



Eurofound

# Quality of employment conditions and employment relations in Europe



A report based on the fifth European Working Conditions Survey



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When citing this report, please use the following wording:

Eurofound (2013), *Quality of employment conditions and employment relations in Europe*, Eurofound, Dublin.

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European Foundation for the Improvement of Living and Working Conditions

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# Executive summary

## Introduction

This report provides an in-depth analysis of the quality of employment conditions and employment relations in the European employed workforce. Employment in the report is viewed as the contractual relationship between an employer and a worker, specifically how the rights and duties embedded into the relationship are translated into real rights. The analysis is mainly based on data from the fifth European Working Conditions Survey (EWCS), conducted in 2010. Where appropriate, comparisons with earlier waves of the EWCS are made.

The report has four main objectives:

- to build indicators for different dimensions of the quality of employment;
- to identify problematic or advantageous situations regarding the quality of employment, as well as groups of workers requiring special attention;
- to examine the evolution of a number of selected indicators of the quality of employment;
- to investigate the relationship between the quality of employment and a number of characteristics of individual workers, their employing organisations, their broader work characteristics, and variations between countries.

## Policy context

European policy is not only directed at the number of people in employment but also at improving the quality of such jobs. Improving job quality is highlighted in the European Employment Strategy (Guideline 7) – ‘Increasing labour market participation of women and men, reducing structural unemployment and promoting job quality’ – and also forms part of the ‘Agenda for new skills and jobs’, one of the flagship initiatives of the Europe 2020 strategy for smart, sustainable and inclusive growth. According to EU employment policy, high employment rates and high quality jobs are not mutually exclusive: good-quality jobs are an important precondition for fostering and safeguarding sustainable working careers, employee motivation and worker productivity. Good-quality jobs also lead to less work-related ill-health and fewer occupational accidents, and overall improvements in occupational health.

## Key findings

- In Europe, the proportion of employees with indefinite (open-ended) contracts was 80% in 2010, compared to 78% in 2005 and 83% in 2000.
- Just 5% of employees in Europe were working without an employment contract in 2010: this figure was significantly higher among employees under 35 years of age (13%) and those with a lower level of education (14%). In addition, a number of countries had much higher proportions of workers working without contracts: Turkey (64%), Cyprus (39%), Greece (28%), Malta (27%), Albania (27%) and Ireland (24%).
- Only 32% of European employees in 2010 reported good employability prospects (defined as perceived ability to find a job of similar salary in the event of losing or quitting one’s current job).
- The research identified five main job clusters. The highest levels of employment quality are found in the ‘high-quality standard employment relationship’ cluster, prevalent among employees with a high educational level, professionals and technicians, office workers and managers, public sector employees, and workers employed in large organisations.

- The lowest levels of employment quality are found in the ‘precarious unsustainable’ cluster. The majority of workers in this group are younger workers, older women, shop and sales workers, unskilled workers, employees in the agricultural sector and employees in very small organisations.
- There is no significant difference in employment quality between men and women. However, young workers have a lower mean employment quality score, and employees with a higher educational level have higher overall employment quality, compared with those with lower educational attainment.
- Job insecurity is more frequently reported by young workers (21%), workers with lower educational attainment (20%), workers in elementary occupations (26%), and workers in manufacturing (23%).
- The Nordic countries (Finland, Denmark, Sweden and Norway) have the highest levels of employment quality, while eastern and southern countries (Turkey, the former Yugoslavian Republic of Macedonia, Montenegro, Albania, Bulgaria, Romania and Greece) have the lowest.
- Opportunities for workers to communicate with their superiors about work-related issues and participate in resolving them remain low. Just under half of all salaried workers in the EU (45%) report having an employee representative at their workplace. Workers who report the presence of an employee representative tend to work in larger organisations and in the civil service; they are also found mainly among older, higher-educated, high-skilled white-collar workers.
- Employees in precarious forms of employment are unduly exposed to adverse general work environments, reporting less favourable outcomes in terms of satisfaction, ability to stay in employment, and health and well-being.
- Jobs that strongly depart from the standard employment job type show less favourable results in terms of job satisfaction, reported ability to do the same job until the age of 60, sick leave, and health and well-being.

### Policy pointers

- The research points to the ongoing polarisation of the labour force in many European countries between, on one hand, jobs in the extremely time-flexible, highly-skilled niche of the labour market and, on the other, jobs in the numerically flexible, low-skilled segment with poor job content and poor reward. This polarity needs to be addressed in employment policies in order to maintain a sustainable labour force in the long term.
- Flexicurity policies need to address the negative consequences of poor-quality jobs for the well-being, health and job satisfaction of employees. Not tackling this issue will not only have adverse consequences for labour productivity, but is likely to also jeopardise the ability of employees to stay in employment until a later age.
- Developing professional skills and competences and continuous training are essential measures for increasing employability and hence – through improving access to employment contracts – increasing the quality of employment. Despite a strong political commitment to lifelong learning, just half of all European salaried workers underwent training in 2010. Among women, older workers, lower-skilled workers, workers in small companies, and workers in southern and eastern European countries, the figures are particularly low. Workers in unstable and precarious labour market situations should be targeted as a priority in training initiatives.

# Introduction

Work and employment are important policy domains for the European Union. European employment policy is not only geared towards increasing the number of people in employment, but also towards improving the quality of jobs. Improving the quality of jobs was pinpointed as one of the objectives of the European Employment Strategy at the Lisbon summit in 2000. It has also been adopted as part of the Europe 2020 flagship ‘Agenda for new skills and jobs’ initiative. According to European employment policy, high employment rates and high-quality jobs are not mutually exclusive. Rather, good-quality jobs are an important precondition for safeguarding sustainable working careers, employee motivation and productivity; minimising work-related disability and occupational accidents; and improving occupational health (Guest, 2008).

This report sets out to examine the quality of jobs. Measuring the qualitative aspects of jobs is far more complex than measuring the degree of employment participation. In the recent past, many initiatives have been taken to conceptualise job quality (Eurofound, 2012b; Holman and McClelland, 2011; Muñoz de Bustillo et al, 2009). However, a review of the literature reveals that the terms ‘quality of work’, ‘job quality’ and ‘quality of employment’ are often used interchangeably. Nevertheless, this quality is often analysed either on the basis of ‘the intrinsic characteristics of jobs’ (such as autonomy, demands and physical work load), on the one hand, and ‘the surrounding conditions and relations of employment’, on the other (Holman and McClelland, 2011).

This study aims to provide an in-depth analysis of the quality of employment conditions and relations as experienced by the European employed workforce. Employment conditions have to do with agreements between employees and their employer about the organisation of employment in terms of issues such as contractual forms, rewards, working hours and training. Employment relations refer to the way all stakeholders at work interact with each other, both in a formal (such as collective bargaining processes) and informal (such as contact with their supervisor or social support) sense. This report uses the term ‘quality of employment’ to indicate the domain of the study. This domain is far less developed in terms of empirical indicators than the field of intrinsic job characteristics (Gallie, 2009), which makes this report an important reference for formulating policy.

Quality of employment is here viewed in a broad way. It refers to those employment conditions and relations that help to guarantee various elements related to employment security. Security cannot be conceived solely in quantitative terms, as merely the continuation of employment. It must also be seen in qualitative terms, as the continuation of valuable features of employment, such as social rights, monetary and non-monetary rewards, the right of collective representation and participation, health and safety protection, and skills development (Hellgren et al, 1999; Standing, 2011). Good-quality employment also includes resources for increasing the employability of workers; opportunities for skills development in a job are crucial for realising the ‘Agenda for new skills and jobs’.

The analysis for this report is mainly based on data from the fifth European Working Conditions Survey (EWCS), conducted in 2010 (Eurofound, 2012a). Where appropriate, comparisons with earlier waves of the EWCS are made. The EWCS series provides comprehensive information on the employed European workforce and the quality of their jobs. These surveys have been conducted by the Eurofound every five years, since 1991.

This report has four objectives:

- to build indicators for different dimensions of the quality of employment;
- to identify problematic or advantageous situations regarding the quality of employment, as well as groups of workers requiring special attention;
- to examine the evolution of a number of selected indicators of the quality of employment;

- to investigate the potential relations between the quality of employment and intrinsic characteristics of jobs, as well as a set of selected outcomes reflecting the health and well-being of workers.

In addition, associations between average country-level overall quality of employment and a selected number of key socioeconomic indicators are tested.

# Background, conceptual framework and objectives 1

In Europe, most labour is performed as waged employment. The 30-year period after World War II was characterised by an increasing amount of regulation and protection of workers in waged employment (Boyer and Durand, 1993). This regulation took two forms:

- substantive regulation, aimed at establishing standards for wages, health and safety, working hours and protection against dismissal;
- procedural regulation, aimed at installing collective bargaining procedures to set standards or to resolve conflicts (Mückenberger, 1989, p. 273).

The resulting model of employment is known as the ‘standard employment relationship’, designed to foster:

- dialogue between workers and management;
- relatively high security of income, employment and representation (Standing, 1999);
- a situation where labour is not only exchanged for a wage, but for a broader set of implicit and explicit expectations and rewards (Bowles and Edwards, 1985).

This model, although never applied generally to the European labour force, provides a point of reference for comparing other types of employment arrangements (Mückenberger, 1989, p. 274).

From the end of the 1970s, employment arrangements increasingly evolved away from this model. This was firstly due to the emergence of a secondary labour market including so-called ‘non-standard forms’ or ‘atypical forms’ of employment (Facey and Eakin, 2010). Secondly, the standard model itself began to alter in the core labour market, through processes of downsizing and restructuring, as well as through the erosion of established worker rights, legal protection and collective bargaining procedures (Scott-Marshall, 2005). Neither change may have been applied to the entire labour market, but it is safe to say that a considerable number of workers are affected nowadays by these trends.

