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Eurofound

Challenges and prospects in the EU

Trend and inequalities in job quality

Working conditions and sustainable work:
An analysis using the job quality framework

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Research carried out prior to the UK's withdrawal from the European Union on 31 January 2020, and published subsequently, may include data relating to the 28 EU Member States. Following this date, research only takes into account the 27 EU Member States (EU28 minus the UK), unless specified otherwise.

This report presents the results of research conducted largely prior to the outbreak of COVID-19 in Europe in February 2020. For this reason, the results do not fully take account of the outbreak.

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Abstract

In the last two decades, job quality has gained importance as a central policy objective at EU level. With the introduction of the European Employment Strategy in 1997 and the subsequent launch of the Lisbon Strategy in 2000, the notion of 'more and better jobs' reached the core of the policy debate. In parallel, international institutions like the OECD but also individual Member States stressed the need to focus not only on employment levels but also on the quality of work and employment. The European Pillar of Social Rights proclaimed in 2018 highlights the need of fair working conditions

Against this backdrop, the analysis of trends starts by presenting a snapshot of changes in the average levels of job quality in non-monetary dimensions over a period of 15 years (2000-2015). Most of the dimensions of job quality haven't changed a great deal at the mean level, but this does not necessarily imply that job quality levels have remained stable for everyone. It is hence also important to consider the dispersion in job quality because certain groups of workers may see their job quality (in a specific dimension) increase while for others the opposite might be true.

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Introduction

Improving working conditions has been a central objective of the European Union since its conception. The treaties that founded the European Coal and Steel Community (1951) and the European Economic Community (1957) already proclaimed the '*constant improvement of the living and working conditions*' as an '*essential objective*'; a proclamation that was reiterated in subsequent treaties such as the Treaty of Maastricht that founded the European Union (article 1). The Treaty on the Functioning of the European Union (TFEU) underlines as significant objectives the '*promotion of employment, improved living and working conditions […] the development of human resources with a view to lasting employment and the combating of exclusion*' (Article 151).

In the last two decades, job quality has gained importance as a central policy objective at EU level. With the introduction of the European Employment Strategy in 1997 and the subsequent launch of the Lisbon Strategy in 2000, the notion of 'more and better jobs' reached the core of the policy debate. In parallel, international institutions like the OECD but also individual Member States stressed the need to focus not only on employment levels but also on the quality of work and employment.

In 2017, European leaders proclaimed a set of twenty principles to be the European Pillar of Social Rights. This not only aimed to equate the social dimension in the objectives of the EU to the level of its economic objectives, but also emphasises more strongly the commitment to achieve more social cohesion, social fairness and equal opportunities. For example, chapter 2 of the Pillar is titled 'Fair working conditions' and its first article states that *"[…] workers have the right to fair and equal treatment regarding working conditions*" and that "*employment relationships that lead to precarious working conditions shall be prevented*". In a similar vein, the EU social partners jointly state in 2017[1] that "both economic and social cohesion should be improved" and mention "addressing inequalities in the labour market and society" to achieve better social outcomes in the EU.

These objectives are testament to the resolve of European policymakers and social partners to ensure that all benefit from social progress in order to promote social cohesion and prevent social exclusion. Historically, notions of social equality emerged in the context of fair competition on the internal market, but more and more attention is being paid to inequalities within countries. As Jean-Claude Juncker (2015[2]) stated: '*The notion of convergence is at the heart of our Economic Union: convergence between Member States towards the highest levels of prosperity; and convergence within European societies, to nurture our unique European model.*'

Inequality is core to many social policy and research agendas but often with a focus on income, wage or wealth inequalities (e.g. OECD, 2011; Eurofound 2017a). Less has been said about developments in non-monetary aspects of job quality (e.g. Green et al. 2013; Felstead et al., 2015). The following analysis aims at filling this gap and to highlight areas that need special policy attention in the spirit of the European social acquis. Also, the aim is to spark a debate on the extent to which equality in job quality should be a policy objective: while considerable income or wealth dispersion within societies

[1] https://www.ceep.eu/joint-statement-of-the-eu-social-partners-for-the-60th-anniversary-of-the-treaty-of-rome/

[2] https://ec.europa.eu/commission/publications/five-presidents-report-completing-europes-economic-and-monetary-union_en

is usually regarded as undesirable – certainly in Europe – and policies are designed to reduce these disparities, the same cannot be said for job quality or working conditions in general, other than setting minimum standards. However, is it fair if, for example, one worker faces an intense and long working day and has little to say about the organisation of their work while another benefits from shorter working hours in a low-stress environment with a considerable deal of autonomy? Some might argue that differences in job quality reflect differences in occupations or sectors and are therefore warranted, but the question is whether having a different occupation is reason enough to accept inequalities in societies that pride themselves in applying the solidarity principle that forms the foundation of their welfare states. In addition, inequalities within occupations and sectors may remain. Inequalities between sectors, occupational and socio-economic groups are usually the starting point of the analysis, but they also hide crucial information. It is hence equally important to look at inequalities within those groups and to explore the underlying variance.

Measuring progress in working and living conditions has been central to the work of Eurofound. In 2012, Eurofound developed a systematic way of measuring job quality through its European Working Conditions Surveys by creating job quality indices. Differences in job quality have been explored by investigating convergence across EU Member States (Eurofound, 2019a), differences across and within sectors (Eurofound, 2020a) or comparing different groups on the labour market, such as men and women (Eurofound, 2020b), age groups (Eurofound, 2017b) and employment statuses (Eurofound, 2018a). This Working Paper more comprehensively considers differences in job quality and assesses how these differences have developed over time. More specifically, it investigates trends in job quality between 2000 and 2015 and explores inequalities overall, the drivers of inequality and assesses in more detail the differences between economic sectors, occupational and socio-economic groups.

The remainder of the Working Paper is organised as follows: Chapter 1 investigates economic and labour market related developments since 2000 and investigates trends in the dimensions of job quality. Chapter 2 discusses main inequality measures (such as the GINI coefficient) and how they can be applied to the Eurofound job quality concept. Furthermore, the chapter identifies main drivers of inequalities at the level of the EU28 by means of variance analysis. Chapter 3 goes into more details and explores both trends and inequalities in each of the seven job quality dimensions along the main lines of country groups, economic sectors, occupations, employment statuses and socio-economic factors. The results of multivariate regression models are included here. Chapter 4 sets out occupational profiles and discusses main developments for each of the nine aggregated groups before the Working Papers closes with some general conclusions and policy pointers.

1 Trends in job quality

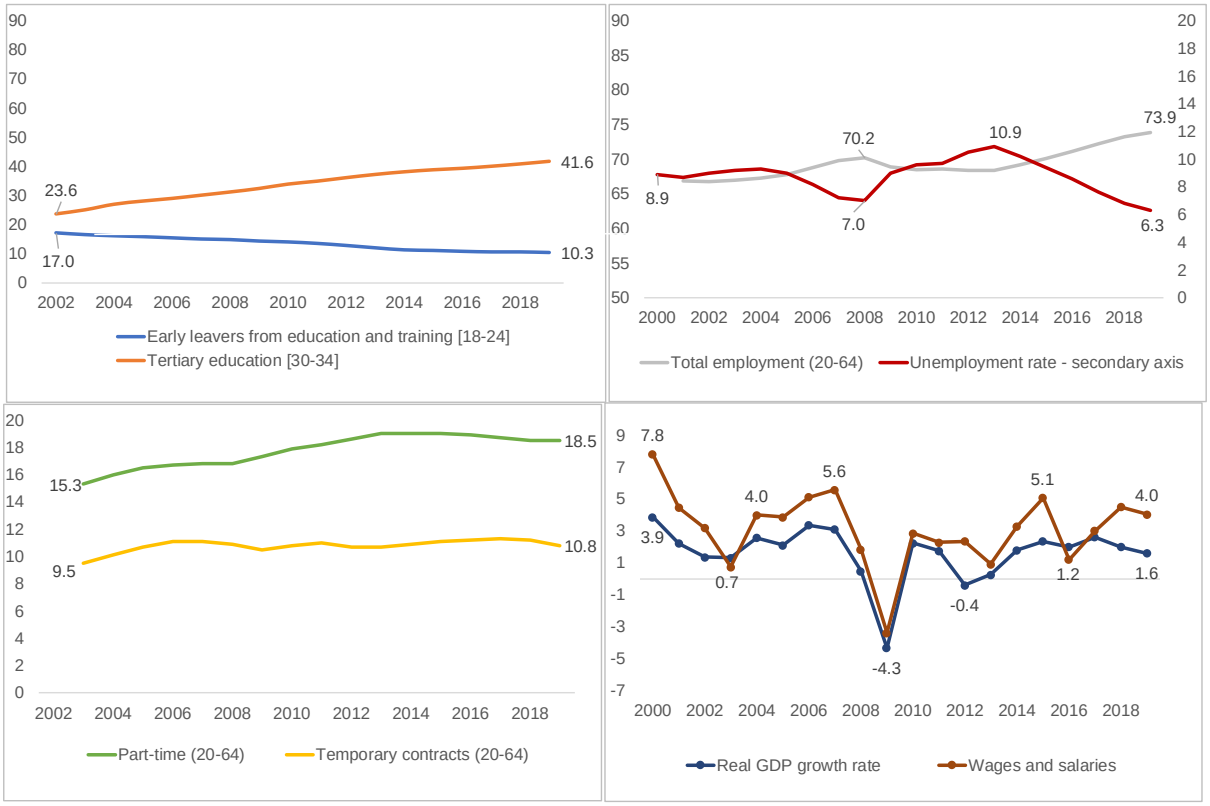
This chapter, therefore, starts by outlining the labour market context in which trends in job qualities are assessed over the period 2000 to 2015. Against this backdrop, the chapter proceeds with describing the development in the overall levels of job quality over time in order to assess which dimensions of job quality have improved on average and which have not.

Labour market developments

Since 2000, employment in the European Union has increased from 66.6 to 73.9% in 2019 with a slight drop during the years of the economic and financial crisis between 2008 and 2013. The lion's share of employment growth has been based on increased female labour market participation. Indeed, the female employment rate grew by almost 10pp to 67.4%. In 2000 8.9% of the EU labour force were unemployed. The unemployment rate reached a peak of 10.5% in 2013 and went down to 6.3% in 2019. Wages and salaries are on a growth path since 2016 again with a plus of 4% in 2019 outperforming GDP growth which went down in 2019 the second year in a row.

Also, other directly or indirectly related labour market indicators developed positively. The rate of early school leavers dropped from 15.7% in 2005 to 10.3% in 2019. The share of individuals aged between 30 and 34 with tertiary education jumped from 28 to 41.6% in the same period and the participation rate in education or training of those aged 25-64 increased from 9.1% (in 2004) to 10.8% (in 2019).

Figure 1 Macro-economic and labour market related developments



Source: Eurostat

The composition of the workforce has changed as well over the years (Table 1). The share of women and older workers has substantially increased. We see a decrease of self-employment while the proportion of employees with temporary and other contracts has grown. Within an increase of skill levels and shifts towards the service sectors, occupations have shifted too with a higher share of professionals in 2019 than back in 2002 and a decrease of agricultural workers, craft workers and plant and machine operators.

Table 1 Development of the composition of the workforce 2002-2018, (% of employed persons)

	2002 %	2005 %	2010 %	2015 %	2019 %
Under 25 years	11.1	10.5	9.3	8.5	8.5
25–49 years	67.5	66.8	65.1	62.5	60.4
50+ years	21.4	22.7	25.6	29.0	31.2
Women	43.8	44.4	45.5	46.1	46.3
Men	56.2	55.6	54.5	53.9	53.7
Managers	7.5	8.2	8.3	5.9	6.0
Professionals	12.2	13.3	14.6	18.8	20.2
Technicians	15.3	15.9	16.6	16.0	16.2
Clerks	11.8	11.1	10.7	9.7	9.5
Service and sales workers	13.5	13.3	14.2	16.9	16.7
Agricultural workers	5.2	4.5	4.0	3.5	3.0
Craft workers	15.1	14.3	12.9	11.8	11.4
Plant and machine operators	9.1	8.8	8.1	7.4	7.4
Elementary occupations	9.1	9.6	9.6	9.2	8.8
Self-employed with employees	4.9	4.6	4.4	4.0	3.8
Solo self-employed	9.5	10.3	10.2	10.1	9.7
Permanent employees	74.0[a]	71.9[a]	72.3[b]	72.7	73.8
Temporary employees	10.3	11.6	11.7	12.0	11.6
Other (no response/unknown)	1.3	1.6	1.4	1.2	1.1

[a] *Based on EU-LFS estimate, ISCO 2008.* [b] *Value for 2011. Source:* Eurostat, EU-LFS

Notes: Figures in the table refer to the percentage of employed people aged 15–64 years.

In summary, employment in the EU has slightly increased but has varied in size since 2000, mostly due to the great recession. The supply of jobs might affect their quality and could be of relevance when assessing trends in inequalities in job quality. Structurally, the composition of employment has also shifted which means that the job holders are different in 2018 than they were in 2000.

Job quality over time

Against this backdrop, the analysis of trends starts by presenting a snapshot of changes in the average levels of job quality in non-monetary dimensions over a period of 15 years (2000-2015). The 28 EU Member States are taken as whole to obtain a picture of the extent and overall direction of change treating these countries as a single labour market. As such an aggregate approach bears the risk of hiding considerable heterogeneities across the various employment and labour market regimes, some of the results will be broken down by country clusters in the analyses below.

Measuring job quality

Building on Eurofound (2012), Eurofound has developed seven indices of job quality that can be measured in the European Working Conditions Survey (Eurofound, 2017c). These are developed on the level of the job, not the person, and aim to capture how workers perform their work and under what conditions. They are constructed with indicators of positive and negative job features reflecting job resources and job demands or the processes that influence these. They refer to specific job quality features which can be observed and have been proven to have a causal effect on the health and wellbeing of workers. The job quality indices are measured on a scale from 0 to 100.

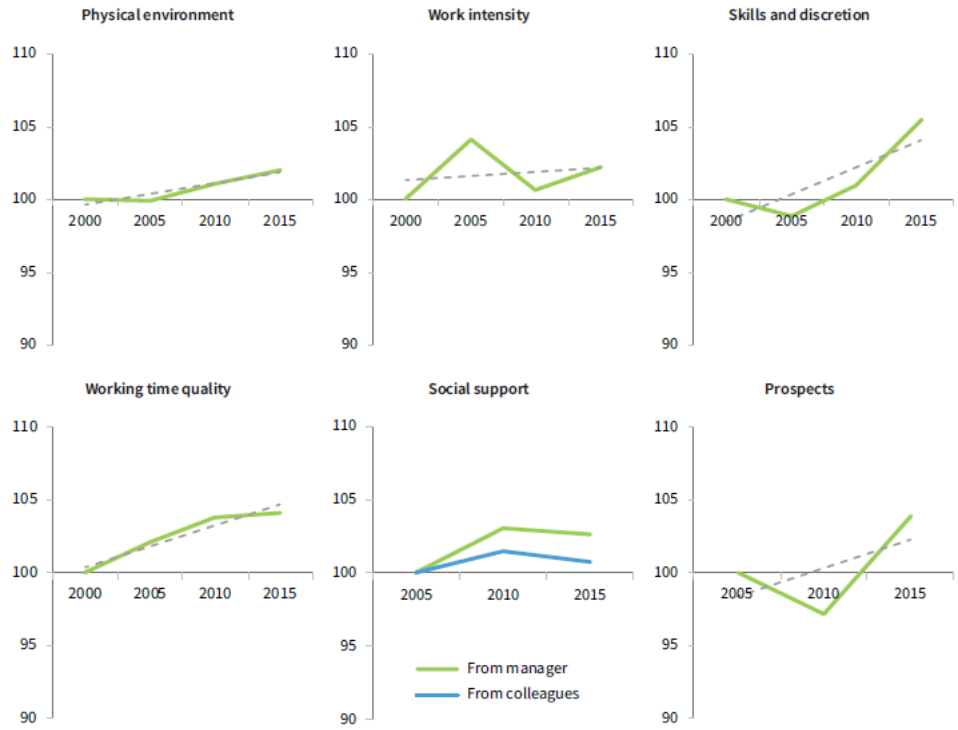
Not all indicators used for the job quality indices in Eurofound (2017c) are available for multiple editions of the European Working Conditions Survey. Because trends are central to this report, it relies on indices made up of fewer indicators. In Eurofound (2017c) these are referred to as the trend index score based on a limited number of items. Monthly earnings from the main job is one of the job quality indexes but does not feature in this report because the monthly earnings are only available for 2015 and this report focuses on non-monetary indicators. The social environment index consists of indicators on adverse social behaviour and of indicators on social support. This index is not covered in this report because the indicators on adverse social behaviour cannot be compared over time, but chapter 3 will cover trends in social support.

Overall, the dimensions of job quality haven't drastically changed since 2000 (or 2005 respectively) as shown in Figure 2. The most pronounced though still modest increases were observed in skills and discretion (+6%) and working time quality (+4%). The 'skills and discretion' index measures the skills required in the job and the opportunities workers have to influence the way their work is performed as well as autonomy at work. The working time quality index captures the incidence of long working hours, scope to take a break, atypical working time, working time arrangements and flexibility. The improvement of both these indexes shows that workers– on average – benefit from improved working time conditions in jobs that require more skills and offer more autonomy.

The quality of the physical environment has improved only marginally over time (+2%). This shows that there is a slight reduction of physical risks at the workplace. Social support (from both managers and colleagues) has stayed quite stable with a slight improvement. The work intensity index

measures the level of work demands in the job, such as working under time pressure or experiencing emotional demands. For the period 2000 – 2015 this index shows a marginal deterioration. The prospects index focuses on prospects for career advancement and job security and follows a cyclical pattern with a deterioration in 2010 and a recovery thereafter – most likely reflecting the trajectory of the economic and financial crisis. In 2015 the level of job prospects was on average above the 2005 level (+4%) but increased by 7% compared to 2010.

