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Life satisfaction and self-employment in different types of occupations

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ABSTRACT

In this research, we investigate whether a positive relationship between life satisfaction and self-employment (versus paid employment) exists while simultaneously considering two occupational dimensions: white-collar versus blue-collar work and high-skilled versus low-skilled work. Using Eurobarometer data for a large number of European countries (2008–2012), our findings confirm that self-employed workers are more satisfied with their lives than paid employees are. A life satisfaction premium is also found when the self-employed and paid employees are compared within similar occupations in terms of collar type and skill level. Finally, self-employment can help to overcome low life satisfaction scores associated with blue-collar and low-skilled work.

KEYWORDS

Entrepreneurship; self-employment; life satisfaction

JEL CLASSIFICATION



J24; L22; M13

1. Introduction

A decisive factor in determining life satisfaction is whether one works. Indeed, research has clearly shown that being unemployed has severe negative consequences in terms of life satisfaction (Clark and Oswald 1994; Winkelmann and Winkelmann 1998). Likewise, the influences of various work-related aspects on life satisfaction have received considerable attention in the life satisfaction literature (Helliwell and Huang 2011; Erdogan et al. 2012). However, previous studies have largely neglected to examine the occupational choice between entrepreneurship and paid employment (Nieß and Biemann 2014). Although several studies indicate that the self-employed report higher levels of work satisfaction than paid employees do (e.g. Hundley 2001; Benz and Frey 2008; Millán et al. 2013), much less is known about their levels of life satisfaction.

Some cross-sectional evidence suggests that the self-employed have higher levels of life satisfaction than paid employees do (Blanchflower and Oswald 1998; Alesina, Di Tella, and MacCulloch 2004; Andersson 2008) and that a switch from paid employment to self-employment increases life satisfaction (Binder and Freytag 2013).

Building on the previous literature, the current article focuses on life satisfaction levels of the self-employed in different types of occupations. First, we investigate whether the self-employed are more satisfied with their lives than paid employees are using a large sample of workers from a substantial number of European countries. The self-employed differ from paid employees in the sense that self-employed individuals act as independent actors in the market, whereas paid employees operate in hierarchical organizations (Benz and Frey 2008). Because of this difference, self-employed individuals have more freedom in their work, such as freedom in choosing their work tasks and working hours, whereas paid employees work in a hierarchal setting in which they need to obey orders from others to some extent. As a result, self-employed individuals derive higher utility from the procedures in their work rather than the outcomes than employees working in organizations and are thus more satisfied with their work as a whole (Benz and Frey 2008). Such higher procedural utility and work satisfaction could also lead to higher life satisfaction for the self-employed, partly because of the positive relationship between work and life satisfaction (see also Erdogan et al. 2012). Furthermore, the jobs of entrepreneurs are typically

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more active, combining high levels of job control and job demand, which can enhance the experience of flow (Stephan and Roesler 2010; Patzelt and Shepherd 2011). This tendency suggests that self-employed workers are more likely than paid employees to consider their work meaningful and challenging, and such a view may result in higher levels of well-being (Csikszentmihalyi 1975). However, one aspect that should be considered in the domain of self-employment is that a high level of involvement in work-related activities could result in work-family conflicts and hence in lower satisfaction levels in other life domains (Ford, Heinen, and Langkamer 2007), potentially harming overall life satisfaction levels (Matthews, Wayne, and Ford 2014).

Second, we explore heterogeneity with regard to the relationship between self-employment and life satisfaction by turning attention to different groups of self-employed workers. In the current literature, there is lack of knowledge about how diverse the group of self-employed individuals is with respect to life satisfaction. The amount of life satisfaction that results from self-employed work could differ because the work varies, for example in terms of physical demands, mental challenges and the degree of routineness. Because we know that considerable heterogeneity exists within the group of self-employed workers, for example in terms of opportunity-based and necessity-based motivations (Kautonen and Palmroos 2010), different groups of self-employed workers may experience different levels of life satisfaction and may not always be more satisfied than paid employees in a similar occupation. In this study, we consider two occupational distinctions that could be relevant to life satisfaction of the self-employed: collar type (white- versus blue-collar workers) and skill level (high-skilled versus low-skilled workers). White-collar and high-skilled workers often differ from blue-collar and low-skilled workers not only in terms of the type of work that they perform (work in an office environment versus manual labour) but also in terms of their level of education, expectations and aspirations. In addition, the different types of occupations often vary in terms of objective characteristics, such as working conditions, promotional prospects and occupational prestige.

