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ABSTRACT

Twenty Years of Job Quality in OECD Countries: More Good News?*

The distribution of job quality across workers and the change in job quality over time can be measured by job-domain indices or single-index job-satisfaction. This paper takes both approaches to establish the evolution of job quality over a period from the mid-1990s to the mid-2010s in 13 OECD countries, using data from the three latest ISSP Work Orientation modules. The rise in job satisfaction from 1997 to 2005 has continued through 2015, despite the 2008 Great Recession. This improvement is also found in most of the job-outcome domains, despite some evidence of work intensification. Job security was the most-important job aspect every year, and the percentage of workers with secure jobs rose over time. There has been a small rise in the dispersion of job satisfaction, but the good news regarding better job quality over a 20-year period does not seem to be dampened by large changes in its inequality.

JEL Classification: J28, J3, J81

Keywords: job quality, job satisfaction, ISSP

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1. Introduction

There is ongoing interest in job quality in many countries. In order to understand the distribution of job quality across workers, and how this quality has changed over time, we need to measure it. There are broadly two approaches to this measurement, both of which respect that there are many aspects of a job that workers will find important. The first is to calculate some kind of index of various job characteristics that can be thought of as including the effort and reward components of jobs. This is the approach taken in Boar and Lashkari (2022), for example, using US General Social Survey data to create a first principal component of seven non-wage aspects of the job,¹ by Cazes *et al.* (2015), who consider earnings quality, labour-market security and the quality of the working environment, and by Hovhannisyan *et al.* (2022), who combine income, benefits, stability and working conditions to produce a job-quality index for developing countries. A useful overview of the different elements of job quality that are considered to be important by different institutions (the ILO, the UNECE, Eurofound and the OECD) in this respect appears in Table 5.1 of OECD (2013).

The second approach is to on the contrary appeal to a single-index measure of job quality as perceived by the workers themselves, which is often overall job satisfaction. This second approach has the advantage of taking into account that individuals put different weights on the various aspects of their jobs that they think are important (as in Locke, 1976), and avoids the need to directly measure both all of these aspects and the weights that are put on them at the individual level (as underlined by Green, 2006).

Our main aim in the current analysis is to establish how both job satisfaction and indices of job quality have changed over time from the mid-1990s to the mid-2010s in OECD countries. There is a very-large literature on the cross-section distribution of job quality across types of

¹ These are respect at the workplace, heavy lifting, hand movement, continuous learning, the opportunity to develop new abilities, the variety of tasks, and the need to work fast.

individuals and jobs at a point in time, but in general less work on the evolution of job quality over time.

Some recent contributions to the vast literature on the cross-section distribution of job satisfaction scores are De Neve and Ward (2017), Dilmaghani (2022), Green *et al.* (2018), and many of the chapters in Zimmerman (2023). In this very-rich literature, job satisfaction is typically found to rise with income and fall with hours of work, to be U-shaped in age, and to be often higher for women.

Regarding the various aspects of the job that enter in job-quality indices, Stier (2015) analyses the gap in four dimensions of job quality (job security, job achievement, job content and time flexibility) between high and low-skilled workers in 2005 International Social Survey Program (ISSP) data covering 28 countries. He finds that low-skilled workers are generally worse off in all four of these dimensions, although the gaps do depend on the characteristics of the national labour market. Job quality is in general higher in technologically-advanced societies. Technological development also helps narrow the job-content gaps between workers with different skills, but does not affect those for overall job security or time flexibility. Last, unemployment is detrimental for most aspects of job quality for the lower-skilled, and to a lesser extent - except for job security - for those with higher skills also.

Clark (2005a) runs regressions of both job satisfaction and a summary index of seven aspects of job quality using the information from employees in 16 OECD countries contained in the 1997 wave of the ISSP. The estimated coefficients (in his Table 1.5) show that women and older workers have both higher job satisfaction and better job quality (with older workers' better outcomes mostly being explained by their higher incomes). The country-level distributions of job satisfaction and the job-quality index are also similar, with the correlation coefficient between the estimated country dummy coefficients in the job-quality and job-satisfaction regressions being over 0.7.

Nikolova and Cnossen (2020) explore job quality from the perspective of job meaningfulness, that is via the degree to which individuals view their work activities as purposeful and worthwhile. In 2005, 2010 and 2015 data from 30 European countries in the European Working Conditions Survey (EWCS), autonomy, competence and relatedness (the job facets emphasised by self-determination theory), are shown to explain as much as 60% of the total variation in job meaningfulness, and are far more powerful in this respect than extrinsic factors such as income, insecurity, benefits and working hours. Supportive relationships with colleagues and superiors are found to be crucial for job meaningfulness. Nikolova and Cnossen (2020) does not however specifically address the changes in job quality between 2005 and 2015 in their analysis.

Dur and Lent (2019) do take time into account in their analysis of one aspect of job quality (or rather its absence): the perceived societal uselessness of jobs. Using survey data from the four ISSP Work Orientations waves (1989-2015), they found that approximately 8% of workers perceive their jobs as useless and 17% have doubts about the usefulness of their work. There was, however, no clear time trend in these figures.

Existing work on broader changes in job quality over the 1990s painted a rather bleak picture. Green (2006) underlines that jobs requiring hard work, high speed, and tension became more frequent over the 1990s in Great Britain, with similar trends being found in Europe (see also Askenazy, 2004). However, more-recent data has produced more-nuanced results.

Antón *et al.* (2023) consider EWCS data aggregated at the NUTS-2 level over the 1995-2005 period matched to information on industrial-robot adoption from the World Robotics Survey. Their instrumental-variables results reveal that while industrial robots have produced greater work intensity they have had no impact on the quality of workers' physical environment, skills and discretion, quantitative demands, pace or interdependence.

Green *et al.* (2013) analyse job quality using EWCS data from 1995 to 2010 covering EU-15 countries, and consider four complex non-wage job-quality indices of work quality or skill use, work intensity, good physical environment, and working-time quality. They show that richer countries have better-quality jobs, co-ordinated market economies have the best working-time quality, and social-corporatist countries have comparatively higher levels of skill use. Regarding movements over time, most of the job-quality indices in their pooled sample of 15 countries remained relatively stable, even though the end of their analysis period included the Great Recession. There was a steady rise in the working-time quality index, consistent with optimistic theories of the changing nature of work in response to increasing worker demands for work-life balance. There was also a fall in the dispersion of working-time quality in most countries (perhaps due to supranational regulations) and work intensity (possibly a result of technological change). The job-quality gaps between genders and socioeconomic groups remained stable.