Figure 2 Indexed change in job quality indices, EU28, 2000-2015



Notes: 2000/2005 = 100. 2000 data do not include Croatia. The Prospects and Social support indices start at 2005. All charts except Social support include a green line plotting the data and dashed grey trendline.

Source: EWCS 2000, 2005, 2010 and 2015

Overall, the quality of the jobs held by the EU workforce has remained stable and has slightly improved in some respects. In order to identify those elements that contribute most to specific developments, job quality indexes need to be disaggregated to their sub-components or even to individual items. The physical environment, for instance, stayed almost at the same level between 2005 and 2015. However, a closer look at individual items reveals that conditions have not developed uniformly: the share of workers exposed to tobacco smoke from other people dropped from 20 to 9% (most likely due to changed EU legislation). The percentage of workers breathing in smoke, fumes, powder or dust decreased by 4pp from 19 to 15% as did the share of workers exposed to vibrations from hand tools or machinery (24-20%). More workers, on the other hand, had to handle or were in skin contact with chemical products or substances (17% vs. 14%) or had to handle or be in contact with infectious materials (13% vs. 9% exposed one-quarter of the time or more). The proportion of workers lifting or moving people also increased by 2pp to 10%.

Working time quality improved since 2000. A lower proportion of the workforce reported long working hours (>48 hours per week) or long working days (>10 hours per day) in 2015, which is

consistent with the overall decline in weekly working hours. The share of workers working on Sundays or doing shift work increased on the other hand.

Also, the domain of skills and discretion improved over time. This was mainly driven by improvements in the cognitive dimension (e.g. solving unforeseen problems or working with computers, smartphones, etc.) and by increased take-up of training (37% in 2015 vs. 26% in 2005), whereas the decision latitude of workers remained almost unchanged. It should however be mentioned that the proliferation of digital devices at the workplace might also imply negative effects as was previously shown (Rosenfeld, 2016; Valenduc, 2017).

Job prospects deteriorated in the years of the crisis between 2005 and 2010 and improved again in 2015. The improvements were driven by the item “good prospects for career advancement” to which 31% strongly agreed or agreed in 2005 compared to 38% in 2015. Job security, on the other hand, went down in the same period, with 14% having been afraid of losing their job in the next sixth months in 2005 and 17% in 2015.

Work intensity, finally, remained almost stable. However, looking at individual items the story becomes more granulated. A lower percentage reported to have enough time to get the job done in 2015 than ten years before (10% vs. 12%). Frequent disruptive interruptions were reported more often (17% vs. 15%). Work pace dependent on colleagues, on the other hand, was reported by 39% in 2015, three percentage points fewer than in 2005.

2. Explaining inequalities in the dimensions of job quality

This chapter focuses on trends in inequalities in job quality and analysis the main drivers of differences in job quality by means of variance analysis before the more in-depth analysis will follow in Chapter 3.

Measures of inequality

Most of the dimensions of job quality haven't changed a great deal at the mean level, but this does not necessarily imply that the dispersion of job quality has remained stable as well. In fact, if job quality decreases for some while it increases for others there would be no change in the overall level. It is important to consider the average level of job quality as it shows the overall development of job quality, but it is also crucial to consider the dispersion in job quality because certain groups of workers may see their job quality (in a specific dimension) increase while for others the opposite might be true. Just looking at averages hence misses the changing inequalities that have beset the work experience of individual workers.

While the EWCS data do not allow us to follow individuals over time, it is possible to see whether the differences or inequality in job quality overall has changed over time. There are several ways of measuring inequality, but not all measures are also useful for our purposes due to the nature of the synthetic job quality indices (see box 'Measuring inequality'). In this chapter, we will mainly use the standard deviation to investigate inequalities across and within groups.

Measuring inequality

The most well-known inequality measure is the GINI coefficient and indeed it has been used in the past in relation to job quality indicators (Green et al. 2013). Another well-known measure is the Theil index which is – as the GINI – mainly used in the analysis of income inequality though it has also been used to measure social segregation (e.g. Östh et al., 2015). The Theil index has the advantage that it is decomposable and accounts for within-group inequalities.

Another option of exploring inequalities is to use ratios of percentiles such as the interquartile ratio dividing the third quartile with the first, or p90/p10 ratio that compares the highest 10% to the lowest 10% on the distribution. These ratios do not represent the overall level of inequality in the population, but they provide measures of the shape of the distribution.

Another quite straightforward measure is the coefficient of variation which divides the standard deviation by the mean (dispersion) of the variable in question. If for instance the mean increases, and the standard deviation goes down, then inequality is reduced. The downside of using the coefficient of variation is that it is sensitive to changes in the mean. For example, a decrease in the coefficient of variation may be driven by an increase in the average rather than a decrease in standard deviation.

A more general and comprehensive method of measuring differences is by calculating the variance and standard deviation. These measure the deviation from the mean and the higher the

variance and standard deviation, the higher the degree of inequality. When equal to zero, there is no inequality at all. These metrics are not dependent on the value of the mean, i.e. the same standard deviation can be observed for different mean values and vice versa.

The caveat for using established inequality measures with job quality indices is that the latter are computed such that they have a maximum ceiling of 100 while this is not the case for income or wage scales for which those measures are usually applied. This implies that in order for job quality indices means to increase over time, more workers have to score higher on average. Where the average levels are already high, there is hence limited scope of further reducing inequality. This is also the explanation why increasing averages are usually correlated with decreasing inequalities (as measured by GINI or THEIL indices).

Inequality trends in the dimensions of job quality

Inequality in the job quality dimensions of the physical environment and working time quality have decreased in the period 2000 to 2015 (Figure 3). The degree of dispersion in work intensity and skills and discretion has remained stable over that period while job prospects have become more unequal meaning that some groups improved while others deteriorated increasing the overall dispersion.

Looking more closely, different patterns of inequality relative to the mean emerge. While the mean level of the physical environment index has remained constant (moderate improvement) over time, inequality has decreased. This indicates that although overall there is little or no improvement of the physical environment at the workplace, the difference between workers has decreased in terms of the physical environment in which they work. This implies that there are fewer workers in environments with many physical risks, but also that there are fewer workers in environments with very little physical risks. This is corroborated by the p75/p25 ratio which has decreased over time. This is a result of a simultaneous increase in the first quartile (scores from 67 to 70) and a slight decrease in the fourth quartile (scores from 94 to 93).

Inequality also decreased in the index of working time quality, except that the mean overall has increased as well. The combination of an increasing overall score and a reducing inequality reflects in this case that the proportion of workers with a low working time quality has decreased. This is also reflected for example by the p75/p25 ratio which has gone down between 2000 and 2015.

The ‘skills and discretion’ index shows a stable pattern until 2010 and steeply increased in 2015. This development is correlated with a reduced dispersion in skills and discretion in the last year of observation. It reflects an increase at the bottom of the distribution: low-skilled jobs which require low levels of discretion have become less common. This is line with previous findings that EU-wide high-skill tasks are on the rise while routine tasks are falling (EC, 2019, p.108).

The job prospects index is only available from 2005 onwards and shows a deterioration of the mean in 2010 and more than a rebound in 2015. Inequality, however, also shows a stark increase in 2015 compared to 2010 implying that even though overall job prospects have improved, in line with the economic recovery, they have not improved for all workers to the same degree. In fact, despite the overall growth, those on the higher end of the job prospects index have benefited more than others which has given rise to growing inequality.

Figure 3 Mean and standard deviation of job quality indices, 2000-2015 (indexed, 2005=100)

Source: EWCS 2000, 2005, 2010 and 2015

Main inequality drivers

So far, we have explored developments in both the average level of and inequality in the dimensions of job quality over time. It is now of interest, if main drivers of these differences can be identified. Can we explain inequalities in job quality by looking at characteristics of the jobs and the workers that hold them? We can answer these questions by assessing how the data vary across individuals and which factors may be related to those differences. To this purpose we applied variance analyses (ANOVA) which reveals the proportion of the variance in each of the job quality indexes in each year that can be attributed to a range of independent variables (covariates).

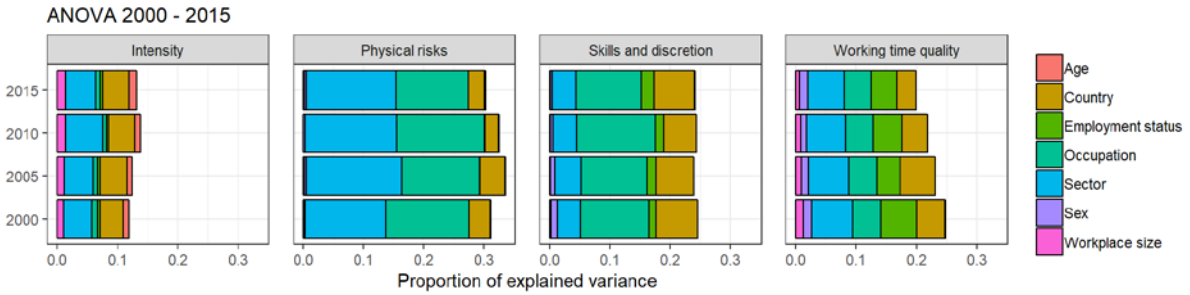
Occupation and sector are – as expected – important determinants of all job quality indices, especially for the physical environment and skills and discretion (Figure 4). This makes intuitive sense: the occupation and the sector determine to a large extent the conditions in which work is carried out. For example, a construction worker will generally face more physical risks than an office clerk. The same applies to skills and discretion. Knowledge workers will hold jobs in which skills and discretion take centre stage, while this may be less the case in more routine-based jobs. The country of residence of the worker does generally not explain as much differences in job quality as sector and occupation do, but still contributes significantly to explaining differences.

The results also demonstrate that the relative importance of the factors explaining inequalities in the job quality indices has remained stable over time. Looking at the physical environment index, for instance, we can see that sector and occupation are the most important determinants compared to other variables both in 2000 and in 2015.

The variables included in the analysis (Figure 4) explain between 20 and 30% of the overall variance in the quality of the physical environment, skills and discretion, and working time quality. They account for less of the variance in the intensity index, roughly 10 to 15% depending on the year of

observation. After accounting for these factors, there are still differences in job quality between individuals which might be explained by other factors not accounted for in the model or which might be random differences that cannot be attributed to any specific or observed variable.

Figure 4: Variance in the job quality indexes explained



Source: EWCS 2000, 2005, 2010 and 2015

Going through the results index by index, we find that most of the explained variance in the physical risk index can be attributed to sector and occupation as was mentioned. Obviously, some occupations and sectors are more prone to include physical risks than others. The country also accounts for some of the differences in the physical environment, which implies that there are differences in the level of physical risks workers are exposed to between countries even after taking into account the occupational and sectoral composition of the workforce.

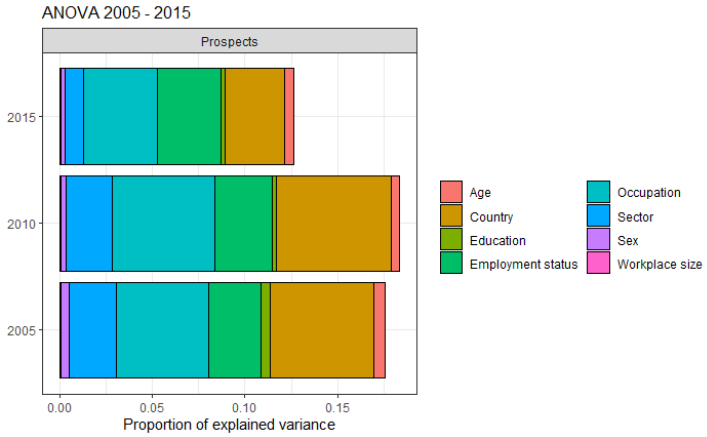
Differences in working time quality are explained by a wider array of factors, although combined these are explaining increasingly less of the variance in working time quality over the years. Almost half of the explained variance is due to sector and occupation, but employment status appears to play a stronger role as well. This mostly reflects differences in working time quality between employees and self-employed (Eurofound 2017d) and in developments in non-standard contracts (Eurfound, 2020c). Like for the physical environment index, country remains explaining a considerable share of the total explained variance after controlling for other factors. Gender and workplace size play a rather marginal role in directly explaining differences in working time quality.

Differences in skills and discretion at the job are to a large extent linked to occupations. This makes sense, as the index measures the skill use and the discretion at the job. The country is also relatively important in explaining variance in this index, but sector plays a more limited role.

Most of the variance in job intensity can be explained by sector and country. Compared to the other indices, however, there is a large proportion of variance in job intensity that cannot be explained by any of the variables included in the model.

The prospects index, finally, is only available from 2005 onwards. Figure 5 shows that country and occupation explain most differences in job prospects, followed by the employment status and sector. The large role for country (for 2005 and 2010) likely reflects that despite correcting for occupational and sectoral composition of the workforce, cross-national differences such as the state of the economy, the impact of the economic and financial crisis, labour market policies and institutions and not least the culture of work drive a large degree of the explained variance. The highest achieved educational level is also included in the analysis but plays a marginal role. This probably reflects that education is mediated by occupational segregation and that educational differences within occupations have little impact.

Figure 5: Variance in the job prospects index explained



Source: EWCS 2000, 2005, 2010 and 2015

Summing up, the results show that for most of the indices, occupation and sector play a strong role, closely followed by country and employment status. This is intuitive: the job quality indices measure characteristics of the job which are often strongly linked to occupations, especially with regards to physical risks and skills and discretion. Other indexes are less strongly related to the occupation, such as the working time quality index and the prospects index. Differences in these dimensions of job quality are largely explained by differences in country and employment status. Finally, it is important to mention that although socio-demographic factors such as age and gender do not explain much variance as such – as they are mediated through the work-related aspects – they play a crucial role in driving working conditions in reality: There are still male- or female-dominated sectors with implications on pay, working hours, prestige etc. Quantitative analysis furthermore cannot cover aspects such as different burdens for men and women when it comes to non-paid work, child- and elder care etc. The significant results of age in variance and regression models further highlight the importance of life-course and age-specific effects.

The following chapter will go more in-depth for each index by focusing on the variables that explain most of the variance in the job quality indexes. We focus on the categories that make up the variables shown above (e.g. specific sectors or occupations) and explore the extent to which there is inequality within each of these categories.

3. Exploring trends and inequalities in detail

After discussing overall trends and inequalities in job quality in Chapter 2, this chapter takes a more detailed look index by index by focussing on the factors that contribute most to explaining differences in the various dimensions job quality, such as sectors, occupations, countries or other groups. Doing so, it reveals also inequalities that exist within these factors. This shows whether inequalities in job qualities are concentrated among certain subgroups or whether differences are more widespread. Countries are clustered into groups in order based on classifications used in previous Eurofound research (e.g. 2018) following suggestions from the literature.

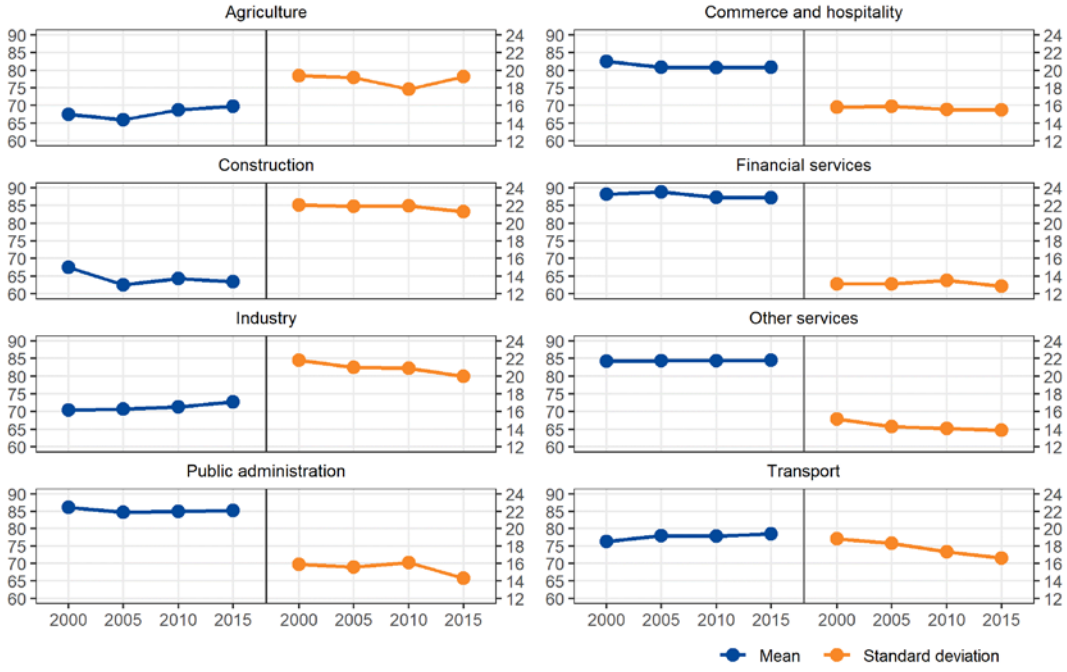
Physical environment

Since 2005, the physical environment has slightly improved for the EU workforce while there was no change between 2000 and 2005. Simultaneously, inequality in the physical environment has decreased (Figure 3). The differences between workers are mostly driven by the sector in which they work or the occupation they hold (Figure 4). This section, therefore, takes a closer look at the development of the physical environment index within sectors and occupations, to assess whether the improvement of the physical environment is reflected in all sectors and occupations.

