Job satisfaction and satisfaction in financial situation and their impact on life satisfaction

Research note no. 6/2016

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Abstract

In this Research Note the aim is to explore the distribution and determinants of job satisfaction and satisfaction in the financial situation based on the EU-SILC ad hoc module carried out in 2013. The literature describes measures of job satisfaction and financial satisfaction as measures of domain satisfaction, as they express satisfaction in important domains of life. Satisfaction in each of these domains is assumed to be influenced by specific behaviour and circumstances, and satisfaction in all these domains determines overall life satisfaction. The Research Note describes the distribution of job satisfaction and financial satisfaction and studies the determinants of these using multivariate statistical models.

In the case of job satisfaction the analysis shows the role of job characteristics and demographic attributes in shaping job satisfaction. Most importantly, higher wages are associated with higher job satisfaction. Employees working full-time are more satisfied than those in short part-time employment (less than 20 hours). Those with a permanent job seem to be more satisfied than temporary workers, although there are countries where this pattern does not apply. Job satisfaction tends to rise with increasing occupational prestige. Among the demographic groups characterised by lower job satisfaction are men, the middle-aged and the tertiary educated.

Results obtained from the regression analysis of financial satisfaction are consistent with previous studies that show a significant positive effect of income on satisfaction with the financial situation. In addition, unemployment and ill health have a strong negative effect on financial satisfaction. Financial satisfaction tends to be lower among men, the non-married population, those with primary and secondary education, and among those with self-reported poor health. Finally, the U-shaped relationship with age is in line with what has been previously found by subjective well-being research.

Results have also shown that job satisfaction and financial satisfaction are important in shaping overall satisfaction with life. Among the measures of domain satisfaction included in the EU-SILC dataset, financial satisfaction was the most strongly correlated with life satisfaction.

Introduction

In this research note the aim is to explore the distribution and determinants of job satisfaction and satisfaction in the financial situation based on the EU-SILC ad hoc module carried out in 2013. Job satisfaction and financial satisfaction are measures of subjective well-being that aim to capture individuals' subjective assessment of their life situation. Satisfaction with financial satisfaction is concerned with the subjective evaluation of the financial position of one's household, while job satisfaction is concerned with the subjective evaluation of one's actual job. The literature describes measures of job satisfaction and financial satisfaction as measures of domain satisfaction, as they express satisfaction in important domains of life. There are of course many other measures of domain satisfaction like satisfaction with housing, with personal relationships, with environmental quality, with political life, with institutions etc. satisfaction in each of these domains is assumed to be influenced by specific behaviour and circumstances, and satisfaction in all these domains determines overall life satisfaction.

The importance of studying job satisfaction lies in its close connection to observed behaviour (Hakim 1991, Clark 1997). Unsatisfied workers are more likely to be less productive, to change job, to be absent from work, to spend more time on extra-work activities and earn more from these. Literature also draws the attention to the fact that satisfaction with work is a central component of the quality of life as well and has an impact on mental health (Curtice 1993). The literature also underlines the importance of financial satisfaction. It is consistently found that measures beyond monetary aspects of the financial position such as the subjective financial situation have a substantial role in the overall well-being of individuals. Increased financial satisfaction is associated with lower levels of stress and depression and with higher self-esteem and control of one's life (Hsu, 2015). Relatively few studies, however, have focused explicitly on financial satisfaction as a distinctive domain of overall life satisfaction or happiness.

Job satisfaction and financial satisfaction are the two domains explored in this Research Note. More specifically, the study is concerned with the determinants of job satisfaction and financial satisfaction especially the relation with wages/income. Existing literature suggest that higher levels of income are associated with higher levels of satisfaction, but that the magnitude of the relationship is relatively moderate. In addition to income, the effect of other factors such as age, gender and labour market status are also analysed. The Research Note first presents results of the analysis on job satisfaction which is followed by discussion of financial satisfaction. Finally, results on the role of job satisfaction and financial satisfaction in shaping life satisfaction are presented.

Job satisfaction

This section first provides a short literature review on determinants of job satisfaction. It then presents data on differences in average job satisfaction and inequality of job satisfaction in EU countries before examining the determinants of job satisfaction by means of regression analysis.

Literature review on determinants of job satisfaction

In the traditional microeconomic models of labour supply, utility from work is related to income one obtains from work and the hours of work that are necessary to secure the given level of income (Ehrenberg and Smith 2009). Such models suggest that wage levels and hours of work will be the main determinants of job satisfaction. Sociologists tend to emphasise a broader range of determinants of job satisfaction. In Arne Kalleberg's (1977) model job satisfaction depends directly on work values and work attributes. He identifies six dimensions that people can find important in their work: intrinsic value (whether work task is interesting), financial value (level of pay and benefits), career value (possibilities for promotion), convenience (short commuting, convenient working hours), relations with co-workers and resource adequacy (whether

resources needed for work are given). Satisfaction with a job comes from a comparison of the characteristics of the actual job and a person's views about the characteristics the job ought to have. Thus differences in job satisfaction are not only consequences of different work rewards but might also arise from different work values. The literature has identified several factors that affect the level of job satisfaction. We intend to consider 1. characteristics of the job; 2. demographic characteristics like gender or age; and 3. the institutional context of labour relations.

Job characteristics

As mentioned above, hourly wage and hours of work are job characteristics that have a large influence on satisfaction with work. Obviously job satisfaction is expected to increase with the level of hourly wage. The relationship between working hours and job satisfaction is less clear. Although full-time employment offers higher income and full integration to the labour market, low work hours do not necessarily mean a bad job. Actually for parents of small children part-time jobs can offer a way to reconcile work and parental duties thus in these case might also lead to higher job satisfaction. If employees are risk-averse, job security is also a feature that enhances satisfaction with a given job.

The organisational context clearly plays an important role in influencing work attitudes and satisfaction with work. The model by Kalleberg and Reve (1991), that builds on approaches from sociology and economics, focuses on employment contracts. In fact, employment contracts with different duration, different guarantees for job security or different features of organisational advancement tend to form the actual basis for employment relations and thus can be an important predictor of job satisfaction. One important feature of employment contracts are the temporary or permanent nature of the employment relation. Although temporary contracts generally involve a lower degree of job security compared to permanent contracts, other attributes of these jobs can compensate employees and result in similar levels of job satisfaction. E.g. temporary jobs have sometimes been described as acting as a stepping stone for regular employment (eg. de Graaf-Zijl 2012).

Origo and Pagani (2009) however argue that the nature of the employment contract is less important in determining job satisfaction. In their study they are able to measure perceived job security of employees and conclude that workers who perceive a high chance of losing their job show low job satisfaction regardless of the type of contract (temporary/permanent) they have. On the other hand, employees with temporary contract perceiving low job insecurity have similar job satisfaction levels compared to employees in stable permanent jobs.

Employment contracts also reflect authority and dependence relations between employers and employees. The managers and supervisors have probably the best possibilities for more advantageous employment contracts. Satisfaction with work was found higher for those in supervisor position in previous analyses, too (e.g. Blanchflower and Oswald 1999).

Sociological theories of contracts assert that exchange relations on the labour market are usually unequal and the results of exchanges depend on the initial distribution of resources. Those employees who have less personal assets and labour market capabilities can decide to form coalitions and co-operate in defending their interests. Workers typically join to or form unions where they can negotiate collectively on the terms of their employment contracts. Thus, unionism – if it is strong and provides support for its members – can also contribute to better work conditions and to higher satisfaction with work. On the other hand, union members can be labourers with less assets and lower social status. If so, in line with our hypothesis on status attributes, union membership can negatively affect satisfaction with work. This was the finding of previous studies (Freeman 1978, Borjas 1979).

Self-employment constitutes a special position in the labour market, a position without an employment contract. Self-employment might be a result of a decision aimed at achieving more independence, personal and professional freedom, better prospects for occupational and financial career, etc. Self-employed also provides more freedom for deciding working conditions and involves a greater degree of autonomy, which can have positive effect on satisfaction with work. At the same time, self-employment can be a consequence of a structural constraint in the labour market or in the individual assets of the person when somebody is not able to find a job and to be part of the labour force as an employee. Self-employment is also related to higher risk, as the people concerned have fully to bear the consequences of market setbacks. Despite the negative side, previous evidence on self-employment suggests that it increases satisfaction with work (Blanchflower and Oswald 1999).

Socio-economic and demographic variables

Previous research on the topic has found a seemingly paradoxical relationship between gender and satisfaction with work. Although women generally have poorer working conditions than men (lower salaries, less promotion opportunities, lower job security), on average, they tend to be more satisfied with work (Hakim 1991, Curtice 1993, Clark 1997). Some authors explain this "gender paradox" by the different priorities of women and men. According to them, work is only a secondary source of self-esteem for women while family plays a more important role (Polachek 1981). Different work values as well as the mechanism of self-selection based on these orientations have an impact on satisfaction. This assumption is supported by some of the interesting findings of the previous research, namely that women who work in part-time jobs are especially satisfied with work (Curtice 1993). At the same time, previous research did not find a substantial difference in work satisfaction between men and women if both work in full-time jobs.

Kalleberg and Loscocco (1983) investigated the impact of age on work satisfaction. They found that age affects working conditions and work values, and both cohort effects and life cycle effects are present. The explanation of the life-cycle effect is that older people are at a more advanced stage of their career and consequently can usually attain better jobs than younger individuals. The cohort effect can come from the fact that members of larger cohorts have more difficulties to find a good job than members of smaller cohorts. The life cycle effect has another feature, namely, that the importance of specific job characteristics can also change as individuals get older. The same phenomenon from a cohort perspective means that socialisation of cohorts born in different periods of time is likely to lead to different work values and it is thus possible that members of subsequent cohorts evaluate similar jobs differently (Kallebereg and Loscocco 1983). Since studies based on cross-sectional data have no proper opportunities to separate cohort and life-cycle effects, they tend to find the impact of age as being curvilinear (e.g. Clark et al. 1995. Blanchflower and Oswald 1999).

Human capital theories assert that the level of education influences returns with respect to the jobs and income which individuals can obtan. According to Becker (1975) people invest in their human capital in order to achieve better jobs with higher occupational prestige and higher income and, in this way, higher general social status. Consequently higher educated people are expected to have better jobs. This does not mean, however, that better educated people will be more satisfied with their work because they also tend to have higher aspiration levels. Moreover, people with higher education and with higher social status are frequently less satisfied with their working conditions because they tend to compare them to the conditions of those who have even better jobs. Reference group theory (Merton 1968) provides a framework for interpretation here and this concept suggest that people with higher status compare themselves to "circles" occupying positions above them.