In general, moving away from the standard employment relationship has compromised employees’ protection and security (Rittich, 2004). However, through flexicurity policies, employees can find a new form of security for their careers, rather than of their jobs (Rousseau, 1995). Therefore, employment security and employability can be seen as connected characteristics of the quality of employment. This consideration forms the starting point of this analysis, aimed at contrasting the characteristics of existing employment arrangements with the typical features of the standard employment relationship. Since this process also affects ‘regular’ jobs, this study does not merely compare standard and non-standard forms of employment, but also explicitly analyses and compares a variety of characteristics of the quality of employment.

## Conceptual framework

As mentioned earlier, there are many models for conceptualising the quality of jobs (Muñoz de Bustillo et al 2009; Eurofound, 2012b). They need to take account of the roles and perspectives of various actors (the workers themselves but also co-workers, the companies that employ them, labour markets and institutions) and how they contribute to job quality at different levels (micro, meso or macro). This report will take as an initial starting point the level of the job, understood as a ‘position in a company’. This is the same perspective taken by Green and Mostapha in their report on *Trends in job quality in Europe* (Eurofound, 2012b).

In general, the different approaches to defining job quality share two characteristics.

- There seems to be a consensus that such evaluations should reflect the multiple components characterising a job (Eurofound, 2012b; Vandenbrande et al, 2012).
- An analytical distinction between ‘intrinsic job characteristics’ (work, job content and working conditions) and ‘characteristics of employment’ (employment conditions and employment relations) is often made.

The model used in this report is particularly inspired by two conceptual frameworks. The first is the one proposed by Holman and McClelland (2011) for the quality of jobs in three main domains:

- work quality – work organisation;
- employment quality – including wages and payment systems, security and flexibility;
- empowerment quality – including skills and development, engagement and representation.

The second is a Dutch–Belgian framework, which defines four dimensions of job quality (Vets et al, 2009). It can be summarised in four Dutch words beginning with ‘*arbeids*’, giving the framework the title 4A:

- *arbeidsinhoud* (job content);
- *arbeidsomstandigheden* (working conditions);
- *arbeidsvoorwaarden* (employment conditions);
- *arbeidsverhoudingen* (social relations at work).

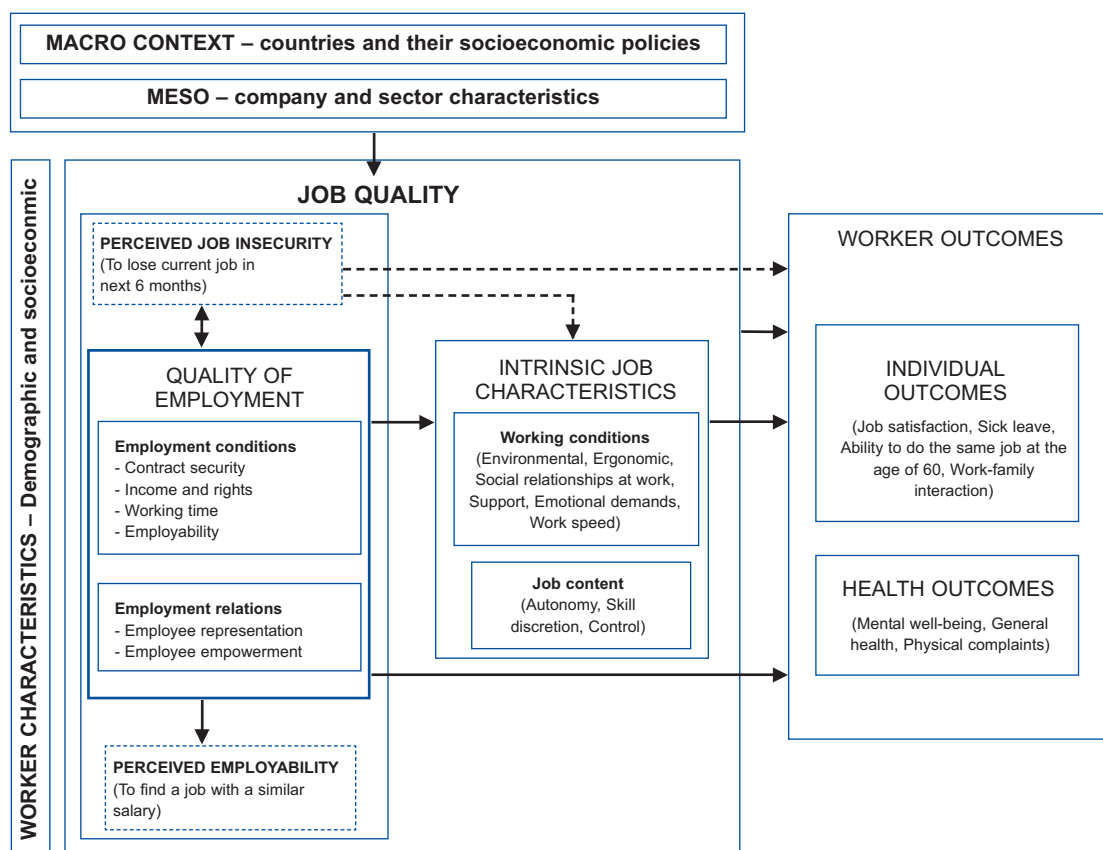
In the 4A framework, job content refers to the intrinsic nature of work tasks (whether they are varied, enriching, too complex or enable autonomy). Working conditions refer to the general physical, ergonomic, biological, chemical and psychosocial environment of work and various risks. Employment conditions concern the agreements between employees and their employer about the organisation of employment in terms of issues such as contracts, rewards, working hours and training. Social relations refer to the way all stakeholders at work interact with each other, both formally (such as collective bargaining processes) and informally (contact with supervisors or social support).

Other approaches, focused on the analysis of employment arrangements, have recently emerged in the field of research on precarious employment (Amable, 2006; Rodgers, 1989; Standing, 2011; Tangian, 2007a; Tucker, 2002; Vives et al, 2010). As noted above, the standard employment relationship model – offering high substantive and procedural regulation (Mückenberger, 1989) – is often used (implicitly or explicitly) as a reference model. The indicators of the quality of employment as applied in this report are basically consistent with the criteria used in these approaches; they take a ‘multidimensional’ perspective, while being focused on the analytically distinct domain of ‘employment characteristics’.

In line with the 4A model, the quality of employment (see Figure 1) is based on two main conceptual dimensions: ‘employment conditions’ and ‘employment relations’ (which overlaps with the 4A terminology ‘social relations’), both consisting of different subdimensions. In the research, to conceptualise the quality of employment and the adverse situation of precarious employment, objective job characteristics are used exclusively. This follows the approach taken by Green and Mostafa (Eurofound, 2012b) and excludes indicators that can be influenced by other individual characteristics of employees and their broader social situation (such as personal preferences, feelings, or household

composition). Other models, however, have included such subjective concepts (European Commission, 2001; Leschke et al, 2008; Tangian, 2007b). Although the framework used in this study builds on many of the same indicators as Eurofound (2012b), they are combined differently in order to allow analysis of employment conditions and employment relations as separate constructs, their relationship (together with measures of perceived job insecurity and perceived employability) to intrinsic job characteristics, and to outcomes for workers going beyond the ‘strict’ well-being approach adopted in Eurofound (2012b).

Figure 1: *Conceptual framework*



Note: Quality of employment is the domain considered in this research.

Source: *Elaborated by the authors*

According to the conceptual framework, the quality of employment is related to intrinsic job characteristics (working conditions and job content). In turn, both the quality of employment and intrinsic job characteristics have an influence on worker outcomes, such as job satisfaction, work–family interaction, mental well-being, and perceived general health.

Moreover, the quality of a job and the way it is experienced by individual employees (which is measured here through perceived job insecurity and perceived employability) are co-determined by the context. This context can be defined at the level of countries or at lower levels of aggregation (for example the organisation, or a specific department of an organisation). Finally, the different characteristics of employment and broader job quality are associated with demographic and socio-economic characteristics of employees.

## Analysing quality of employment

To analyse the subdimensions described above, 12 suitable indicators were selected from the third EWCS as the best representations of the subdimensions (see Table 1). Many of the selected indicators were available only among wage-earners, so it was decided to focus on this group, excluding self-employed people from the analysis. Although this decision obviously limits the general applicability of the results to the whole working population, it is beneficial, given the far more detailed analytic possibilities of the multidimensional model that is applicable among wage-earners. The armed forces were also excluded from the analysis due to the specificities of this occupational group.

The dimension of employment conditions is analysed through four subdimensions:

- contract security, measured by type of employment contract;
- income and rights, measured by low-waged jobs, non-wage benefits, uncompensated flexible working times, and information on health and safety;
- working time, measured by (involuntary) part-time employment, long working hours and regular working hours;
- employability, measured by training paid or provided by the employer, or on-the-job training.

Employment relations consists of two subdimensions:

- opportunities for employee representation;
- employee empowerment.

Opportunities for employee representation refers to procedures for social dialogue or formal procedures for individual problem-solving. This subdimension is measured through the availability of an employee representative. Employee empowerment takes into account the informal employment relations between employees and employers. There are two indicators representing employee empowerment:

- opportunities for communication and participation of employees with their superiors;
- self-determination of the work schedule.

Based on a selection of these indicators an overall employment quality indicator is calculated as well.

Finally, two additional indicators are included as intermediate variables – reflecting more subjective perceptions of the quality of employment:

- perceived job insecurity (a person's perceived likelihood of losing their current job in the next six months)
- perceived employability (a person's perceived opportunities of finding a job with a similar salary in the event of losing or leaving their current job).

Because of their different conceptual status as intermediate variables, they are not included in the employment quality concept. Instead they are situated within the pathway between the quality of employment and worker's well-being, since they contain a certain amount of subjectivity informed by preferences or personality as well as being related to anticipations of the local labour market of the respondent, whatever that is.