The remainder of this article is organized as follows. Section II describes the data and empirical strategy. Section III presents the results. Concluding remarks follow in Section IV.

II. Data and methodology

Data and variables

To examine the relationship between occupation and life satisfaction, we use data from the Gesis Eurobarometer and utilize individual information on life satisfaction and occupational status. Repeated cross-section data are pooled over time (for 2008–2012), yielding a sample of nearly 50,908 paid employed and self-employed individuals in 205 regions in 28 European countries. Unemployed individuals and other groups that were originally included in the survey, such as students, retirees and individuals who are unable to work, are omitted from our sample to allow for a direct comparison between self-employed workers and paid employees and to ignore any possible effects that derive from the inclusion of the economically inactive population.

Our dependent variable is a 4-point scale measure of life satisfaction in which people are asked to respond to the following question: ‘On the whole, are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with the life you lead?’ Possible answers are (1) not at all satisfied, (2) not very satisfied, (3) fairly satisfied and (4) very satisfied.¹ This life satisfaction question used to measure Subjective Well-Being (SWB) has been frequently employed in earlier research (see Veenhoven 2012). Higher values indicate more satisfied individuals.

An individual’s self-employment status was assessed based on whether his/her (self-reported) primary occupation is in self-employment or paid employment. However, it is important to account for heterogeneity within the self-employed and paid employee groups. In this research, we further distinguish between different occupations along two lines: collar type and skill level. With regard to collar type, white-collar workers are those who perform professional jobs, typically in an office setting. Blue-collar work involves more hands-on duties and includes

¹Nonrespondents and those who answered ‘don’t know’ were excluded from the sample.

manual labour. The distinction between white-collar and blue-collar workers is based on the ISCO-88 (International Standard Classification of Occupations) 1-digit classification, where ISCO-88 major occupational groups 1–5 are defined as white-collar labour and ISCO-88 major occupational groups 6–9 are designated as blue-collar labour (see Appendix 1). Skill level is based on the range and complexity of tasks involved, with the complexity of tasks having priority over the range of tasks. Skill level distinguishes between individuals who perform high-skilled tasks from those who perform tasks requiring little skill. High-skilled occupations fall into ISCO-88 categories 1, 2, 3, 6 and 7, whereas low-skilled jobs fall into categories 4, 5, 8 and 9. A more detailed explanation and a taxonomy of occupations can be found in Appendix 1. Based on this taxonomy, an initial division of four occupational groups was made: white-collar and high-skilled employment, white-collar and low-skilled employment, blue-collar and high-skilled employment, and blue-collar and low-skilled employment.

In addition to the main variables of interest, our analysis includes a set of control variables denoting personal characteristics (demographics and socio-economic characteristics) that may confound the relationship between occupational type and life satisfaction. These personal characteristics are gender, age, marital status, number of children, education level,² perceived financial situation and perceived job situation. An overview of all variables included in the empirical analyses can be found in Appendix 2, while descriptive statistics can be found in Appendix 3.

Table 1 displays the prevalence of collar type and skill level among the groups of self-employed and paid employed workers. It can be seen that blue-collar occupations are more prevalent among self-employed workers (57.7%) than among paid employees (32.1%). The differences in skill level are much smaller; almost 58% of the self-employed are involved in high-skilled work, while this is true for 48.5% of the paid employees.

Table 1. Descriptive statistics: prevalence of occupational groups among paid employees and the self-employed.

	White collar and high skilled (%)	White collar and low skilled (%)	Blue collar and high skilled (%)	Blue collar and low skilled (%)
Paid employees	24.4	43.5	24.1	8.0
Self-employed	17.5	24.9	40.3	17.4

Econometric model

To examine the relationships between occupation type and life satisfaction, we specify a simple reduced-form life satisfaction equation (see also Di Tella, MacCulloch, and Oswald 2003; Arampatzis, Burger, and Veenhoven 2015):

$$LS_{jit} = \Omega Occupational\ Type_{jit} + \Sigma Personal_{jit} + \varepsilon_i + \lambda_t + \mu_{jit}$$

where LS_{jit} is a self-reported measure of life satisfaction for individual j in region i in year t and $Occupational\ Type_{jit}$ is a vector of the occupational characteristics of individuals (self-employed versus paid employed, white-collar versus blue-collar work, high-skilled versus low-skilled work), $Personal_{jit}$ is a vector of other personal and socio-economic characteristics of individuals, ε_i is a vector of region (NUTS-2) dummies³ to control for time-invariant regional characteristics, λ_t is a vector of time dummies included to capture global time-related external shocks and μ_{jit} is a residual error. Given the ordinal nature of our dependent variable LS_{jit} , ordered probit regressions were performed with corrected (robust) SEs.