Olsen *et al.* (2010) analysed changes in five job-quality aspects in two coordinated market economies (Germany and Norway) and two liberal market economies (the UK and the US) using data from the 1989, 1997 and 2005 ISSP Work orientations modules. Job insecurity and work intensity rose in all four countries in at least one of the time periods, which they attribute to downsizing, outsourcing and other forms of organisational restructuring. Job security and work intensity converged between countries, which Olsen *et al.* (2010) argue reflects globalisation pressures that have forced organisations to respond in similar ways and produced similar negative job-quality outcomes. There were no clear trends in different intrinsic job facets, and job satisfaction was overall stable.

Changes in job quality from the mid- to the late 2000s were also assessed by Leschke and Watt (2014), who use EWCS and Labour Force Survey (LFS) data to construct a synthetic job-quality indicator for all EU-27 countries. They found a small overall decline in job quality

between 2005 and 2010, which was slightly more pronounced among women (see also Erhel *et al.*, 2022). This decline was primarily driven by worsening job quality in terms of wages and involuntary non-standard employment, with smaller declines in skills and career development and collective-interest representation. On the contrary, working conditions, working time and work-life balanced improved markedly over the same period. While there was no obvious pattern of either convergence or divergence among countries, the greatest job-quality improvement took place in Poland, Belgium and Denmark and the greatest deterioration in Ireland and France.

Clark (2010) considers most of the indicators of job quality that we will analyse below, using the same ISSP waves from 1989, 1997 and 2005 as in Olsen *et al.* (2010), but with information on all of the available countries. While many of these indicators deteriorated between the first and second ISSP waves, there was something of a recovery in job quality by 2005: in particular, there were positive movements in OECD countries between 1997 and 2005 for the measures of considering one's income as high, promotion opportunities, and relations at work.

In line with the 1990s work on aspects of job quality, the subjective measure of overall job satisfaction has often been found to have trended downwards over this period (see Green, 2006, for the US, Germany and the UK). In Clark (2005*b*), using the seven OECD countries that were observed in both the 1989 and 1997 ISSP waves, job-satisfaction regressions with demographic control variables indicated no change over time. When controlling for income and hours of work, job satisfaction was estimated to be lower in 1997 than in 1989 (so that the joint contribution of changes in income and hours over time was to increase job satisfaction in these countries).

However, data from beyond the Millennium have suggested a possible break in this negative trend. In UK BHPS data, job satisfaction fell from 1992 up to 1999, but then exhibited

something of a recovery up to 2007 (Clark, 2011). Clark (2010) extended the analysis in Clark (2005b) to include data from the third ISSP Work Orientations module from 2005. Only five OECD countries appear in all of 1989, 1997 and 2005 waves. For these countries, regression analysis suggests lower job satisfaction in 1997 than in 1989, but higher job satisfaction in 2005. Considering the larger sample of 15 countries that appeared in both the 1997 and 2005 waves, job satisfaction was again estimated to be higher in 2005 than in 1997. On average in these countries, there is then no evidence of a secular fall in job satisfaction over time, with if anything jobs being better-rated in 2005 than in previous ISSP waves.²

Our aim in this paper is to contribute to this literature that has covered both job-quality indices and job satisfaction, and in particular that using prior ISSP waves, by adding information from the fourth ISSP Work Orientations module from 2015. The main question we ask is whether the rise in job satisfaction that was identified between 1997 and 2005 in previous work continued over the following 10 years, or whether on the contrary it was obliterated by the Great Recession (with its potential effects on job security, earnings, work intensity etc.) or by recent changes in the effort required of workers due to technological change. Our evidence suggests that it is the former, so that the previous good news regarding job quality continues to hold in more-recent years.

The remainder of the paper is organised as follows. Section 2 presents the data and the measures of both job values (what workers want), job quality (what they receive), and their overall evaluations of their jobs in terms of job satisfaction. Section 3 then presents the empirical analysis that will reveal how both job satisfaction and various measures of different job aspects have changed over a 20-year period. Last, Section 4 concludes.

² When controlling for income and hours of work in both of these regressions, job satisfaction in 2005 is estimated to be identical in 1997 and 2005. As such, much of the rise in job satisfaction between these two years reflects higher income and lower hours of work.

2. Data on Job Values and Job Quality

We here aim to evaluate the changes in job quality over a 20-year period, using standardised repeated cross-section data from three most-recent “Work Orientations” waves of the ISSP in 1997, 2005 and 2015 (see <http://www.issp.org/>). We concentrate on the 13 OECD countries that appear in all three of these waves: West Germany, Great Britain, USA, Hungary, Norway, Sweden, the Czech Republic, New Zealand, Japan, Spain, France, Denmark and Switzerland. The initial 1989 Work Orientations wave included only seven OECD countries (see Clark, 2005a, 2005b and 2010) and is not analysed here, in order to produce a wider country coverage (only five countries appear in all four of the ISSP Work Orientations waves).³ These ISSP surveys contain a considerable amount of both objective and subjective cross-country information about job quality. Table 1 shows the number of employees⁴ interviewed in these OECD countries in each of the three Work Orientations waves that will be analysed here.⁵

The ISSP Work Orientations modules contain information on both job values (what workers think is important) and job outcomes (the characteristics of the job that they currently occupy). There are eight different job-values questions, all answered on a five-point qualitative scale from “*Not at all important*” to “*Very important*”. The job-values domains are High income, Flexible working hours, Good opportunities for advancement, Job security, Interesting job, Allows to work independently, Allows to help other people, and Useful to society. The answers to these job-values questions will reveal a much-broader picture of the aspects of the

³ Our key result in Table 5A is that job satisfaction was higher in 2005 and (especially) 2015 in the 13 OECD countries that we analyse. This pattern continues to be found when we add 1989 data (and thus drop from 13 to 5 countries), with in addition the fall in job satisfaction between 1989 and 1997 underlined in Clark (2010).

⁴ We will here concentrate on the job quality of employees, as the self-employed are a distinct group with respect to some of the aspects of work that we analyse.

