ 2 & \text{if } \tau_1 < S_i^* \leq \tau_2 \\ \dots \\ J & \text{if } S_i^* > \tau_{J-1} \end{cases}$$

(4)

$$\tau_i = (\tau_1, \tau_2, \dots, \tau_{J-1})$$

, with $i = 1, \dots, J$, denotes thresholds to be estimated along with the parameter vector β .

represents the total number of categories. The interpretation of this regression model is based on coefficients and, therefore, accounts for the sign and statistical significance. It should be noted that the parameters do not calculate marginal effects on job satisfaction. Positive signs for the estimated parameters indicate higher levels of job satisfaction as the value of the associated variable increases. In other words, a positive value for S_i^* reveals that the entire distribution of S_i^* moves to the right. With a decreasing value of the associated variable, negative signs for suggest the converse.

Before proceeding with the empirical results of the analysis, some data limitations need to be brought to the reader's attention.

The job satisfaction question in the ESS refers to satisfaction with a specific job post with a specific employer covered by specific contractual terms, rather than satisfaction with work or occupation in general. Such a distinction between job and work satisfaction could be potentially important as satisfaction with a specific job might have a different influence than that of satisfaction with work or occupation in general. Reassuringly, however, Rose (2003) reminds us that although any given job is characterised by a unique set of contractual arrangements and work experiences, such experiences tend to fit with patterns of experience associated with given occupations or career paths.

It is also important to note that the present study focuses on 'overall job satisfaction' as a single-item measurement. Whilst previous studies on workers' subjective well-being also investigate 'satisfaction with pay', 'satisfaction with line managers', 'satisfaction with influence over job design', etc. (e.g. Gazioglu and Tansel, 2006), the ESS data set does not extend its coverage to include these details. Although these limitations cannot be overcome, a number of studies expressed their concerns about the internal consistency of single-item measurements (e.g. Rose, 2005). However, whilst acknowledging these concerns the present investigation takes comfort from the result of a meta-analysis of job satisfaction research, which suggests that workers' satisfaction can be adequately examined on the basis of a single-item measurement (Wanous et al., 1997).

Finally, the ESS is cross-sectional in nature, which imposes design limitations to examining trends and changes over time. It follows that in the absence of longitudinal data the analysis cannot rely on fixed-effect estimations to control for time-invariant factors.

4. Empirical Results and Interpretations

Although various socio-demographic variables have been shown to be strong predictors in the self-employment context (e.g. Cowling and Taylor 2001; Smallbone and Welter 2001), relatively little is known about the impact of personal values, personality traits and autonomy indicators in a cross-European context.⁷ To set the scene, Table 3 displays an examination in the form of a binary logit model, estimating the impact of various covariates on the probability of being self-employed for all observations as well as for male and female sub-samples. At the outset, it should be noted that

the logit analysis is presented here for the sole purpose of showing partial coefficients, holding all other predictors constant, and not as an attempt to infer causality.

Consistent with many previous studies, important gender differences are evident in that men are more likely to be self-employed than women. Men's net odds of being self-employed are 1.65 times ($= e^{0.503}$) the odds of women. The relationship with age is significant and positive for all observations and for men, but does not display a curvilinear pattern. Beugelsdijk and Noorderhaven (2005) explain the absence of the latter by reference to similar retirement arrangements of the self-employed and salaried employees. Marital status does not show a statistically significant impact at the conventional levels. Compared with lower levels of educational achievements, middle level education – equivalent to lower secondary school and vocational trade qualifications – displays a positive and statistically significant impact on being self-employed for all observations and for men (with respective net odds of 1.23 and 1.37 times the odds of those with lower level education). For women, the impact is negative but not statistically significant. Similarly, for all observations and both sexes upper level education shows a negative and insignificant effect. Workers with access to ongoing education and training opportunities are less likely to be self-employed. The impact is strong and negative for all observations and for both, men and women (with net odds of only 50 percent, 45 percent and 62 percent of non-access workers' odds). The coefficients for household income are not significant at the conventional levels. Contrary to some previous studies, neither value statements nor reported personality traits show a particularly strong and significant effect on the probability of being self-employed. Consistent with the literature on mental health problems as barriers to employment (e.g. Jones et al. 2006), the interesting exception to this trend is the impact of feeling depressed for men, which shows a strong and negative effect. In contrast, the autonomy and independence indicators display a strong and positive impact on the probability of being self-employed. This holds true for all observations, as well as for men and women, and confirms the notion that decision freedom and the absence of hierarchical constraints in the workplace are strongly associated with self-employment (e.g. Van Gelderen and Jansen 2006).

[Table 3 near here]

Turning to the determinants of job satisfaction, the respective regression estimations are provided in Table 4.