Sectors

The quality of the physical environment differs strongly by sector and physical working conditions are particularly demanding in Construction, Agriculture and Industry (Figure 6). Not all sectors have marked an improvement in the physical environment index. There is an upward trend in Agriculture and Industry but in the Construction sector the index dropped in 2005 and stayed around that level in the following periods. The decrease in inequality has occurred across many sectors, but was rather stable in commerce and hospitality, financial services and construction. Particularly, the Transport sector and – to a lesser extent – Industry marked a decrease in inequality.

Figure 6: Physical risk index by sector, 2000-2015, EU28.



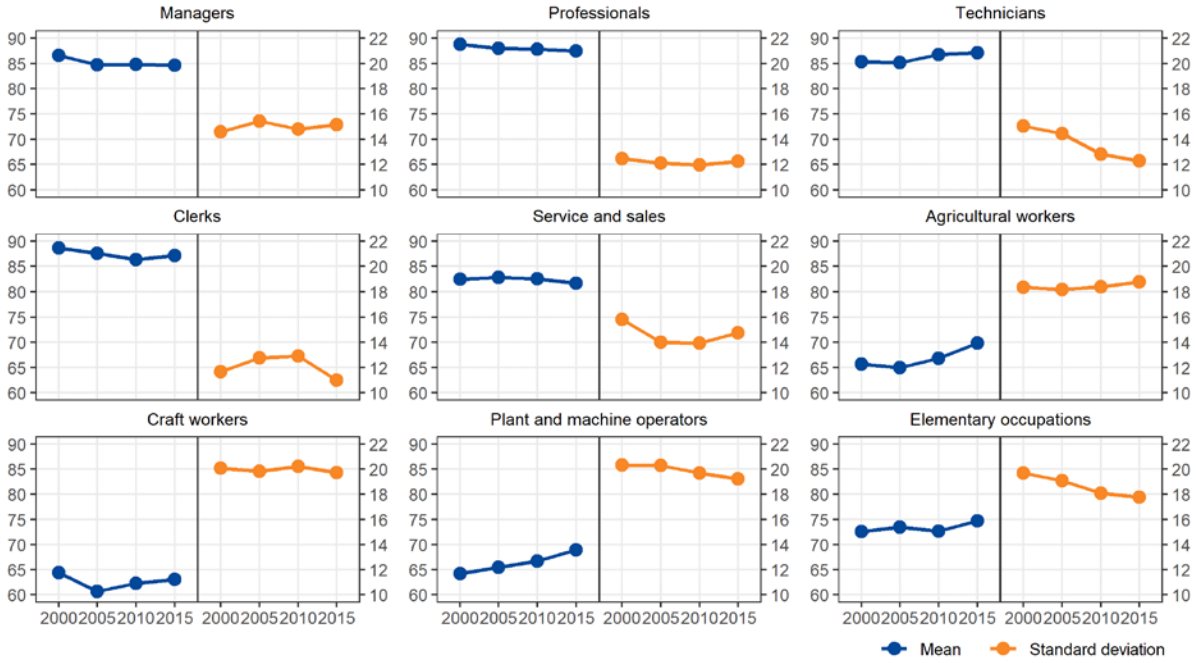
Source: EWCS 2000, 2005, 2010 and 2015

Occupations

The quality of the physical working environment also differs strongly across occupations with craft workers (63), plant and machine operators (69) and agricultural workers (70) reporting the lowest physical environment index well below average in 2015. The physical working conditions are on the other hand quite favourable for clerks, technicians (both 87) and managers (85). Since 2000, the physical environment particularly improved for plant and machine operators (+4.7) and agricultural workers (+4.2) and to a lesser extent also for elementary occupations (+2.2). The occupation of craft workers experienced a substantial drop between 2000 and 2005 (-3.8) but slightly improved again since, still recording by far the lowest score in 2015. Improvements for low-skilled workers as regards physical working conditions were – aside negative effects on employment levels – previously associated with ongoing automation of work processes (e.g. James et al, 2013; Pham et al., 2018). Minor deteriorations were on the other hand observed for managers (-1.9), professionals (-1.5) and clerks (-1.3).

The decrease in inequality in the physical environment index is marked most strongly for technicians, elementary occupations and plant and machine operators. For these groups, both the overall level of the index went up as the differences within the occupational groups went down. For agricultural workers, however, the inequality in the index has slightly increased despite a strong improvement in the overall level of the index. This implies that only a group of agricultural workers have benefited from the increase in the index, while other groups remained on stable levels.

Figure 7: Physical risk index by occupational group, 2000-2015, EU28



Source: EWCS 2000, 2005, 2010 and 2015

The overall improvement of the physical environment is reflected in all three sub-components of the index (see box 'types of physical risks'), posture-related risks, ambient risks and biochemical risks, which all decreased in the observed period.

Figure 8 shows the development of sub-dimensions in selected occupations. The improvement of the physical environment for agricultural workers, craft workers and to a lesser extent plant and

machine operators is mainly driven by a reduction of posture related risks, while those risks slightly increased for clerks. Biochemical risks, on the other hand, decreased for the latter (also for plant and machine operators but to a lesser extent), but remained stable for the other mentioned occupations. Ambient risks, finally, remained almost unchanged for clerks (on a very low level), but went down in the other occupations shown in the Figure below.

Types of physical risks

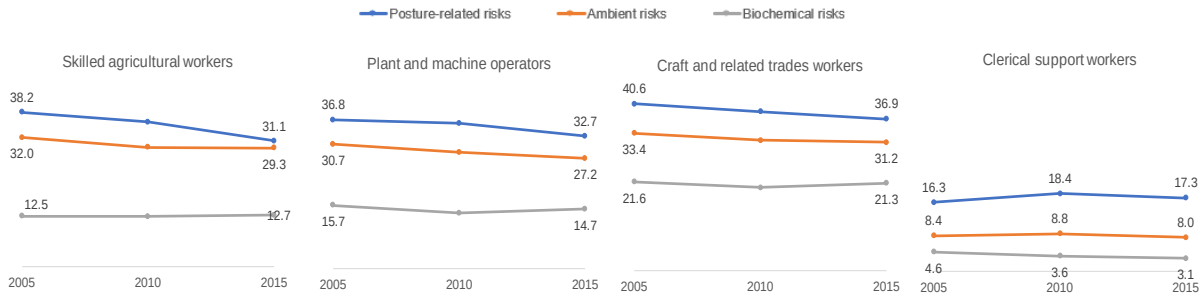
In the physical environment job quality index, Eurofound distinguishes three types of physical risks:

Posture-related risks including exposure to vibrations, tiring positions, lifting people, carrying heavy loads and repetitive movements.

Ambient risks including exposure to vibrations, noise, and high and low temperatures related to the experience of specific conditions in specific activities of the economy (mostly in industry, construction and agriculture), as well as generalised exposure to noise

Biological and chemical risks including exposure to inhaling smoke and toxic vapours and handling chemical products and infectious materials

Figure 8: Development of subdimensions of the physical environment for selected occupation, 2005-2015, EU28.

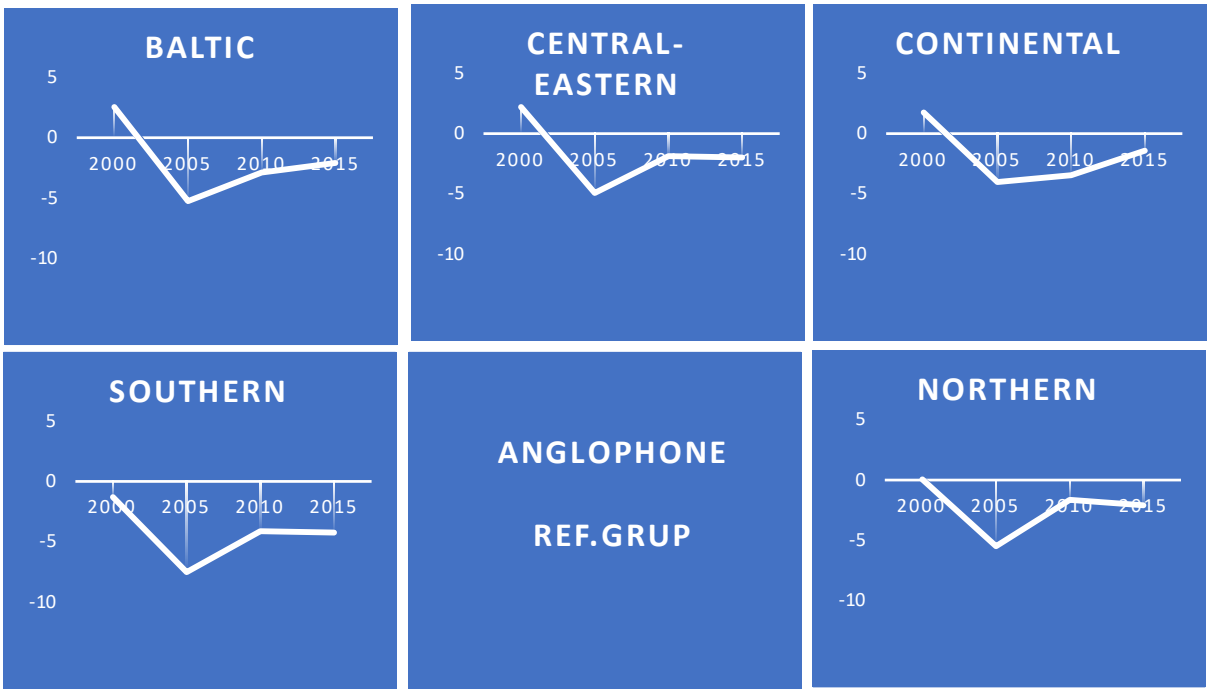


Source: EWCS 2000, 2005, 2010 and 2015

Country comparisons show that in 2015 the physical environment was most problematic in France, Romania, Spain, Cyprus and Greece after controlling for the role of economic sectors. Highest average scores after filtering sector influence were observed in Ireland, Italy and Czechia. Improvements since 2000 were most pronounced in Greece, Portugal and Hungary. A couple of countries, particularly the U.K. and France, showed a deteriorating tendency.

Figure 9 illustrates the developments of country clusters after controlling for sector in comparison to the Anglophone group. All graphs show a similar pattern with a growing gap between 2000 and 2005 and a catch-up process thereafter.

Figure 9 Regression coefficients of physical environment, Reference cluster is the Anglophone group



Source: Eurofound, EWCS; Controlling for sectors, R2=17.68

Inequalities between socio-demographic groups

Even after controlling for sector, occupation and age, women still have higher average scores in the physical environment over all observed years. Older workers, aged 55+, face better physical environments than their younger fellow workers, which is most likely linked with older workers moving away from physically challenging jobs either by leaving the labour market or transitioning to less demanding tasks (Villosio et al, 2008). There is also a clear gradient across educational groups with workers having attained only primary levels facing poorer physical working conditions than those with secondary or tertiary education, but the gap has shrunk over the years. Single parents finally also reported significantly lower scores than the other household types and this remained unchanged over the years.

Summary: Physical environment

- Overall, the quality of the physical working environment in the EU28 has slightly increased.
- Differences between workers in the Physical Environment Index have gone down.
- Sector and occupation can explain most of the differences and the quality of the physical environment is the lowest in Construction, Agriculture and Industry. Craft workers, plant and machine operators and agricultural workers report the highest levels of physical risks.
- The decrease in inequality in the physical environment index is marked in many sectors (particularly Transport and Industry) and occupations, but inequality has gone up for agricultural workers.
- Occupations with low scores have marked substantial improvements, although craft workers report lowest scores and experienced a slight reduction in the mean between 2000 and 2015.

- Differences between country groups are negligible but the physical environment improved the most in the Southern group mostly driven by improvements in Greece and Cyprus.

Work intensity

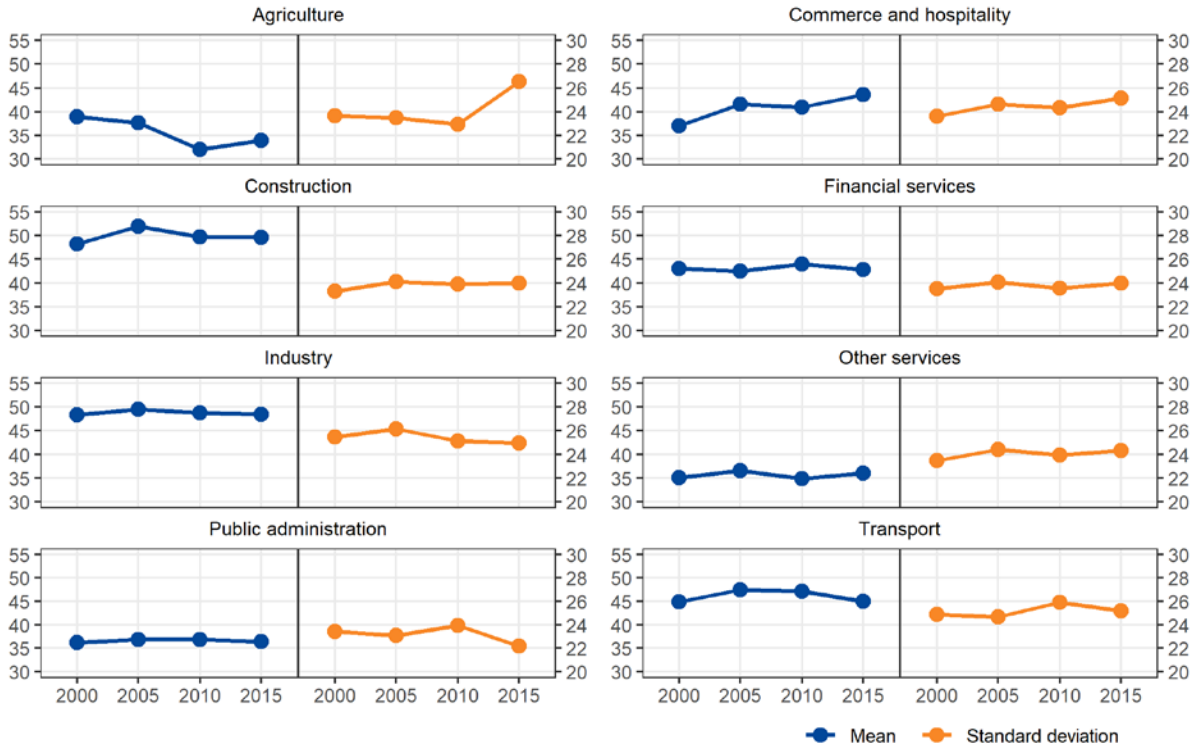
While work intensity might be interpreted as a way to maintain and develop workers' interest in their activity, high work intensity is associated with a negative impact on health and well-being (Boekhorst et al., 2017). Note that, therefore, a higher score in work intensity implies a high degree of intensity not favourable to the worker.

The degree of work intensity, overall, remained quite stable between 2000 and 2015 with some volatile developments over the years: There was an increase in 2005 (+1.7), a reduction in 2010 (-1.4) and again a marginal increase in 2015 (+0.6). This holds also true for the sub-components including working at high speed and to tight deadlines, not having enough time to do the job, frequent disruptive interruptions and pace determinants and interdependency.

Sectors

The strongest predictor of work intensity is the economic sector in in which the job operates. As Figure 10 illustrates, the overall stable trend seems to apply across most sectors. The exceptions are Agriculture where work intensity has decreased, while it has substantially increased in Commerce and hospitality. The decrease of work intensity in Agriculture might be related to the shrinking of relative employment in this sector during this period. Dispersion, however, has also increased in the agricultural sector implying that the reduction in the mean was only experienced by a sub-group of workers. Inequality also increased in Commerce and hospitality, where it is however associated with a general intensification of work.

Figure 10: Work intensity index by sector, 2000-2015, EU28.



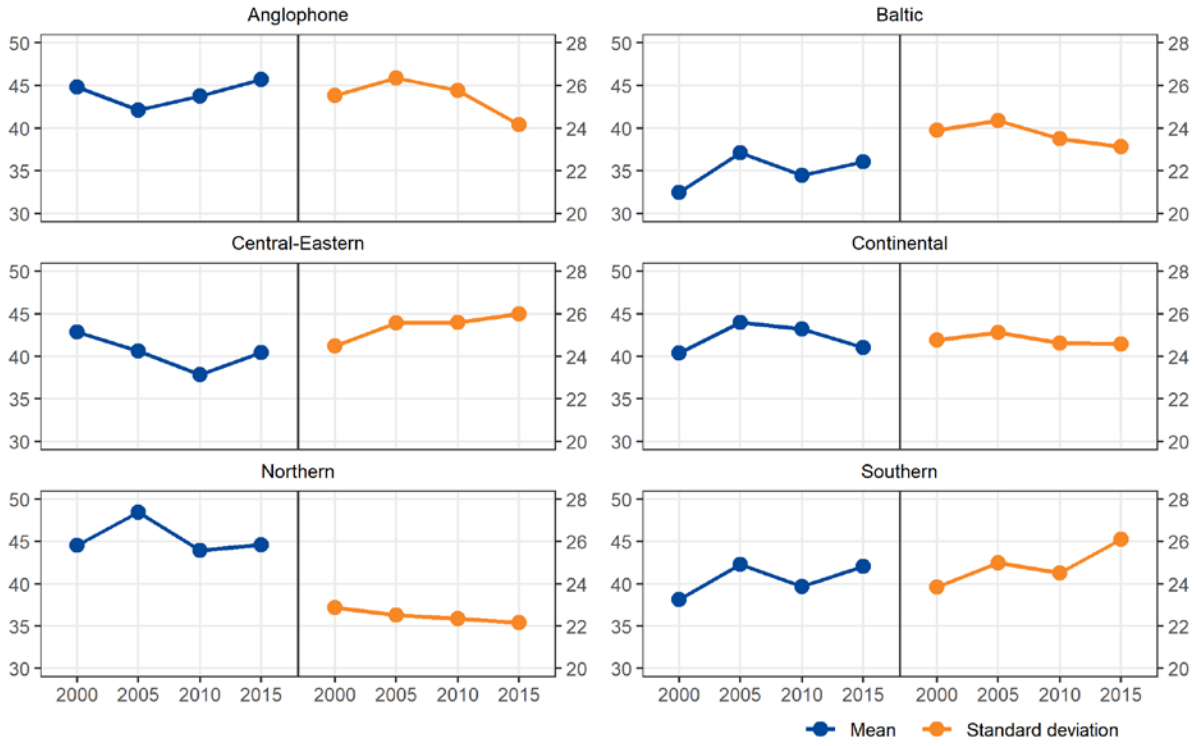
Source: EWCS 2000, 2005, 2010 and 2015

Country clusters

In addition to sector, a huge part of variance in work intensity can be explained by differences across countries. Figure 11 shows the development of work intensity by country cluster and illustrates that high levels in the Anglophone countries, where it increased since 2005 (however with a decreasing level of dispersion). Both in the Baltic and Southern country group intensity has increased as well, albeit at a lower level and accompanied with a growing level of dispersion in the latter, while inequality went down in the first. Work is on average most intense but has remained stable in the Northern group. In the Central-Eastern countries, work intensity slightly decreased.