The institutional context of labour relations

Job satisfaction is also influenced by the institutional context of labour relations. For instance the institutional context might have an effect on job security, which is an important aspect of jobs and has more of an influence on job satisfaction. One element of the institutional context that affects job security is employment protection legislation (EPL), which consists of rules and procedures related to the faculty of companies to hire and dismiss workers in private employment relationships. Features of EPL are not only embedded in law but also in collective and individual labour contracts. The rationale of EPL is to address the risks for workers associated with dismissal through a series of requirements to be respected by the employer when dismissing workers. In more flexible labour markets the level of EPL is low, so it is less difficult for employers to lay off workers. Another important aspect of the institutional context is the generosity of unemployment benefits and the availability of services that help the unemployed to find a job (training, counselling etc.). If unemployment benefits are generous and services are effective the unemployed are more likely to find a job and less likely to suffer important income loss while out of work.

Origo and Pagani (2009) describe the institutional context of the labour market in terms of flexibility (measured by EPL) and security (measured by expenditure on labour market programmes). They identify four distinct country clusters based on these indicators. In the Anglo-Saxon countries labour markets are flexible (EPL is low), while spending on labour market programmes is also relatively low. Continental countries are also characterised by low EPL, while spending on LMP is higher . The Nordic countries also have low level of EPL but have an even higher level of spending on labour market programmes. The Mediterranean countries are the opposite, having more rigid labour markets (high EPL) but low level of spending on labour market programmes.

Previous research underlines the importance of labour market institutions for job satisfaction. For example, several studies have investigated the hypothesis that the effect of job insecurity on job satisfaction should be smaller in countries with labour market institutions characterised by flexibility and security at the same time (flexicurity model). E.g. the study by Ferrer-i-Carbonell and van Praag (2006) shows that the effect of the temporary nature of employment on job satisfaction strongly depends on the institutional context. In the case of Spain, temporary employment is associated with lower job satisfaction, because temporary employment does not lead to permanent jobs (see Garcia-Serrano and Malo 2013) and labour market programmes offer little protection against the consequences of job loss. On the other hand temporary employment is not associated with lower job satisfaction in the Netherlands, where the labour market institutions are characterised by flexibility coupled with security. Similar results have also been found for the Netherlands by Graaf-Zijl (2010).

Data and measurement

The EU SILC ad hoc module on well-being conducted in 2013 included one question on job satisfaction. Job satisfaction refers to the respondent's opinion/feeling about the degree of satisfaction with their job, focusing on the period when the interview took place. Individuals who are currently working (as employees or self-employed) were invited to grade their jobs in these terms. Answers were coded on an 11-point scale (0-10), with 0 meaning not at all satisfied to 10 meaning completely satisfied.

One of our independent variables of interest is hourly wage of the individual. Information on current monthly earnings for employees (PY200G) is available only in the case of 10 countries in EU-SILC. For the inter- country analysis, hourly earnings were calculated on the basis of this variable and the number of hours worked. This variable is available only in case of employees while there is no such information present in case of the self-employed. Thus in models where variable PY200G is included the self-employed are not be included. When all Member States of the EU are examined a different solution has to be adopted. EU-SILC records yearly employee cash and non-cash income (PY010G) over the income reference year. To examine wages among individuals with different working

hours, hourly wage rates were calculated using the information on yearly employee income, the number of months the respondent was in employment (PL070, PL072) and the hours they typically work in their main job (PL060). One limitation of the data is that information on hours of work relates to the current situation and there is no information on hours of work in earlier periods of the year[1]. Thus the calculation of hourly wage rates has to be restricted to employees who have been working either full-time or part-time over the whole year. Employees who have changed job during the reference year have also been excluded, since in this case hours of work at the previous job are not known[2]. The assumption here is that individuals who have been working throughout the entire year at the same job have been working the same hours as currently reported (in variable PL060).

Average and inequality of job satisfaction in EU countries

In the following section the aim is to describe cross-country differences between EU countries in job satisfaction. When describing cross-country differences in well-being indicators (such as job satisfaction) account should also be taken of differences in well-being within countries (see e.g. Stiglitz et al. 2009). For this reason, instead of focusing only on differences between countries in average job satisfaction we also measure inequality of job satisfaction within countries. Kalmijn and Veenhoven (2005) argue that indicators used to describe inequality in incomes are not necessarily the best indicators to describe inequality in satisfaction/happiness. The reason is that income is measured on a ratio scale, while the measurement of satisfaction is basically ordinal. Usually, these ordinal numbers are treated as if they were cardinal numbers, which implies that happiness ratings are postulated to be equidistant (for justification see e.g., Van Praag (1991), Ng (1996, 1997), Van Praag and Ferrer-i Carbonell, (2004: 319)). But even if this assumption is made, satisfaction is still measured on an interval scale and not ratio scale, which supposes a meaningful (unique and non-arbitrary) zero value. In the case of satisfaction it is not meaningful to speak about one's share of total satisfaction in society, and it is not meaningful to speak about a transfer of units of satisfaction between individuals, unlike in the case of income.

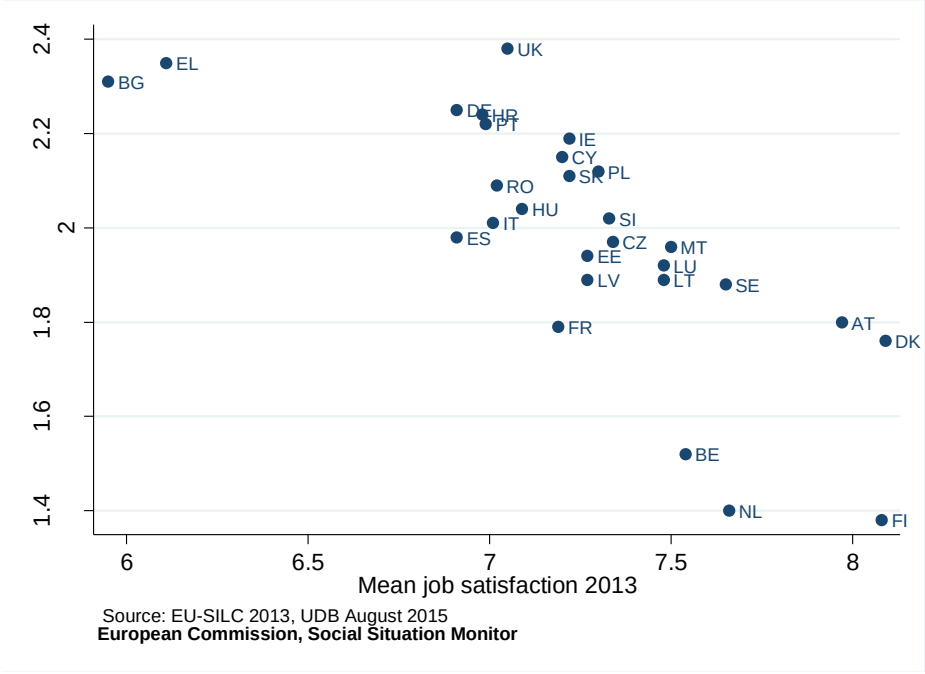
Kalmijn and Veenhoven (2005) suggest the use of standard deviation, mean pair distance or interquantile range as measures of inequality of subjective well-being. Here we use the standard deviation. In income inequality analysis, this measure is not frequently used due to its dependence on the mean of the distribution. However Kalmijn and Veenhoven (2005) argue that the case of subjective well-being and satisfaction is essentially different. These measures are already dimensionless, due to their origin as ordinal numbers and as a consequence dependence on the mean is not problematic.

Figure 1 shows that job satisfaction is lowest in Bulgaria and Greece, where the average score is around 6. Three countries clearly stand out at the other end of the country ranking, Denmark, Finland and Austria where the average score is around 8. In the majority of the countries the average score of job satisfaction falls in the range between 7 and 7.5. Standard deviation of job satisfaction tends to be higher in countries with lower average score, although the highest inequality indicator is observed in the UK, where standard deviation equals 2.38. Still there seem to be important differences even among countries with similar average score. E.g. Spain has the third lowest average score but the standard deviation is around average (1.98). Finland has a similar average as Denmark or Austria, but standard deviation is considerably lower.

[1] This approach is similar to that taken by other studies in the literature. For instance, Maître et al. (2012) focus on those working full-year full-time when studying low pay.

[2] This was omitted from the definition in the case of countries where there was no information in this variable (PL160), for example, Bulgaria, Sweden, and Finland; and also in the case of countries where it was only asked from the selected respondents (and not all household members above 16 years of age), such as Denmark, the Netherlands, and Slovenia.