⁵ The ISSP samples were mostly stratified, and designed to be representative of adults (aged 18 or over) living in non-institutional accommodation. The mode of administration was most often face-to-face. There are a number of differences between countries in this respect. Details regarding the questionnaire, sampling, and data collection are available in the Study Monitoring Report for each ISSP wave. That for 2005, for example, is available at the following address: <http://www.gesis.org/en/services/data/survey-data/issp/modules-study-overview/work-orientations/2005/>.

job that matter to workers than the many analyses that have concentrated on income, hours and perhaps some indication of job security.

The analysis of job values over time is important for the understanding of job quality. Any change in values will affect the overall evaluation of job quality, even if job outcomes remain unchanged.

Table 2 lists, separately for men and women, the (weighted) percentage of employees across the 13 OECD countries in Table 1 who describe each job characteristic as “Very important.” Columns 1, 3 and 5 of this table present these figures for the 1997, 2005 and 2015 waves respectively. The asterisks in column 2 reveal whether there was a significant change in job values from 1997 to 2005, and analogously those in column 4 evaluate changes between 2005 and 2015. The top panel of Table 2 refers to women and the bottom panel to men.

The job aspects that workers overall report to be the most important are job security and job interest, followed (at a distance) by autonomy: this ranking holds for both sexes and in all years. In terms of changes over time, the rising importance of income between 1997 and 2005 was notably reversed in 2015 for both men and women, while promotion opportunities have gradually increased in importance. Also on the rise are the importance of jobs that help other people and are socially useful. These figures for women in 2015 are now practically at the same level as those for the importance of work autonomy, whereas there was a notable gap in this respect for both in 1997. For men, the gap between the importance of autonomy and usefulness of 16% points in 1997 had halved by 2015. Job security is the most important job aspect in every year, with figures that are stable for men and have risen slightly for women.

In terms of gender differences, it is striking how similar men’s and women’s reported job values are in 2015. Somewhat more women than men cite job security and helpful and useful jobs as very important, but the differences overall are only small. The correlation

coefficient between the job-values figures in 2015 for men and women is 0.97, with a Spearman correlation coefficient of 0.90.

Overall, Table 2 then underlines that there are only minor differences between men and women in terms of what is valued in a job, and that there is broad stability in these values over time (but with something of a rise in the importance of the social aspects of the job). Last, income and hours (although this latter only refers to flexible working) are declared by workers in OECD countries as being among the least-important aspects of work.⁶

We now turn to the changes in job outcomes between 1997 and 2015 in our 13 OECD countries. The questions in the ISSP Work Orientations module allow us to identify six broad classes of job outcomes:⁷

- * Pay;
- * Hours of work;
- * Future prospects (promotion and job security);
- * How hard or stressful the job is;
- * Job content: interest, prestige, and independence; and
- * Interpersonal relationships.

These job outcomes are mostly self-reported by workers, although we do have objective information on monthly gross earnings and weekly hours of work. Appendix A1 sets out the details of how the different indices of job outcomes are constructed. There are two indicators

⁶ We can use regression analysis to split these values into wave and cohort effects. Some values (income, promotion opportunities, and job interest) are declared to be more important for more-recent birth cohorts. Others exhibit non-monotonic relationships, with for example the jobs that are useful to society being the least important for those born in the 1960s or 1970s.

⁷ These cover four out of the five work features that Green (2006) analyses. The exception is skill (to the extent that this is not reflected in pay).

each for hours of work, future prospects, and “hard and stressful”, for a total of nine job-outcome indicators.

We also have a summary measure of all of the aspects that workers appreciate or dislike about their job, whether measured or unmeasured, which is given by an overall job satisfaction question: “*How satisfied are you in your (main) job?*”, answered on a scale of one to seven, where one means completely dissatisfied and seven completely satisfied. Appendix Figure A2 plots the distribution of job satisfaction over our three ISSP waves; the numbers behind this Figure appear in the table below the figure. In all waves, only very few people give answers of one or two, and around 70% respond 5 or 6 (with around one in eight workers in OECD countries saying that they are completely satisfied at work). There is not a huge amount of variation in these replies between 1997 and 2015. The median job satisfaction score is always five, which is also the mode. The last line of Appendix Table A2 shows a slight rising trend in average job satisfaction over time: 5.25 (SD = 1.11), 5.27 (SD = 1.15) and 5.29 (SD = 1.18) in 1997, 2005 and 2015 respectively.

The changes over time in the nine ISSP job-outcome indicators above appear in Table 3. The different domains here are of course not exhaustive, but do reflect a number of job characteristics that very often appear in traditional discussions of job quality (income and hours of work), as well as others upon which information is typically much scarcer. Table 3 also includes, in the last row of each panel of the table, the summary job satisfaction score reflecting all of the characteristics (whether explicitly-measured or not) of the job that the individual occupies: this is presented as the percentage of employees with “high” job satisfaction (a score of 6 or 7 on the 1-7 scale). The figures in Table 3 are weighted, and are presented in the same format as those for job values in Table 2.

There is a notable movement over time towards reporting that the job’s income is high in Table 3, although the overall incidence of this variable remains fairly low (at one in four

women and one in three men in 2015).⁸ Equally striking is the trend in desired hours of work: an increasing number of people want to spend more time at work, and fewer people prefer shorter working hours⁹. These two findings are consistent with an upward-sloping labour supply curve, where higher wages induce longer desired hours of work (but also of course with other explanations). Good promotion opportunities and job security are equally on the rise for both women and men, although the actual incidence of the former is only around the one-quarter mark. There is thus no evidence in this raw data of greater worries about job security in OECD countries. The incidence of job security is also striking, being reported by over two-thirds of both men and women in the most-recent ISSP wave. Last, there is a mild upward trend in good job content.

Counterbalancing this good news for OECD workers, the incidence of stressful work and (to a much-lesser extent) hard work has increased. Last, employee reports of good relations at work have remained broadly stable over the period under consideration.

On the face of it then, the job-outcome figures in Table 3 mostly seem to suggest an improvement in job quality between 1997 and 2015, despite the occurrence of the Great Recession in 2008.¹⁰ This impression is confirmed in the job-satisfaction scores in the last row of Table 3. The percentage of workers with high job satisfaction has risen over time: from 42%

⁸ OECD data on real earnings for full-time workers (https://stats.oecd.org/Index.aspx?DataSetCode=EAR_MEI) reveals that real wages grew in every country of the 13 we analyse here over the 2000-2004 period (the data only start in 2000) except for Japan (essentially zero) and Spain (minus 4%). Over the longer 2005-2014 period real wages grew in every country except for Japan and Hungary (both minus 2%).