A more detailed conceptualisation of the quality of employment, and of its different dependent, intermediate, controlling and stratification variables is outlined in the technical annex.

Table 1: *Quality of employment: dimensions, indicators and original variables in EWCS 2010 dataset*

Employment conditions		
Indicators	Description	Variables used
<b>Contract security</b>		
Type of employment contract	Type and duration (including self-employment)	q6; q7;q8a; q8b;
<b>Income and rights</b>		
Low-waged jobs	Quartile of the European distribution of income	inc_est
Non-wage benefits	Earnings provided by the main job in form of benefits or advantages such as medical services and access to shops	ef7j
Uncompensated flexible working time	Non-compensated Sunday work or non-compensated overtime	q34; ef7e
Information on health and safety	Degree of information regarding health and safety risks	q30
<b>Working time</b>		
(Involuntary) part-time employment	(Involuntarily) working fewer than 35 hours per week	q18; q22; q19
Long working hours	Working more than 48 hours (and in free time)	q18; q22; q42
Regular working hours	Working the same number of hours per day and per week, same number of days per week and fixed starting and finishing times	q37a; q37b; q37c; q37d
<b>Employability</b>		
Training	Training paid or provided by the employer, or on-the-job training	q61a; q61c
Employment relations		
Indicators	Description	Variables used
<b>Employee representation</b>		
Employee representative	Employee acting as an employee representative at workplace	q63
<b>Employee empowerment</b>		
Communication and participation with superiors*	Consultation and participation in decision-making	q51c; q51d; q51e; q58e
Self-determination over work schedule	Self-determination of working hours	q39
Subjective quality-of-employment indicators		
Indicators	Description	Variables used
Perceived job insecurity	Perceived likelihood of losing current job in the next 6 months	q77a
Perceived employability	Perceived likelihood of finding a job of similar salary in the case of losing or quitting the current job	q77f

\* Scale indicating frequency : 'always', 'most of the time', 'sometimes', 'rarely', 'never' and 'refusal'.

Source: *Elaborated by the authors, based on the EWCS 2010*

The current study hypothesises, in line with policy actions, that employment conditions and relations play an important role in shaping intrinsic job characteristics as well as workers' outcomes: it aims to identify and highlight this role.

As part of the construction of Europe, a number of labour law directives setting minimum requirements notably for collective redundancies, information and consultation, fixed-term contracts and temporary work have been adopted with the intention of balancing the intensified competition of the internal market and its potentially damaging consequences for workers with a degree of legislative protection.

Furthermore, a key concern in EU policymaking in recent years has been to modernise European labour markets. In its *Annual Growth Survey 2013*, part of its drive for a ‘job-rich recovery’ post-crisis, the European Commission recommended ‘simplifying employment protection legislation and developing flexible working arrangements, including short-time working arrangements and work environments conducive to longer working lives. Reducing the gaps in employment protection between different types of work contracts should also help to reduce labour market segmentation’ (European Commission, 2012).

Nevertheless, different legal and institutional traditions are partly still reflected in the great variety of local employment conditions and relations systems; furthermore, regulation differences between Member States have been rising, as content and timing of reforms have very specific impacts.

It should be mentioned that the current approach differs from that taken in the *Trends in job quality* (Eurofound, 2012b) report for three main reasons: first, for its focus on employment conditions and employment relations; second, because it explores more worker outcomes; and third, for contributing to an understanding of the role of Member States’ national policies and traditions in mitigating or not the relationship between employment conditions and relations and workers’ outcomes. Indeed, items included in the *Trends in job quality* report were selected because research in epidemiology had proved that these characteristics of work had a causal relationship, positive or negative, with health and well-being. This report goes beyond this well-being approach to explore the relationship between employment conditions and employment relations with other outcomes for workers, such as work–life balance, career security and the subjective satisfaction with working conditions.

### Structure of the report

This report consists of two parts, the first descriptive and the second analytical. The introduction and the second chapter on the conceptual framework are followed by a chapter providing information on the separate indicators incorporated in the model of the quality of employment, as well as on the perceptual indicators of job insecurity and perceived employability. In this chapter, the general and country-level prevalence, as well as the demographic, socio-economic and organisational-level associates of the indicators are shown. In addition, a selected number of trend analyses over the different editions of the EWCS are reported. Chapters 3 and 4 are more analytical. In Chapter 3, findings on the overall score for employment quality are described. Associations with socio-demographic, company-level and other quality of work characteristics, as well as the country-level distribution are provided. In Chapter 4, we describe a typology of workers that is composed by their specific combinations of scores on the indicators of the quality of employment. The five types of workers who emerged from this latent class cluster analysis are subsequently related to a number of outcomes regarding the individual well-being and health of employees. The report also includes a final chapter summarising the findings and their policy consequences.

# Distribution of employment quality indicators in Europe 2

Quality of employment is related to macro-social and organisational factors, as well as individual characteristics. This chapter describes how the quality-of-employment conditions and relations (see Table 2 in Chapter 3) are distributed according to:

- socio-demographic characteristics of employees (gender, age and educational attainment);
- occupational characteristics (occupation, economic sector and company size);
- countries.

In addition, similar analyses have been performed for the two selected subjective indicators associated with the quality of employment: perceived employability and perceived job insecurity. Trends according to data from previous rounds of the EWCS are also reported (when possible), along with the description of each indicator.

The objectives of this chapter are to highlight how the factors listed above (socio-demographic and occupational characteristics, countries) are related to the quality of employment, how the latter has evolved over time, and finally to identify groups of employees requiring special attention regarding the quality of their employment conditions and relations. A selection of the most relevant results is shown.

Low educational attainment includes pre-primary education; primary education or first stage of basic education; lower secondary or second stage of basic education. Medium educational attainment includes upper secondary education and post-secondary non-tertiary education. High educational attainment includes first stage of tertiary education and second stage of tertiary education.

Occupation is reported according to the International Standard Classification of Occupations (ISCO-08) categories, while economic sector is reported in four categories based on the classification of economic activities in the European Community (NACE Rev. 2). Because country composition changed between the successive waves of the EWCS since 1991, trends refer exclusively to the EU27 Member States. In all other cases, data refer to the whole set of the 34 countries where the EWCS 2010 was conducted: EU27 Member States; Croatia, a candidate country in 2010 and when this report was written; Norway, a member of the European Free Trade Association (EFTA); the former Yugoslav Republic of Macedonia, Montenegro and Turkey (candidate countries); and Albania and Kosovo (potential candidate countries).

The chapter is organised into four sections:

- employment conditions;
- employment relations;
- perceived employability and perceived job insecurity;
- a summary with a description of the identified groups of employees requiring special attention.

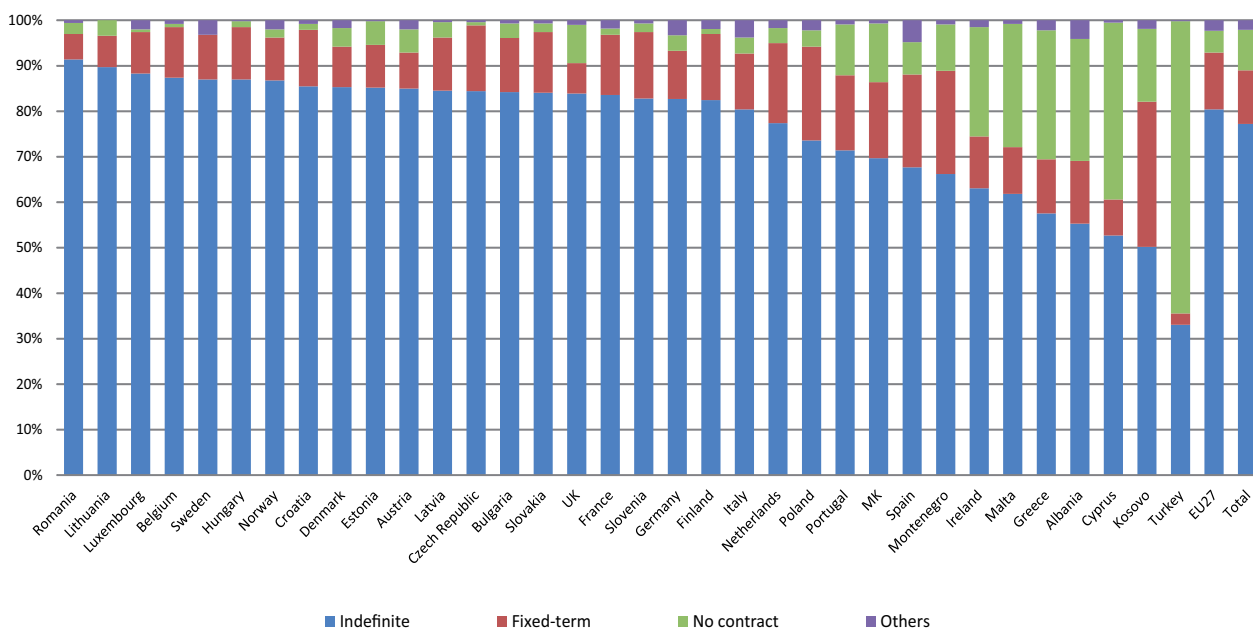
## Employment conditions

### Contract security

Regarding the type of employment contract, the proportion of employees with indefinite (open-ended) contracts in the EU27 was 83% in 2000, dropping to 78% in 2005 and recovering to 80% in 2010. At the same time, the proportion of fixed-term contracts was 10% in 2000, increasing to 12% in 2005 and remaining at the same level in 2010; while the proportion of employees working without a contract decreased from 7% in 2005 to 5% in 2010.