An increase in both the average level and the standard deviation implies that work has become more intense on average, but that intensity is increasing more for some than for others.

Figure 11: Work intensity index by country cluster, 2000-2015.



Source: EWCS 2000, 2005, 2010 and 2015

The variables explored in our statistical model can only explain 11% of the overall variance in work intensity – much lower than for other job quality indices. This means that most of the factors that drive inequalities in this job quality index remain unobserved. Occupations, for example, contribute little to explaining differences in work intensity. However, as was shown above and is confirmed in the multivariate analysis, craft workers and plant and machine operators have a significant higher intensity than all other occupations, but this is only the case in the Southern and Central Eastern countries, while there are no significant occupational differences in other country-regimes. In 2015, work intensity was by far lowest for agricultural workers, who experienced a substantial drop between 2000 and 2010 and remained at that level in the last year of observation. Work intensity increased most for professionals (+10%) and service and sales workers (+12%) since 2000.

Inequalities between socio-economic groups

The multivariate analysis shows that women on average even after controlling for other confound report higher work intensity than men. Work intensity is highest for the youngest age groups and compared to workers with primary education for those with secondary or tertiary educational attainments. Migrants, both first and the second generation, report significantly higher work intensity than natives, but work intensity is lower in low income groups.

Summary: Work intensity

- Work intensity in the EU28 has remained stable overall (with a minor increase) and inequality in work intensity has also remained constant.
- Sector and country explain most of the differences in work intensity between workers.
- The overall stable trend applies across most sectors, but intensity decreased in Agriculture and increased in Commerce and hospitality. Inequality increased in both these sectors.
- There are pronounced differences in work intensity across country groups with increasingly high levels over the year in the Anglophone countries since 2005 and lowest, however also increasing levels in the Baltic countries.
- In Southern and Central-Eastern countries inequality in work intensity has increased, while in other country groups differences between workers decreased or remained stable.
- In 2015, work intensity was highest for craft workers, who experienced a moderate increase since 2000, and for plant and machine operators, though with a decreasing tend since 2005. Decreasing and lowest work intensity was reported by agricultural workers.

Skills and discretion

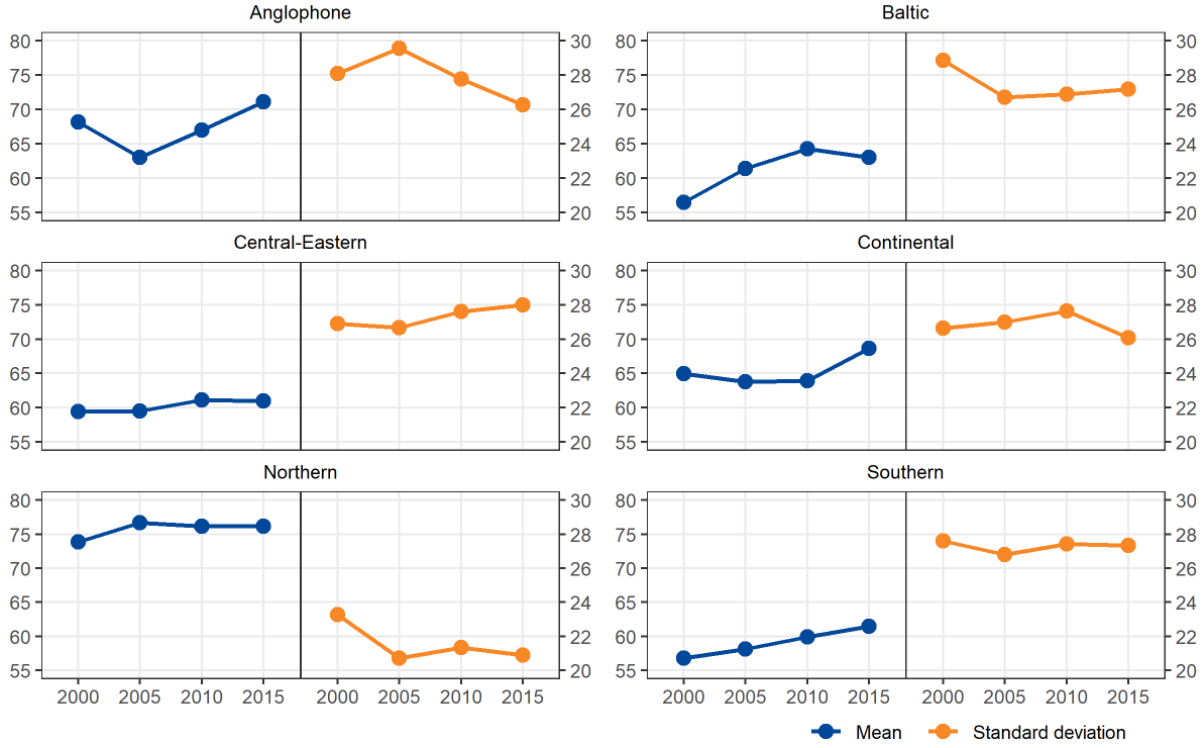
The skills and discretion index increased in the EU28 between 2005 and 2015. It rose more for women than for men and for younger age groups closing the gaps with older groups. Country differences range from 52 points in Greece to 78 points in Denmark and Finland. Strongest gains were observed in this time span in Spain (+10pts), the U.K. and Estonia (both +8pts) and losses in Latvia (-7pts), Greece and Hungary (both -5pts).

All three sub-dimensions of the index, viz. the cognitive dimension, decision latitude and training improved over time. However, the most remarkable changes happened between 2005 and 2015 in the use of ICT (computers, smartphones and laptops) with a growth of 20pp (36%-56%) and in take-up of paid training (+11pp).

Country-group differences

Figure 12 shows the developments across country regimes. The strongest growth over the period 2000-15 took place in the Baltic (+12%) and the Southern (+8%) countries. While inequality dropped substantially in the first, it remained almost stable in the latter group. The index grew below average in the Central-eastern group (+3%) and inequality increased. The score increased moderately in the Northern group between 2000 and 2005 with a drop in inequality and remained at this high average (and low inequality level) until 2015. In the Anglophone group, finally, we see a decrease between 2000 and 2005 (-8%) and a steep growth thereafter until 2015 (+13%). The index of standard deviation in this group mirrors this trajectory.

Figure 12 Skills and discretion index by country groups



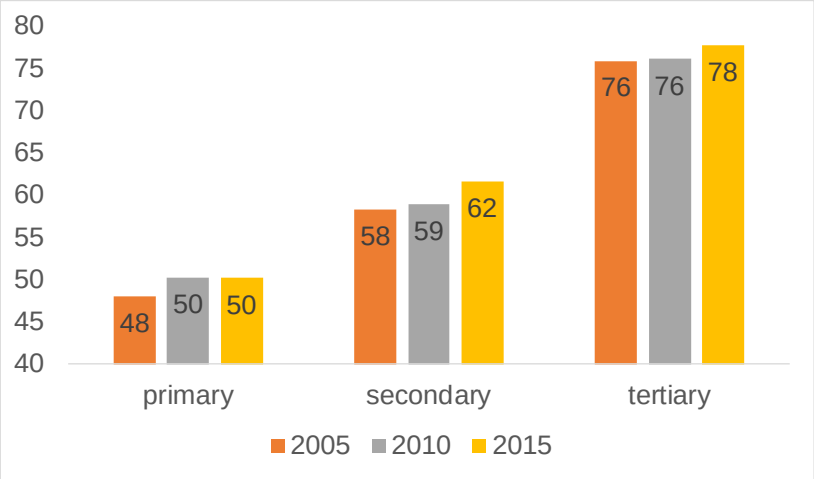
Source: EWCS 2000, 2005, 2010 and 2015

In-depth statistical analysis revealed that after controlling individual and workplace-related factors, country group differences remained highly significant over the years. However, we also find that the differences between the Nordic and all other groups (except for the Central-eastern group) decreased between 2000 and 2015, especially so as regards the Anglophone and Southern group. The latter, however, remains the country group with the biggest negative effect size (in 2015 workers in the South scored on average 13 points lower than in the Northern regime after controlling for covariates). Differences between the Continental and Northern group increased between 2000 and 2010 and then sharply went down in 2015.

Educational attainment

Autonomy and skills use are highly correlated with formal educational attainments as illustrated by Figure 13. Workers with tertiary education scored 28 points higher than those who only attained a primary degree in 2015. However, scores slightly improved for all groups between 2005 and 2015, particularly for workers with secondary education (+4 points). Differences between educational groups stayed statistically significant over the years (even after controlling for other confounders), but the effect size slightly decreased which indicates that the groups have come closer together as regards skill use and autonomy at work.

Figure 13 Skills and discretion index by formal educational attainment



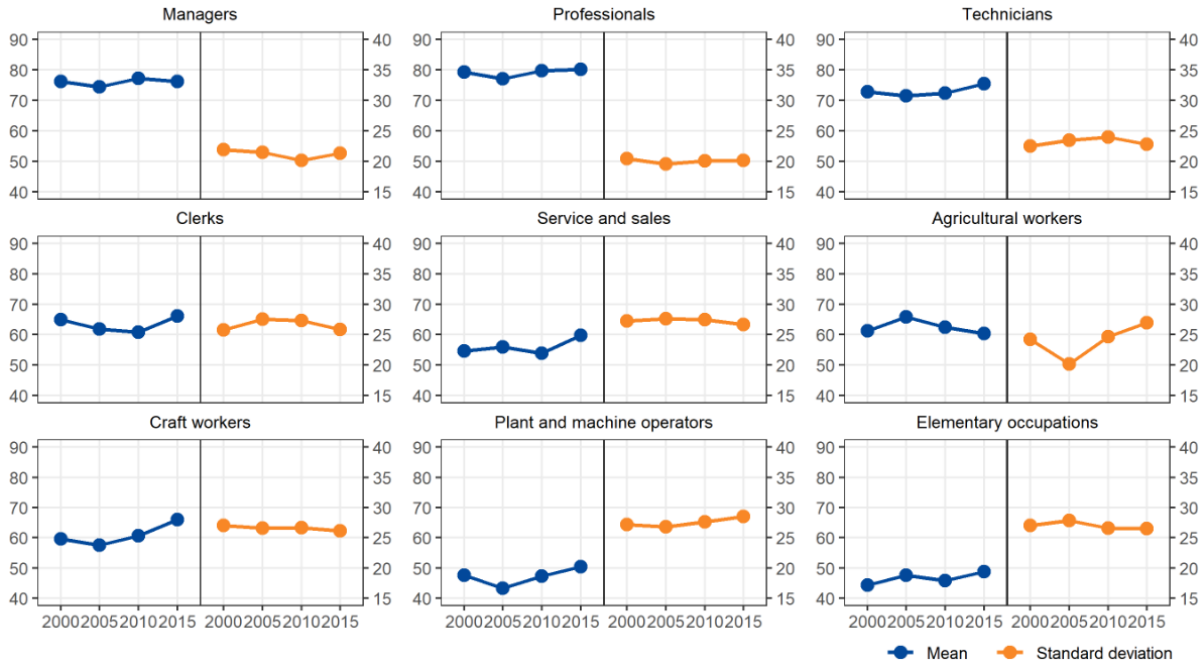
Source: EWCS 2005, 2010 and 2015

Occupations

Breaking down skills and discretion by occupations, reveals three main groups that can be categorised in low/medium/high (Fig. 14). At the bottom, we see elementary occupations and plant/machine operators, the middle category is composed by clerks, service and sales workers, agricultural and craft workers, the latter showing a particularly favourable development since 2005. On top, we see professionals, technicians and managers. Highest relative growth rates over the observed period (Fig. 15) were observed for craft workers, elementary occupations and service and sales workers (all +10%), whereas agricultural workers faced a slight decrease mainly due to a reduction in their work autonomy. For the latter we also observe an increase in the standard deviation meaning that the dispersion within the group has grown. Inequality also increased for craft workers, but their mean score went up as well. For the other occupations we see stable standard deviation throughout the year.

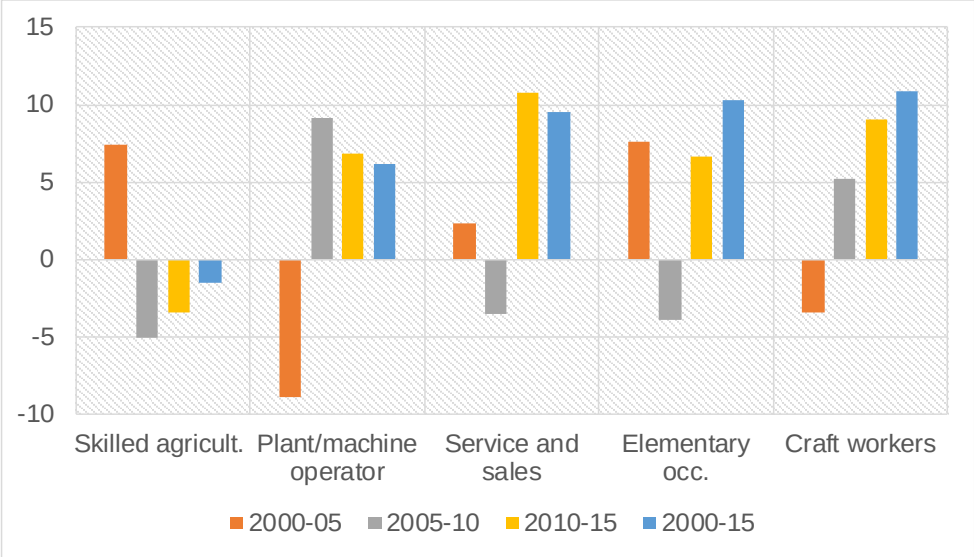
In-depth statistical analyses confirm the overall picture with managers and professionals at top and elementary occupations and plant and machine operators being the most disadvantaged group in this dimension after controlling for other factors. While the effect size remained stable for elementary workers over the years, it decreased for the plant operators implying a catching up to other occupations.

Figure 14 Mean levels and standard deviation of skills and discretion by occupation



Source: EWCS 2000, 2005, 2010 and 2015

Figure 15 Relative growth rates (%) of skills and discretion by selected occupations



Source: EWCS 2000, 2005, 2010 and 2015

Looking at differences between occupations within country-groups, reveals a few interesting aspects. Overall, the divide in this dimension between high- and low-skilled occupations is confirmed. However, in the Northern countries, for instance, the low-skilled occupations are not significantly different from the office clerks after controlling for other potential influential factors. One of the reasons is the higher take-up rate of training in the Northern countries even for those lower skilled professions but inequalities are also less pronounced in the Northern countries as regards autonomy and use of cognitive skills. In the Anglophone countries, on the other hand, there is less inequality reported between medium- and high-skilled workers. In the Central-eastern group we observe a stronger polarisation between higher skilled and low-skilled professions.

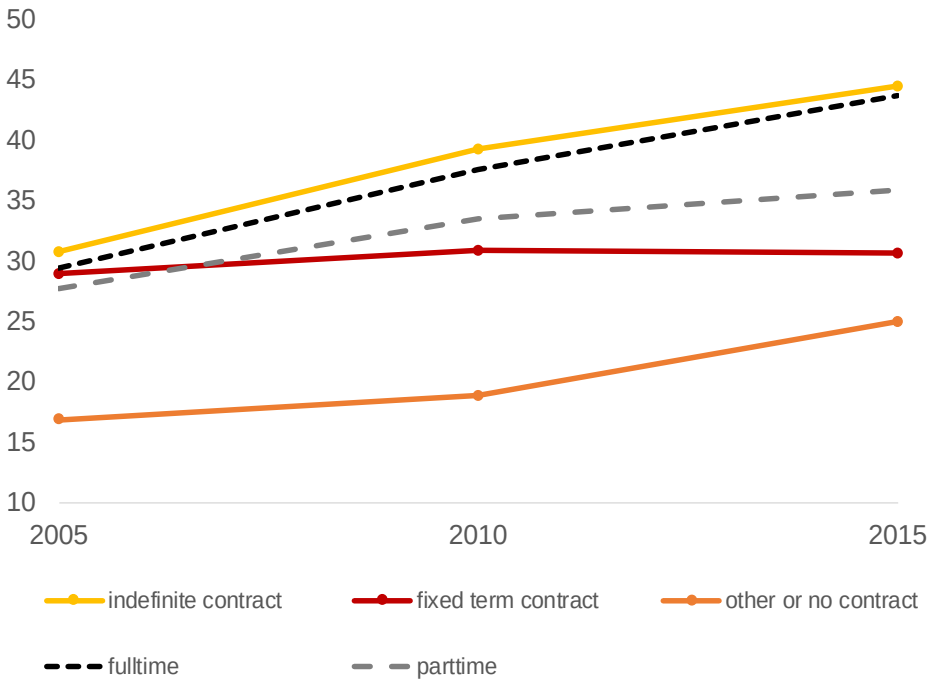
Employment status

Our analysis further revealed that skills and discretion significantly vary across different employment statuses with self-employed scoring highest, followed by permanent employees and with temporary employees and those with other or no contracts at the bottom. These differences remained stable in size over time even after controlling for other influential factors.