⁹ It is important to note, however, that the question on hours preference is formulated with regard to the effects on earning; the response variant longer hours was stated to result in higher earnings, whereas a preference for shorter hours specified this would imply lower earnings (see Appendix A1).

¹⁰ There is of course selection at work in these numbers. Job values, outcomes and satisfaction are only reported by those who have jobs. The Great Recession may have wiped out a substantial number of poor-quality jobs, so that the 2015 numbers reflect greater selection than those from earlier time periods. However, the employment rates for those aged 15 and older in these 13 OECD countries were 55.8, 56.8 and 56.4 percent in 1997, 2005 and 2015 respectively, suggesting that selection may not be a major issue. The employment data for all countries come from the World Development Indicators database: World Bank (2021), "Employment to population ratio, 15+, total (%) (modeled ILO estimate)", World Development Indicators (database), <https://data.worldbank.org/indicator/SL.EMP.TOTL.SP.ZS> (accessed on December 16th 2021).

to 44% for women, and from 40% to 46% for men. Both of these changes are statistically significant at the one percent level.

3. Job-Quality Regressions

Table 3 presented the mean job-quality figures in the raw data for each of our three analysis years. These changes over time in various aspects of job quality can either reflect the changing nature of a given type of job, or on the contrary composition effects from changes in the prevalence of different types of jobs (with the growth of Service-sector jobs) or types of worker (for example, due to the general rise in education: see OECD, 2020) over time. To have a better idea of the changes in job quality for a given type of worker, which is arguably what many people have in mind when considering improving or deteriorating job quality, we carry out regression analyses that control for individual demographic characteristics, as well as country and year dummies. The estimated coefficients on the year dummies in these regressions will then tell us how job quality has evolved over time, holding the structure of the work force constant in terms of sex, age, and education. Since job satisfaction and other job quality outcomes are ordered categorical variables, all of the regressions are estimated using ordered probit techniques.

We consider two different regression specifications: one without objective earnings and hours, and one including these variables. The results in the latter shows us whether an employee who had the same hours of work and real earnings in 1997, 2005 and 2015 thinks that their job has become more- or less-attractive over time. This then helps to isolate the role of changing earnings and hours in explaining movements in job quality. Table 4 shows the results of these regression analyses, where the dependent variable is the summary measure of overall job satisfaction.

The estimated coefficients in the regression without earnings and hours appear in the first column of Table 4. The male dummy attracts a negative estimated coefficient, which is

however not significant. Older workers, the married and the educated are more satisfied. The estimated coefficients on the country dummies show that, *ceteris paribus*, workers in Hungary, Japan, and France are relatively miserable; the most satisfied workers are in Switzerland (the omitted category), Denmark, Spain and the United States. In the context of our interest in the evolution of job quality over time, the most important coefficients in Table 4 are those on the 2005 and 2015 dummy variables: these reveal whether the “average” employee was more satisfied in their job in 2005 and 2015 than in 1997. In column 1, job satisfaction rose from 1997 to 2005 (as noted in Table 14.5 of Clark, 2010, for the group of 15 countries that appeared in both the 1997 and 2005 ISSP waves), and this rise subsequently continued through to 2015.

The estimated coefficients in this first column could reflect movements in objective earnings and hours of work. To see whether this is the case, these are introduced as controls in Column 2 of Table 4.¹¹ While this affects some of the estimated coefficients in a way that might be expected,¹² the estimated year coefficients change only relatively little. Only a small part of the rising job satisfaction in these 13 OECD countries between 1997 and 2015 then resulted from higher labour income and lower hours of work. The estimated coefficients on log earnings and log hours of work are both significant at the one percent level.

The comparison of the first two Work Orientations modules (1989 and 1997) of the ISSP (Clark, 2005*b*) revealed falling job satisfaction in OECD countries across the 1990s, which was suggested to partly reflect an increase in hard work. In Green (2006), greater work intensity and less worker discretion were proposed as explanations of the flat, if not declining, job satisfaction figures in a number of countries over the same period. However, the addition

¹¹ The number of observations in this second column is smaller, as hours of work information is entirely missing in New Zealand. Excluding New Zealand in Column 1 makes little difference to the results there. There is no substantive change in the results if we restrict the number of observations in the first column of Table 4 to those that appear in column 2 as well.

¹² The estimated coefficient on education becomes insignificant in column 2, so that part of the job-satisfaction advantage of the educated in column 1 reflects their higher earnings (or lower hours); the positive estimated coefficient on older workers in column 1 is halved in size for the same reasons. The estimated coefficient on male is negative and significant: at a given level of earnings and hours, women are happier at work than men. This may reflect a difference in expectations, as argued in Clark (1997) and Green *et al.* (2018).

of the third Work Orientations wave of the ISSP in Clark (2010) produced some evidence of a turning point in this decline, with job satisfaction recovering in 2005; the analysis in Table 4 shows that this improvement has continued through to 2015.

Tables 5A and 5B carry out the same kind of analysis as in Table 4, but with the dependent variable now being in turn the eight job-outcome measures from Table 3 (described in Appendix A1).¹³ Each row refers to a separate regression. Instead of showing all of the estimated coefficients from these eight regressions, the tables list only those on the “2005” and “2015” wave dummies for each dependent variable. The first rows of Table 5A and 5B reproduce the estimated wave coefficients on job satisfaction from the first column of Table 4, for comparison purposes, showing the rise in job satisfaction between 1997 and 2015. The following rows summarise the analogous changes in the other job-outcome measures over the different ISSP waves.

The regressions behind the results in Table 5A do not control for earnings or hours of work. The estimated coefficients reveal significant changes in job quality between 1997 and 2015 in all job domains apart from good relations at work. In general, these changes look to be larger between 2005 and 2015 than between 1997 and 2005: changes in job quality then appear to have been speeding up, despite the presence of the Great Recession in the latter period. The job-quality movements in Table 5A are mostly beneficial for workers, although both hard work and stressful work are higher in 2015 than in 1997 or 2005, in line with work intensification (as noted for the UK by Green *et al.*, 2021, in 2001-2017 data from the British Skills and Employment Survey). The hours-preference variables indicate a secular shift towards preferring more hours of work between 1997 and 2015.