For most occupations, an indefinite contract was the most common employment arrangement in 2010 (more than 75%). However, some occupations showed less favourable figures, as was the case for elementary workers (61%), skilled agricultural and fishery workers (62%), and service, shop and market sales workers (68%). Widening our scope to the whole set of countries surveyed in the EWCS 2010, the distribution of the type of employment contract varied considerably between them (see Figure 2). While in most countries more than 75% of employees held an indefinite contract, providing greater contract security, there were countries where less than 60% of employees had this type of contract, most noticeably Turkey (33%), Kosovo (50%), Cyprus (53%), Albania (55%) and Greece (58%).

Figure 2: Distribution of type of employment contract by country



Note: MK = former Yugoslav Republic of Macedonia (MK corresponds to ISO code 3166. This is a provisional code that does not prejudice in any way the definitive nomenclature for this country, which will be agreed following the conclusion of negotiations currently taking place under the auspices of the United Nations – see [http://www.iso.org/iso.country\\_codes/iso\\_3166\\_code\\_lists.htm](http://www.iso.org/iso.country_codes/iso_3166_code_lists.htm)).

However, only 5% of employees in Europe overall were working without a contract in 2010, but this figure was significantly higher among employees under 35 years of age (13%) and those with lower educational attainment (14%). The same held for:

- solo workers (one-employee organisations) (33%);
- employees in very small companies (two to four workers) (20%);
- service, shop and market sales workers (14%);

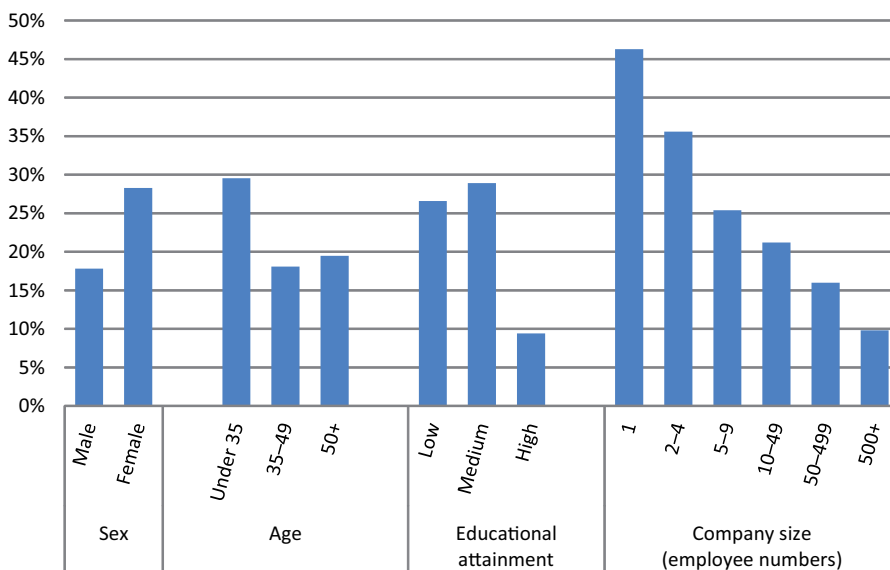
- skilled agricultural and fishery workers (17%);
- elementary workers (21%).

In addition, in some countries there was a very high proportion of workers without a contract, for example, Turkey (64%), Cyprus (39%), Greece (28%), Malta (27%), Albania (27%) and Ireland (24%) (see Figure 2). This might indicate that in this category there was a mix of people legally and informally working without a contract.

### Income and rights

In 2010, low-waged jobs (those in the first quartile of the income distribution) were more frequent among women (28%), young workers (30%), those with low (27%) and medium educational attainment (29%) and employees in smaller organisations (up to 46%) (see Figure 3). They were also more frequent among workers in elementary occupations (46%), and service, shop and market sales workers (38%). Non-wage benefits refer to earnings provided by the main job in the form of benefits or advantages such as medical services, or access to shops. There was a clear increase of these benefits, from 3% in 2000 to 17% in 2010. Non-wage benefits in 2010 were more often offered to men (18%) than women (15%), to workers with higher educational attainment (22%), legislators, senior officials and managers (27%), and increased gradually with company size.

Figure 3: *Proportion of workers in the first income quartile, by gender, age, educational attainment and company size*



Uncompensated flexible working times (uncompensated overtime and/or Sunday work) affected about 25% of EU27 European employees in 2000, but has been decreasing since then. In 2010, uncompensated flexible working times were reported by 20% of workers in wage employment, and were especially prevalent among those who:

- worked alone (35%);
- worked in very small companies (two to four workers) (28%);
- worked in the agricultural sector (37%).

At country level, very high proportions of workers reported uncompensated flexible working times in Turkey (53%), Albania (49%), Montenegro (48%) and former Yugoslav Republic of Macedonia (48%).

As for information on health and safety risks, between 2000 and 2010 a high percentage of EU27 workers reported being well informed or very well informed (about 90%). This proportion grew with company size, whereas the proportion that was not very well informed or not at all well informed (ranging from 6% to 16%) was greater among younger workers, skilled agricultural and fishery workers and those in elementary occupations.

### Working time

In 2010, 77% of European wage-earners had a full-time job (35 hours or more), while the remainder had part-time jobs (fewer than 35 hours), either voluntary (18%) or involuntary (5%). Voluntary part-time jobs were more frequent among women (30%) than men (7%), and among workers over 50 years of age (21%) than younger ones (17%), as well as in certain occupations, such as:

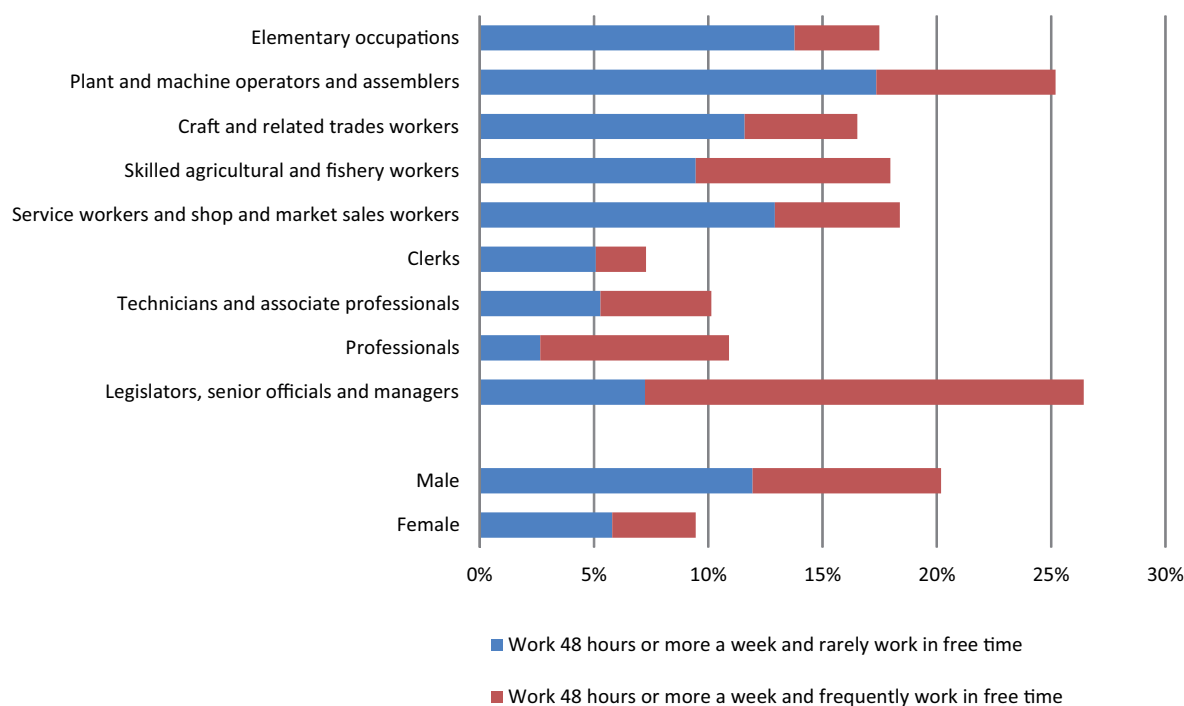
- service, shop and market sales workers (26%);
- professionals (26%);
- elementary occupations (23%);
- public administration and other services (28%).

These numbers decrease as the size of the company decreases.

Involuntary part-time jobs (working less than 35 hours while wanting to work more) were also more frequent among women (7%) than men (2.8%), and among workers in elementary occupations (10%). However, involuntary part-time work was more frequent among workers aged under 35 (6%) than older workers (3.7%). It was, however, more frequent among civil service workers and other services (6%), as well as in the agricultural sector (6%), and in small companies (less than four workers) (up to 10%).

Long working hours (48 hours or more a week) were reported by 11% of the European employed workforce in 2010. As Figure 4 shows, the number of people working long hours was distributed differently in comparison with those working part time, being more frequent among men (20%), plant and machine operators and assemblers (25%), and legislators, senior officials and managers (26%). It was also more common in very small companies (four workers or fewer) (23%), and especially, in the agricultural sector (27%). About 50% of workers with long working hours also frequently worked in their free time, especially solo workers (one-employee organisations) (10%), and legislators, senior officials and managers (19%).