Figure 1. Mean and standard deviation of job satisfaction in the EU, 2013



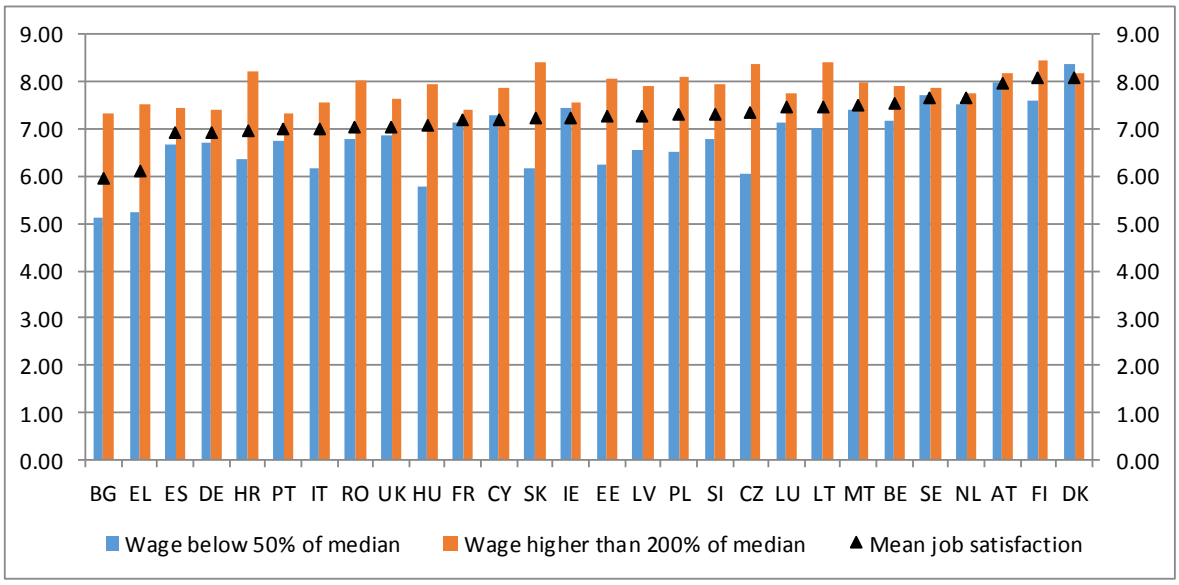
Source: EU-SILC 2013, UDB August 2015
European Commission, Social Situation Monitor

Determinants of job satisfaction

In this section we analyse determinants of job satisfaction. First we show job satisfaction according to the main variable of interest, the level of wages. The wage level is measured by gross hourly wage (see the section on data and measurement), which is grouped in five categories relative to the median wage in the given country (lower than 50% of median, between 50-80%, between 80-120%, between 120-200%, over 200% of median). It is important to keep in mind that, because of data limitations as detailed above, the analysis is restricted to those in stable employment (either full-time or part-time), so that those whose employment has fluctuated over the year are not included.

Figure 2 shows the average level of job satisfaction together with job satisfaction among low wage and high wage workers. The figure reflects the pattern already seen in Figure 1, which shows relatively small differences between countries in average job satisfaction levels except for the two countries with low satisfaction (Bulgaria and Greece) and the three countries with high job satisfaction (Denmark, Finland and Austria). Figure 2 also shows that differences in job satisfaction by wage level are important in approximately half of the countries. In Bulgaria, Greece, Hungary and the Czech Republic, job satisfaction among those with high wages is 40% higher than in the case of those with low wages. On the other hand in France, Ireland, Sweden, Austria and Denmark, the difference between the two groups is small, only a few percentage points. In general, differences in job satisfaction by wage level are more important in countries with low and medium -level mean job satisfaction.

Figure 2 Job satisfaction by wage level in EU countries, 2013



Source: own calculation based on EU-SILC 2013.

Note: Countries ordered according to average job satisfaction. Employees who have been working full-time over the whole year or have been working part-time over the whole year. Employees who have changed job during the reference year have also been excluded.

Multivariate analysis

In the following, determinants of job satisfaction are examined through multivariate statistical analysis. As satisfaction variables are ordinal categorical variables the most appropriate model would be the ordered probit model for multivariate analysis. One can think of ordinal regression models as being based on the relationship between a continuous latent variable (y^*) and a set of explanatory variables (X) and an error term $y^*=X\beta+\varepsilon$. In our case the continuous latent variable is satisfaction in one of the life domains, or satisfaction with life in general. Satisfaction per se is however unobservable, all we can observe is the category I which satisfaction falls[3]. Results of model estimation can be interpreted using standardised coefficients (betas) which show that for a unit increase in the value of an explanatory variable, job satisfaction increases by beta standard deviations holding all other variables constant (Long 1997).

In some more complicated cases (such as panel data analysis) the nonlinear nature of these models causes difficulties. One possibility is to use ordinary least squares regression, which effectively assumes that the values of the categorical variable are measured on an interval scale. Researchers have also proposed other cardinalised versions of the satisfaction variable, which could then be analysed through OLS regressions. The method of probit adapted OLS (POLS) proposed by van Praag and Ferrer-i-Carbonel (2005) consists of deriving the Z-values of a standard normal distribution that correspond to the cumulated frequencies of the different categories of the ordinal dependent variable[4] and to use these as a cardinalised version of the satisfaction variable.

[3] Thus the model has to be completed with a measurement model, which expresses the relationship between the continuous variable y^*, which is unobservable and the observed categorical variable y (Long 1997).

[4] Suppose X is an ordinal variable with i=1,…,m categories. The cumulated frequencies of each categories are $P_i=p(X<=i)$ and the corresponding Z-values of the standard normal distribution are Z_i. Then the cardinalised variable (Corneliessen 2006): $Xc_i=(\varphi(Z_{i-1})-\varphi(Z_i))/(\Phi(Z_i)-\Phi(Z_{i-1}))$,

Regression analysis is performed to analyse variations in job satisfaction relating to the main variable of interest (wages) while controlling for other factors that could potentially influence the outcome variable and are associated with wages. As control variables, we include job characteristics: hours of work (below 20 hours, 21-29 hours, 30-39 hours, 40 hours or more), contractual type (3 categories: permanent employment, temporary contract) and occupation (9 categories based on the first digit of the ISCO-88 classification). We also include demographic controls like gender, age, migrant status (3 categories: local, EU migrant, non-EU migrant), educational attainment (3 categories: primary, secondary, tertiary education), and spouse's/partner's employment (no spouse/partner in household; partner working full-time; partner working part-time; partner not working), number of children below the age of 6.

In addition, some of the models also control for an index of general positive attitudes. The literature states that when analysing job satisfaction, it is important to control for personality traits, like motivation, ability, information regarding the labour market (eg. Origo and Pagani 2009). These variables are determinants of job satisfaction and might be correlated with variables of interest. Leaving them out from the analysis would thus bias the estimates as regards the effect of the independent variables. Unfortunately, these variables are not captured by the survey, so all we can do is to control for an indicator of positive attitudes which is composed of five indicators, based on the survey items measuring the extent to which the respondent has felt very nervous, down in the dumps, calm and peaceful, downhearted or depressed, or happy during the four weeks preceding the interview. The indicator of positive attitude used in the analysis is calculated as a sum of responses to these items.

The regression analysis is first performed for five countries representing the four country clusters defined earlier based on the institutional context (see page 2) plus Eastern Europe. This approach allows to detect differences between the determinants of job satisfaction in countries with different labour market institutions. Country-level analysis is also important because mechanisms that drive selection in the sample for analysis might differ between countries as employment rates are different as well. Results are shown in Table 1.

First we consider the effect of the characteristics of the respondent's job. As expected, the level of hourly wage has a positive effect on job satisfaction in every country. Working more hours is associated with higher job satisfaction in four of the five countries studied. The exception is Austria, where job satisfaction declines with longer hours. In Italy and Poland the effect of working time seems to be linear, while in the UK we found a significant difference only between those in the highest category (40 hours or more) and the lowest category (20 hours or less). In Finland the coefficient of working hours is positive, but not significantly different from zero.

Employees with a temporary contract are less satisfied with their job in Italy and Poland compared to those with a permanent contract. On the other hand, in Finland those with temporary contracts are actually more satisfied with their job. As the institutional context in Finland (and other Nordic countries) is characterised by a high level of benefits and services for the unemployed it might be that lower job security of temporary jobs is not seen as problematic. On the other hand in more rigid labour markets of the Mediterranean and Eastern European countries temporary jobs are less appealing because promotion to permanent employment is less likely and in case of job loss the level of services and benefits is low.

Occupation is significantly related to job satisfaction in all countries. Workers in crafts, plant operators and those in elementary occupations are consistently less satisfied with their job compared to managers. The questionnaire does not ask about the respondent's

where φ stands for standard normal density function and Φ for standard normal cumulative distribution function.

satisfaction with various aspects of the job except in the case of commuting time. The regression results clearly show that those employees who are more satisfied with commuting time are overall more satisfied with their job.

Table 1 Determinants of job satisfaction in selected countries (coefficients from ordered probit model)

	UK	IT	AT	FI	PL
Log hourly wage (gross)	0.1507***	0.4022***	0.0923	0.3227***	0.2982***
Weekly working hours					
min/20	ref.	ref.	ref.	ref.	ref.
21/30	-0.0277	0.1140	-0.0391	0.0256	0.1158
31/39	0.0573	0.2266***	-0.1323*	0.0614	0.3104***
40/max	0.1075*	0.2536***	-0.1414*	0.1856	0.2237***
Employment contract					
permanent empl.	ref.	ref.	ref.	ref.	ref.
temporary empl.	0.1260	-0.0927*	-0.0602	0.2145*	-0.1517***
Gender of person					
male	ref.	ref.	ref.	ref.	ref.
female	0.1673***	0.0872**	0.1751***	0.1268**	0.0776**
Age	-0.0396***	-0.0261*	-0.0280*	-0.0378**	-0.0121
Age squared	0.0005***	0.0002*	0.0003*	0.0004**	0.0001
Education, 3 categories					
less than up.secondary	ref.	ref.	ref.	ref.	ref.
upper secondary	-0.0653	-0.0670*	-0.0226	-0.0386	-0.1514**
tertiary	-0.1222*	-0.2244***	-0.1285	-0.1865*	-0.2393***
Migrant status					
born in country	ref.	ref.	ref.	ref.	ref.
born in other EU	0.0487	0.0727	-0.1188	0.0662	1.6611*
born outside EU	-0.0045	-0.0107	-0.0679	0.3169	-0.3006
Partner's employment					
full-time employed	ref.	ref.	ref.	ref.	ref.
no partner	0.0481	-0.0478	0.0449	-0.0445	0.0885**
part-time employed	0.0463	-0.0295	0.0577	-0.0959	-0.0660
not working	0.0641	0.0922*	0.0508	0.1172*	0.1171**
No. of children below 6	0.0127	-0.0055	0.0757	0.0797	-0.0044
Satisfaction with commuting time	0.1122***	0.1254***	0.1224***	0.0936***	0.1764***
Positive attitude	0.0806***	0.0671***	0.0991***	0.1091***	0.0896***
Occupation ISCO-08 1 digit codes					
Legislators senior official, managers	ref.	ref.	ref.	ref.	ref.
Professionals	-0.2244***	-0.1608	-0.1812*	-0.0455	-0.0002
Technicians, associate professionals	-0.2050***	-0.1763	-0.1397	-0.0805	-0.0581
Clerks	-0.3080***	-0.2879**	-0.2965**	-0.0393	-0.0807
Service workers and shop, market	-0.2054***	-0.3237**	-0.0863	-0.1717	-0.1592*
Skilled agricultural workers	0.0760	-0.1394	-0.2626	0.1529	-0.0725
Craft,related trades workers	-0.3641***	-0.3504**	-0.1551	-0.3383**	-0.2628***
Machine operators, assemblers	-0.4383***	-0.3504**	-0.1689	-0.1054	-0.2409**
Elementary occupations	-0.3171***	-0.3989***	-0.3151**	-0.0980	-0.3599***
McKelvey-Zavoina pseudo R^2	0.177	0.206	0.186	0.151	0282
log-lieklihood (no covariates)	-10885.9	-13754.2	-7544.2	-5057.1	-14156.2
log-lieklihood (covariates)	-10390.9	-12984	-7148.7	-4811.6	-13044.8
LR chi^2 test significance	0.000	0.000	0.000	0.000	0.000
N	5329	7054	4135	3253	7045