This pattern of job-quality change is not significantly affected by controlling for earnings and working hours in Table 5B. One remark here is the rise in hard work and stressful

¹³ The two hours-preferences variables from Table 3 are combined into one variable here, as set out in Appendix A1.

work is a little larger when income and hours are controlled for in Table 5B, which is consistent with there being some kind of compensating differentials at work.

Table 6 presents separate results by country. It should be borne in mind that the sample sizes by country are often only quite small here. The symbols in column 1 indicate whether job quality rose between 1997 and 2005 (*i.e.* between the second and third ISSP Work Orientations waves) and those in column 2 whether it rose between 1997 and 2015 (between the second and fourth waves). The overall 1997-2015 rise in job satisfaction revealed in Table 4 appears in six of the 13 countries: West Germany, Great Britain, Hungary, Norway, the Czech Republic and Switzerland. Job satisfaction is estimated to have fallen significantly over this period in only two countries (Japan and Denmark).¹⁴

We have so far considered both the individual job-quality domains and overall job satisfaction as dependent variables. We now explicitly consider the relationship between the two, running job-satisfaction regressions with the job-outcome measures now included among the explanatory variables. All of these job-outcome variables are entered as dummies (as in Table 3), so that the estimated coefficients allow us to establish a ranking of the domains of work.

The results appear in Table 7 and refer to all three ISSP waves pooled together. The estimated coefficients show that all eight of the domain variables are indeed correlated with overall job satisfaction. The first two rows list the estimated coefficients on the year dummies, controlling for the job-quality measures. Both of these are small and insignificant, as compared to positive and significant in the first column of Table 4. As such, the job-quality measures included in Table 7 entirely explain the 1997-2015 rise in job satisfaction.

¹⁴ There is no obvious relationship between the country pattern here and movements in Employment Protection Legislation or trade-union density over time. It is, however, notable that real GDP per capita growth over the 1997-2015 period was 26% in the group for which job quality fell, 41% in the two countries with no change, but 57% in the countries where job quality rose (Source: Penn World Tables version 10.01).

The estimated coefficients in Table 7 provide a ranking of the different aspects of job quality. Good relations are estimated to be the most-important element, followed by good job content, and then promotion opportunities, preferring fewer hours of work, and stressful work.¹⁵ The smallest correlations are with hard physical work and preferences for longer work hours.¹⁶ The “good relations at work” dummy is composed first of relations between management and employees and second of those between workmates/colleagues. When introduced as separate dummy variables (coded as one for “Very Good” or “Quite Good”), both are significantly positively correlated with job satisfaction but with the estimated coefficient on relations with management being twice that on relations with colleagues. This underlines (as in Artz *et al.*, 2017) the key role that bosses play in worker well-being.

We last ask whether there is any evidence of greater dispersion in job satisfaction over time. There has been only little work on this question. Green *et al.* (2013) analyse the Gini coefficient for their four separate indices of job quality, and conclude that there is overall only little change in dispersion over the 1995-2010 period. We have not considered the indices we use here separately in this respect, but have rather calculated inequality in overall job satisfaction. As this is measured on an ordinal scale, we do not calculate Gini coefficients but rather normed ordinal dispersion. The results in Appendix Table A3 indicate a small rise in the dispersion of job satisfaction when pooling data from all 13 countries between 1997 and 2015. This movement is however far from being concerted. Dispersion rose in four countries, fell in three, and was broadly unchanged in the other six. As such, the broad increase in mean job quality that we find does not seem to have been counterbalanced by large changes in its inequality.

¹⁵ The importance of good relations at work for job quality is emphasized in De Neve *et al.* (2019).

¹⁶ Separate regressions for each ISSP wave show that this ranking of job domains is stable over time. These results are available on request.

4. Conclusions

We have analysed the changes in job quality in OECD countries over a twenty-year period, where job quality is measured both via indices of a number of specific job characteristics and an overall job satisfaction score. There are four broad conclusions.

First, there are only minor differences between men and women in terms of what is valued in a job, and there has been broad stability in these values over time. The job aspects that both men and women consider as the most important in all years are job security and job interest, followed by autonomy; income and hours are among the least-important aspects of work.

Second, the analyses of all main job characteristics that appear in discussions on job quality and of overall job satisfaction seem to suggest an improvement in job quality between 1997 and 2015. The percentage of workers reporting their income as high rose, as did the percentage reporting good promotion opportunities, job security, and good job content. In addition, a rising percentage of employees want to spend more time at work. Counterbalancing this good news, both stressful work and hard work increased, in line with work intensification. The net effect of these various changes seems to have been positive, as the percentage of workers with high job satisfaction has risen over this 20-year period.

Third, these results continue to hold in regression analyses with a variety of control variables, so that the job-quality movements do not seem to reflect either the changing structure of the workforce in terms of sex, age, and education, or lower hours of work and higher earnings. The regression analysis also shows that the 1997-2015 rise in job satisfaction is entirely explained by the eight job-quality measures that we analyse. The estimated coefficients in this regression underline the importance of good relations at work (especially with respect to management), as well as job content, stressful work, promotion opportunities and income.

Last, the benefits of higher average job satisfaction may be dampened by greater inequality in its distribution (especially if this implies the increasing prevalence of very poor-quality jobs). This does not seem to have been the general case across the 13 OECD countries that we analysed here, with there being only small movements in inequality over the period analysed.

There will always be causes for concern about the quantity and quality of jobs in the labour market, as a result of recessions, immigration and job automation for example. We find no evidence here of any systematic deterioration in job quality over a fairly long time period, but on the contrary a number of findings suggest improvements. Better job quality is good news for workers but arguably also for firms, given the well-known relationships between worker job satisfaction and their quitting and productivity (for example, Böckerman and Ilmakunnas, 2009, and Bellet *et al.*, 2023).

Appendix A1. ISSP Variable Definitions

1) *Pay*

Objective measure: Respondent's monthly gross earnings, converted to U.S. Dollars using Purchasing Power Parities for private consumption from the OECD (http://stats.oecd.org/Index.aspx?datasetcode=SNA_TABLE4#). All figures are expressed in real 1997 values by deflating for OECD Consumer Price Index (CPI) inflation (<https://data.oecd.org/price/inflation-cpi.htm>). The following countries have their net earnings converted to gross:

- 1997— Germany, Hungary, Czech Republic, Spain
- 2005—Germany, Hungary, Czech Republic, Spain
- 2015—Germany, Hungary, Czech Republic, France

These conversions are carried out using the OECD tax database. As data in the database only starts from the year 2000, the 2000 tax rates were used to convert the 1997 ISSP data from net to gross as necessary (http://stats.oecd.org/index.aspx?DataSetCode=TABLE_I6).