Figure 4: *Proportion of workers who work more than 48 hours a week and work in their free time, by occupation and gender*



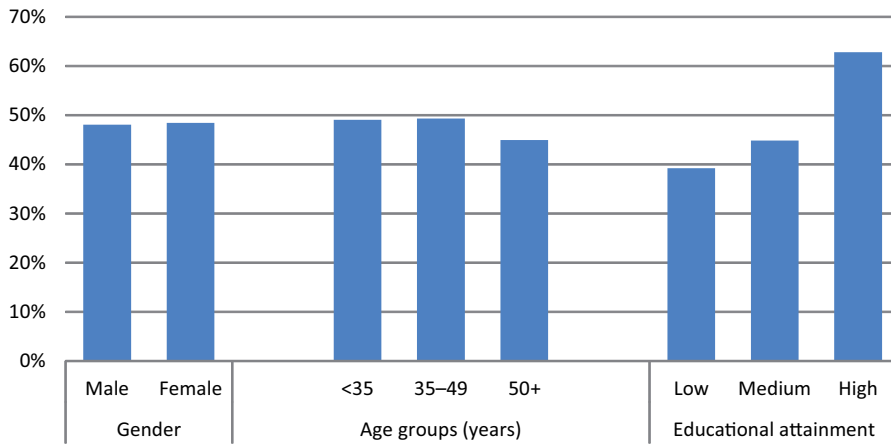
Regular working hours (working the same number of hours per day and per week, with the same number of days per week, and fixed starting and finishing times) were reported by 51% of EU waged-workers in 2010. It was more frequent among craft and related trades workers (64%), clerks (63%), and elementary occupations (61%), as well as the industry sector (60%). In Albania, Portugal, Kosovo and Cyprus over 72% of their employed workforce reported highly regular working hours. Women reported a higher degree of regularity.

### Employability

Developing professional skills and competences and continuous training are essential resources for increasing employability and, by extension, through its role in improving access to employment contracts, the quality of employment. The proportion of EU27 employees who underwent training (paid or provided by the employer, or on the job training), was very similar in the 2000–2001 and 2005 ECWS waves (about 43%), but in 2010, an overall 50% of all surveyed employees reported having had training in the previous 12 months.

While there were no differences in the prevalence of training between men and women, it was less frequent among older workers (50 years or more) (45%). However, the most striking difference in the prevalence of training was related to the employee's level of education (see Figure 5), being 39% for those with low educational attainment and 63% for those with high educational attainment. Training was also reported less frequently by skilled agricultural and fishery workers (26%) and employees in elementary occupations (27%). Conversely, training was more frequent among professionals (68%), technicians and associate professionals (62%), legislators, senior officials and managers (62%) and those in the public administration sector (57%), and increased remarkably as company size increased.

Figure 5: Proportion of workers reporting having undergone training during the previous year, by gender, age group and education



## Employment relations

### Employee representation

Overall, 45% of waged workers reported that there was an employee acting as an employee representative at their workplace, a number which increased with company size (up to 79%). Employee representatives were more frequently reported (over 50%) by male, older and higher-educated workers; by professionals, legislators, senior officials and managers, plant and machine operators and assemblers (see Figure 6); and by those working in the public administration. Conversely, it was less common among:

- female employees (42%);
- people under 35 years old (38%);
- people with a low level of education (39%);
- skilled agricultural and fishery workers (30%);
- service, shop and market sales workers (31%);
- those in elementary occupations (34%);
- those in the agriculture sector (27%).



Figure 6: *Proportion of workers reporting they have an employee acting as an employee representative at their workplace, by occupation*



### Employee empowerment

In 2010, 48% of European waged-workers reported good communication and participation with their superiors. This percentage increased to over 60% in the case of higher-educated employees, legislators, senior officials and managers, and professionals (see Figure 7). In turn, the lowest prevalence corresponded to those employees with low educational attainment (39%), and those in elementary occupations (27%).

Figure 7: *Proportion of workers reporting good communication and participation with superiors, by occupational category and educational attainment*



Trends for 2005–2010 suggest a general decrease in the ability to control personal work schedules. The capacity to determine working hours entirely decreased (7%–5%), as well as the opportunity to adapt working hours within certain limits (18%–16%) and the opportunity to choose between several fixed working schedules (9%–8%). In 2010, it was more common that employees' working times were set by the company without any opportunity for workers to introduce changes (66%–71%).

Among employees responding to the EWCS 2010, it was more common for men (6%), older workers (7%), legislators, senior officials and managers (17%), and solo workers (21%) to be able to determine their own working times.

### Subjective quality-of-employment indicators

These indicators provide an assessment of job insecurity for a specific individual in a specific labour market.

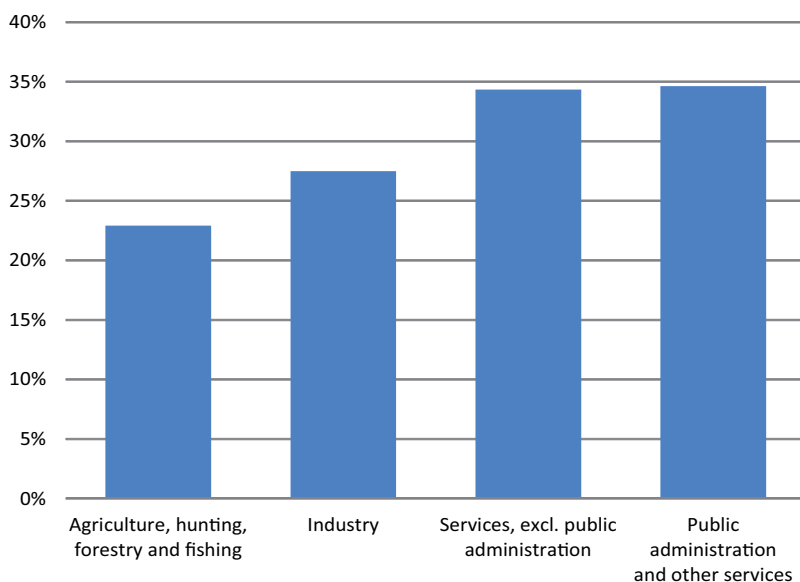
#### Perceived employability

Overall, only 32% of European employed workers in 2010 reported good employability prospects (to be able to find a job of similar salary, in the event of losing or quitting their current job). Good prospects were reported most frequently by:

- those with high educational attainment (38%);
- younger workers (40%);
- professionals (40%);
- service, shop and market sales workers (36%);
- legislators, senior officials and managers (35%);
- technicians and associate professionals (33%);
- public administration workers (35%);
- those in the services sector (34%) (see Figure 8).

Good prospects of employability were highest in Norway (58%), followed by Netherlands (50%), Denmark (47%), Finland (45%), the UK (44%), Sweden and Belgium (43%), and France (41%).

Figure 8: *Proportion of workers reporting good prospects of employability, by economic sector*



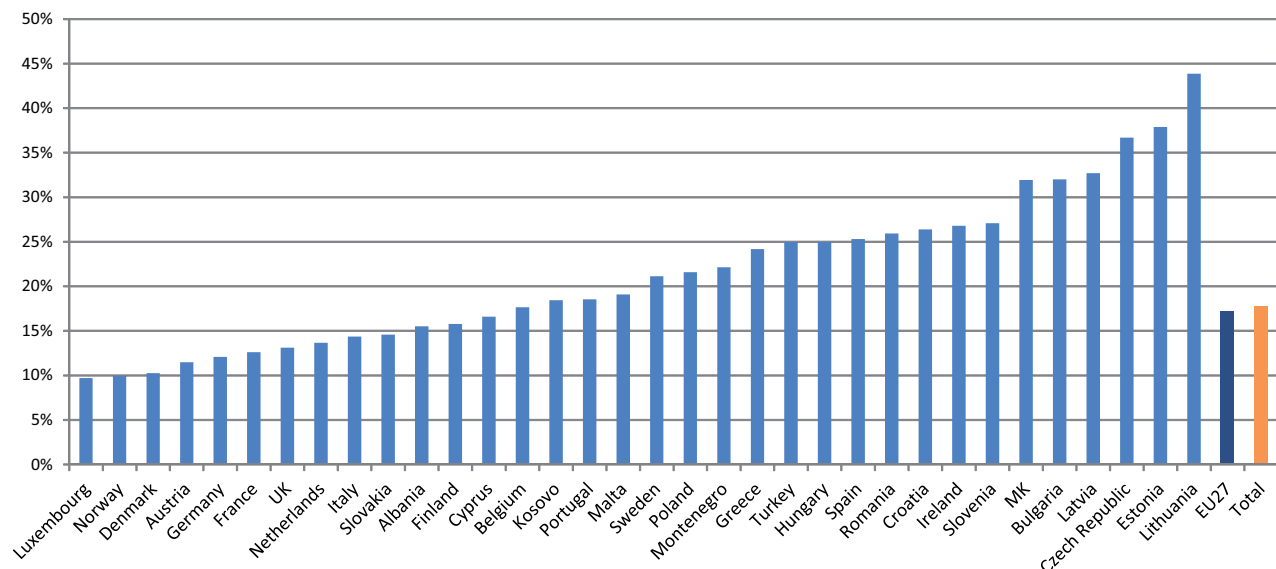
### Perceived job insecurity

Perceived job insecurity has been measured by the extent to which workers agree that they might lose their current job in the next six months. This is one of the most accepted indicators studied in the scientific literature and has been shown to be a good predictor of future unemployment (Campbell et al, 2007; Stephens, 2004; Dickerson and Green, 2009; Green, 2011). The categories ‘agree’ and ‘strongly agree’ were considered to indicate perceived job insecurity.

In general, perceived job insecurity increased for the EU27 between 2005 (15%) and 2010 (17%). In 2010, job insecurity was more frequently perceived by young workers (under 35 years) (21%), workers with lower educational attainment (20%), craft and related trades workers (22%), plant and machine operators and assemblers (23%), those in elementary occupations (26%), and workers in the industry sector (23%).

European countries differed significantly from one another with regard to their employed workforce’s perception of job insecurity (see Figure 9). While in Luxembourg, Norway and Denmark there was a very low prevalence of perceived job insecurity, there was a high prevalence in the Czech Republic, Estonia and Lithuania.

Figure 9: Prevalence of perceived job insecurity, by country



Note: MK = former Yugoslav Republic of Macedonia (MK corresponds to ISO code 3166. This is a provisional code that does not prejudice in any way the definitive nomenclature for this country, which will be agreed following the conclusion of negotiations currently taking place under the auspices of the United Nations – see [http://www.iso.org/iso.country\\_codes/iso\\_3166\\_code\\_lists.htm](http://www.iso.org/iso.country_codes/iso_3166_code_lists.htm)).