III. Empirical results

Table 2 presents the marginal effects resulting from ordered probit regressions using the full sample of self-employed and paid employees,⁴ where we focus on the marginal effects belonging to the ‘very satisfied’ category of the dependent variable (highest category). In line with our expectations, the results indicate that individuals who are self-employed are significantly

²Please note that the correlation coefficients between education level and the occupational characteristics were moderate at most (full set of correlation coefficients available from the authors upon request). High-skilled workers, white-collar workers and paid employees tend to be higher educated than low-skilled workers, blue-collar workers and self-employed workers.

³The region-fixed effects were found to be jointly significant. Robustness-check interaction terms between time and regions were applied (see also Di Tella, MacCulloch, and Oswald 2003), yielding similar results.

⁴We are interested mainly in the marginal effects of the job characteristics. With regard to the control variables, we find significant positive relationships between life satisfaction and the level of education, financial situation of the household and personal job situation. Likewise, young, female and married respondents are significantly more likely to report to be very satisfied than old, male and unmarried respondents. The relationship between having children and life satisfaction was positive but small. These findings are in line with the existing literature.

Table 2. Marginal effects of occupational characteristics on the probability of being 'very satisfied' based on ordered probit regressions.

	(1)	(2)	(3)
Paid employees	Reference		Reference
Self-employed	0.017*** (0.003)	–	0.022*** (0.003)
White-collar and high-skilled labour	–	Reference	Reference
White-collar and low-skilled labour	–	–0.017*** (0.003)	–0.016*** (0.003)
Blue-collar and high-skilled labour	–	–0.027*** (0.004)	–0.030*** (0.003)
Blue-collar and low-skilled labour	–	–0.039*** (0.005)	–0.043*** (0.005)
Control variables	Included	Included	Included
Region fixed effects	Included	Included	Included
Time fixed effects	Included	Included	Included
Observations	50,908	50,908	50,908

Notes: Robust SEs in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

more satisfied with their lives than are paid employees (Column 1). After controlling for collar type and skill type, the self-employed are still significantly more satisfied than paid employees (Columns 2 and 3).⁵ We find that, compared with being in paid employment, being self-employed increases the probability of reporting to be very satisfied by 0.017 (1.7 percentage points).⁶ This figure raises to 0.022 when controlling for collar type and skill level. At the same time, it can be observed that compared to the group of white-collar and high-skilled workers, respondents belonging to the white-collar and low-skilled, blue-collar and high-skilled, and blue-collar and low-skilled groups are significantly less satisfied with their lives. The absolute difference between paid employed and self-employed (0.022) is smaller than between the white-collar and high-skilled workers and both groups of blue-collar workers (0.030 and 0.043).⁷

Next, we distinguish between eight occupational categories based on the three occupational dimensions: self-employment versus paid employment, white-collar versus blue-collar labour and high-skilled versus low-skilled work ($2 \times 2 \times 2$). Table 3 presents the resulting eight marginal effects, one for each category. Each column of Table 3 takes another category as the reference category such that we test directly for statistically significant differences across the occupational categories. Again, marginal effects are presented for the highest category of the

dependent variable ('very satisfied'). This analysis is conducted to examine the differences in life satisfaction between self-employed and paid employees for different types of occupations.

The results can be summarized as follows. First, within every occupational category (collar type by skill level), self-employed individuals have a significantly higher probability of being very satisfied with their lives than paid employees. Among the white-collar high-skilled workers, the probability of being 'very satisfied' among the self-employed is 1.8 percentage points (marginal effect is 0.018) higher than among paid employees. Similar results are found for the other occupational categories: the marginal effects range from 0.016 (blue collar high skilled; Column 5) to 0.033 (blue-collar low-skilled; Column 7). Hence, the life satisfaction premium for the self-employed can be observed within different occupational types.