Subjective measure: *Income is high* dummy variable: “My income is high” —strongly agree or agree.

2) *Hours of work*

Objective measure: Weekly hours of work.

Subjective measure: *Would like to spend less or more time in job*. “Think of the number of hours you work, and the money you earn in your main job, including any regular overtime. If you had only one of these three choices, which of the following would you prefer?”

– Prefer to spend less time in their job dummy variable: Work fewer hours and earn less money

– Prefer to spend more time in their job dummy variable: Work longer hours and earn more money

– Prefer to spend the same hours in their job dummy variable (reference category):
Work the same number of hours and earn the same money

In the regression analysis, these variables are combined into one: workers preferring to work fewer hours is coded as 1, the same hours as 2, and more hours as 3.

3) Future prospects—promotion and job security

Opportunities for advancement are high dummy variable: “My opportunities for advancement are high - strongly agree or agree.”

Job secure dummy variable: “My job is secure - strongly agree or agree.”

4) How difficult is the job—hard physical work and stressful work

Hard Work: “How often do you: have to do hard physical work?”

Stressful Work: “How often do you: find your work stressful?”

Both coded as:

1. Always
2. Often
3. Sometimes
4. Hardly ever
5. Never

Dummy variables were created for these two variables, with 1 representing Always, Often or Sometimes, and 0 Hardly ever or Never.

5) Job content: interest, prestige and independence

Good job content. Based on answers to the following four questions.

- My job is interesting
- In my job I can help other people
- My job is useful to society
- I can work independently

All of these are coded as:

1. Strongly agree
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree

The Cronbach's alpha figure over these four elements is 0.69. Dichotomous variables were created, with 1 representing Strongly Agree or Agree. The sum of these four variables is a measure of good job content. A dummy variable was created for workers reporting positive job content on all four aspects.

6) *Interpersonal relationships*

Good Relations at Work. Based on answers to the following two questions:

- Relations at the respondent's workplace: Between management and employees
- Relations at the respondent's workplace: Between workmates / colleagues

Both of these are coded as:

1. Very good
2. Quite good

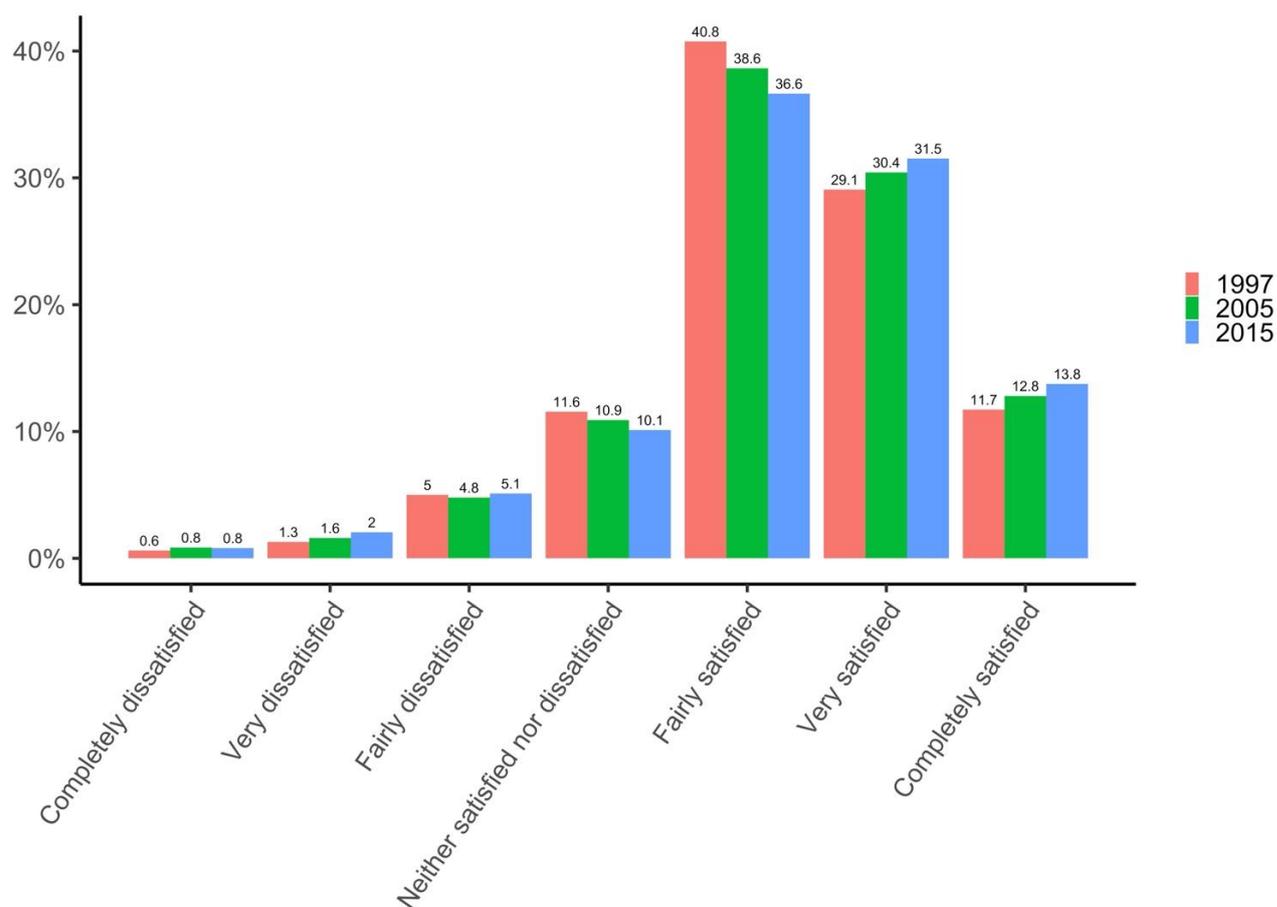
3. Neither good nor bad

4. Quite bad

5. Very bad

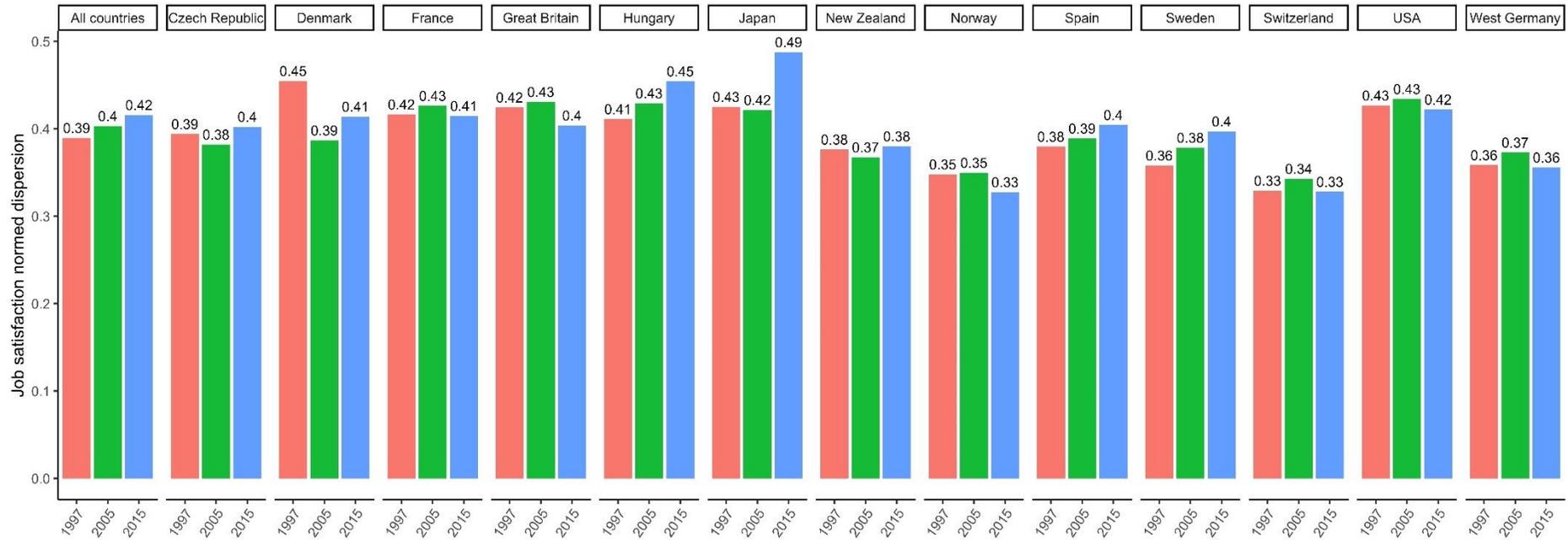
The Cronbach's alpha figure over these two elements is 0.66. A dummy variable was created for those reporting Very Good or Quite Good relations with both management and with colleagues.

Appendix A2. The Distribution of Job Satisfaction in the ISSP in 1997, 2005 and 2015



Job Satisfaction	ISSP Wave		
	1997	2005	2015
1	0.6	0.9	0.8
2	1.3	1.6	2.1
3	5.0	4.8	5.1
4	11.6	10.9	10.1
5	40.8	38.6	36.6
6	29.1	30.4	31.5
7	11.7	12.8	13.8
Mean	5.25	5.27	5.29
SD	1.11	1.15	1.18

Appendix A3. ISSP Job Satisfaction Inequality in 1997, 2005 and 2015



Notes: Inequality is measured by normed ordinal dispersion, as in Blair and Lacy (2000). 0 indicates the minimum and 1 the maximum dispersion.

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**Table 1. Number of employees interviewed in OECD countries:
ISSP Module on Work Orientations. 1997, 2005 and 2015.**

	1997	2005	2015
West Germany	648	531	659
Great Britain	545	469	893
USA	800	961	842
Hungary	626	437	579
Norway	1,366	846	1,007
Sweden	793	866	688
Czech Republic	526	667	759
New Zealand	695	812	493
Japan	607	428	798
Spain	387	556	857
France	700	1084	658
Denmark	600	1092	645
Switzerland	1727	662	742
Total	10020	9411	9620

Table 2. Job Values

ISSP 1997, 2005 and 2015					
Job Values: Percentage Saying 'Very Important'					
WOMEN					
	1997		2005		2015
High Income	16.9	**	21.5	**	17.0
Flexible Working Hours	18.3	**	21.2		19.8
Good Opportunities for Advancement	15.9	**	18.9	**	21.4
Job Security	56.5		57.6	**	60.9
Interesting Job	51.6	*	54.5	**	51.0
Allows to Work Independently	31.9		32.4	**	29.5
Allows to Help Other People	25.0	**	29.4		29.4
Useful to Society	21.6	**	26.8	**	29.3

MEN					
	1997		2005		2015
High Income	19.0	**	24.8	**	18.8
Flexible Working Hours	14.7	**	19.2	**	15.9
Good Opportunities for Advancement	16.1	**	20.5		21.1
Job Security	53.6		52.2		54.2
Interesting Job	49.3		51.0	**	47.0
Allows to Work Independently	32.0	*	34.0	**	29.0
Allows to Help Other People	15.9	**	20.8		20.1
Useful to Society	17.2	**	21.3	*	23.2

Notes: Weighted Data; ** (*) = significant difference between the two adjacent years at the one (five) per cent level.

Table 3. Job Outcomes

ISSP 1997, 2005 and 2015					
Job Outcomes: Percentage Reporting the Characteristic in Question					
WOMEN					
	1997		2005		2015
Income is high	15.7	**	19.2	**	23.0
Prefer to spend less time in their job	13.2	**	10.4	**	8.3
Prefer to spend more time in their job	18.4	**	21.5	**	24.8
Opportunities for advancement are high	16.5	**	20.4	**	23.5
Job is secure	63.8	**	67.1	**	70.8
Hard work	41.1		42.8	**	48.4
Stressful work	81.5		81.7		82.7
Good job content	43.8	**	46.7		48.4
Good relations at work	67.9	**	65.1		65.7
High job satisfaction	41.6		42.5		44.3

MEN					
	1997		2005		2015
Income is high	24.4	**	30.0	*	32.3
Prefer to spend less time in their job	11.2	**	9.2	*	7.8
Prefer to spend more time in their job	23.1	*	25.2	**	29.6
Opportunities for advancement are high	20.9	**	25.5	**	29.3
Job is secure	61.2	*	63.3	**	68.0
Hard work	49.8	*	52.2	**	57.8
Stressful work	81.7		80.5	**	82.7
Good job content	40.0		40.9		42.3
Good relations at work	65.7		65.5	*	68.1
High job satisfaction	40.3	**	43.8		45.7

Notes: Weighted Data; ** (*) = significant difference between the two adjacent years at the one (five) per cent level; see Appendix A1 for the definition of the ISSP job-outcome variables.