Source: own calculation based on EU-SILC 2013.
*Note: * p<0.05, ** p<0.01, *** p<0.001, t-statistics in parenthesis. Self-employed excluded from the analysis. Industry controls included in the model.*

Job satisfaction is also related to the demographic attributes of respondents. Women are more satisfied with their jobs in all five of the countries. Job satisfaction is U-shaped in relation to age: first declining as individuals are more advanced in age and increasing with age later. The only country where the effect of age is not significantly different from zero is Poland. This might be explained by the fact that in post-socialist labour markets the age-earnings profile is less steep compared to Western European countries. Actually, in post-socialist countries more mature cohorts have seen their human capital depreciate after transition, while younger cohorts with an education more adapted to the new technologies enjoy an advantage. Job satisfaction declines with educational

attainment in all countries except Austria: among those with tertiary degrees average job satisfaction is lower compared to those with primary education, all else being equal. This might be the result of higher wage expectations among those with tertiary education. Higher educated people tend to compare their wages and other characteristics of their jobs with those of people with similar education levels. This results in lower satisfaction level among the higher educated if they are compared with people with similar wages and jobs but lower education.

There is no statistically significant difference in job satisfaction by country of birth, thus those who have been born outside their country of residence have similar satisfaction to locals. The only exception is the case of Poland, where those born in other EU countries have on average higher job satisfaction. The family situation of the respondent also has an effect on job satisfaction in some of the countries. If the respondent's partner is not working the respondent is more satisfied with their job in Italy, Poland and Finland. Our measure of positive attitude is also significantly related to job satisfaction in every country considered: those with a more positive attitude have higher levels of job satisfaction.

Based on the likelihood ratio chi-square test the null hypothesis that all coefficients equal zero can be refuted in all models. Goodness-of-fit of the country-level ordered probit models are assessed with the pseudo-R^2 measure proposed by McKelvey and Zavoina (see Long 1997). This measure provides an analogous measure to the R^2 used in OLS regressions in case of models which are defined in terms of a latent outcome (in our case job satisfaction). The pseudo-R^2 exceeds 0.15 in all models. Its value is lowest for Finland (0.151) and highest for Poland (0.282),

It has been argued that the determinants of job satisfaction could be different by gender as men and women might have different preferences and expectations about work (e.g. Clark 1997). For example, in the case of women who have to maintain a balance between paid work and family obligations. shorter or flexible work hours could be more important job attributes than for men. In order to test for differences in determinants of job satisfaction by gender, the regression analysis for women and men is performed separately. Results by gender in each country are shown in Table A1-A3 of the Appendix. To allow for a different effect of working hours in the case of parents with small children, an interaction term has also been added to the models.

Comparing regression results for women and men, the first important result is that the hourly wage has a positive effect on job satisfaction for both men and women in the case of the United Kingdom, Italy and Poland. For Austria and Finland, on the other hand, the effect of the wage level on job satisfaction is positive for men, but not significantly different from zero for women. Temporary employment has an effect on job satisfaction only for men in the United Kingdom (positive effect) and Italy (negative effect) and only for women in Finland (positive effect).

The effect of working time differs by gender for Finland and Poland. Job satisfaction increases with working time among men in Finland, while no significant effect has been found for women. In Poland job satisfaction increases with working time for women and this effect seems to be stronger when there are small children in the household, as shown by the positive interaction effect.

There also are differences by gender in the effect of demographic characteristics. The effect of age on job satisfaction is only visible for men in all the countries considered, while for women there seems to be no difference by age. In Austria education has a different effect for men and women : among men the more educated are more satisfied with their jobs, while among women the effect of education is negative. In the United Kingdom, those who were born outside the EU have higher job satisfaction compared to locals among men, while no such difference can be seen among women.

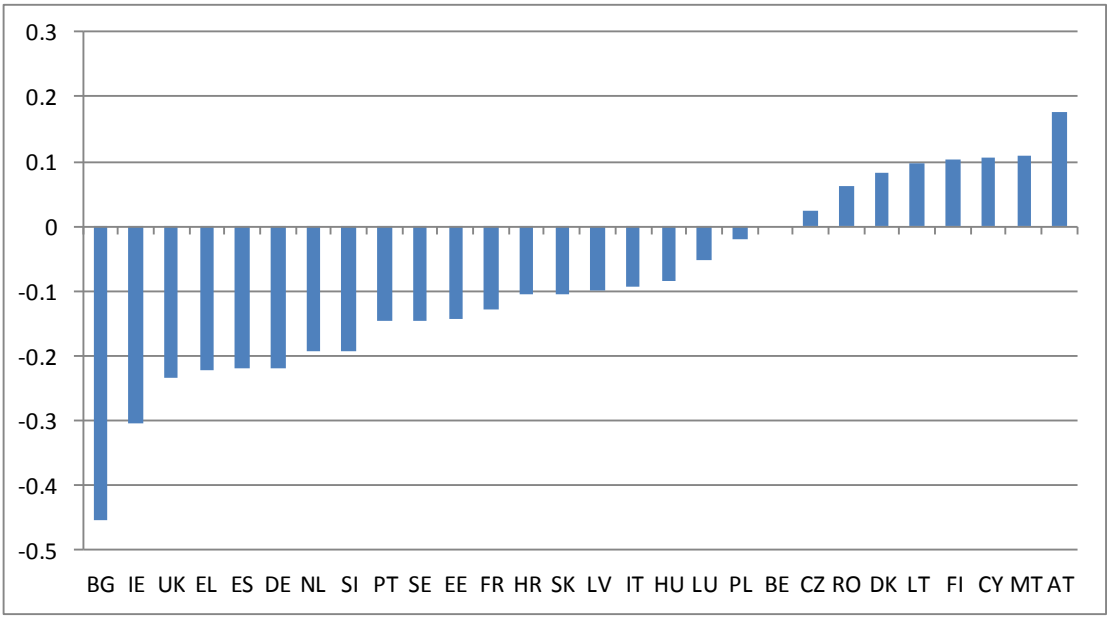
Finally a pooled regression is performed, pooling data from all EU Member States and including the country dummies in the model. Table A4 shows the result of regression estimates using three different estimation methods (ordered probit, POLS and OLS).

Estimates obtained with the ordered probit model show that job satisfaction is also strongly related to levels of the hourly wage and hours of work in the pooled model. Among those who have wages close to the median in their country, job satisfaction is 0.16 standard deviations[5] higher compared than for those with wages below half of the median. For those with wages more than twice the median, job satisfaction is 0.45 standard deviations higher than for those in the lowest wage category. Hours of work are also associated with job satisfaction. Those working more than 20 hours have higher job satisfaction than those with working hours below 20, although the difference is not very large. Employees with a temporary contract are less satisfied than employees with a permanent contract, but there is no difference in satisfaction between employees with a permanent contract and the self-employed. Among the occupations, managers and professionals are the most satisfied with their job. Among those at the lowest end of the occupational ladder (elementary occupations) job satisfaction is significantly lower than for managers.

Among the demographic characteristics the effect of gender and age is statistically significant. Women show higher job satisfaction in the pooled model as well. Age has a U shaped effect on job satisfaction: first job satisfaction declines with age but after a certain age job satisfaction starts to increase. Job satisfaction is lower among the more educated workers. Those born in other EU countries have higher job satisfaction than locals. Job satisfaction is higher for those who do not live with a partner. The results obtained with the POLS and OLS methods are qualitatively similar to those obtained with the ordered probit model.

The pooled model allows us to compare job satisfaction levels between countries after differences in independent variables have been taken into account. Figure 3 shows differences between countries after controlling for all job characteristics and demographic attributes by plotting standardised coefficients of country dummies.

Figure 3 Differences between countries in job satisfaction controlling for covariates (standard deviations, reference category: Belgium)



Source: own calculation based on EU-SILC 2013.
Note: Standardised coefficients of country dummies from pooled ordered probit model (see Table A4), reference category: Belgium.

According to the results, employees in Austria and Malta are the most satisfied with their job, controlling for all the above-mentioned covariates. Somewhat surprisingly Cyprus, Finland and Lithuania follow in the country ranking. The lowest job satisfaction

[5] Based on the standardised regression coefficients (not shown in Table A4).

is observed in Bulgaria. Ireland, the United Kingdom, Greece, Spain and Germany are also characterised by relatively low levels of satisfaction with work.

Satisfaction with the financial situation

This section is aimed at analysing financial satisfaction as a particular domain of overall life satisfaction, providing empirical evidence on the distribution and main determinants of satisfaction with the financial situation. The section starts with a review of the literature where the different concepts and measurements of financial satisfaction are discussed, followed by a description of the data and method of analysis. It then first looks at the average and inequality of financial satisfaction in EU Member States, followed by an analysis of its determinants, with the main focus on income.

Literature review

Financial satisfaction as a measure of life satisfaction

Research investigating subjective well-being and its determinants have become common in economics literature (Dolan and White, 2008; Clark et al, 2008; Stutzer and Frey, 2010). Several studies provide empirical evidence on the impact of income as well as other variables such as household assets or debts (Christoph, 2010; Gray, 2014). There is also a cumulative body of literature showing that subjective financial situation has an important influence on individuals' well-being in addition to monetary aspects of financial position. Following Porter and Garman (1993), Vera-Toscano et al (2004) identify three main groups of determinants of well-being in general: (1) objective attributes such as income and other individual and household characteristics, (2) perceived attributes related to satisfaction with standard of living including not only material goods, but also social engagement and health condition, and (3) evaluated attributes related to expectations or aspirations. Ferrer-i-Carbonell (2002) differentiates between external or objective factors of subjective well-being (e.g. income and age) and internal or subjective determinants which include, among others, financial satisfaction and self-reported health. Van Praag et al (2000, 2003) identify financial satisfaction as one of six dimensions of personal well-being together with job, health, housing, leisure and environment.