In a first step, columns 1 – 3 report the baseline results for job satisfaction regressions with respect to the employment status only. For all observations, and separately for men and women, the results display the predicted pattern: job satisfaction is higher for the self-employed compared with those in salaried employment. In columns 4 – 6, job satisfaction regressions are controlled for demographic and labour market characteristics. The estimated coefficients are generally in line with those reported in previous empirical investigations.

Men are, on average, less satisfied with their jobs than women (albeit not at a statistically significant level), and there is a U-shaped relationship between job satisfaction and age, reflecting life-cycle, non-job related aspects of individuals' social, family and economic circumstances (Clark et al. 1996). However, the latter result is only significant for men rather than women. Being

married displays a positive impact on job satisfaction for both, men and women. For all observations, and also separately for men and women, higher levels of income are associated with greater job satisfaction, a finding that is broadly consistent with results of previous cross-sectional studies. Interestingly, compared with lower levels of educational attainments, both middle and upper level education display a negative impact on job satisfaction. However, the results are not statistically significant with the exception of upper level attainments for men. In contrast, ongoing education and training opportunities during the past 12 months display a strong and positive impact on job satisfaction for all observations and for both sexes. Although the empirical literature on the impact of education on job satisfaction is ambiguous, the latter effect may be explained on the basis of *social exchange theory* (Blau 1964). The motivational processes of the theory incentivise workers who believe that committed organisations provide education and training opportunities for the benefit of the worker to reciprocate by way of attitudinal and behavioural commitments that are of benefit to the firm. Empirical support for such processes is also shown by Georgellis and Lange (2007) for the German labour market. Despite the addition of personal and job related controls, the ‘self-employed’ variable retains its positive impact for all observations and for men and women.

[Table 4 near here]

In columns 7 – 9, the regressions are repeated, this time with further controls in the form of personal values and personality traits. A number of interesting mediating effects become visible. Being male is now highly significant and negative. Similarly, the coefficients for educational attainments have become statistically significant for all observations and the male sub-sample, whereas the statistical significance of marital status for the male and female sub-samples disappears. Turning to personal values and personality traits, the regression results show several, statistically significant effects. Specifically, the importance of new ideas and creativity displays a strong and positive impact on workers’ job satisfaction for both, men and women. Those who indicate that success and recognised achievements are important also appear to enjoy higher levels of job satisfaction. However, the effect is significant only for men. The importance of seeking adventures and having an exciting life, a proxy for risk propensity, shows a negative effect, although the impact is significant only for men rather than women. The impact of optimism and self-esteem is strong and positive for both sexes. Depression, on the other hand, displays a strong and negative effect, which is consistent with previous findings in the literature.

Even after controlling for this multitude of personal and work characteristics, including income, socio-demographic characteristics, personal values and personality traits, the multivariate regressions continue to confirm that the self-employed are more satisfied with their jobs than employees. For all observations, and in separate regressions for men and women, the analysis finds substantial and highly significant effects for the ‘self-employed’ variable.

In the final step of the analysis, two autonomy and independence indicators are added to the regressions: the ability to decide how daily work is organised and the ability to influence the employing organisation’s policy decisions, as proxies for procedural freedom. As such, these indicators are consistent with what Benz and Frey (2008a) refer to as ‘procedural utility’, a notion, which reflects people’s value of not only outcomes, but also of conditions and processes leading to outcomes. Accepting this reasoning implies that the self-employed enjoy their situation in the market place as independent actors, that is actors independent of organisational hierarchies,

primarily for procedural reasons. Respective estimations are shown in columns 10 – 12.

Both indicators have a strong and positive impact on workers' job satisfaction, a result, which holds true for all observations and for both sexes. The addition of the two variables also results in mediating effects with regard to the impact of education, which now displays a strong and negative influence of upper level education on women's job satisfaction. Above all, taking into account autonomy and procedural freedom results jointly in strong mediating effects with regard to the impact of self-employment. The latter's coefficients for all observations as well as for men and women remain positive, but are no longer statistically significant at the conventional levels. Although both personal values and personality traits retain their roles as strong predictors of workers' job satisfaction, it appears that net of demographics, values and personality traits the residual effect is indeed entirely explained away by workers' ability to exercise autonomy and procedural freedom in the workplace. In contrast, neither demographic, income and educational characteristics nor value and personality traits are able to account for the observed utility differences between the self-employed and salaried employees.

Finally, it is worth noting that organisational economists have examined the importance of independent and autonomous decision freedom for some time (e.g. Williamson 1975; Aghion and Tirole 1997; Zabojnik 2002). However, as Benz and Frey (2008b) were amongst the first to recently acknowledge, in economic theory "it has not been taken into account that people might have a preference for autonomy per se" (Benz and Frey, 2008b, p. 453). As Table 1 of this study already highlights, there are a number of values, traits and characteristics, which distinguish the self-employed from salaried employees. However, the findings of subsequent analyses suggest that paying attention to the role of autonomy and independent decision-making as crucial components of personal utility, especially in the context of self-employment, is a particularly worthwhile endeavour.