Access to and take-up of training is a particularly relevant sub-category of this dimension. Investing in the work force improves their employability and career prospects (e.g. De Grip & Zwick, 2005; Laguador, 2015) and expresses appreciation of the individual worker and his or her work. The training of staff has also a political connotation as for instance EU Directives on Fixed-term and Part-time work, but also the EU Social Pillar aim at avoiding discrimination and inequality between different employment statuses (see Eurofound 2018a).

Figure 16 reveals two problematic developments: While the overall take-up of paid training has grown, there are substantial differences across employment statuses. Both gaps, between permanent and temporary employees and fulltime and part-time employees have increased. The proportion of permanent employees who attended a training course over the past 12 months grew from 34 to 44% whereas the proportion of employees with a fixed-term contract grew by 2 points to 31%. Similarly, 44% of fulltime workers and 36% of part-timers attended a training course in 2015 compared to 32% of fulltime employees and 30% of part-timers back in 2005.

Figure 16: % of workers attending paid training the past twelve 12 months preceding the interview



Source: EWCS 2005, 2010 and 2015

A Eurofound Working Paper (Gevaert et al., 2018) demonstrated that (after controlling for other factors) younger age groups are more likely to receive training. Formal education and qualification also play a significant role with lower grades reducing the likelihood of attending training courses. Migration background is another factor that on average reduces the take-up chance of paid training

(see also Eurofound 2019b). Curiously, workers living in households with partners and children are more likely to attend training courses compared to workers living alone or with older partners. Other factors that were found to be positively correlated with training were seniority, income, high-skilled occupations, permanent employee contracts as well as working in the Health or Public administration sector (compared to other economic sectors).

Overall, the differences in skills and discretion between employees with temporary, other or no contract and permanent employees remain statistically significant with growing effect sizes over the years even after controlling for other influences. The differences (measured by regression coefficients) remained on the other hand stable between permanent employees and self-employed, the latter being the group with highest scores in in the index.

Inequalities between socio-economic groups

Women constantly score below men in skills and discretion over the years and after taking account of other factors such as sector, occupation or age. Middle aged groups 25-44 report higher scores than both younger and older groups and seniority is also significantly associated with higher average scores and this remained to be the case over the years. After controlling for other relevant factors, life stage keeps being significant: Workers living alone consistently score lower than those in couple households with no children. Workers in couple households with children, on the other hand, report higher average scores than the latter.

Summary: Skills and discretion

- The skills and discretion index has increased quite substantially between 2005 and 2015. This increase is mostly due to an increase in the use of ICTs and the take-up of paid training.
- Differences between workers are most strongly driven by occupation and country.
- In Central-Eastern countries the growth in the skills and discretion was marginal and differences between workers have increased. For most other country groups, the skills and discretion index has increased more steeply, particularly so in the Baltic and Southern group. Scores were by far and constantly highest in Northern group over the years.
- Professionals, technicians and managers have the highest skills and discretion scores and elementary occupations and plant and machine operators the lowest. While most occupations show an increase in skills and discretion (particularly elementary occupation, craft workers, service and sales agents), agricultural workers have marked a decrease combined with an increase in inequality in the index.
- A concerning trend was observed as regards the opening gap between different employment statuses in taking-up training paid by the employer: In 2015 the gap between indefinite and fixed-term employees amounted to 13pp and between full-time and part-time workers to 8pp.

Working time quality

The working time quality trend index brings quite heterogeneous sub-dimensions under one heading: First, the duration of work in terms of long working hours (48 hrs or more; long working days). Secondly, it comprises atypical working hours such as weekend work, night work or shift work.

And finally, it looks at working time arrangements: Do workers have control over their working time arrangements and how are changes in working time arrangements managed? Time flexibility is another increasingly important aspect of working time quality, but data are only available for 2015.

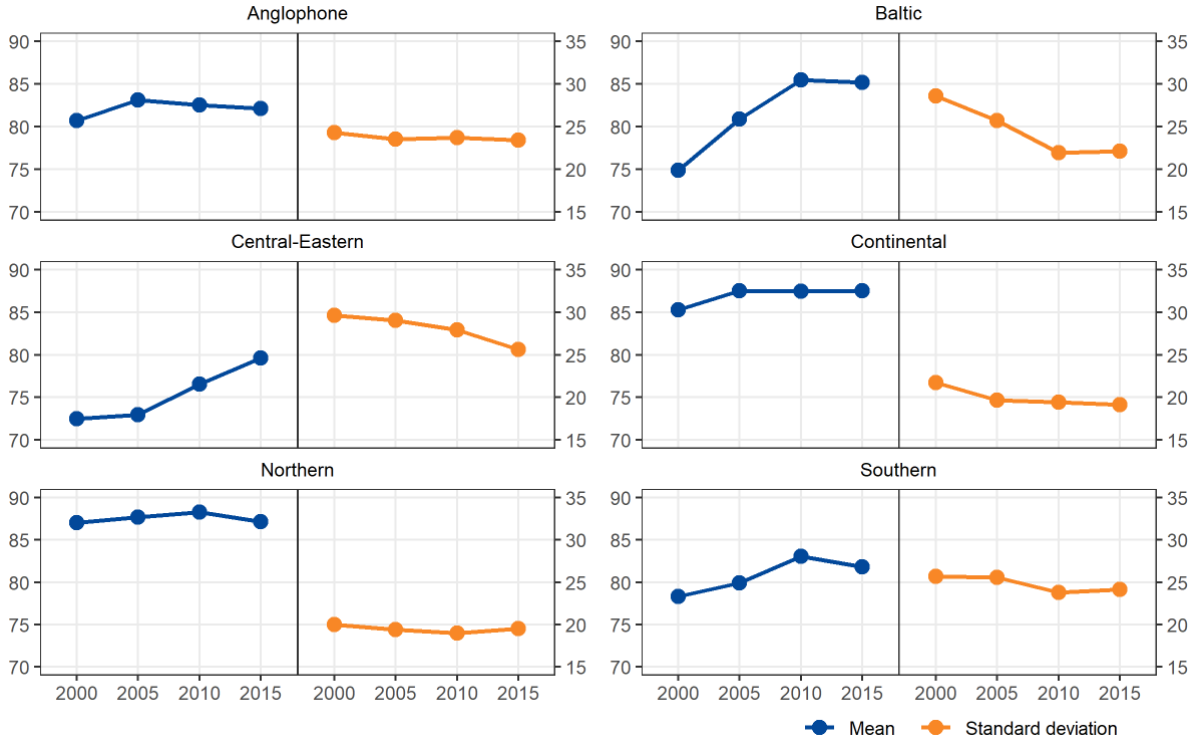
Overall, working time quality improved between 2000 and 2015, inequality decreased. This improvement was especially driven by a decrease in the proportion of workers reporting long working hours (from 19% to 16%) and long working days (from 36 to 32%). On the other hand, did the proportion of workers reporting to have to work on Sundays or do shift work moderately increase between 2010 and 2015 (+2%-points and +3%points respectively).

Countries and country groups

Since 2000, working time quality improved in most EU Member States. Particularly some of the Eastern European countries managed to catch up to the old EU Member States such as Latvia (+13 pts.), Romania (+11 pts.), Lithuania (+10), Poland (+9 pts.) or Estonia (+7pts.). The only country where working time quality substantially deteriorated was Greece which experienced a main drop between 2000 and 2005. A couple of other countries with high scores back in 2000 more or less hold this level.

We see these developments also reflected in the trajectories of country groups (Figure 18): Both the Baltic (+14%) and Central-eastern (+10%) group display steep improvements over the period observed. Increases are also recorded in the Southern group but only between 2000 and 2010 (+6%) and with a slight decrease in the average score in 2015. Working time quality developments were comparably flat in both the Continental (+3%) and the Anglophone (+2%) cluster. The score remained stable in the Northern group. Inequality within country groups went particularly down in the Baltic and Central-eastern countries.

Figure 17 Working time quality by country groups



Source: EWCS 2000, 2005, 2010 and 2015

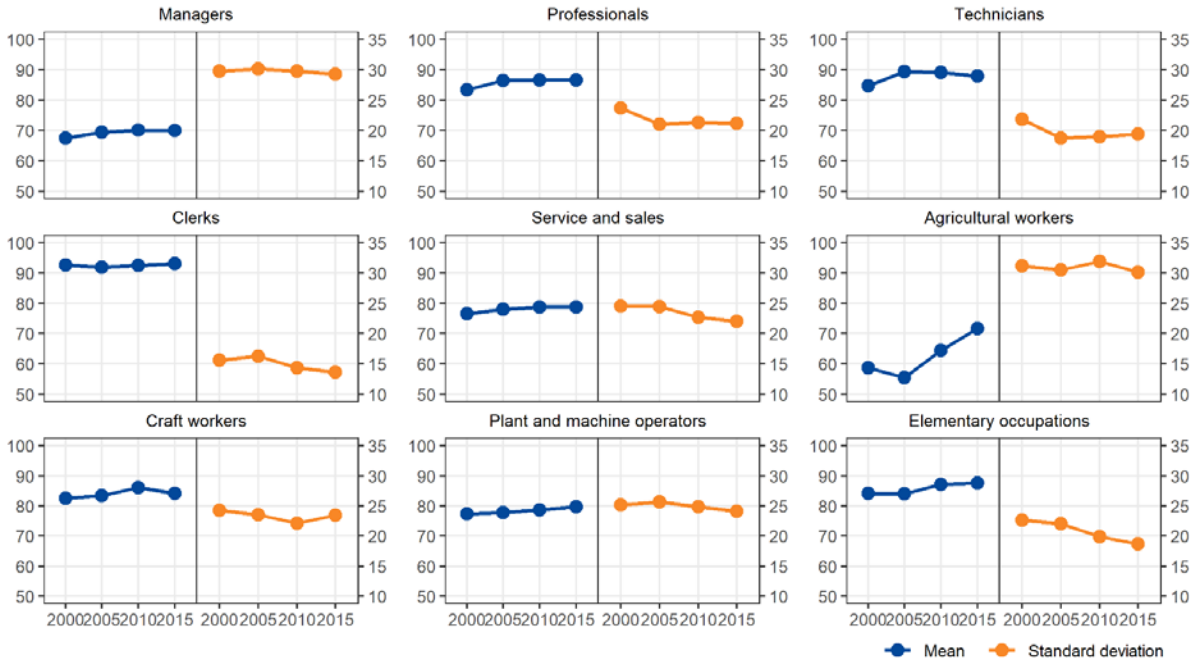
The closing of the working time quality gap between Eastern Europe and the Northern and Continental countries is also confirmed in the multivariate analysis. While in 2000 workers in the Baltic and Central-eastern group scored on average 9 points and 6 points respectively behind their Northern fellow workers (after controlling for other confounders), differences between these groups where not statistically significant any more in 2015. The gap between South and North (and the Continental group), on the other hand, remained unchanged over the years after controlling for other impact factors.

Occupations

Working time quality is not as clearly linked to skill-levels of occupations as other job quality indices but appears to be associated with contractual arrangements and employment status. Highest scores are for instance achieved by clerks and elementary occupations but also by technicians and professionals. At the lower end we find managers and agricultural workers, but also craft workers and service and sales workers score well below average.

While most occupations had minor improvements between 2 and 3 points in their scores over the years, agricultural workers who were 22 points below average in 2000 closed this gap to 12 points in 2015. The steep improvement for the agricultural workers was particularly driven by a drop of the proportion of workers reporting long working hours from 53 to 35%. The improvement is also confirmed by the multivariate analysis showing a substantial decline of the negative regression coefficient between 2005 and 2015:

Figure 18 Working time quality by occupations



Source: EWCS 2000, 2005, 2010 and 2015

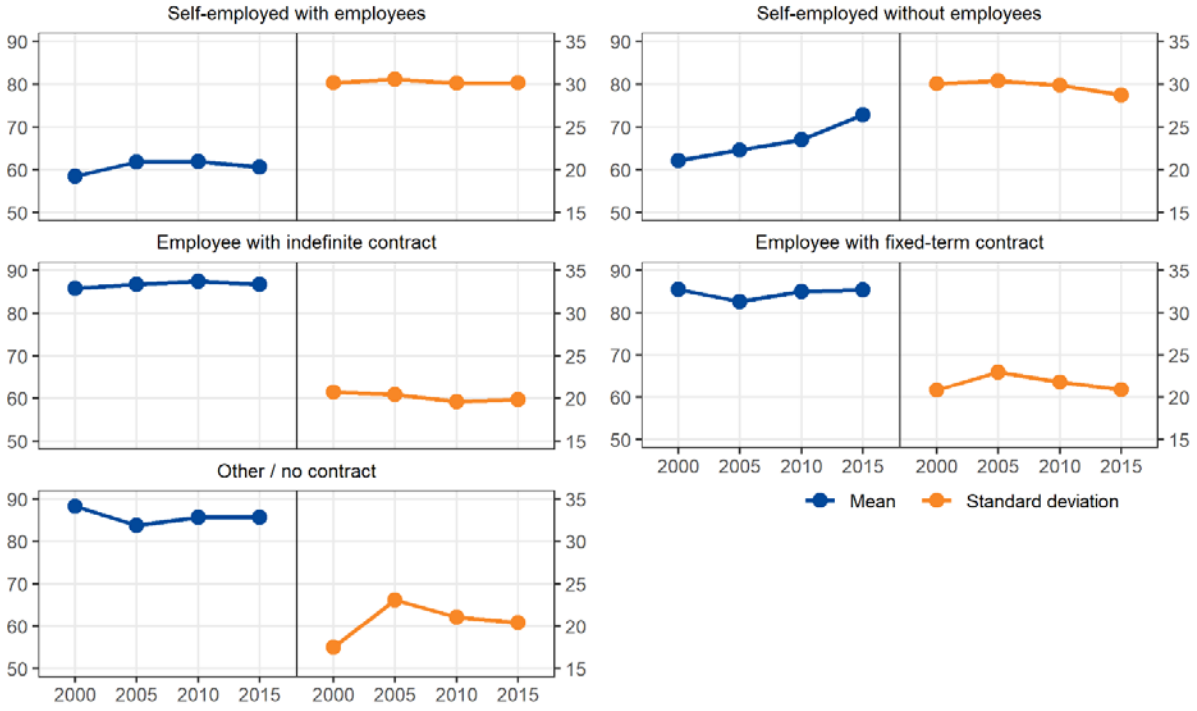
The negative associations of working time quality with being a manager is consistent across most country groups with the only exception of the Baltic countries. Service and sales workers are particularly disadvantaged in the Central-eastern and Southern welfare types. However, their working time quality is significantly worse across all regimes. The same holds true for plant operators (compared to clerks) with the strongest negative effects in the Anglophone and Central-

eastern group. Elementary occupations, finally, are particularly worse off than clerks in the Southern groups and to some extent also in the Anglophone countries, but not so in the Northern and Baltic type. The drivers of inequality are different for service and sales workers, who are better off in Continental and Northern Europe and worse off in Central-eastern and Southern Europe.

Employment status

Working time quality differs particularly between employees and the self-employed as is illustrated in Figure 20 and confirmed in the multivariate analysis. Over the years, working time quality remained almost unchanged for both employees and employers but substantially improved for the solo self-employed. This improvement might however have a caveat as there are increasing blurring boundaries between solo self-employment and employment relationships (e.g. Eurofound 2017). Hence, working time quality for those solo self-employed might resemble more to the working time quality of employees, but they are also more dependent on their principal client as regards work organisation.

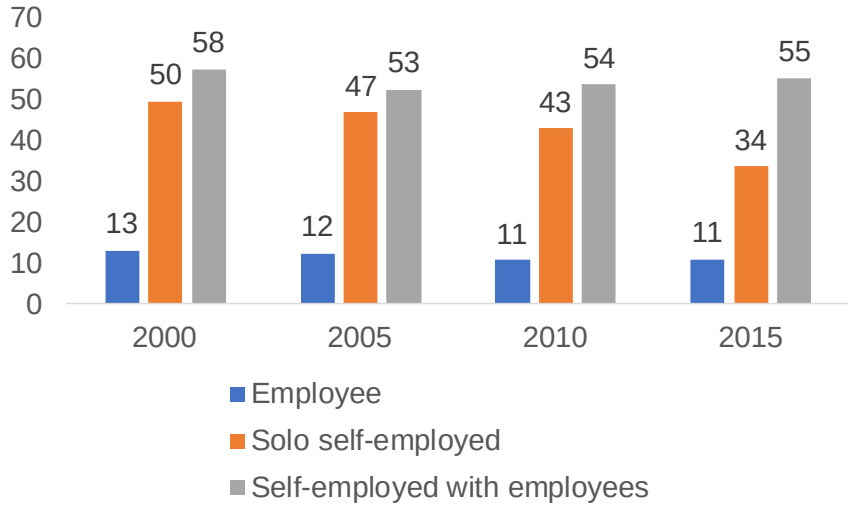
Figure 19 Working time quality by employment status



Source: EWCS 2000, 2005, 2010 and 2015

A strong difference between employment statuses was particularly observed as regards long working hours. In 2015 around 40% of all self-employed usually had to work 48 hours or more a week, while the same hold true for only 11% of employees. However, since 2000 the gap between the two groups got continuously smaller and shrank by 10%-points over the observed period. As Figure 21 shows this development was again due to a reduction in the proportion of solo self-employed reporting long weekly working hours from 50 to 34%, while the share of self-employed with employees remained almost at the same level.