While financial satisfaction is generally understood as a sub-construct of general well-being, there has been little consensus on what is the best way to measure it (Joo and Grable, 2004). Some researchers utilised single-item measurements (Porter and Garman, 1993; Danes, 1998; Vera-Toscano et al, 2004; Newman et al, 2008; Brown and Gray, 2014), while others opted for multiple item measures (Hayhoe and Wilhelm, 1998; Hira and Mugeda, 1999; Gerrans and Speelman 2013; Ryan, 2014; Sass et al, 2015). Moreover, there have been a variety of items used to study the subjective assessment of one's financial situation namely perceived economic well-being, perceived income adequacy, economic or financial strain, and financial stress (Danes and Rettig, 1993; Kim and Garman, 2003; Marks, 2007). As a measure of financial well-being, financial satisfaction is mainly used as a component of a broader range of subjective and objective dimensions. For instance, Joo's (2008) multidimensional concept of personal financial wellness incorporates financial satisfaction along with different objective financial status measures (household income, assets and debt), financial attitudes and financial behaviour, while financial satisfaction is one of eight subjective items of the financial distress/financial well-being measure developed by Prawitz and his colleagues (2006).

Determinants of financial satisfaction

Prior research consistently shows that income is positively correlated with financial satisfaction. Richer individuals report higher level of satisfaction with their financial situation while those living in poorer objective conditions with coping difficulties and higher income insecurity are more likely to report lower financial satisfaction. The

magnitude of the relationship between income and financial satisfaction, however, is relatively modest with correlations ranging between 0.20 and 0.40 (Hansen et al, 2008). This modest correlation is partly explained by the fact that people tend to judge their current financial situation in relation to the situation of others who are relevant to them (the so-called relative standards model) suggesting that the income of the reference group is just as important as own income for financial well-being (Ferrer-i-Carbonell, 2005; Hansen et al, 2008). Vera-Toscano et al (2004) find individuals to be more satisfied the higher their income as compared with the income of the reference group. A similar positive own income effect and a negative comparison income effect is found by Newman and her colleagues (2008) using longitudinal data from the Living in Ireland Survey, and by Brown and Gray (2014) who use the longitudinal survey of Household, Income and Labour Dynamics in Australia (HILDA) which also find a significant and positive relationship between household income and financial satisfaction.

In line with overall satisfaction, empirical evidence on the relationship between age and financial satisfaction suggests a U-shaped pattern with those in older age groups being more likely to report higher satisfaction than those in mid-life (Vera-Toscano et al, 2004; Hansen et al, 2008; Plagnol, 2011). This observation is rather unexpected considering the positive association between income and financial well-being and the fact that income usually decreases in old age. Nevertheless, this finding appears to be consistent in both US and European research (Hansen et al, 2008). One possible explanation is based on the so-called "satisfaction paradox" phenomenon which points to the gap between one's actual resources and one's perceived needs and aspirations (Hansen et al, 2008). As a response to their limited economic resources and opportunities for improving their situation, people tend to lower their needs and expectations and so they report higher satisfaction even when they have lower levels of income. An alternative explanation for the higher financial satisfaction among the elderly relates to the important role of accumulated wealth and assets as determinants of financial well-being in later phases of life (Hansen et al, 2008; Plagnol, 2011).

The presence of children in the household also appears to be closely related to financial satisfaction whereas no significant differences have been found by gender (Van Praag et al, 2003; Ferrer-i-Carbonell, 2005). Larger household size has generally been linked to less financial satisfaction, although some studies have found that, unlike the number of adults, the number of dependent children is associated with increased life satisfaction (Ferrer-i-Carbonell, 2002).

Perceived health status has been identified as a significant explanatory factor for overall life satisfaction and poor health status was found to be closely related with both lower income and with higher need for healthcare resources (Newman et al, 2008; Grey, 2014). Further, financial satisfaction is indicated to be closely linked to employment, education and marital status (Hira & Mugenda, 1999; Joo and Grable, 2004). For example, Pudney (2008), using a single item from the BHPS to study the determinants of financial satisfaction, finds that the responses are higher among the employed, married and homeowners. By contrast, those who are recently divorced, have lost their job or become long-term ill tend to report lower level of financial satisfaction.

For the US, Hsieh (2001) analyses financial satisfaction of those aged 45 years and above using three responses: pretty well satisfied, more or less satisfied and not satisfied. According to the results, being married, in employment and being religious all show a significant positive effect while living in a metropolitan area has a marked negative effect on financial satisfaction. Age and positive comparisons of income against others as well as with the past are also shown to be positively significant.

More recently, Ryan (2012) used Australian panel data to analyse reported satisfaction with financial situation and how it changes as individuals move through important lifetime transition points. He finds a strong positive effect of age, income and employment and a relatively modest effect of health on financial satisfaction. Life events with a positive effect on financial satisfaction include improvements in the financial situation over the previous 12 months, retirement, changing jobs, being promoted at

work and moving house, while becoming a single parent and separation from a spouse have a negative effect.

Besides demographic and socio-economic characteristics, the influence of financial stressors on financial satisfaction is explored by Joo and Grable (2004) who identify three main sources of financial stress with a negative impact on financial well-being: personal stressors (i.e. investment losses, bad health due to injuries, disabilities, accidents, illnesses and wage changes), family stressors such as marriages, births, retirement, divorce, and financial stressors including high levels of consumer debt and large, unexpected expenditures.

Gerrans and his co-author (2013) focus on the relationship between financial satisfaction, financial status (household income, assets and debts), financial knowledge (measured by five items), financial behaviour (e.g. retirement planning, consulting an accountant or financial planner) and financial attitudes (e.g. being up-to-date with finances). Their results indicate that, unlike women, men's financial satisfaction is more affected by their financial knowledge than by their financial status. A number of studies on the effect of financial literacy have found that it reduces financial satisfaction as the more financially literate tend to be more aware of their finances and therefore more prone to see any deficits (Sass et al, 2015). Sass et al (2015) also conclude from their results that personal financial situation is highly correlated with near-term financial concerns, but not with more distant ones.

Data and measurement

Data for the analysis of financial satisfaction is derived from the 2013 EU-SILC survey. Questions on subjective well-being were included in the survey for the first time as part of the special ad-hoc module on well-being. The survey contains questions on different satisfaction items including overall life satisfaction, satisfaction with time use, satisfaction with commuting time, job satisfaction and satisfaction with financial situation. The question on satisfaction with the financial situation asks respondents their opinion or feelings about the degree of satisfaction with the financial situation of their household taking into account income adequacy, level of savings, ability to pay back debt and money owed, ability to meet large emergency expenses, as well as the level of assets of the household as a whole. Answers are coded on a scale from 0 to 10 with 0 meaning not at all satisfied to 10 meaning completely satisfied.

Our key independent variable is household income. In the EU-SILC, the total disposable income of a household comprises the personal income components received by each household member plus income components received at household level minus some deductions. These include earned income from employment (both employees and the self-employed), income from state support (i.e. benefits and state pensions) from investments and rent from property, as well as regular inter-household cash transfers received. Income is equivalised using the so-called modified OECD scale in order to account for the differences in the size and the composition of the household.

Table 2 shows Spearman Rank Correlations between household disposable income and the different satisfaction items covered in the ad-hoc module. While income is positively correlated with all domains of life satisfaction, the magnitude of the correlation is greatest for financial satisfaction.

Table 2: Spearman Rank Correlation between income and different life satisfaction domains, 2013

	Disposable household income	Financial satisfaction	Job satisfaction	Satisfaction with commuting time	Satisfaction with time use	Overall life satisfaction
Disposable household income	1.000					
Financial satisfaction	0.426***	1.000				
Job satisfaction	0.148***	0.421***	1.000			
Satisfaction with commuting time	0.120***	0.251***	0.370***	1.000		
Satisfaction with time use	0.098***	0.342***	0.345***	0.311***	1.000	
Overall life satisfaction	0.294***	0.634***	0.472***	0.272***	0.380***	1.000

Source: own calculation based on EU-SILC 2013.
*Note: *** indicates significance at the 1 per cent level.*

To explore variations in financial satisfaction outcomes related to the variables of interest regression analysis is carried out using both OLS and ordered probit methods. While ordered probit technique is more commonly applied in modelling subjective well-being and is considered the best suited for such analysis, several studies use both methods. It is also relatively well documented that the two methods tend to yield similar results in the case of more than four categories for ordered responses (Ferrer-i-Carbonell and Frijters 2004; Stevenson and Wolfers 2008; Fleche et al., 2011). The main advantage of using ordered probit as opposed to OLS is that it takes into account the ordinal nature of the responses to the financial satisfaction question without assuming equal distance between the scores. On the other hand, the results of OLS regression are more straightforward to interpret than in the case of the ordered probit method.

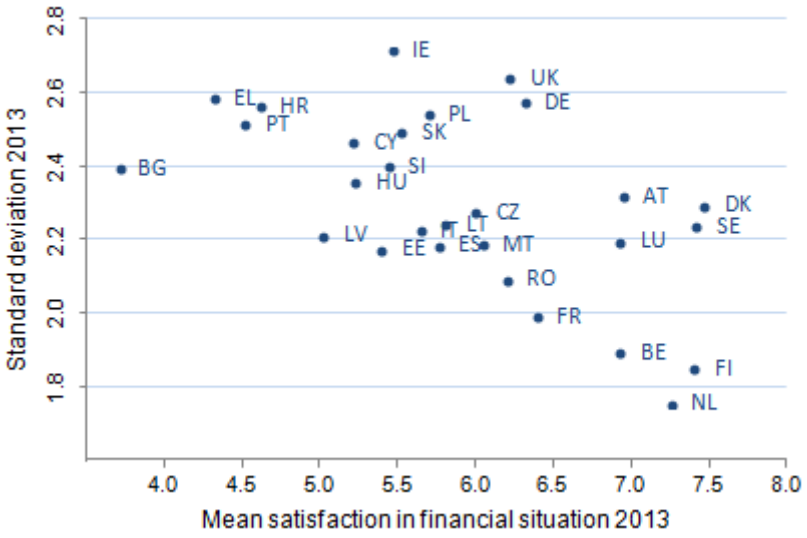
As the effect of income on satisfaction is likely to vary with the level of income a natural logarithmic transformation is to be applied to total equivalised disposable household income. A separate model using income quintiles is also included so as to compare the satisfaction of individuals belonging to different income groups. In line with the existing literature, demographic and socio-economic factors that have been shown to be closely related with both financial satisfaction and the level of income are controlled for. They include age, gender with male used as the reference category, marital status (never married and widowed, separated and divorced with married as the reference category), educational attainment, (primary and secondary level education, the reference category used is tertiary education), labour market status (unemployed, retired and other inactive, the category used as a reference is employed) and presence of dependent children in the household. Self-assessed health is coded through a five element Likert scale (very good, good, fair, bad and very bad) from which a binary variable 'good health' is created corresponding to very good, good and fair self-reported health.