### Summary

The description of the distribution of quality-of-employment indicators in the EU employed workforce allows groups requiring special attention to be identified. These are characterised by the poor quality of their employment, their (perceived) poor employability and their higher perceived job insecurity.

According to the conceptual framework (Figure 1) the distribution of quality-of-employment indicators has been described from a micro level (individual characteristics), meso level (company and sector characteristics) and macro level (country) point of view. Here the most salient aspects of the micro and meso levels are reviewed briefly.

First, from a micro-level perspective, women more frequently had low-waged jobs and part-time jobs, while men worked longer hours, had more opportunities to determine their working hours, and received higher wages and non-wage benefits more frequently. Young workers had the highest percentage of jobs without a contract and low-waged jobs, and the highest perceptions of job insecurity, while older workers received less training (either paid or provided by the employer or on-the-job training). Workers with lower educational attainment more often worked without a contract, were in low-waged jobs, and had a high perception of job insecurity, together with lower workplace empowerment, as assessed by a poorer communication and participation with their superiors. In contrast, a greater number of workers who had a higher level of education had permanent contracts, received higher wages and more non-waged benefits, had better communication and participation with superiors, received more training and had a better perception of future employability.

Second, from a meso-level perspective, and with regard to the occupational level, elementary workers reported the worst levels of quality-of-employment indicators, with fewer permanent contracts and more no-contract jobs, in addition to higher perceived job insecurity. Moreover, while they worked at more regular times, they tended to have low-waged jobs, and were offered less training and less participation and communication opportunities with their superiors. Other low-skilled blue-collar employees, such as plant and machine operators and assemblers, reported long working hours and a high perception of job insecurity. Service, shop and market-sales workers are low-skilled white-collar workers, few of whom had permanent contracts, and many who had no contract at all, and who were in low-waged jobs. Among high-skilled blue-collar workers, there were groups with poor employment conditions indicators that also require attention, as was the case of agricultural and fishery workers, who had fewer permanent contracts and more no-contract jobs, were offered less training and were not very well informed about health and safety issues at work; and craft and related trades workers, who, despite high regular working hours, had a high perception of job insecurity. In contrast, highly skilled white-collar workers had the most satisfactory employment indicators, except for long working hours, as in the case of legislators, senior officials and managers who sometimes also had to work during their free time.

As for economic sectors, workers employed in agriculture, forestry and fishing frequently did unpaid overtime work on Sundays and had long working hours. Workers in the industrial sectors reported highly regular working hours but also high job insecurity, while civil servants and those in other services sectors tended to have more involuntary part-time jobs.

# Individual and country-level attributes of employment quality 3

## Introduction

In this chapter, a general picture of the quality of employment conditions and relations is drawn by means of an overall score of employment quality. Such a single measure has the advantage of providing an overall view on employment quality. In contrast, a limitation is its lack of specificity: by summing all indicators together, it becomes impossible to make fine-tuned diagnoses on the reasons why specific groups or countries have favourable or less favourable scores. Therefore, the overall score of employment quality described in this chapter provides a summary that needs to be complemented by the more detailed description of the separate indicators in the previous chapter. This score is specifically focused on the quality of employment conditions and relations, which is the central objective of this report.

Twelve indicators are included in the overall employment quality score:

- type of employment contract;
- low-waged jobs;
- non-wage benefits;
- uncompensated flexible working times;
- information on occupational health and safety;
- (involuntary) part-time jobs;
- long working hours;
- regular working hours;
- training paid or provided by the employer;
- knowledge about the availability of an employee representative;
- opportunities for communication and participation with superiors;
- control over personal work schedule.

These indicators are all recoded into a 0–1 range and subsequently summed and standardised to an overall score ranging from 0–100.

All indicators have been given equal weights in the overall score. This choice may present another issue for discussion. Previous studies have varied the weights of the constituting indicators (Holman and McClelland, 2011; Leschke et al, 2008). For example, Holman and McClelland (2011) use the strength of the relationships with outcomes, such as well-being or job satisfaction, as criteria for determining weights. This may be a viable practice; however it also introduces new and potentially uncontrollable methodological concerns related to reverse causality, trait and measurement bias (see Eurofound 2012b, p.19), as well as the risk of making tautological interpretations when subsequently using the summed score as a predictor for the same or similar outcomes. Given this counter argument and the rather low correlations between the 12 indicators, attaching an equal weight to each item is considered the safest methodological choice. Our choice for equal weights can thus be considered as the most cautious option in the absence of hard criteria supporting the allocation of more specific weights to each indicator.

A further point of discussion concerns the ‘ingredients’ of a summed score for employment quality. Its constituting indicators are initially selected on conceptual grounds. Moreover, the rather low mutual correlations between the selected indicators are an indication that each of them represents a unique subdimension of the employment quality construct. A specific point of consideration could be the incorporation of wages as an indicator. Since the PPP-corrected<sup>1</sup> income indicator is derived from the income distribution at European level it may have influenced the country-level distribution of employment quality. Therefore the analyses have been repeated while omitting the indicator for ‘low waged jobs’ from the summed score. Analyses with this restricted employment quality indicator show largely the same trends. It may also be questioned whether the employment quality score should incorporate indicators of the quality of employment relations (such as the availability of an employee representative, communication and participation with superiors and self-determination over work schedules). Therefore, a score not including these three indicators is also calculated. Additional analyses show that omitting these indicators has an impact on the strength of the relationships with intrinsic job characteristics (such as job control) and various outcomes (such as perceived job insecurity, ability to stay in employment and job satisfaction). Given these considerations, it has been decided to report the results based on the overall indicator incorporating the wage and employment relations indicators.

This chapter deals firstly with the distribution of overall employment quality according to a number of basic demographic and socioeconomic characteristics of the employees, as well as characteristics of their employing organisations. Relationships with measures of intrinsic job characteristics, as well as associations with a selected number of outcomes are also shown. Finally, country differences in the distribution of the overall score are described.

The overall employment quality score follows a normal distribution in the total sample of wage-earners. The mean score is 63 with a median of 67 and a standard deviation of 15. High scores indicate high overall employment quality.

### Associations with employee-level and organisational-level attributes

In Table 2, the mean prevalence of the overall employment quality score is reported according to a number of demographic and socioeconomic indicators. The ‘eta score’ can be interpreted as a measure for the strength of the association, where a score of 1 would mean that both associated indicators determine each other completely. In the social sciences, associations with a strength of 0.20 or 0.30 are considered as quite strong.

There is no significant difference in employment quality between men and women. Age is significantly related to employment quality: young workers experience a somewhat lower mean employment quality score. A stronger association can be seen with educational attainment. Employees with a higher educational level have, on average, higher overall employment quality, compared with those with lower educational attainment. There is also a strong relationship with occupational groups. The most advantageous employment quality scores are seen among professionals, technicians and associate professionals, and legislators, senior officials and managers. The lowest levels of employment quality are reported by employees in elementary occupations, service, shop and market sales workers, and skilled agricultural and fishery workers. These results are quite robust when women and men are considered separately.

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<sup>1</sup> PPP = Purchasing power parity

Table 2: Mean of overall employment quality in relation to gender, age, educational attainment and occupational group

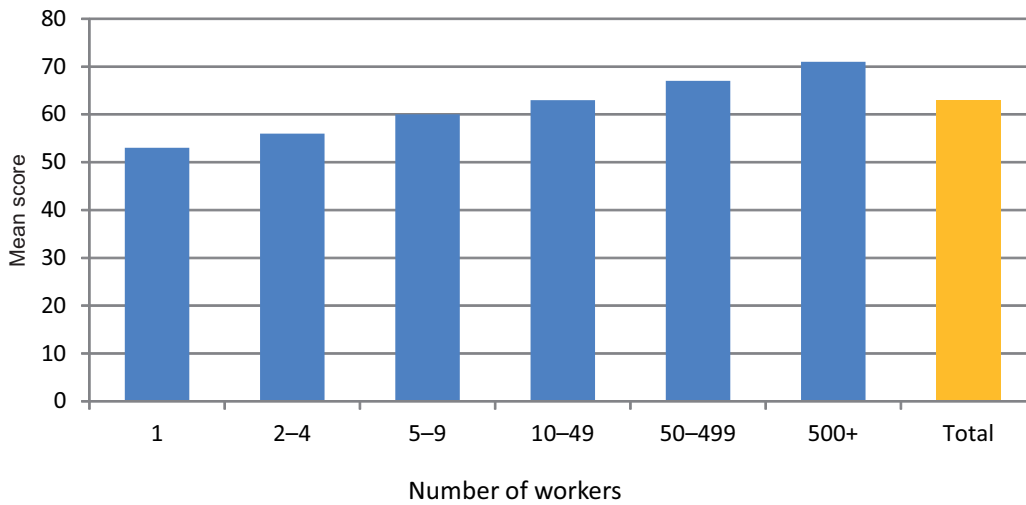
	Women		Men		Overall		Eta (overall)
	Mean	N	Mean	N	Mean	N	
<b>Gender</b>	63	13,599	63	11,280	63	24,879	0.01
<b>Age</b>							0.15***
<35 years	61	3,810	60	4,999	60	8,809	
35–49 years	65	4,944	65	5,415	65	10,359	
50+ years	65	2,501	65	3,146	65	5,648	
<b>Total</b>	<b>63</b>	<b>11,256</b>	<b>63</b>	<b>13,560</b>	<b>63</b>	<b>24,816</b>	
<b>Educational attainment</b>							0.30***
Low	61	3,280	60	4,478	60	7,758	
Medium	62	4,346	62	5,468	62	9,814	
High	67	3,641	68	3,634	68	7,275	
<b>Total</b>	<b>63</b>	<b>11,276</b>	<b>63</b>	<b>13,580</b>	<b>63</b>	<b>24,847</b>	
<b>Occupational group</b>							0.35***
Legislators, senior officials and managers	68	451	68	848	68	1,300	
Professionals	69	1,887	68	1,691	69	3,578	
Technicians and associate professionals	68	2,395	69	2,062	68	4,457	
Clerks	65	2,205	66	946	66	3,151	
Service, shop and market sales workers	58	2,396	56	1,301	57	3,697	
Skilled agricultural and fishery workers	55	61	59	250	60	311	
Craft and related trades workers	59	357	63	3,012	62	3,369	
Plant and machine operators and assemblers	60	444	60	2,114	60	2,558	
Elementary occupations	54	1,083	55	1,375	54	2,458	
<b>Total</b>	<b>63</b>	<b>11,280</b>	<b>63</b>	<b>13,599</b>	<b>63</b>	<b>24,879</b>	

Note: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Figure 10 gives an overview of the association between overall employment quality and the size of the employing organisation. Employees from smaller organisations have, on average, lower scores of overall employment quality. This association shows a clear gradient pattern, with employees who work alone ( $n = 533$ ) in the least favourable situation. Note that this category is composed of respondents who indicated they worked as employees, since self-employed people have been excluded from the analyses.