5. Concluding Remarks

Using job satisfaction as a proxy for utility from employment, it has been shown that the self-employed enjoy higher levels of job satisfaction than salaried, organisationally-dependent employees. Most studies in the economics literature support the hypothesis that higher job satisfaction of the self-employed, compared with employees, can be explained by reference to preferences for autonomy and independence. Personality traits and personal values, although hailed in the psychology literature as important influences on workers' subjective well-being, do not feature prominently in these studies and are generally considered less likely to explain the link between self-employment and job satisfaction. Interestingly, variables on values and personality traits rarely feature explicitly in economists' investigations, but are nevertheless described as unlikely explanatory factors. This may have been an important oversight, especially since the role of personality traits and the effect of procedural utility are not mutually exclusive.

In this paper, a complementary analysis was performed, taking values and personality traits explicitly into account and investigating the relative contribution of greater freedom and autonomy, as compared to workers' psychological values and attributes, that leads to the higher job satisfaction levels of the self-employed.

Based on cross-sectional data derived from the 2006 European Social Survey, the

empirical analysis – consistent with previous findings – identified a number of demographic variables, which impact on workers' well-being. It also confirmed psychologists' assertions that several personality traits and deeply engrained personal values serve as strong predictors of workers' job satisfaction. However, controlling for these traits and values did not alter the statistical significance of a strong and positive association between self-employment and job satisfaction. In contrast, adding variables on autonomy and procedural freedom to the regressions resulted in strong mediating effects. The sign of the self-employment coefficient remained positive, but was no longer statistically significant at the conventional levels. This result held true for all observations and for male and female sub-samples.

The findings of this study thus add further strength to economists' argument that - net of values and personality traits - autonomy and independence are the mechanisms by which self-employment leads to higher levels of job satisfaction.

Replicating the study with longitudinal data sets, with different satisfaction domains and extending the analysis to include a larger set of countries or regions with more salient personal value and traits variations all provide interesting avenues for future research.

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Notes

- 1 In the spirit of Blanchflower and Oswald's observation that "the simplest kind of entrepreneurship is self-employment" (Blanchflower and Oswald 1998, p. 27), the terms 'entrepreneur' and 'self-employed' are used interchangeably throughout the analysis.
- 2 Data from the 2006 European Social Survey were released in April 2008. For a description of the sampling design, see Lynn et al. (2004). For further information, including questionnaire design details see www.europeansocialsurvey.org.
- 3 In Schumpeter's view, the entrepreneur does not passively operate. Instead, he creates an environment different from the one hitherto encountered by seeing through investments of physical, emotional and intellectual assets. In Schumpeter's own words: "... there is the joy of creating, of getting things done, or simply of exercising one's energy and ingenuity" (Schumpeter 1934, p. 93).
- 4 It is interesting to note that these characteristics are broadly consistent with the concept of 'core self-evaluations', which is manifested in self-esteem, locus of control, generalised self-efficacy and low levels of neuroticism. These personality traits have been shown to serve as significant predictors of job satisfaction (Judge et al. 1998).
- 5 Defined as respondents being in 30 hours or more of paid employment per week for their main job.
- 6 The employment status variable adopts the employment classifications specified in the ESS, without making any additional adjustments to the self-employment category. On this basis and across the chosen countries, an average of 8.1% of the workforce sampled was self-employed. This is broadly in line with the observation by Benz and Frey (2008a, p. 362) who note that "around 10% of all individuals gainfully employed in Western countries are self-employed".
- 7 For a notable exception see the analysis on values and personality characteristics of the self-employed by Beugelsdijk and Noorderhaven (2005).

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Table 1: Job Satisfaction, Values and Personality Traits by Employment Status

	Employee	Self-Employed
Mean job satisfaction (sample mean; scale 0 - 10)	7.10***	7.89***
Allowed to decide how daily work is organised (sample mean; scale 0 - 10)	6.51***	9.23***
Allowed to influence organisation's policy decision (sample mean; scale 0 - 10)	3.86***	9.00***
Important to think new ideas and be creative (% indicating "like me" or "very much like me")	52.84	68.14
Important to be successful and that people recognise achievement (% indicating "like me" or "very much like me")	34.91	42.23
Important to seek adventures and have an exciting life (% indicating "like me" or "very much like me")	18.60	24.15
Always optimistic about future (% indicating "agree" or "strongly agree")	71.17	79.49
Feel very positive about myself (% indicating "agree" or "strongly agree")	79.20	85.01
Felt depressed during past week (% indicating most, almost all or all of the time)	4.99	3.96