Average and inequality of financial satisfaction in EU countries

Similarly to the previous part of the research note, cross-country differences in financial satisfaction are presented in the form of means and standard deviations. As financial satisfaction is an important component of well-being its distribution is of relevance for policy. Moreover, as EU Member States are different in terms of the level of income inequality we expect them to be different in terms of inequality of financial satisfaction as well. The lowest financial satisfaction is observed in Bulgaria, Greece, Portugal and Croatia with average scores below five. The four countries ranked highest are the three Nordic Member States and the Netherlands. The average score in the remaining 21 countries ranges between 5.0 (Latvia) and 6.9 (Luxembourg, Belgium and Austria). The

standard deviation tends to be higher among countries with low average scores - albeit with some differences i.e. Latvia and Estonia – and smaller in those with higher averages (again, there are exceptions e.g. the UK and Germany).

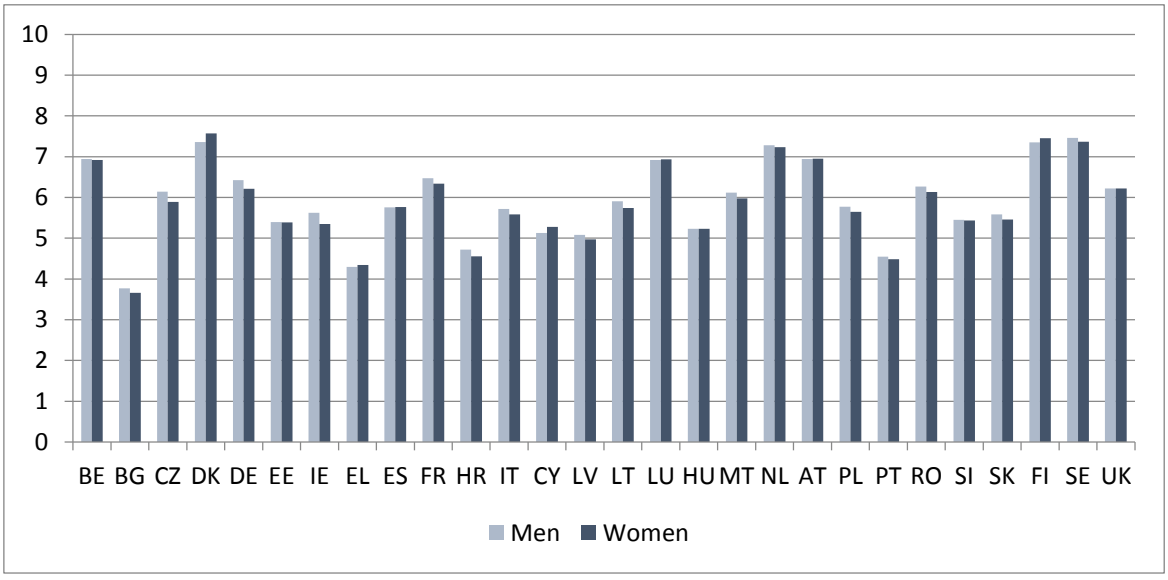
Figure 4: Mean and standard deviation of financial satisfaction in the EU, 2013



Source: own calculation based on EU-SILC 2013.

As Figure 5 shows, average values of financial satisfaction tend to vary little by gender. In 20 of the 28 countries, men appear to have slightly higher average scores than women. Only in Denmark, Greece, Spain, Cyprus, Luxembourg, Hungary, Austria and Finland, is the reverse the case.

Figure 5: Financial satisfaction by gender, 2013

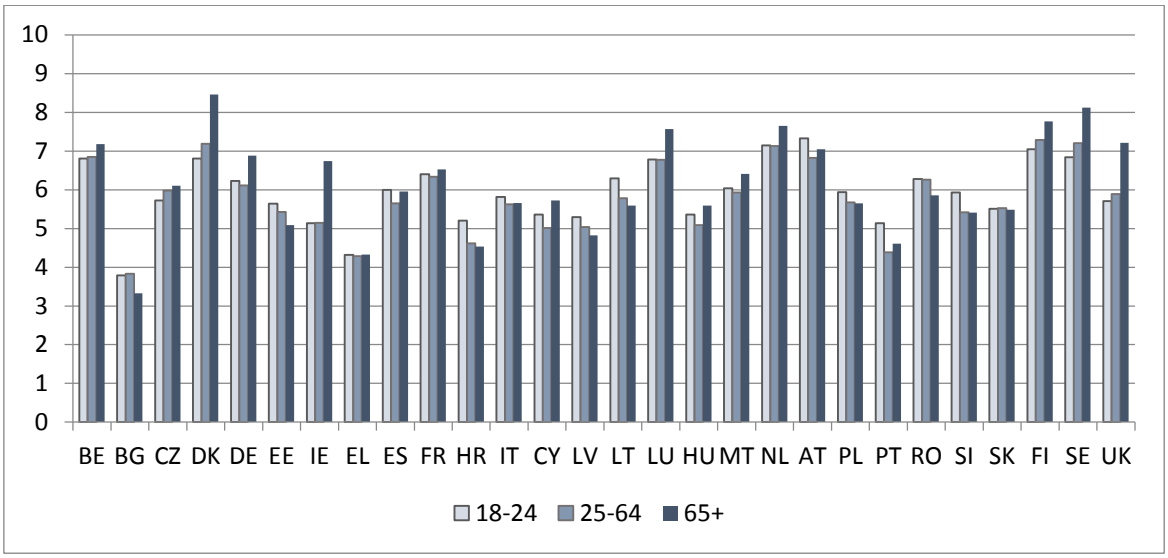


Source: own calculation based on EU-SILC 2013.

There are relatively large variations in financial satisfaction by age group and by income quintile across the countries. With regard to age, average scores tend to be highest among the older age group in 15 of the 28 countries; the difference to the other two age groups appear to be especially significant in Denmark, Ireland, Luxembourg,

Finland, Sweden and the UK. In Bulgaria and Slovakia, those belonging to the middle age group (i.e. 25-64) report the highest average financial satisfaction, whereas in the remaining countries (Spain, Croatia, Italy, Latvia, Lithuania, Poland and Austria) it is those aged 18-24 who seem to be most dissatisfied with their financial situation.

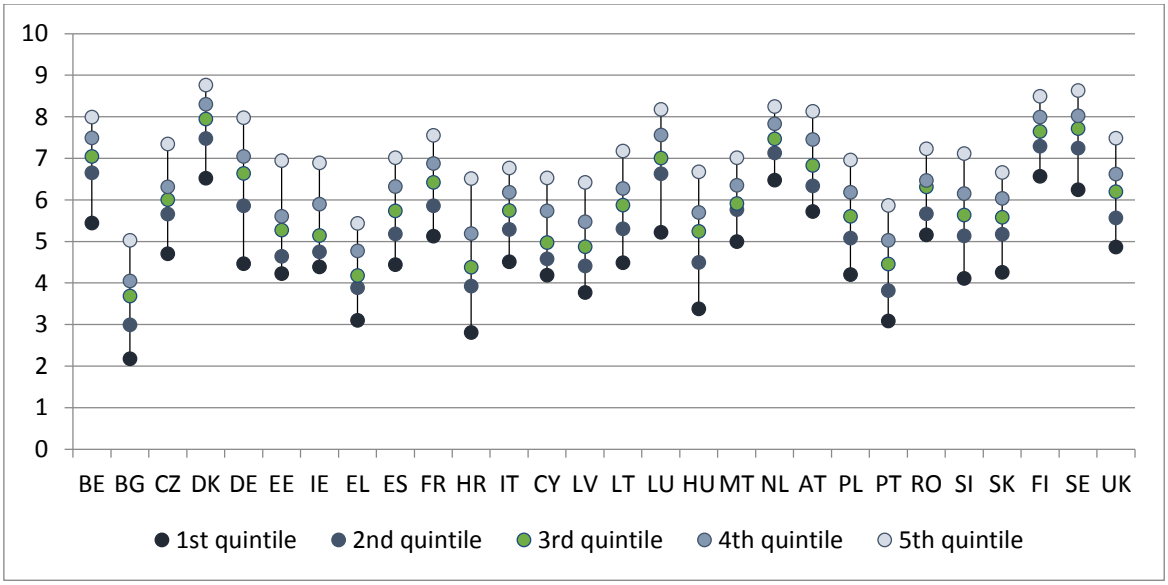
Figure 6: Financial satisfaction by age groups, 2013



Source: own calculation based on EU-SILC 2013.

Descriptive results for financial satisfaction by income quintiles show less variation within than between the countries. In all EU member states, those of the first (lowest) quintile tend to have the lowest average financial satisfaction. The largest distance in average scores between the first and the fifth (highest) quintile is observed in Croatia, Hungary, Slovenia, Germany, Luxembourg and Bulgaria, while the difference between the two lowest income groups is most pronounced in Croatia, Germany, the Netherlands, Hungary and Slovenia.

Figure 7: Financial satisfaction by income quintiles, 2013



Source: own calculation based on EU-SILC 2013.

Determinants of financial satisfaction

The results of regression analyses on determinants of financial satisfaction are presented in Table 3. As the dependent variable of the analysis (financial satisfaction) is measured on an ordinal scale, the most appropriate model is the ordered probit. A simple linear regression model has also been run as results from this are more easy to interpret. As expected, there is a significant positive relationship between income and financial satisfaction, that is, households with higher income tend to report higher levels of satisfaction with their financial situation, holding other factors equal. The effect is similar with regard to both household income and income quintiles.