Table 4. Overall Job Satisfaction Regressions. ISSP 1997, 2005 and 2015.

	<i>1997-2015</i>	
	Standard	With earnings and hours
2005	0.038*	0.030
	(0.016)	(0.018)
2015	0.086**	0.061**
	(0.016)	(0.018)
Male	-0.012	-0.051**
	(0.013)	(0.015)
30 to 44	0.025	-0.018
	(0.019)	(0.021)
45 to 65	0.105**	0.048*
	(0.020)	(0.022)
Married	0.105**	0.099**
	(0.014)	(0.015)
Years of Education	0.009**	0.002
	(0.002)	(0.002)
West Germany	-0.280**	-0.209**
	(0.032)	(0.034)
Great Britain	-0.361**	-0.213**
	(0.032)	(0.035)
USA	-0.189**	-0.080*
	(0.029)	(0.032)
Hungary	-0.573**	-0.362**
	(0.033)	(0.044)
Norway	-0.336**	-0.257**
	(0.027)	(0.029)
Sweden	-0.416**	-0.317**
	(0.030)	(0.032)
Czech Republic	-0.449**	-0.262**
	(0.031)	(0.040)
New Zealand	-0.386**	-0.288**
	(0.032)	(0.041)
Japan	-0.929**	-0.763**
	(0.032)	(0.037)
Spain	-0.205**	-0.019
	(0.032)	(0.040)
France	-0.566**	-0.428**
	(0.030)	(0.033)
Denmark	-0.063*	0.027
	(0.030)	(0.033)
Earnings (log)		0.161**
		(0.013)
Hours per week (log)		-0.063**

		(0.023)
Observations	27250	23281
Log-Likelihood	-39723.5	-33814.6
Log-Likelihood at zero	-40410.8	-34512.4

Notes: These are ordered probit regressions; standard errors in parentheses; the omitted country is Switzerland and the omitted wave is 1997; * significant at 5%; ** significant at 1%.

**Table 5A. Estimated Changes over Time in Various Job Outcomes: Standard Specification.
ISSP 1997-2015.**

	Estimated Coefficients on '2005' and '2015'	
	1997-2015	
	2005	2015
Job satisfaction	0.038* (0.016)	0.086** (0.016)
Income is High	0.059** (0.016)	0.147** (0.016)
Hours Preferences	0.100** (0.018)	0.231** (0.019)
Opportunities for advancement are high	0.089** (0.016)	0.209** (0.017)
Job is secure	0.037* (0.016)	0.173** (0.017)
Hard physical work	0.072** (0.016)	0.340** (0.017)
Stressful work	-0.026 (0.017)	0.049** (0.017)
Good job content	0.016 (0.017)	0.075** (0.017)
Good relations at work	0.007 (0.019)	0.023 (0.020)

Notes: These are ordered probit regressions; standard errors in parentheses; * significant at 5%; ** significant at 1%. Hours preferences: workers would prefer to work more hours, fewer hours, or the same hours. Fewer hours is coded as 1, the same hours as 2, and more hours as 3. USA is missing data on stressful work in 1997 and this cross-section is excluded from the analysis. All regressions include country dummies and the same control variables as in Table 4.

**Table 5B. Estimated Changes over Time in Various Job Outcome Measures:
Controlling for Earnings and Hours of Work. ISSP 1997-2015.**

	Estimated Coefficients on '2005' and '2015'	
	1997-2015	
	2005	2015
Job satisfaction	0.030 (0.018)	0.061** (0.018)
Income is High	0.044* (0.018)	0.105** (0.018)
Hours Preferences	0.131** (0.020)	0.275** (0.021)
Opportunities for advancement are high	0.079** (0.018)	0.199** (0.018)
Job is secure	0.016 (0.018)	0.152** (0.018)
Hard physical work	0.091** (0.018)	0.396** (0.018)
Stressful work	0.015 (0.018)	0.093** (0.019)
Good job content	0.015 (0.019)	0.072** (0.019)
Good relations at work	0.000 (0.021)	-0.006 (0.021)

Notes: These are ordered probit regressions; standard errors in parentheses; * significant at 5%; ** significant at 1%. Hours preferences: workers would prefer to work more hours, fewer hours, or the same hours. Fewer hours is coded as 1, the same hours as 2, and more hours as 3. USA is missing data on stressful work in 1997 and this cross-section is excluded from the analysis. All regressions include earnings and hours of work, country dummies and the same control variables as in Table 4.

Table 6. Change in Overall Job Satisfaction by Country. ISSP 1997-2005-2015.

Country	1997-2005	1997-2015
West Germany	+	+
Great Britain	+	+
USA	0	0
Hungary	+	+
Norway	0	+
Sweden	0	0
Czech Republic	0	+
New Zealand	0	0
Japan	0	-
Spain	-	0
France	-	0
Denmark	-	-
Switzerland	+	+

Notes: This table summarises the results from single-country estimation of the regression reported in Table 4; significant rises in job satisfaction are indicated by a '+' and falls in job satisfaction by a '-'.

Table 7. Overall Job Satisfaction and Job Quality Components (as dummies)
(ISSP 1997, 2005 and 2015)

	<i>1997-2015</i>
2005	-0.019 (0.018)
2015	-0.009 (0.019)
Income is high	0.297** (0.018)
Prefers to work fewer hours	-0.335** (0.024)
Prefers to work longer hours	-0.083** (0.018)
Opportunities for advancement are high	0.370** (0.019)
Job is secure	0.267** (0.016)
Hard physical work	-0.058** (0.015)
Stressful work	-0.327** (0.019)
Good job content	0.513** (0.016)
Good relations at work	0.821** (0.016)
Observations	22648
Log-Likelihood	-29184.8
Log-Likelihood at zero	-33208.2

Notes: These are ordered probit regressions; standard errors in parentheses. * significant at 5%; ** significant at 1%. All of the job-quality domain variables are dummies (see Appendix 1), to facilitate the comparison of the effect sizes. The USA is missing data on stressful work in 1997, and this cross-section is excluded from the analysis. The regressions include country dummies together with the same control variables as those reported in Table 4.