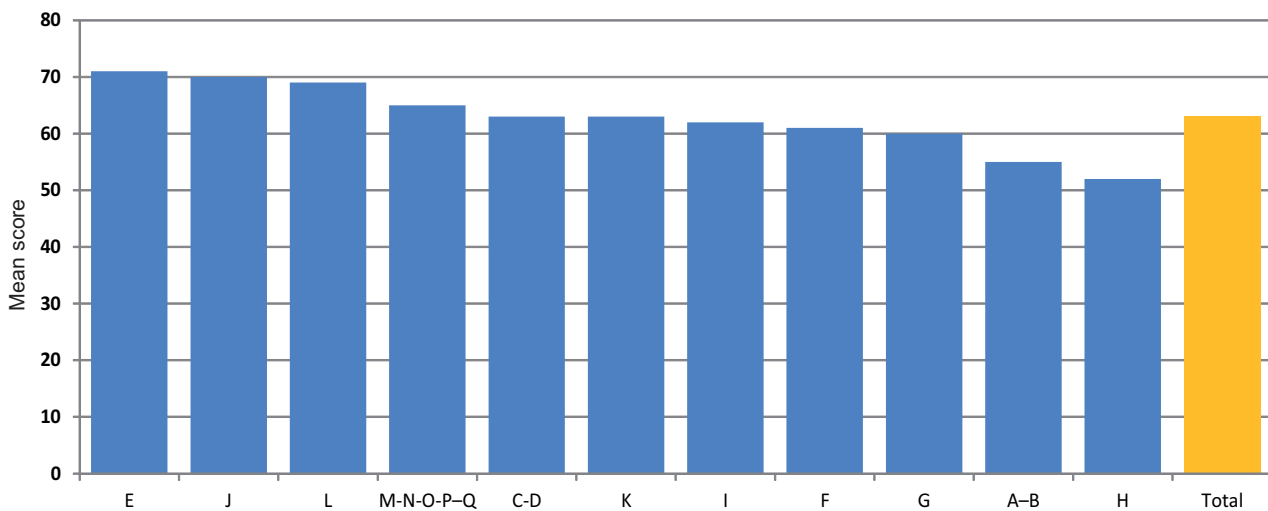
Figure 11 shows the associations between the overall employment quality score and the NACE-classification of economic sectors. There is a clear association between overall employment quality and economic sectors. Employees working in the hospitality sector (H) have, on average, the lowest employment quality. They are closely followed by primary sector workers (A–B). Particularly high average scores are seen in the electricity sector (E) and in the financial (J) and public sectors (L).

Figure 10: Mean of overall employment quality in relation to organisational size



Note: eta = 0.306\*\*\* (p <0.001)

Figure 11: Mean of overall employment quality in relation to economic sector



Note: eta = 0.306\*\*\* (p <0.001)

### Relationship between employment quality and intrinsic job characteristics and work-related outcomes

In Table 3, bivariate correlations between the overall employment quality score and a number of selected indicators of intrinsic job characteristics are shown:

- participation in team work;
- job control;
- co-worker support;



- superior support;
- unwanted social contacts at work;
- environmental risks and ergonomic risks.

A bivariate correlation is a measure for the strength of a relationship between two variables. The value of a correlation can vary between -1 and 1, where a value of 1 points to a situation where the two variables are perfectly predicting each other. Negative values indicate negative associations: a low score on one variable means a high score on the other. The table shows clear and significant positive associations between employment quality and participation in teamwork, job control, co-worker support and superior support. This means that employees with higher overall employment quality also tend to experience more chances to be involved in teamwork, have a high level of control over their work tasks and more social support from their co-workers and superiors. Furthermore, employees with high employment quality report less frequently being confronted with unwanted social contacts and exposure to environmental and ergonomic risks.

Table 3: *Relationship of employment quality to indicators of intrinsic job characteristics and work-related outcomes*

	Overall employment quality Correlation
<b>Intrinsic job characteristics</b>	
Teamwork	0.12***
Job control	0.32***
Co-worker support	0.15***
Superior support	0.16***
Unwanted social contacts	-0.03***
Physical risks (environmental)	-0.10***
Physical risks (ergonomic)	-0.24***
<b>Work-related outcomes</b>	
Perceived job insecurity	-0.23***
Perceived employability	-0.01
Ability to stay in employment	0.26***
Advantageous work–family interaction	0.20***
Job satisfaction	0.27***

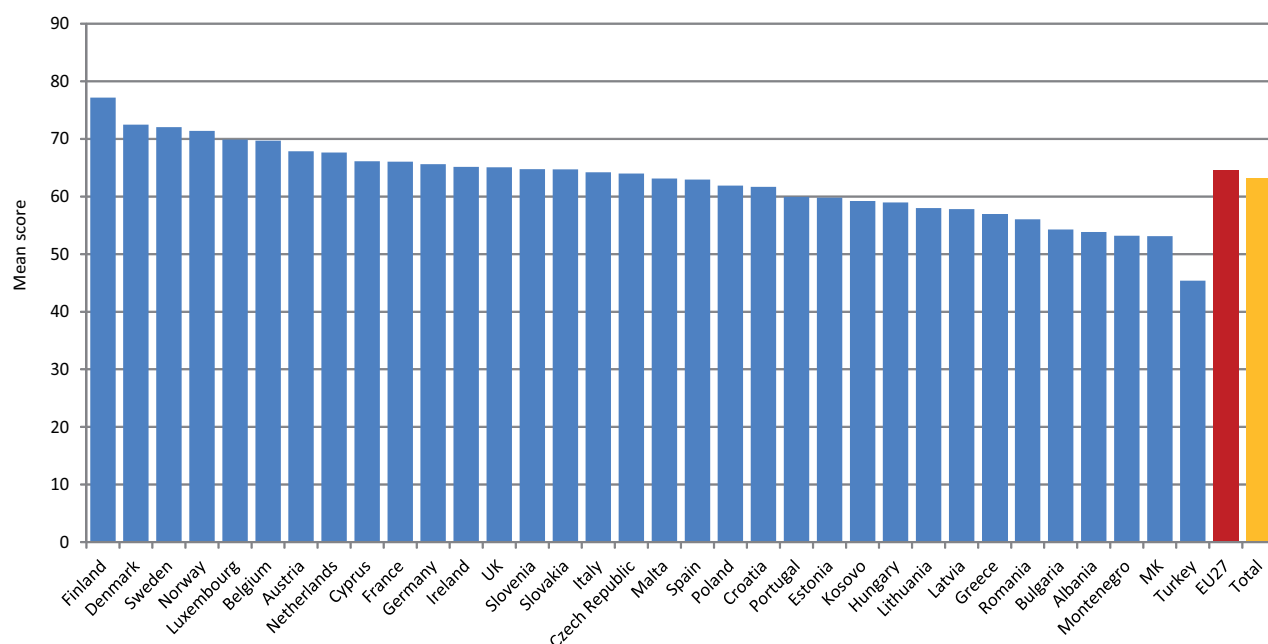
Note: \* p <0.05, \*\* p <0.01, \*\*\* p <0.001

In Table 3, bivariate correlations between overall employment quality and a number of work-related outcomes of employees are shown. In terms of the ‘intermediate outcomes’ of perceived job insecurity and perceived employability, the results show that employees with a high employment quality score are less inclined to perceive their job as insecure. On the other hand, overall employment quality is not significantly related to the perceived ability to find a job with similar pay in the case of losing or quitting the current job (perceived employability). Also, positive relationships exist between overall employment quality and the ability to stay in the same job until the age of 60. This positive association implies that employees with high employment quality are more likely to feel that they will stay in their job for longer. Similar positive associations are seen in relation to the chance of reporting an advantageous work-family interaction and high job satisfaction.

## Country-level associations

Considerable variation exists for the average scores of overall employment quality between the countries in the EWCS 2010. The highest scores are reported for Nordic countries, such as Finland, Norway, Denmark and Sweden. There are also rather favourable scores to be seen for Luxembourg, Belgium, the Netherlands and Austria. The lowest mean scores for employment quality can be noted for Turkey, Montenegro, Albania, Bulgaria, Romania, Croatia, Greece, Latvia, Lithuania, Hungary and Kosovo. Other southern and continental European countries are in the middle of the ranking. The mean score for the EU27 countries is 65. For the total sample of the EWCS 2010, it is 63 (Eurofound, 2012a). Overall it can be concluded that the association with the overall employment quality scale is quite strong ( $\eta^2$  0.434).