Table 3: Regression analysis of financial satisfaction (coefficients from OLS and ordered probit regression), 2013

	Pooled sample			
	OLS		Ordered probit	
Log income	1.125***		0.566***	
1st quintile		-1.029***		-0.486***
2nd quintile		-0.443***		-0.215***
4th quintile		0.410***		0.210***
5th quintile		1.060***		0.572***
Age	-0.095***	-0.096***	-0.047***	-0.048***
Age (squared)	0.001***	0.001***	0.001***	0.001***
Male	0	0	0	0
Female	0.017**	0.027***	0.010**	0.015***
Married	0	0	0	0
Never married or widowed	-0.322***	-0.303***	-0.161***	-0.153***
Separated or divorced	-0.658***	-0.621***	-0.321***	-0.305***
Tertiary education	0	0	0	0
Secondary education	-0.324***	-0.274***	-0.171***	-0.143***
Primary education	-0.543***	-0.466***	-0.269***	-0.228***
Employed	0	0	0	0
Unemployed	-1.283***	-1.287***	-0.578***	-0.584***
Retired and other inactive	-0.073***	-0.034**	-0.021***	-0.002
Dependent children in the household (Yes)	-0.012	0.036***	-0.008	0.018***
Good health	1.193***	1.166***	0.572***	0.561***
Country fixed effects	Yes	Yes	Yes	Yes
N	327,100	327,389	327,100	327,389
R-sq	0.322	0.329	n.a.	n.a.

Source: own calculation based on EU-SILC 2013
*Note: Values with *** have a significant relationship at the 1% level. For the income quintiles, the reference category used is the 3rd or middle quintile.*

The results confirm a strong effect of age on financial satisfaction with the effect of linear age negative and that of age squared is positive indicating a U-shaped pattern (the minimum occurs at around age 48). This suggests that those in older age tend to be more financially satisfied than their younger working-age counterparts despite their tendency to have lower levels of income. As mentioned before, this "satisfaction paradox" has been consistently found in previous research and has been mainly

attributed to larger assets and less debt among the older age group as well as to the downward adjustment of needs, aspirations and comparison standards as people age (Hansen et al, 2008).

No major difference is observed between men and women as women are only slightly more likely to report higher financial satisfaction than men. As for marital status, those who are separated or divorced report significantly lower satisfaction with their financial situation than single or widowed and married respondents. Education and labour market status are also associated with financial satisfaction. Regarding educational attainment, those with primary and secondary education are significantly less satisfied than the tertiary educated. Unemployment has a significant negative effect on financial satisfaction with the unemployed reporting considerably lower satisfaction with their financial situation than the employed, but also than those in retirement. Self-assessed health is also a significant explanatory factor; a result that has been found in other studies of well-being as well. Those with better health report significantly higher financial satisfaction in comparison to individuals with poor health status.

Finally, the magnitude of the results shows that in addition to income, which is an important determinant of financial satisfaction, indicators such as unemployment and health also appear to have large independent effects.

Job satisfaction, financial satisfaction and life satisfaction

Satisfaction with life can be understood as the aggregate of the domain satisfactions. If our satisfaction with respect to one domain increases, *ceteris paribus* this should imply that our overall life satisfaction increases as well. In this approach, life satisfaction is modelled as a function of different domain satisfactions. We introduce as explanatory variables all measures of domain satisfaction included in the EU-SILC ad-hoc module. This means - in addition to job satisfaction and financial satisfaction - the inclusion of satisfaction with accommodation, with commuting time, with time use, with personal relationships, with recreational or green areas and with the living environment.

When analysing such regression models Van Praag and Ferrer-i-Carbonell (2008) argue for the use of the POLS approach, where satisfaction variables (both explained and explanatory) are transformed using the POLS transformation (see the discussion earlier). The following table shows the results of our estimations.

Table 4 The regression of life satisfaction on various domain satisfactions (POLS estimates)

	Model1		Model2		Model3	
Job satisfaction	0.1516***	(55.973)	0.1203***	(45.324)	0.1209***	(45.792)
Financial satisfaction	0.3211***	(139.585)	0.2875***	(126.798)	0.2778***	(117.122)
Satisf. w. accomodation	0.1465***	(47.889)	0.1400***	(47.203)	0.1445***	(48.906)
Satisf. w. commuting time	-0.0029	(0.999)	0.0016	(0.556)	0.0034	(1.211)
Satisfaction w. time use	0.0472***	(19.739)	0.0258***	(11.057)	0.0402***	(17.182)
Satisf. w. personal relations	0.2431***	(72.716)	0.2032***	(61.983)	0.1849***	(56.560)
Satisfaction w. green areas	-0.0013	(0.441)	-0.0010	(0.366)	0.0012	(0.424)
Satisfaction w. environment	0.0279***	(9.260)	0.0255***	(8.728)	0.0239***	(8.257)
Control variables	No		Yes		Yes	
Country dummies	Yes		Yes		Yes	
R^2	0.479		0.510		0.523	
N	103828		103828		103390	

Source: own calculation based on EU-SILC 2013.
*Note: * p<0.05, ** p<0.01, *** p<0.001, t-statistics in parenthesis. Self-employed excluded from the analysis. The only control variable in Model2 is a measure of "positive attitude". Model 3 includes also gender, age, age squared, education, partner employment, number of children under age 6, log individual wage, log equivalised household income.*

The results demonstrate that domain satisfactions, with the exception of satisfaction with commuting time and with green and recreational areas, are statistically significant predictors of overall life satisfaction. Based on standardised coefficients (not shown

here) the strongest predictor is financial satisfaction, the second strongest is satisfaction with personal relationships. Job satisfaction and satisfaction with accommodation also have an important effect, while the effect of satisfaction with time use and satisfaction with the environment is weaker, but still significantly different from zero. The effects become somewhat weaker when control variables are included in the model, but the overall pattern of the effects does not change.

Conclusions

This Research Note has explored the distribution of job satisfaction and financial satisfaction in EU countries and how these in turn determine life satisfaction.

The analysis confirms the role of job characteristics as well as demographic attributes in shaping satisfaction with one's job. Most importantly, higher wages are associated with higher job satisfaction. Employees working full-time are more satisfied compared to those in short part-time employment (less than 20 hours). Those with a permanent job seem to be more satisfied than with temporary jobs, although there are countries where this pattern does not apply. Job satisfaction tends to rise with increasing occupational prestige. Among the demographic groups characterised by lower job satisfaction are men, the middle-aged and the tertiary educated.

Results obtained from the regression analysis of financial satisfaction are consistent with previous studies that show a significant positive effect of income on satisfaction with the financial situation. In addition, unemployment and health are strongly associated with financial satisfaction. Financial satisfaction tends to be lower among men, the non-married population, those with primary and secondary education, and among those with self-reported poor health than the respective reference population. Finally, the U-shaped relationship with age is in line with what has been found previously by subjective well-being research.

Results have also shown that job satisfaction and financial satisfaction are important in shaping overall satisfaction with life. Among the measures of domain satisfaction included in the EU-SILC dataset, financial satisfaction was the most strongly correlated with life satisfaction.

There are however a number of limitations to the analysis of job satisfaction and financial satisfaction that need to be borne in mind when interpreting the results. One potential problem stems from the cross-sectional nature of the data, which does not allow us to establish causality between the dependent and independent variables of the regression. Also, the analysis may leave out potentially important factors which are associated with financial satisfaction. For instance, no information is available in the dataset on financial behaviour and financial attitudes even though research has demonstrated that they too have an important influence on financial satisfaction (Gerrans et al, 2013; Sass et al, 2015). The problem of the income reference period which relates to the previous rather than the current year should also be noted as it means that recent changes in income situation are not captured in the analysis. The subjective nature of the outcome variable implies too that when people assess their financial situation they may consider not only their current financial position, but also their ability to meet future needs or compare their present situation with reference to past experiences. Life events such as changes in marital status, unemployment or ill health have been found to have serious negative effects on financial well-being as well as on overall life satisfaction (Pudney, 2008; Ryan, 2012). To capture the effect of such changes over time would however require longitudinal data.

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Annex

Table A1 Determinants of job satisfaction by gender (OLS regression coefficients)

	UK		Italy	
	Men	**Women**	**Men**	**Women**
Log hourly wage (gross)	0.432***	0.217**	0.755***	0.615***
Weekly working hours				
min/20	0	0	0	0
21/30	-0.203	-0.015	-0.139	0.296*
31/39	-0.092	0.274*	0.441*	0.406***
40/max	0.253	0.207	0.486*	0.491***
Employment contract				
permanent empl.	0	0	0	0
temporary empl.	0.435*	0.036	-0.200*	-0.127
Age	-0.117***	-0.033	-0.048*	-0.033
Age squared	0.001***	0.000	0.000*	0.000
Education, 3 categories				
less than up.secondary	0	0	0	0
upper secondary	-0.167	-0.037	-0.096	-0.090
tertiary	-0.208	-0.108	-0.313**	-0.384***
Migrant status				
born in country	0	0	0	0
born in other EU	0.005	0.229	0.028	0.219
born outside EU	0.269*	-0.217	0.091	-0.040
Partner's employment				
full-time employed	0	0	0	0
no partner	0.126	0.018	0.025	-0.143*
part-time employed	0.120	-0.013	-0.130	0.342
not working	0.144	0.059	0.100	0.222*
Presence of children below 6	-0.456	0.072	0.130	0.199
Satisfaction with commuting time	0.188***	0.231***	0.198***	0.220***
Positive attitude	0.188***	0.138***	0.132***	0.104***
Interaction working time-children				
0	0	0	0	0
2	-0.375	-0.111	0.319	-0.046
3	0.675	-0.074	0.208	-0.123
4	0.348	-0.167	0.173	-0.372
ISCO-08 1 digit codes				
Legislators senior officials and managers				
Professionals	-0.496***	-0.183	-0.227	-0.226
Technicians and associate professionals	-0.507***	-0.170	-0.252	-0.205
Clerks	-0.618**	-0.325*	-0.473*	-0.340
Service workers and shop sales workers	-0.976***	-0.086	-0.310	-0.666*
Skilled agricultural and fishery workers	0.048	0.911	-0.199	-0.168
Craft and related trades workers	-0.802***	-0.365	-0.461*	-0.646*
Plant and machine operators and assemblers	-0.762***	-1.369***	-0.382	-0.933**
Elementary occupations	-0.755***	-0.393*	-0.459*	-0.791**
cons	3.388***	3.168***	1.774**	2.204**
N	2342	2987	3554	3500