Figure 20 Usually working long hours (>47hrs) weekly (%)



Source: EWCS 2005, 2010 and 2015

Inequalities between socio-economic groups

Inequality in working time quality has gone down between 2000 and 2015 across all workers. Women generally have a better working time quality even after controlling for other influence factors (Eurofound 2018) and these differences remained significant and stable in size over time. Women are less likely to be called to work at short notice but have more difficulties to arrange time off than men. There are no strong significant statistical effects of age (with the only exception of the oldest group of workers 55+ having higher scores) or formal education on working time quality nor is the migration background significantly associated with working time quality. Older couples with no children living in the household have a significantly better working time quality on average. Income is negatively correlated with working time quality indicating that higher income groups are on average facing poorer working time quality than workers with lower incomes.

Summary: Working time quality

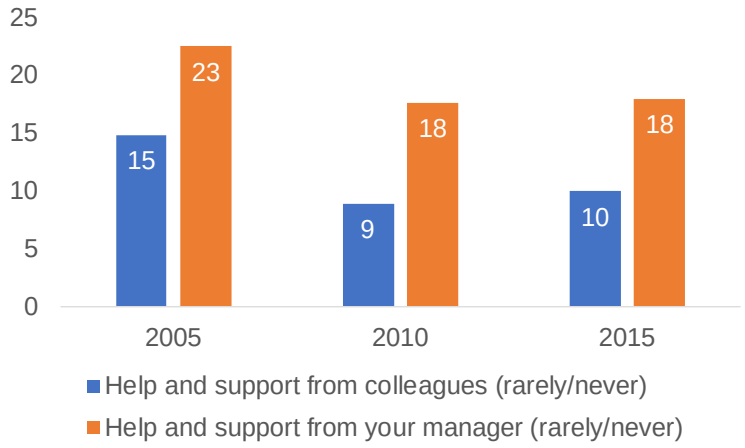
- Working time quality has improved, most notably between 2000 and 2010.
- Differences between workers in the quality of their working time has simultaneously decreased.
- Sector, occupation, employment status and countries explain most differences between workers in the quality of the working time.
- Working time quality has improved in most Member States, particularly in Central-eastern (still lacking behind the other clusters) and Baltic groups (Latvia, Lithuania, Romania, Poland). Greece marked a strong decrease in working time quality between 2000 and 2005, but overall, working time quality also increased in the Southern cluster.
- Most occupational groups marked a minor increase in working time quality but working time quality especially improved for agricultural workers over time. This is related to a decrease in very long working hours.
- Working time quality is substantially higher for employees than for self-employed, but self-employed without employees have improved their working time quality strongly.

Social environment

This dimension as measured in 2015 includes two sub-dimensions, adverse social behaviour (exposure to verbal abuse, unwanted sexual attention etc.) and social support. The latter is split into social support by managers and colleagues and management quality (which is about the relationship between direct superiors and workers at the workplace). Management quality was however measured in 2015 for the first time which is why we do not consider it in this chapter.

Figure 22 shows the development of (poor) social support from 2005 to 2015. Both items, having rarely or never support from colleagues and managers, substantially dropped between 2005 and 2010 and remained at the same level in 2015, where 10% of EU workers reported to have rarely or never support from colleagues and 18% said they would never or rarely get support or help from their managers.

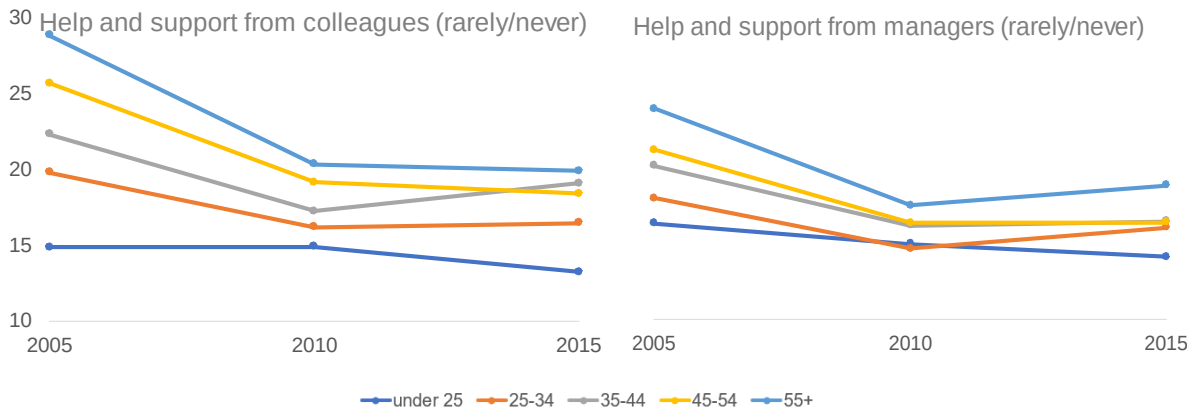
Figure 21: Help and support from collegues and managers, (%, rarely or never)



Source: EWCS 2005, 2010 and 2015

Social support seems to be affected by age as is illustrated by Figure 23 with the youngest age group having the lowest proportion of poor social support from colleagues (13%) and the highest proportion for the group of workers aged 55+ (20% in 2015). However, social support from colleagues increased for all age groups over the years and the gap between the youngest and the oldest age group shrank from 14 to 7pp. The picture is very similar for support from management though the differences between the age groups are less pronounced.

Figure 22 Help and support from colleagues by age groups, (%, rarely or never)



Source: EWC 2005, 2010 and 2015

Data on the exposure to different adverse social behaviours are available for 2010 and 2015. Overall, exposure (to at least one type) increased in the observed period for both men and women. Verbal abuse appears to be the widest spread phenomenon of adverse social behaviour, with 11% of women and 12% of man reporting it in 2015, a slight increase compared to 2010. Around 6% of female and 4.5% male workers were exposed to harassment (both sexual and/or psychological) in 2015. This figure remained stable over time.

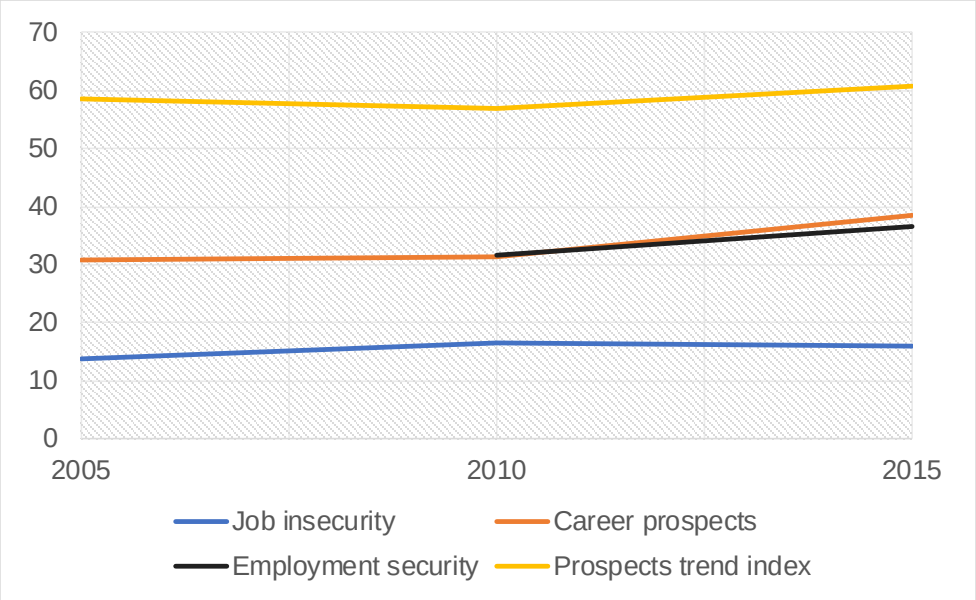
Figure 23 Harassment items by gender (%)

Source: EWCS 2010 and 2015

Prospects

The full index of prospects includes many aspects such as employment status, downsizing, career prospects and job security. However, the trend index only covers the latter two. Overall, we see a moderate increase in the index with 61 points in 2015 compared to 58 points in 2005. While job insecurity remained at 2005 level with a small rise in 2010 (most probably due to the economic and financial crisis), career prospects for EU workers continuously increased. Employment security (measured since 2010) increased as well.

Figure 24 Items of the prospects trend index, (2005-15)



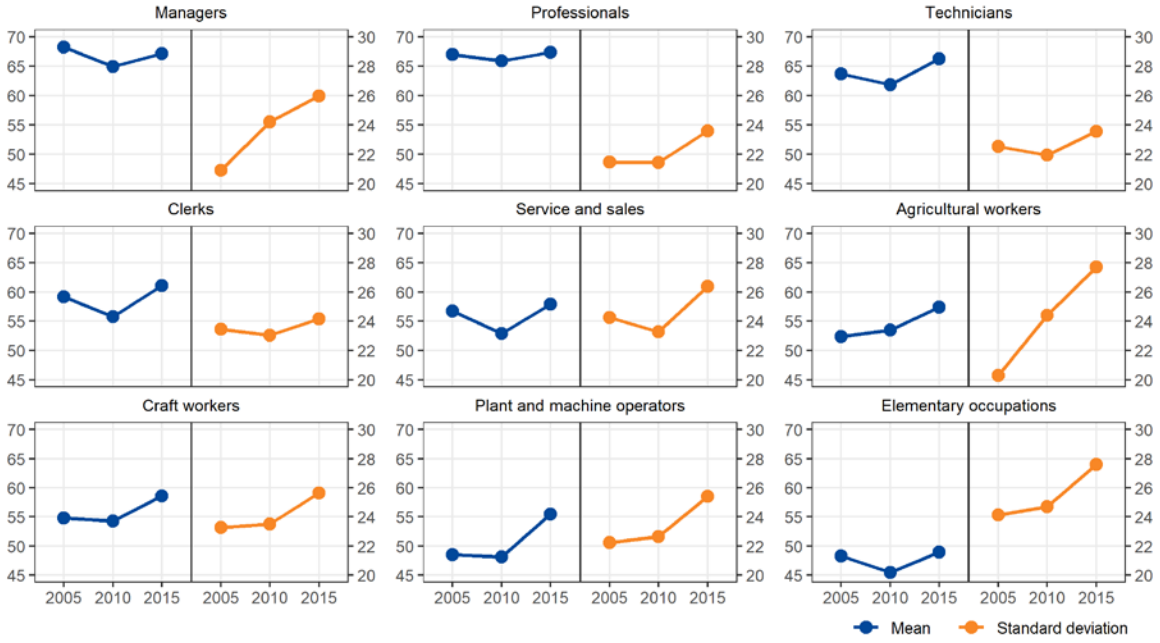
Source: EWCS 2005, 2010 and 2015

Occupation

Occupation accounts for most of the explained variance in job prospects. Prospects are highest for managers, professionals and technicians, and lowest for elementary occupations and plant and machine operators. For all occupational groups, job prospects have decreased from 2005 – 2010 (except agricultural workers) and increased between 2010 and 2015, reflecting the overall trend on the labour market. Figure 26 also reveals that the standard deviation in job prospects has gone up for all occupational groups over this period. An increase in job prospects overall coupled with an increase in the difference in job prospects means that only sub-groups have benefited from the economic recovery as regards their prospects whereas others stayed at the same level or deetiolated. This is especially the case for managers.

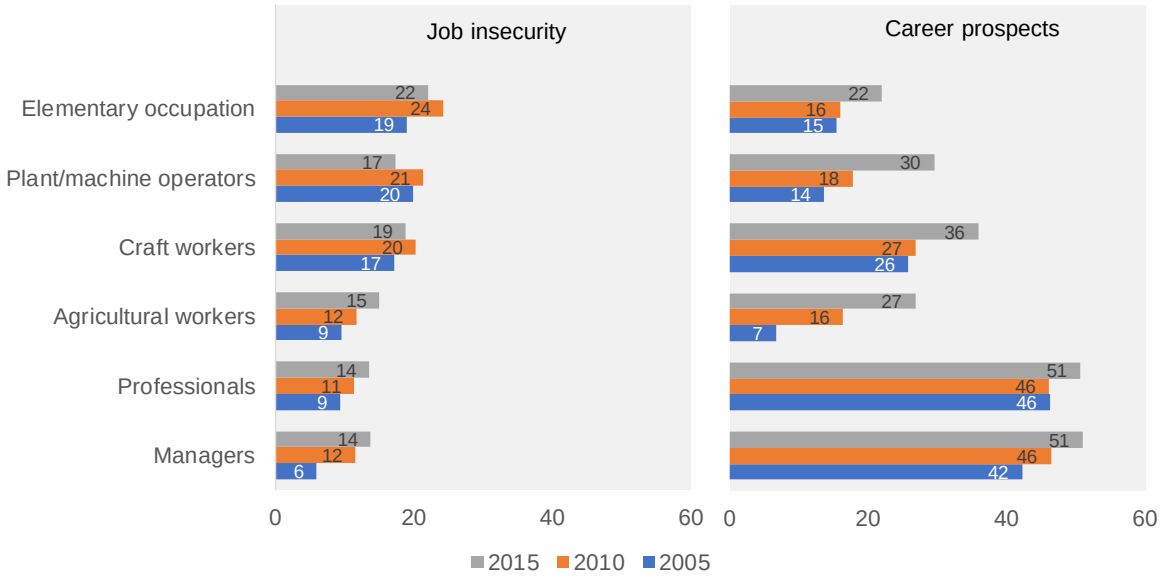
The focus on occupations shows that job insecurity is negatively correlated with career prospects. For instance, did 22% of elementary occupations in 2015 strongly agree or agree to the statement "I might lose my job in the next 6 months" and another 22% strongly agree to "My job offers good prospects for career advancement" while for Managers the ratio was 14:51%. For most occupations job insecurity was higher in 2015 than in 2005 but particularly so for Managers (+8%-points), Agricultural workers (+6%-points) and Professionals (+5%-points). Other occupations had higher job insecurity in 2010 but decreasing again in 2015 (elementary occupations, plant operators, craft workers). Interestingly, also career prospects substantially increased in the observed period for all occupations and particularly so for agricultural workers (+20%-points), plant/machine operators (+16%-points) and craft workers (+10%-points). Career prospects in 2015 were – unsurprisingly – highest for managers and professionals (both 51%).

Figure 25: Job prospects index by occupation, 2005-2015.



Source: EWCS 2000, 2005, 2010 and 2015

Figure 26 Job insecurity and career prospects by occupation, (2005-15)



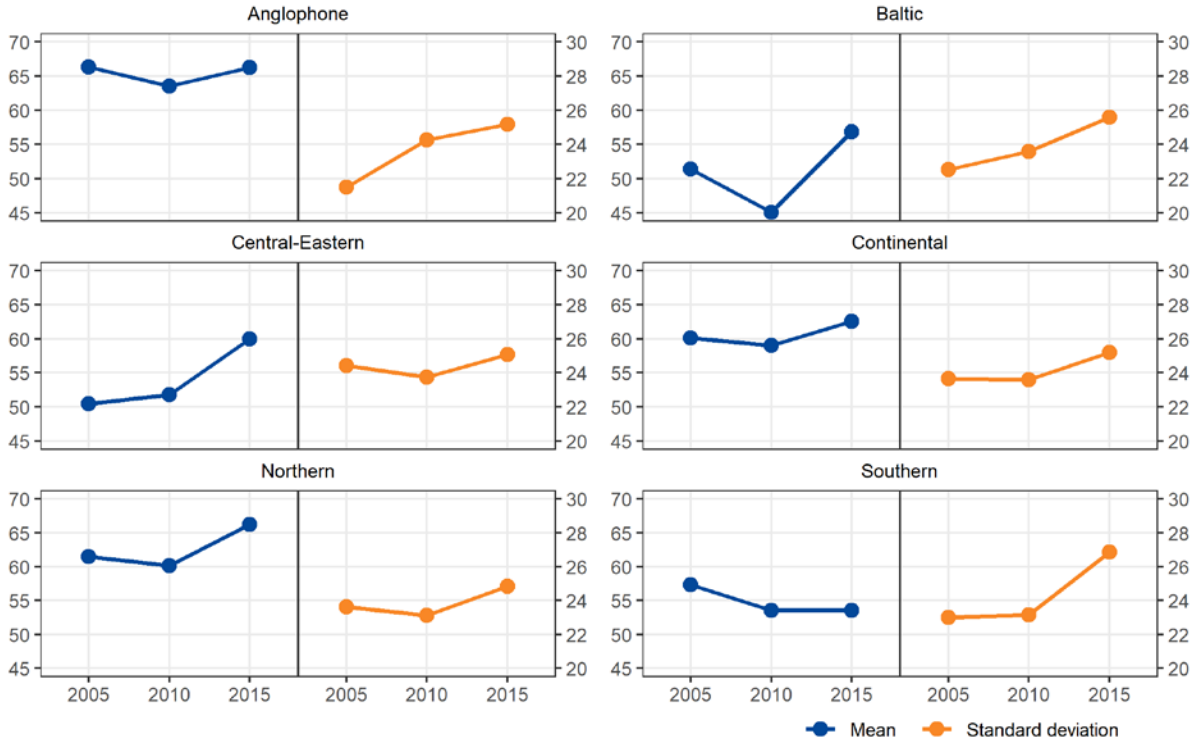
Source: EWCS 2005, 2010 and 2015

Country clusters

The second most important determinant of job prospects is the country. The highest job prospects can be observed in the Anglophone and Northern countries, closely followed by Continental countries. Job prospects are lowest in Southern country group. Over time, job prospects have not followed the same trajectory in all countries. In the Southern country cluster job prospects have, on average, decreased while they have gone up, sometimes in a u-shaped path, in all other country clusters. Especially the Central-Eastern country cluster marked a substantial improvement.