Second, the results for occupational categories suggest that self-employment can help to overcome the low life satisfaction scores associated with blue-collar versus white-collar work, and with low-skilled versus high-skilled work. Most notably, (1) blue-collar low-skilled self-employed workers do *not* have a significantly lower probability of being 'very satisfied' than blue-collar high-skilled paid employees (Table 3, Column 5) or white-collar low-skilled paid employees (Table 3, Column 3); and (2) white-collar low-skilled self-employed workers do *not* have a significantly lower probability of being 'very satisfied' than white-collar high-skilled paid employees (Column 1). In fact, the only group of self-employed workers that is significantly less satisfied with life than any of the groups of paid employees is that of blue-collar high-skilled self-employed workers (who are significantly less satisfied than white-collar high-skilled employees; Column 1). Hence, self-employment appears to make people more satisfied than paid employees, even when they do not have the same skills or perform the same type of labour.

Third, collar type by skill level has a less profound effect on life satisfaction among self-employed workers than among paid employees, signified by the smaller variation in marginal effects for the four

⁵Based on the estimation in Column 3, the predicted probabilities of belonging to the four categories of the dependent variables (including the extreme categories) are 0.05 for 'not at all satisfied', 0.17 for 'not very satisfied', 0.56 for 'fairly satisfied' and 0.22 for 'very satisfied'.

⁶The raw coefficients and a full report of the marginal effects are available upon request.

⁷In a similar vein, the differences between lowest and highest educated respondents are more pronounced. Compared to having less than 15 years of education, having enjoyed more than 20 years of education increases the probability of reporting to be very satisfied by 3.5 percentage points. Although, self-employment is significantly associated with life satisfaction, other occupational characteristics seem to matter more.

Table 3. Marginal effects of occupational characteristics on the probability of being 'very satisfied': eight occupational groups.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
White collar and high skilled								
Paid employee	Reference	-0.018** (0.007)	0.017*** (0.003)	-0.010 (0.006)	0.029*** (0.004)	0.013** (0.005)	0.046*** (0.005)	0.016** (0.008)
Self-employed	0.018** (0.007)	Reference	0.035*** (0.007)	0.008 (0.009)	0.047*** (0.008)	0.031*** (0.008)	0.064*** (0.009)	0.035*** (0.010)
White collar and low skilled								
Paid employee	-0.017*** (0.003)	-0.035*** (0.007)	Reference	-0.027*** (0.006)	0.012*** (0.003)	-0.004 (0.005)	0.029*** (0.005)	-0.001 (0.008)
Self-employed	0.010 (0.006)	-0.008 (0.009)	0.027*** (0.006)	Reference	0.039*** (0.006)	0.023*** (0.007)	0.056*** (0.007)	0.026*** (0.010)
Blue collar and high skilled								
Paid employee	-0.029*** (0.004)	-0.047*** (0.008)	-0.012*** (0.003)	-0.039*** (0.006)	Reference	-0.016*** (0.005)	0.017*** (0.005)	-0.013 (0.008)
Self-employed	-0.013** (0.005)	-0.031*** (0.008)	0.004 (0.005)	-0.023*** (0.007)	0.016*** (0.005)	Reference	0.033*** (0.006)	0.003 (0.009)
Blue collar and low skilled								
Paid employee	-0.046*** (0.005)	-0.064*** (0.009)	-0.029*** (0.005)	-0.056*** (0.007)	-0.017*** (0.005)	-0.033*** (0.006)	Reference	-0.030*** (0.009)
Self-employed	-0.016** (0.008)	-0.035*** (0.010)	0.001 (0.008)	-0.026*** (0.010)	0.013 (0.008)	-0.003 (0.009)	0.030*** (0.009)	Reference
Personal characteristics	Included	Included	Included	Included	Included	Included	Included	Included
Region fixed effects	Included	Included	Included	Included	Included	Included	Included	Included
Time fixed effects	Included	Included	Included	Included	Included	Included	Included	Included
Observations	50,908	50,908	50,908	50,908	50,908	50,908	50,908	50,908

Notes: Robust SEs in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$; full table including marginal effects of personal characteristics is available upon request.

occupational categories within self-employment than within paid employment. For example, the two white-collar categories in self-employment do not have significantly different marginal effects, and this also holds true for the two blue-collar categories in self-employment. In paid employment, all categories have significantly different marginal effects. An explanation for this finding could be the important role of job autonomy in self-employment which could diminish the relevance of other job characteristics for determining life satisfaction.