Source: own calculation based on EU-SILC 2013.
*Note: * p<0.05, ** p<0.01, *** p<0.001, t-statistics in parenthesis. Self-employed excluded from the analysis. Industry controls included in the model.*

Table A2 Determinants of job satisfaction by gender (OLS regression coefficients)

	Austria		Poland	
	Men	**Women**	**Men**	**Women**
Log hourly wage (gross)	0.327**	-0.006	0.689***	0.302***
Weekly wokring hours				
min/20	0	0	0	0
21/30	-0.356	0.069	0.046	0.076
31/39	-0.297	-0.102	-0.080	0.483**
40/max	-0.176	-0.184	0.130	0.309*
Employment contract				
permanent empl.	0	0	0	0
temporary empl.	-0.225	-0.167	-0.333***	-0.240***
Age	-0.055*	-0.020	-0.034*	0.006
Age squared	0.001*	0.000	0.000	0.000
Education, 3 categories				
less than up.secondary	0	0	0	0
upper secondary	0.252*	-0.154	-0.215	-0.352**
tertiary	0.044	-0.283*	-0.530***	-0.423**
Migrant status				
born in country	0	0	0	0
born in other EU	-0.033	-0.224		1.821*
born outside EU	-0.031	-0.195	-0.472	-0.421
Partner's employment				
full-time employed	0	0	0	0
no partner	0.057	0.060	0.131	0.126*
part-time employed	0.045	0.268	-0.107	-0.160
not working	0.087	0.040	0.161*	0.242**
Presence of children below 6	1.222	0.277	-0.886	0.753**
Satisfaction with commuting time	0.181***	0.205***	0.285***	0.297***
Positive attitude	0.168***	0.146***	0.187***	0.143***
Interaction working time-children				
0	0	0	0	0
2	-1.616	-0.463	0.958	0.804*
3	-0.792	0.163	1.681	0.816
4	-1.234	0.341	0.811	0.844**
ISCO-08 1 digit codes				
Legislators senior officials and managers				
Professionals	-0.272*	-0.122	-0.043	0.156
Technicians and associate professionals	-0.106	-0.222	-0.246	0.021
Clerks	-0.703***	-0.283	-0.286	0.009
Service workers and shop, sales workers	-0.160	-0.052	-0.404*	-0.219
Skilled agricultural and fishery workers	-0.362	-0.814	-0.141	-0.239
Craft and related trades workers	-0.185	-0.027	-0.422**	-0.758***
Plant and machine operators and assemblers	-0.137	-0.146	-0.517***	-0.279
Elementary occupations	-0.146	-0.659**	-0.792***	-0.671***
cons	3.690***	3.929***	1.424*	1.983**
N	2106	2029	3155	3890

Source: own calculation based on EU-SILC 2013.
*Note: * p<0.05, ** p<0.01, *** p<0.001, t-statistics in parenthesis. Self-employed excluded from the analysis. Industry controls included in the model.*

Table A3 Determinants of job satisfaction by gender (OLS regression coefficients)

	Men		Women	
Log hourly wage (gross)	0.429***	(4.350)	0.197	(1.660)
Weekly wokring hours				
min/20	0		0	
21/30	0.792*	(2.303)	-0.131	(0.697)
31/39	0.993***	(3.415)	-0.099	(0.636)
40/max	1.077***	(3.706)	0.004	(0.024)
Employment contract				
permanent empl.	0		0	
temporary empl.	0.193	(1.212)	0.218*	(1.816)
Age	-0.082***	(3.560)	0.000	(0.010)
Age squared	0.001***	(3.456)	0.000	(0.315)
Education, 3 categories				
less than up.secondary	0		0	
upper secondary	-0.050	(0.438)	0.044	(0.317)
tertiary	-0.198	(1.533)	-0.080	(0.533)
Migrant status				
born in country	0		0	
born in other EU	-0.157	(0.555)	0.013	(0.050)
born outside EU	0.239	(0.758)	0.471	(1.548)
Partner's employment				
full-time employed	0		0	
no partner	-0.076	(0.951)	-0.018	(0.246)
part-time employed	-0.023	(0.165)	-0.438*	(2.101)
not working	0.121	(1.397)	0.093	(0.953)
Presence of children below 6	-0.315	(1.010)	0.027	(0.061)
Satisfaction with commuting time	0.114***	(7.378)	0.122***	(7.474)
Positive attitude	0.145***	(12.021)	0.121***	(11.284)
Interaction working time-children				
0	0		0	
2	2.611	(1.860)	-0.272	(0.481)
3	1.340	(1.022)	0.067	(0.130)
4	1.371	(1.051)	0.439	(0.811)
ISCO-08 1 digit codes				
Legislators senior officials and managers				
Professionals	-0.028	(0.241)	-0.040	(0.274)
Technicians and associate professionals	0.033	(0.257)	-0.226	(1.432)
Clerks	0.023	(0.097)	-0.098	(0.546)
Service workers and shop sales workers	-0.178	(1.099)	-0.268	(1.497)
Skilled agricultural and fishery workers	0.055	(0.136)	0.718	(1.402)
Craft and related trades workers	-0.298*	(1.970)	-0.269	(0.813)
Plant and machine operators and assemblers	-0.119	(0.707)	-0.001	(0.004)
Elementary occupations	-0.277	(1.150)	-0.091	(0.412)
cons	4.184***	(5.999)	3.432***	(4.181)
N	1601		1652	

Source: own calculation based on EU-SILC 2013.

*Note: * p<0.05, ** p<0.01, *** p<0.001, t-statistics in parenthesis. Self-employed excluded from the analysis. Industry controls included in the model.*

Table A4 Regressions of job satisfaction on pooled sample

	OLS		Ordered Probit		POLS	
Relative hourly wage						
Below 50% of median	0		0		0	
Between 50% and 80% of median	0.1088***	(4.488)	0.0439**	(2.964)	0.0274***	(3.422)
Between 80% and 120%	0.3526***	(14.604)	0.1813***	(12.277)	0.1041***	(13.043)
Between 120% and 200%	0.5514***	(21.553)	0.3015***	(19.246)	0.1679***	(19.849)
Higher than 200% of median	0.7613***	(25.164)	0.4477***	(24.101)	0.2433***	(24.323)
Weekly working hours						
min/20	0		0		0	
21/30	0.0949***	(3.341)	0.0405*	(2.325)	0.0257**	(2.741)
31/39	0.1455***	(5.801)	0.0599***	(3.896)	0.0408***	(4.920)
40/max	0.2095***	(8.826)	0.1004***	(6.900)	0.0578***	(7.367)
Employment contract						
permanent empl.	0		0		0	
temporary empl.	-0.1595***	(7.534)	-0.0874***	(6.758)	-0.0485***	(6.926)
self-employment	-0.0511	(0.283)	-0.0011	(0.010)	0.0363	(0.608)
Gender of person						
male	0		0		0	
female	0.1375***	(10.900)	0.0887***	(11.482)	0.0439***	(10.537)
Age	-0.0354***	(9.324)	-0.0239***	(10.244)	-0.0102***	(8.149)
Age squared	0.0004***	(8.868)	0.0003***	(9.948)	0.0001***	(7.623)
Education, 3 categories						
less than up.secondary	0		0		0	
upper secondary	-0.1944***	(10.934)	-0.1333***	(12.245)	-0.0582***	(9.910)
tertiary	-0.3176***	(14.803)	-0.2143***	(16.305)	-0.0960***	(13.528)
Migrant status						
born in country	0		0		0	
born in other EU	0.0648*	(2.002)	0.0260	(1.315)	0.0216*	(2.015)
born outside EU	0.0348	(1.413)	0.0305*	(2.025)	0.0111	(1.363)
Partner's employment						
full-time employed	0		0		0	
no partner	0.0125	(0.964)	0.0162*	(2.052)	0.0029	(0.685)
part-time employed	-0.0104	(0.488)	-0.0019	(0.147)	-0.0050	(0.708)
not working	0.0925***	(5.864)	0.0636***	(6.581)	0.0291***	(5.572)
No. of children below 6	0.0157	(1.268)	0.0090	(1.193)	0.0030	(0.729)
Satisfaction with commuting time	0.2485***	(104.088)	0.1521***	(101.692)	0.0771***	(97.752)
Positive attitude	0.1498***	(93.586)	0.0884***	(88.423)	0.0465***	(87.850)
Occupation ISCO-08 1 digit codes						
Legislators, senior officials, managers						
Professionals	-0.1119***	(4.362)	-0.0872***	(5.520)	-0.0380***	(4.485)
Technicians and associate professionals	-0.1502***	(5.726)	-0.1072***	(6.644)	-0.0511***	(5.890)
Clerks	-0.2305***	(8.059)	-0.1621***	(9.227)	-0.0793***	(8.390)
Service workers and shop sales workers	-0.2775***	(9.758)	-0.1842***	(10.534)	-0.0947***	(10.076)
Skilled agricultural and fishery workers	-0.3319***	(5.272)	-0.1987***	(5.145)	-0.1103***	(5.299)
Craft and related trades workers	-0.3524***	(11.586)	-0.2268***	(12.147)	-0.1166***	(11.602)
Machine operators, assemblers	-0.3802***	(12.027)	-0.2434***	(12.544)	-0.1252***	(11.977)
Elementary occupations	-0.4751***	(14.796)	-0.2962***	(15.028)	-0.1507***	(14.192)
Constant	3.5198***	(31.683)			-0.1497***	(4.075)
R^2	0.241				0.221	
McKelvey and Zavoina pseudo R^2			0.245			
log-lieklihood (no covariates)			-207019			
log-lieklihood (covariates)			-192914			
LR chi^2 test significance	0.000		0.000		0.000	
N	105568		105568		105568	

Source: own calculation based on EU-SILC 2013.

Note: Sector and country dummies included in the model. Employees who have been working full-time over the whole year or have been working part-time over the whole year. Employees who have changed job during the reference year have also been excluded.