*Source: 2006 European Social Survey; author's own calculations; *** = significant at the 1 percent level.*

Table 2: Variable definitions and sample means

Variable	Definition
Job satisfaction	Ordinal categorical variable on a scale 0 to 10 (0=extremely dissatisfied; 10=extremely satisfied)
Self-Employed	Dummy variable: 1 for self-employed; 0 otherwise
Employee	Dummy variable: 1 for employee; 0 otherwise
Male	Dummy variable: 1 for male; 0 otherwise
Age	Age in years
Married	Dummy variable: 1 for married; 0 otherwise
Education	
Lower	Dummy variable: 1 for lower level education; 0 otherwise
Middle	Dummy variable: 1 for middle level education; 0 otherwise
Upper	Dummy variable: 1 for upper level education; 0 otherwise
Ongoing education/training opportunities in past 12 months	Dummy variable: 1 for having opportunity in past 12 months; 0 otherwise
Household income	
Lower	Dummy variable: 1 for lower household income; 0 otherwise
Middle	Dummy variable: 1 for middle household income; 0 otherwise
Upper	Dummy variable: 1 for upper household income; 0 otherwise
Value Statements	
It is important to think new ideas and be creative	Ordinal categorical variable on a scale of 1 to 5 (1 = not at all like me; 5 = very much like me)
It is important to be successful and people recognise achievements	Ordinal categorical variable on a scale of 1 to 5 (1 = not at all like me; 5 = very much like me)
It is important to seek adventures and have an exciting life	Ordinal categorical variable on a scale of 1 to 5 (1 = not at all like me; 5 = very much like me)
Personality Traits	
I am always optimistic about the future	Ordinal categorical variable on a scale of 1 to 5 (1 = disagree strongly; 5 = agree strongly)
Generally, I feel very positive about myself	Ordinal categorical variable on a scale of 1 to 5 (1 = disagree strongly; 5 = agree strongly)
I felt depressed (how often past week)	Ordinal categorical variable on a scale of 1 to 4 (1 = none of the time; 4 = All or almost all of the time)
Autonomy Indicators	
Allowed to decide how daily work is organised	Ordinal categorical variable on a scale of 1 to 5 (1 = I have no control; 5 = I have complete control)
Allowed to influence organisation's policy decision	Ordinal categorical variable on a scale of 1 to 5 (1 = I have no control; 5 = I have complete control)
Observations	

Table 3: Self-Employment: logit regressions

	All	Males	Females
Male	0.503*** (0.093)	-	-
Age	0.060* (0.032)	0.084** (0.038)	0.010 (0.059)
Age2	0.000 (0.000)	0.000 (0.000)	0.000 (0.001)
Married	0.032 (0.095)	-0.051 (0.117)	0.171 (0.165)
Education			
Middle	0.210* (0.119)	0.315** (0.143)	-0.086 (0.219)
Upper	-0.010 (0.127)	-0.160 (0.154)	-0.409 (0.238)
Ongoing education/training opportunities past 12 months	-0.701*** (0.091)	-0.805*** (0.111)	-0.484*** (0.165)
Household income			
Middle	0.107 (0.142)	0.099 (0.182)	0.113 (0.231)
Upper	-0.114 (0.143)	-0.140 (0.181)	-0.080 (0.243)
Value Statements: Important to ...			
think new ideas and be creative	0.057 (0.043)	0.048 (0.054)	0.081 (0.075)
be successful and people recognise achievements	0.068* (0.036)	0.059 (0.045)	0.104 (0.063)
seek adventure and have an exciting life	-0.047 (0.034)	-0.022 (0.042)	-0.095 (0.061)
Personality Traits			
I am always optimistic about the future	0.002 (0.061)	0.041 (0.075)	0.071 (0.106)
Generally, I feel very positive about myself	0.066 (0.071)	0.092 (0.088)	0.014 (0.122)
I felt depressed (how often past week)	-0.112 (0.076)	-0.251*** (0.097)	-0.105 (0.130)
Autonomy indicators			
Allowed to decide how daily work is organised	0.110*** (0.034)	0.051** (0.019)	0.276*** (0.073)
Allowed to influence organisation's policy decision	0.797*** (0.032)	0.811*** (0.039)	0.764*** (0.058)
Constant	-10.226*** (0.778)	-10.175*** (0.933)	-9.741*** (1.412)
Country dummies?	Yes	Yes	Yes
Observations	11,157	6,282	4,875
Pseudo R2	0.213	0.242	0.162

Note: (***) = significance at the 1 percent level, (**) = significance at the 5 percent level, and (*) = significance at the 10 percent level; robust standard errors in parentheses. Reference categories: educational qualifications lower; household income lower.

|Table 4: Job satisfaction - ordered probit regressions

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