IV. Concluding remarks

This study aimed to investigate the variation in life satisfaction among self-employed workers and paid employees, accounting for heterogeneity within the group of self-employed workers. We found that the self-employed are generally more satisfied with their lives than paid employees are and that self-employment can even help to overcome the low life satisfaction scores associated with low-skilled and blue-collar work. This finding complements the limited existing empirical evidence in this area and contributes to the debate on whether self-employed workers who have consistently been found to be more satisfied with their work than paid employees are also more

satisfied with their lives. This finding is not straightforward because an extensive focus on work may come at the expense of satisfaction in other life domains (e.g. having less time for leisure and spending time at home) and hence may reduce life satisfaction.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

- Alesina, A., R. Di Tella, and R. MacCulloch. 2004. "Inequality and Happiness: Are Europeans and Americans Different?" *Journal of Public Economics* 88 (9): 2009–2042. doi:10.1016/j.jpubeco.2003.07.006.
- Andersson, P. 2008. "Happiness and Health: Well-Being among the Self-Employed." *The Journal of Socio-Economics* 37 (1): 213–236. doi:10.1016/j.socsec.2007.03.003.
- Arampatzi, E., M. J. Burger, and R. Veenhoven. 2015. "Financial Distress and Happiness of Employees in Times of Economic Crisis." *Applied Economics Letters* 22 (3): 173–179. doi:10.1080/13504851.2014.931916.
- Benz, M., and B. S. Frey. 2008. "Being Independent Is a Great Thing: Subjective Evaluations of Self-Employment and Hierarchy." *Economica* 75 (298): 362–383. doi:10.1111/j.1468-0335.2007.00594.x.

- Binder, M., and A. Freytag. 2013. "Volunteering, Subjective Well-Being and Public Policy." *Journal of Economic Psychology* 34: 97–119. doi:10.1016/j.joep.2012.11.008.
- Blanchflower, D. G., and A. J. Oswald. 1998. "What Makes an Entrepreneur?" *Journal of Labor Economics* 16 (1): 26–60. doi:10.1086/209881.
- Clark, A. E., and A. J. Oswald. 1994. "Unhappiness and Unemployment." *The Economic Journal* 104: 648–659. doi:10.2307/2234639.
- Csikszentmihalyi, M. 1975. "Play and Intrinsic Rewards." *Journal of Humanistic Psychology* 15 (3): 41–63. doi:10.1177/002216787501500306.
- Di Tella, R., R. J. MacCulloch, and A. J. Oswald. 2003. "The Macroeconomics of Happiness." *Review of Economics and Statistics* 85 (4): 809–827. doi:10.1162/003465303772815745.
- Erdogan, E., T. N. Bauer, D. M. Truxillo, and L. R. Mansfield. 2012. "Whistle while You Work: A Review of the Life Satisfaction Literature." *Journal of Management* 38: 1038–1083. doi:10.1177/0149206311429379.
- Ford, M. T., B. A. Heinen, and K. L. Langkamer. 2007. "Work and Family Satisfaction and Conflict: A Meta-Analysis of Cross-Domain Relations." *Journal of Applied Psychology* 92 (1): 57–80. doi:10.1037/0021-9010.92.1.57.
- Helliwell, J. F., and H. Huang. 2011. "Well-Being and Trust in the Workplace." *Journal of Happiness Studies* 12: 747–767. doi:10.1007/s10902-010-9225-7.
- Hundley, G. 2001. "Why and When are the Self-Employed More Satisfied with Their Work?" *Industrial Relations* 40 (2): 293–316.
- Kautonen, T., and J. Palmroos. 2010. "The Impact of a Necessity-Based Start-Up on Subsequent Entrepreneurial Satisfaction." *International Entrepreneurship and Management Journal* 6 (3): 285–300. doi:10.1007/s11365-008-0104-1.
- Matthews, R. A., J. H. Wayne, and M. T. Ford. 2014. "A Work-Family Conflict/Subjective Well-Being Process Model: A Test of Competing Theories of Longitudinal Effects." *Journal of Applied Psychology* 99 (6): 1173–1187. doi:10.1037/a0036674.
- Millán, J. M., J. Hessels, R. Thurik, and R. Aguado. 2013. "Determinants of Job Satisfaction: A European Comparison of Self-Employed and Paid Employees." *Small Business Economics* 40 (3): 651–670. doi:10.1007/s11187-011-9380-1.
- Nieß, C., and T. Biemann. 2014. "The Role of Risk Propensity in Predicting Self-Employment." *Journal of Applied Psychology* 99 (5): 1000–1009. doi:10.1037/a0035992.
- Patzelt, H., and D. A. Shepherd. 2011. "Negative Emotions of an Entrepreneurial Career: Self-Employment and Regulatory Coping Behaviors." *Journal of Business Venturing* 26 (2): 226–238. doi:10.1016/j.jbusvent.2009.08.002.
- Stephan, U., and U. Roesler. 2010. "Health of Entrepreneurs versus Employees in a National Representative Sample." *Journal of Occupational and Organizational Psychology* 83 (3): 717–738. doi:10.1348/096317909X472067.
- Veenhoven, R. 2012. "Happiness: Also Known As 'Life Satisfaction' And 'Subjective Well-being.'" In *Handbook of Social Indicators and Quality of Life Research*, edited by K. C. Land, a. C. Michalos, and M. J. Sirgy, 63–77. Berlin: Springer doi:10.1007/978-94-007-2421-1_3
- Winkelmann, L., and R. Winkelmann. 1998. "Why are the Unemployed so Unhappy? Evidence from Panel Data." *Economica* 65 (257): 1–15. doi:10.1111/ecca.1998.65.issue-257.