Inequality within the country groups remained almost stable in the Central-eastern group but increased in all other cluster, especially so in the Baltic, the Anglophone and the Southern group. For those clusters with an increase in job prospects overall this means that job prospects have increased substantially for some, while it has increased less substantially for others. In the Southern cluster the opposite holds – while for some job prospects have gone down marginally, they have gone down more substantially for others.

Figure 27: Job prospects index by country cluster, 2005-2015.

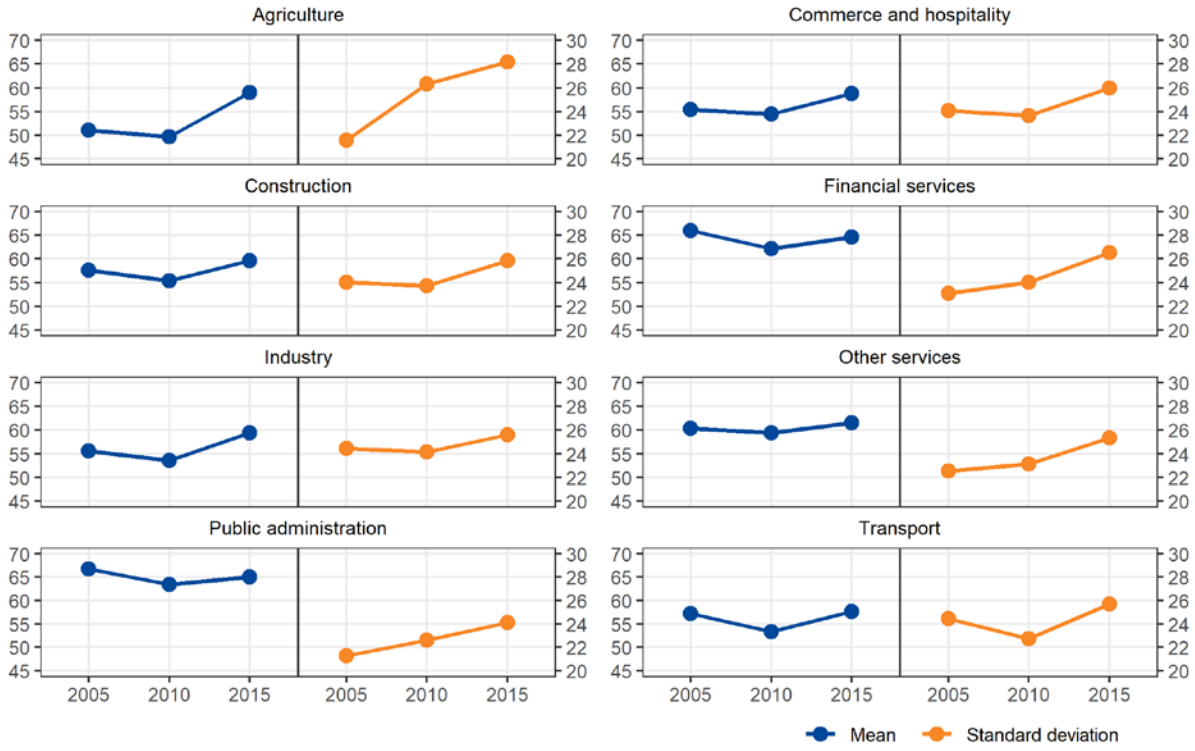


Source: EWCS 2000, 2005, 2010 and 2015

Sectors

Looking at sectors, between 2005 and 2015 job prospects grew in most sectors, often following a slight deterioration from 2005 to 2010. Especially Agriculture, Commerce and hospitality, and Industry have marked increases in job prospects. In Financial services and Public administration, job prospects were highest in 2015 compared to other sectors, but both sectors have marked a marginal decline since 2005.

Figure 28: Job prospects index by sector, 2005-2015.



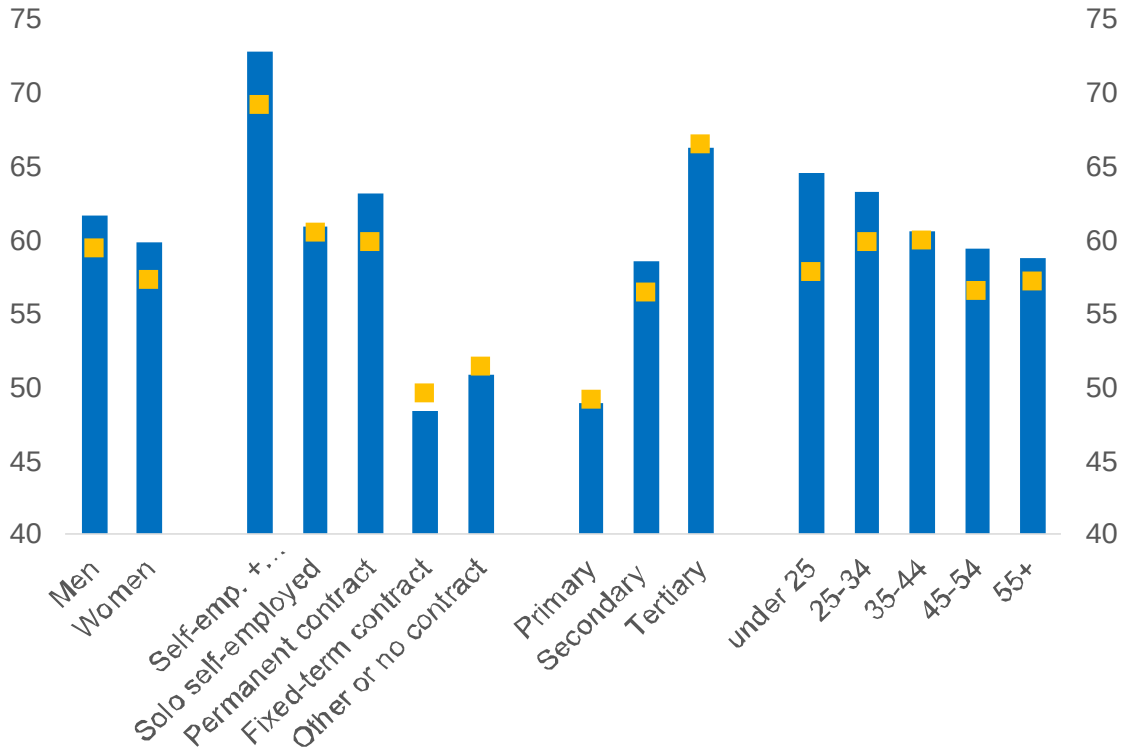
Source: EWCS 2000, 2005, 2010 and 2015

Socio-economic factors

Prospects vary hugely across various forms of employment, educational groups and age groups as is shown in Figure 30. Men score higher than women and the gap remained the same over the years (see also Eurofound, 2020b). The gap between workers with primary and tertiary education sums up to 17 points and this hasn't changed since 2005 neither. There are also substantial differences between the various forms of employment for instance between solo self-employed and self-employed with employees. For the latter prospects increased by 4 points in the observed period but remained at the same level for the first. The gap also widened between workers with permanent and those with fixed-term contracts. Prospects particularly increased for younger age groups but also for workers aged 45-54.

The data show that prospects decreased between 2005 and 2010 for most groups which can be explained against the backdrop of the financial and economic crisis with rising rates of unemployment and an increased perception of insecurity among EU workers. However, in 2015 prospects started to recover and exceeded for many workers the levels of 2005. Nonetheless, we also see that some groups need special policy attention such as low-skilled workers and those with fixed-term or other types of contracts.

Figure 29 Prospects by selected groups, 2005 (organge) and 2015 (blue



Source: EWCS 2005 and 2015

Summary: Job prospects

- For the analysis of trends, the job prospects index consists of items on job security and career prospects. The index has increased showing that job prospects in the EU28 have gone up. This is mostly due to an increase in career prospects coming with economic recovery.
- Prospects are most strongly explained by country, occupation, employment status and sector.
- Scores have increased for all occupational groups and sectors, coupled with an increased inequality in prospects showing that some have benefited more from the economic recovery than others.
- There are huge differences between employment statuses with highest scores for self-employed and lowest scores for workers with fixed-term contracts. For the latter, prospects have decreased over time widening the gap to other groups of workers.
- Prospects have improved for both men and women, but differences remained stable over time.
- In the Southern country group, job prospects have decreased while they have gone up in all other country clusters. Most notably the Central-Eastern cluster.

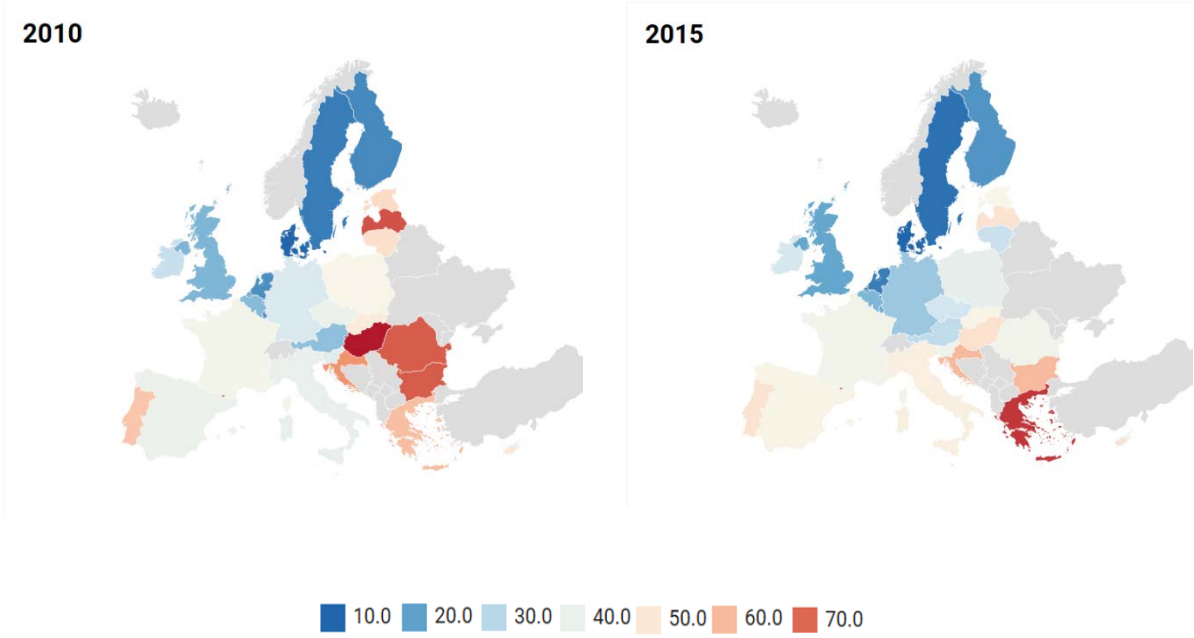
Earnings: Financial security and fair pay

This report is not dealing with monetary indicators. However, as earnings is a central dimension of job quality some light is shed into the developments and inequalities in non-monetary income-related aspects of job quality. Two items are collected by the EWCS which cover this sphere. The first item seeks to capture the household context of the worker/respondent and asks if the respondent's household manages to make ends meet with the monetary resources available: 1) *Thinking of your household's total monthly income, is your household able to make ends meet…?* (included in the EWCS since 2010). The second item touches upon fairness aspects/fair pay. Respondents are asked if: 2) *Considering all my efforts and achievements in my job, I feel I get paid appropriately* (included in the EWCS since 2005).

The ability to make ends meet addresses material hardship of a household by considering labour market income after taxes. While the question doesn't ask for in-kind or cash welfare benefits, it is safe to assume that respondents include them in their considerations. Free access to education or health care for instance reduces the economic burden of a household with the same monthly income as one without access to such public services.

The country comparison as illustrated in the Figure below is particularly interesting regarding two aspects: It shows the percentage of workers finding it fairly-very difficult to make ends meet. There is a clear East-West but also a North-South divide of Member States in 2010. Countries such as Denmark (9%), Sweden, Finland and the Netherlands, all having proportions of less than 20%. On the other side we see Bulgaria, Romania, Hungary and Latvia with overwhelming population majorities of over 70(!)% reporting difficulties in making ends meet. But also, all other Eastern (except for Slovenia) and Southern Member States have proportions clearly above average (38%). However, by 2015 the East-West gap was substantially reduced with decreases of over 20pp in Romania, Latvia, Lithuania and Hungary against the backdrop of an EU-wide decrease of 4pp. In some countries the percentage of workers with difficulties in making ends meets increased moderately between 2010 and 2015 such as in Ireland (+2pp), Luxembourg (+5 pp), Austria (+6 pp), countries that however stayed below EU average. Other Member States that had high proportions of workers with difficulties back in 2010 further deteriorated such as Spain (+4pp) and Italy (+8 p), but particularly Greece with a plus of 16pp. It is evident that the financial and economic crisis and especially the policy responses to it play an important role in explaining these developments

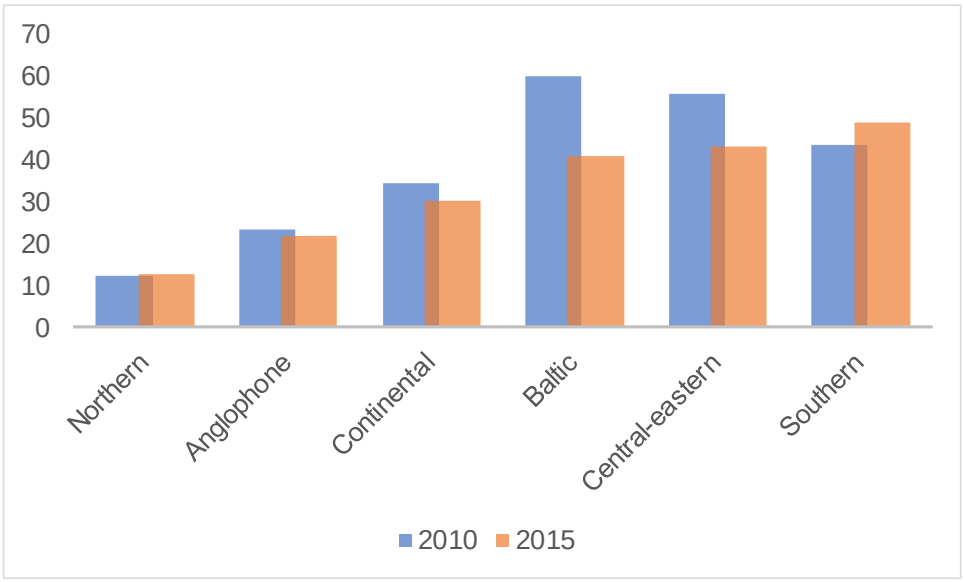
Figure 30 Fair earnings Map, (%)



Source: EWCS 2005 and 2015

Figure 32 shows the proportions of workers with difficulties in making ends meet by country groups. We see a clear East-West and North-South divide reflected again with the Northern countries reporting comparably low levels, while Baltic, Central-eastern and Southern groups have proportion between 40 and 50% with substantial improvements in the East and moderate deteriorations in the South (mostly driven by Greece and Italy) between 2010 and 2015. Overall, however, these results complement findings of upward convergence among EU28 countries in monetary indicators such as disposable income or monthly minimum wages (Eurofound, 2019d)

Figure 31 Difficulties in making ends meet (% of workers)

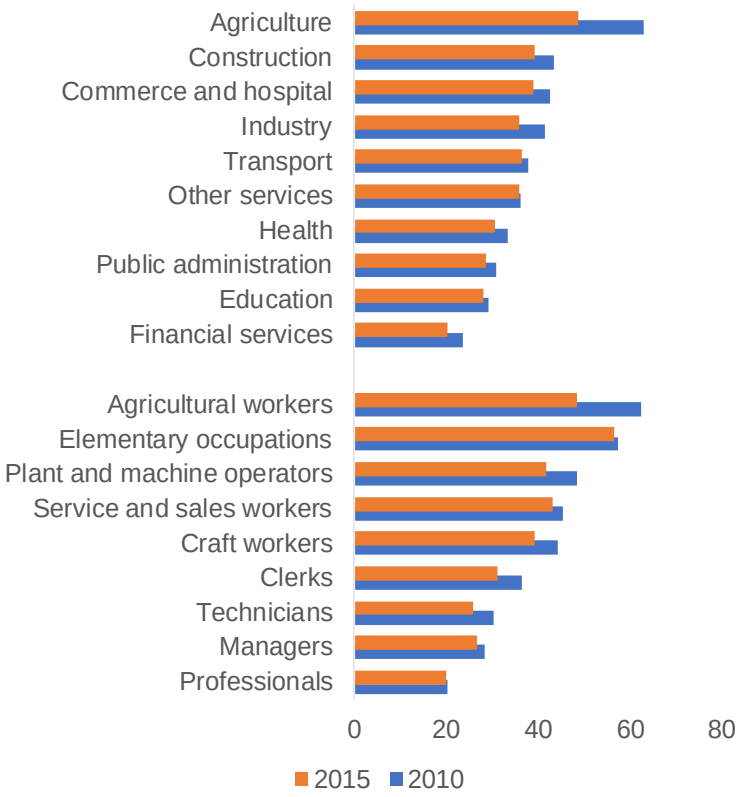


Source: EWCS 2010 and 2015

Figure 34 illustrates that the situation improved for workers in almost all economic sectors and occupations. This was particularly the case for Agriculture and to a lesser extent for Construction,

Industry and Commerce and hospitality and indeed for agricultural workers but also for plant and machine operators, craft workers and clerks. Other occupations at high risk of having fair to severe difficulties in making ends meet haven't developed that favourably. This was particularly the case for elementary occupations which remained almost at the same level as in 2010 but also for service and sales workers (56%). Managers and professionals didn't further improve too but remained at an already comparably low proportion below 30%.