Appendix 1. Classification for four occupational groups

Collar type	White collar	Legislators, senior officials and managers (Code 1), professionals (Code 2), technicians and associate professionals (Code 3). Clerks (Code 4) and service workers and shop and market sales workers (Code 5)
	Blue collar	Skilled agricultural and fishery (Code 6) workers and craft and related trades workers (Code7). Plant and machine operators (Code 8) and assemblers and elementary occupations (Code 9)
Skill level	High skilled	Legislators, senior officials and managers (Code 1), professionals (Code 2), technicians and associate professionals (Code 3). Skilled agricultural and fishery (Code 6) workers and craft and related trades workers (Code7)
	Low skilled	Clerks (Code 4) and service workers and shop and market sales workers (Code 5). Plant and machine operators (Code 8) and assemblers and elementary occupations (Code 9)

Appendix 2. Description of all variables included in the analysis

Variable	Type	Categories
Dependent variable		
Life satisfaction	Ordinal	Not at all satisfied; not very satisfied; fairly satisfied; very satisfied
Job characteristics		
Occupation	Binary	Self-employed; paid employees
Collar type	Binary	White-collar; blue-collar
Skill level	Binary	High-skilled; low-skilled
Demographics		
Gender	Binary	Male; female
Age group	Categorical	15–24; 25–39; 40–54; 55+
Socio-economic characteristics		
Marital status	Categorical	Single or unmarried; divorced, widowed or separated; married
Number of children in the household	Categorical	No children; 1 child; 2 children or more
Education (to age)	Categorical	Less than 15; 15–20 years; more than 20 years; No full-time education
(Perceived) financial situation of the household	Ordinal	Very bad; rather bad; rather good; very good
(Perceived) personal job situation	Ordinal	Very bad; rather bad; rather good; very good

Appendix 3. Descriptive statistics for the full sample

	N	Mean	SD	Min	Max
Dependent variable					
Life satisfaction	50,908	2.95	0.77	1	4
Job characteristics					
Self-employed	50,908	0.16	0.36	0	1
White-collar	50,908	0.64	0.48	0	1
High-skilled	50,908	0.50	0.50	0	1
Demographics					
Female	50,908	0.48	0.50	0	1
<i>Age groups (reference = 15–24)</i>					
25–39 years old	50,908	0.37	0.48	0	1
40–54 years old		0.40	0.49	0	1
55+ years old		0.17	0.37	0	1
Socio-economic characteristics					
<i>Marital status (reference = single)</i>					
Divorced/Separated/Widowed	50,908	0.11	0.31	0	1
Married		0.66	0.47	0	1
<i>Number of children in household (reference = 0 children)</i>					
One child	50,908	0.19	0.39	0	1
2 or more		0.18	0.39	0	1
<i>Education (to age) (reference = 15–20 years)</i>					
16–19 years	50,908	0.52	0.50	0	1
>20 years		0.37	0.48	0	1
No full-time education		0.01	0.11	0	1
<i>Financial situation household (reference = very bad financial situation)</i>					
Rather bad financial situation	50,908	0.26	0.44	0	1
Rather good financial situation		0.57	0.49	0	1
Very good financial situation		0.10	0.31	0	1
<i>Personal job situation (reference = very bad job situation)</i>					
Rather bad job situation	50,908	0.20	0.40	0	1
Rather good job situation		0.56	0.50	0	1
Very good job situation		0.18	0.38	0	1