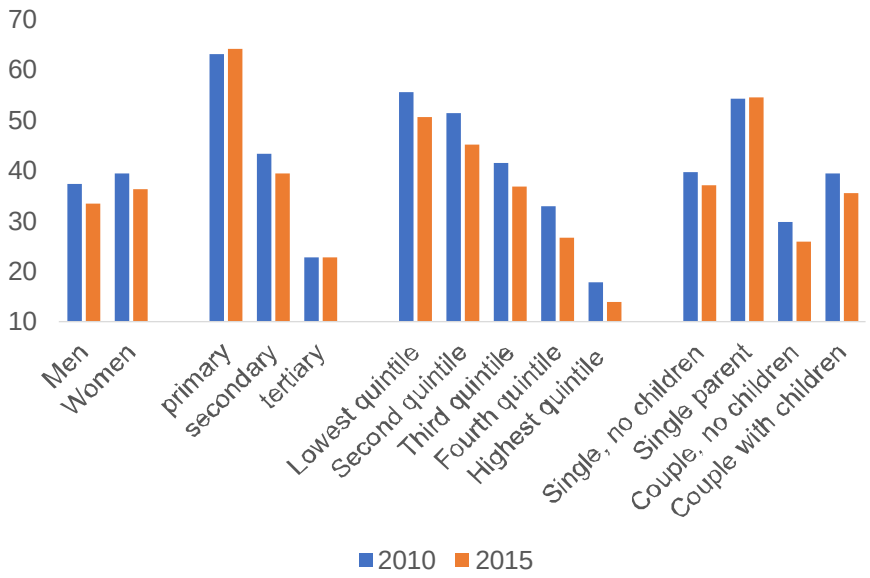
Figure 32 Difficulties in making ends meets by sector and occupation, (%)



Source: EWCS 2000, 2005, 2010 and 2015

Finally, Figure 36 investigates various socio-economic groups. Difficulties with making ends meet are unsurprisingly associated with the level of income. It is however noticeable that in 2015 even in the fourth income quintile 27% of workers reported difficulties. Workers who are single parents had the highest proportion of difficulties among various household types and indeed remained at that level in 2015. Couples without children reported on the other hand the lowest percentage. Furthermore, we observe a huge gap between workers with primary and workers with tertiary educational attainments (supposedly mediated by income). Both levels of and the gap between these groups remained unchanged between 2010 and 2015, while the proportion of workers with secondary educational attainment reporting difficulties decreased. Slightly more women than men reported difficulties, but the proportion decreased for both genders. All these differences remain significant in the regression and effect sizes increased for workers who are single parents.

Figure 33 Prospects by socio-demographic groups (Index 0 low – 100 high)



Source: EWCS 2010 and 2015

Figure 36 shows the trends of proportions of workers who answered to the question if they are paid appropriately "strongly agree or agree" (blue line) and "disagree/strongly disagree" (red line) between 2005 and 2015 by Member States. While the proportion of workers finding their pay appropriate has increased from 43 to 51% in the EU28, the share of workers who disagree that their pay is appropriate has almost remained at the same level (31-30%) which indicates increasing inequality as also confirmed by the Gini coefficient. Some countries deviate from this pattern. In a couple of Eastern European Member States, the dissatisfaction with their pay went substantially down such as particularly in Romania (-27pp), Hungary (-25pp), Poland -21pp), Bulgaria (-16 pp), Estonia (-15pp) and a few others. In all these countries the proportion of workers who strongly agree or agree that they are paid appropriately also increased substantially. Finland was however one of the countries with the highest level of agreement (62%) and the steepest increase between 2005 and 2015 (+26pp). In several countries, we see a reversed pattern with increasing proportions of disagreement such as in Spain (+14pp), Ireland (+7pp), France and Luxembourg (both +6pp).

Figure 35 summarises these findings illustrating mean values of *appropriate pay* for country groups from 2005 to 2015. Levels remained almost stable in the Anglophone and the Continental cluster, but increased substantially in the Northern, Baltic and Central-eastern group, the latter two catching up with the EU-average. The Southern group recorded a small growth between 2010 and 2015.

Figure 34: Proportions of workers responding "strongly agree/agree" (blue line) and "disagree or strongly disagree" (red line) to the statement "Considering all my efforts and achievements in my job, I feel I get paid appropriately", %, 2005-2015

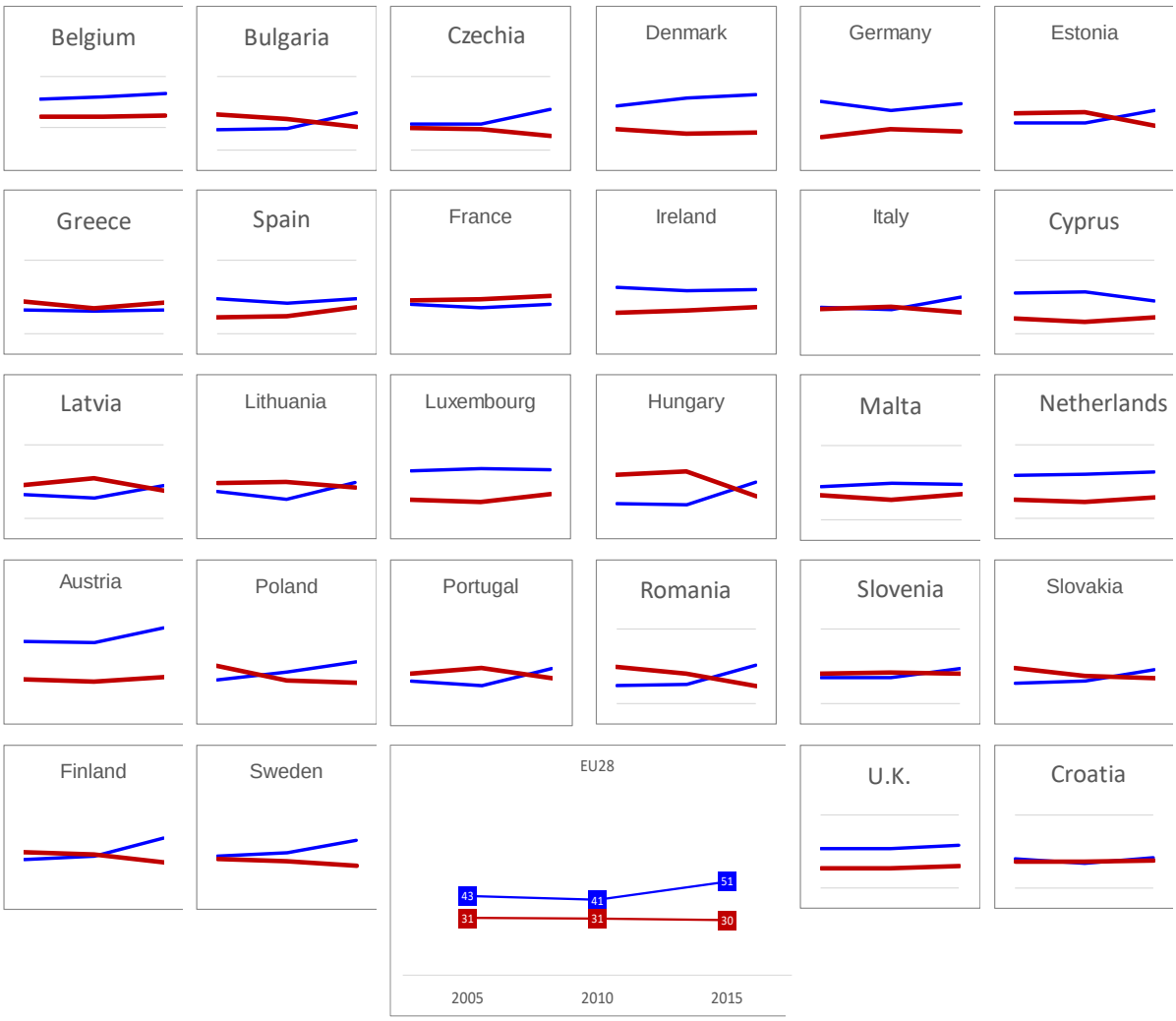
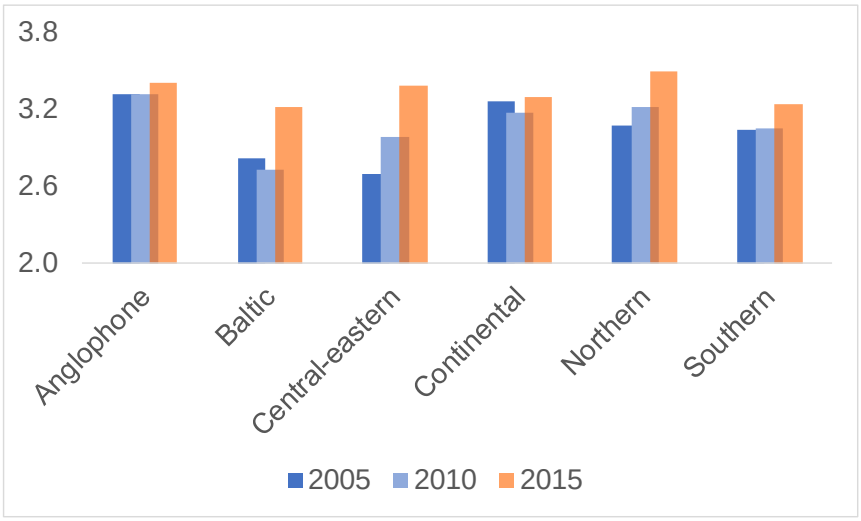


Figure 35 Mean values of appropriate pay (scale 1-5) by country groups



Source: EWCS 2005, 2010 and 2015

Occupations with particularly increasing consent to the appropriateness of their payment include agricultural workers (+30pp), plant and machine operators (+9pp), clerks and elementary occupations (both +7pp). For managers, on the other hand, the proportion of disagreement increased by 6pp between 2005 and 2015. We see particularly growing satisfaction with their payment among solo self-employed (+13pp), workers with fixed-term contracts (+10pp) and employees with other or no contracts (+9pp).

The perception that payment is appropriate has also over-proportionally increased for the lower income groups since 2010: the proportion of workers perceiving their income as appropriate grew in the lowest quintile by 18 points (to 46%) and in the second quintile by 11 points (to 41%) compared to +5 points in the highest quintile (to 67%).

Summary: Financial aspects

- Two items were explored to capture the dimension earnings (non-monetary financial aspects): Difficulties in making ends meets with the household earnings and the perception of appropriate pay (fair pay).
- Countries such as Denmark (9%), Sweden, Finland and the Netherlands have proportions of less than 20% of workers having difficulties in making ends meet. On the other side we see Bulgaria, Romania, Hungary and Latvia with proportions of over 70%. By 2015 the East-West gap was however substantially reduced with decreases of over 20pp in Romania, Latvia, Lithuania and Hungary against the backdrop of an EU-wide decrease of 4pp. Proportions increased, on the other hand, in the Southern group.
- The financial stress improved for workers in almost all economic sectors and occupations, particularly so in Agriculture and to a lesser extent for Construction, Industry and Commerce and hospitality and indeed for agricultural workers but also for plant and machine operators, craft workers and clerks. Other occupations at high risk of financial pressure haven't developed that favourably, particularly elementary occupations.
- Workers who are single parents had the highest proportion of difficulties among various household types and indeed remained at that level in 2015. Couples without children reported on the other hand the lowest percentage.
- The perception of being paid appropriately overall improved between 2005 and 2015. Particularly, the Central-eastern, Baltic and Northern group reported higher mean values in in 2005, while the levels remained stable in the Anglophone and the Continental cluster.
- Lower skilled occupations and lower income groups had particularly increasing consent to the appropriateness of their payment.
- Growing perception of fair pay was also reported among solo self-employed, workers with fixed-term contracts and employees with other or no contracts (+9pp).

Conclusion and policy pointers

Synthesising the findings

Job quality matters. It has a substantial effect on health and wellbeing (Eurofound 2012; 2019b) and is the key factor in making work more sustainable over the life course (Eurofound 2015; Virtanen et. al, 2018; Eiffe, 2018, 2019). There is therefore – as Felstead et al. (2015, p.191) pointed out – "*a strong case for trying to improve job quality at all levels*". It is hence duly justified to monitor developments in the various dimensions of job quality and to assess if progress has been achieved for all sub-groups of workers or if the gaps between those groups are widening with raised levels of inequality.

Previous Eurofound research (2018b, 2019, 2019d) has demonstrated that among EU28 Member States there has been upward convergence in both labour market participation and in most job quality dimensions since 2000. This Working Paper has strived for complementing these results on the EU level with more **granulated analyses of trends and inequalities** in job quality across economic sectors, occupations, employment statuses and socio-demographic groups.

To summarise, in most dimensions of job quality, inequality has decreased or remained at least at the same levels, while averages moderately went up. **Prospects** marks the exception with improvements on average while at the same time **inequality between workers increased**. Work intensity slightly increased and this particularly affected specific sectors and occupations (see below).

As **main drivers of inequalities** in job quality generally, we identified the **economic sector, occupation, country of residence and employment status**. However, the role of **gender and age** should not be underestimated in shaping working conditions in the real world and differences between men and women and between different age groups remained stable over time.

Job quality improved for some of the most vulnerable occupations above average and the gap between the higher- and lower-skilled occupations has narrowed. Plant operators are, for example, the only occupational group with improvements in all dimensions (mostly above average) but also agricultural workers and craft workers over-proportionally increased average scores in some dimensions. However, **elementary occupations haven't experienced considerable improvements** in job quality (their work intensity, for instance, increased), and their average scores have remained at the bottom in several dimensions. This is also reflected in the job quality profiles (developed for the EWCS Overview Report (2017c)), where 52% of this group were in the *poor-quality profile*. The intensification of work, finally, particularly affected service and sales workers and professionals (and to a lesser extent, also office clerks).

Economic sectors were identified as important drivers of inequalities in most job quality dimensions, but particularly so as regards the physical environment and (to a lesser extent) work intensity. **Agriculture is the sector with lowest average scores in almost all job quality dimension**. However, it is also the sector **with major improvements** particularly as regards working time quality, work intensity and prospects. Average skills and discretion scores, on the other hand, considerably increased in **Construction and Industry**, but both sectors remained at the bottom level as regards the physical environment and work intensity. Job quality developments were not great in the **Transport** sector and the sector **retained lowest averages scores in skills and discretion, working**

time quality and prospects. **Work intensity**, finally, particularly **increased in Commerce and hospitality**.

The **employment status** turned out to be a crucial **explanatory factor of differences in working time quality** with substantially higher average scores for employees than for self-employed. Over time these differences were reduced. However, this was mainly due to improvements for solo self-employed and not for those with employees. A particularly relevant finding from a policy point of view is the **growing gap between permanent and fixed-term** workers on the one hand and **full-time and part-time** workers on the other hand as regards the **take-up of paid training** by the employer. Proportions increased in all groups, but so did the differences between the groups.

Finally, **job quality also varies significantly across countries and country groups** with a clear **North-East and South-West divide**. Substantial **improvements** were however observed in the **Central-eastern and Baltic countries** narrowing the gap to the Continental and Northern group in a couple of job quality dimensions, particularly as regards working time quality and prospects. However, a divide remains between North and South with unchanged levels of dispersion over the years and although job quality improved in the Southern cluster (especially in the physical environment, skills and discretion and working time quality), there were also some less favourable developments in this country group such as increased work intensity and declined prospects.

Policy pointers

The implications of improvements in specific dimensions of job quality need to be reflected carefully and contextualised against the backdrop of macro-economic developments and mega-trends. For instance, could the improvement of the physical environment for low-skilled workers be associated with a trend towards automation and with other effects such as decreased employment levels for these sub-groups of workers.

Rising levels of work intensity particularly in the Commerce and hospitality sector and for service and sales workers and professionals contribute to a rising risk of high stress levels and their consequent ill effects on health and well-being. Policies targeted to these specific groups and sectoral agreements to reduce the presence of stressors are indicated, as well as programmes to ameliorate the effects of high levels of stress.

Increased inequality across the workforce as regards prospects needs to be closely monitored and counter-measures taken. Particularly, lower-skilled workers are at risk of higher job insecurity and lower employability. Measures should be taken to secure the continuous up-skilling (e.g. in form of training funds etc) and on the job learning for most vulnerable occupations and employment statuses.

Further research is needed to understand why lower-skilled occupations face particularly high physical risks in Southern and Baltic countries. A dialogue needs to start with those countries and policy makers must take measures to assure that Directives and regulations are being transposed efficiently.

The widening gap between fixed-term and permanent workers but also between full-timers and part-timers as regards the take-up of paid training by the employer is a source of growing concern. Specific policy instruments to tackle these issues could include public funding of training to equip temporary workers with the skills that the labour market demands, as well as state-backed measures

to enhance their career prospects and facilitate their transition into permanent jobs. EU Directives on part-time an fixed-term work need to be further implemented, transposed and promoted in order to avoid unequal treatment at the workplace.

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