Figure 12: Mean of overall employment quality, by country



Note: MK = former Yugoslav Republic of Macedonia (MK corresponds to ISO code 3166. This is a provisional code that does not prejudice in any way the definitive nomenclature for this country, which will be agreed following the conclusion of negotiations currently taking place under the auspices of the United Nations – see [http://www.iso.org/iso.country\\_codes/iso\\_3166\\_code\\_lists.htm](http://www.iso.org/iso.country_codes/iso_3166_code_lists.htm)).

## Summary

The overall indicator for employment quality, based on the different sub-indicators that are described in the previous chapter, can be considered as a way of summarising the information provided in Chapter 3.

Notwithstanding the potential limitations discussed above, this overall indicator yields very interesting results. First of all, it has the advantage of giving an impression of the situation in different employee groups or in different countries by means of a single measure. At the level of individual employees, high employment quality is more common among men, older workers and in workers with a high educational attainment. Employees in service and elementary occupations have the lowest average scores, while professionals and supervising occupations have, on average, the most favourable position in terms of employment quality. Employees of smaller organisations and organisations with activities in the primary and service sector have, on average, less favourable scores on employment quality. Similar results are found in the analyses that were specifically made for Belgium in the same EWCS 2010 dataset – however, using a slightly

different methodology and subset of indicators (Vandenbrande et al, 2012). These similar results can be seen as a first validation for the application of an overall indicator for employment quality.

Finally, the overall employment quality score shows specifically strong associations on the country-comparative level. A clear pattern in the distribution of mean scores for overall employment quality according to countries can be seen. The pattern of the country-level association can be related to earlier described patterns in job quality between different types of welfare states (Gallie, 2009; Kim et al, 2011).

Until now, an indicator of employment quality has been absent among indicators routinely produced by international organisations characterising the quality of jobs and the wider socio-economic situation of countries. For that reason, a further exploration and fine-tuning of an overall indicator, specifically focusing on the quality of employment is important. The results reported in this chapter should be interpreted as an important first step.



# Typology of jobs based on 4 quality of employment

In this chapter, a typology of jobs is constructed by classifying employees in a number of categories, based on their scores on 12 quality-of-employment indicators. Three steps have been followed to build the typology:

- a latent class cluster analysis is conducted;
- the resulting typology is described by studying its relationship to relevant variables (demographic, socioeconomic and organisational characteristics, country differences and indicators of intrinsic job quality);
- associations between the typology and a selection of individual worker outcomes related to well-being at work and health are reported, with the aim of giving an overview of the influence of employment quality within the European salaried workforce on the selected outcomes.

## Construction of the typology

Latent class cluster analysis is a very useful statistical technique for discovering structures in large databases informed by the answering pattern of respondents. Based on the results of this statistical analysis, information from large quantities of indicators can be rearranged into a limited number of meaningful categories. The source indicators for the analysis are the previously mentioned 12 indicators of quality of employment:

- type of employment contract;
- low-waged jobs;
- non-wage benefits;
- uncompensated flexible working times;
- information on occupational health and safety;
- (involuntary) part-time jobs;
- long working hours;
- regular working hours;
- training paid or provided by the employer;
- knowledge about the availability of an employee representative;
- opportunities for communication and participation with superiors;
- control over personal work schedule.

The best latent class cluster model is obtained by extending stepwise the number of clusters and evaluating every time whether adding an additional group (cluster) improves the typology. To that end, the following formal statistical indices for the evaluation of model fit are applied:

- the Akaike Information Criterion (AIC);
- the Bayesian Information Criterion (BIC);
- the Consistent Akaike Information Criterion (CAIC).

Nevertheless, the substantial interpretability of the typology is an indispensable additional criterion to select the optimal number of clusters for the typology.

The workers in the EWCS dataset have been arranged into five meaningful groups based on their answers to the 12 indicators above.

### Characteristics of the job typology

Considering both selection criteria, the cluster model with five groups of workers was selected as the most stable and meaningful solution. A substantive interpretation of the cluster model can be given by looking at the relationships between the initial indicators of quality of employment and the five cluster categories obtained from the analysis. These relationships are expressed as ‘conditional probabilities’ (see Table 4). These probabilities point to associations between one of the initial indicators of quality of employment and a specific job type that emerges from the cluster solution. For example, an association of 0.960 between the cluster ‘high-quality standard employment relationship (SER)-like jobs’ and the category ‘permanent contract’ of the indicator ‘type of employment contract’ means that workers belonging to the cluster ‘high-quality SER-like jobs’ have a 96% probability of having a permanent contract.

The five types of jobs found are as follows:

1. high-quality SER-like jobs;
2. instrumental SER-like jobs;
3. precarious extensive jobs;
4. portfolio jobs;
5. precarious unsustainable jobs.

The first type is the one most frequently found (34%). This is characterised, overall, by beneficial employment conditions and relations. Employees in this job cluster have a high probability of being in stable employment with high regularity, to receive non-wage benefits, to have control over their work schedules, to have access to an employee representative and to get training opportunities from their employers. Moreover, they have a lower probabilities of having a low income, of being engaged involuntarily in part-time work, of having uncompensated flexible working times or low communication and participation with superiors. There is also a low probability that they have long working hours, or are ill-informed on occupational health and safety. In short, this job cluster is labelled as high-quality standard employment relationship-like because of its beneficial score on all indicators of the quality of employment. In addition, the features of this cluster closely resemble the typical standard employment model as described in the literature.

The second cluster, instrumental SER-like jobs, is the second most prevalent type of job in Europe (29%). This cluster is characterised by relatively favourable scores on the following indicators:

- a high amount of permanent or longer fixed-term contracts;
- a low probability of long working hours;
- few involuntary part-time workers;
- few low-waged jobs;
- high regularity and a low probability for experiencing uncompensated flexible working times.

However, employees in this cluster have a rather low probability of:

- receiving non-wage benefits;
- having self-determination over their work schedules;
- having good opportunities for communication and participation with superiors;
- having an employee representative;
- being provided with training opportunities by the employer;
- being well informed on occupational health and safety.

In other words, this type of job offers a good basic stability and predominantly consists of full time jobs that guarantee a sustainable income, for relatively regular work of low or moderate intensity in terms of working times. However, these are also jobs where employees cannot expect additional rewards (in the form of non-wage benefits or training opportunities) or a high extent of participation in decisions over when and how their work should be performed. This type of employment arrangement thus appears as a kind of instrumental transaction between an employee and his or her employer that does not offer much room for features of employment other than simply ‘work for pay’. Referring to psychological contract theory (Coyle-Shapiro and Kessler, 2000; Rousseau, 1995), this cluster differs from the ‘relational’ standard psychological contract (standard employment relationship, SER) by its absence of material and non-material exchanges (such as training, participation or representation) which intend to establish and maintain long-term employment relationships over and above the core instrumental exchange of the employment relationship (De Cuyper et al, 2008). Because these types of job combine stable, sustainable employment and good working times with a less beneficial situation in terms of additional rewards and participation as well as representation, this cluster is labelled ‘instrumental SER-like jobs’.

The third cluster, precarious extensive jobs, accounts for 16% of jobs and is characterised by relatively adverse employment conditions and relations. It is very similar to the fifth cluster (precarious unsustainable jobs), and these two job types have the most adverse scores on the different indicators of employment quality. Employees in this cluster generally have adverse employment conditions and relations resembling the situation of ‘precarious workers’ as described in the literature (Amable, 2006; Hannif and Lamm, 2005; Standing, 2011; Vives et al, 2011; Vosko, 2006). This label is additionally justified by the finding of generally more adverse working conditions, poorer intrinsic job quality and the lower socioeconomic position of these employees. However, as mentioned, the results point to two types of precarious employees. In contrast with the precarious unsustainable job type, the precarious extensive cluster shows particularly high probabilities of workers in it experiencing long working hours and uncompensated flexible working times. Jobs belonging to this cluster are also predominantly full-time.

The jobs in the fourth cluster are labelled ‘portfolio jobs’. The prevalence of this cluster throughout Europe is 11%. This cluster is characterised by beneficial employment conditions and relations, but long working hours and uncompensated flexible working times are more prevalent. These jobs resemble the category of highly flexible, high skilled and independent workers which Standing describes as ‘proficians’ (Standing, 2011). This privileged category of employees belonging to the core labour market has been detected before in empirical research (De Beer, 2002; Vanroelen et al, 2010) and has also previously been described as a group of employees that is most of all affected by work intensification (Eurofound, 2007a).

The fifth cluster (with an overall prevalence of 10%) is precarious unsustainable jobs and, like the precarious extensive job type, this group is characterised by overall adverse employment conditions and relations. However, compared to the other precarious group, the precarious unsustainable type is in a better situation with regard to the probability of

experiencing long working hours, uncompensated flexible working times and low self-determination over work schedules. A distinguishing characteristic of this cluster is the high probability of involuntary part-time employment and low income, which relates to employment unsustainability – that is the incapacity to generate a sustained and viable living wage from this job without having an additional (family) income (Vives, 2010).

Table 4: Probabilities of quality-of-employment indicators in the clusters of the final model

	High-quality SER-like	Instrumental SER-like	Precarious extensive	Portfolio	Precarious unsustainable
<b>Type of employment contract</b>					
Permanent + fixed term >6 months	0.960	0.871	0.695	0.935	0.652
Fixed term <6 months + temporary agency	0.013	0.059	0.060	0.014	0.113
No exact duration	0.005	0.012	0.014	0.007	0.022
No contract	0.022	0.058	0.231	0.044	0.214
<b>Low-waged jobs</b>					
1st quartile of income distribution	0.093	0.264	0.483	0.030	0.627
2nd or 3rd quartile of income distribution	0.527	0.625	0.463	0.390	0.367
4th quartile of income distribution	0.380	0.112	0.054	0.580	0.006
<b>Non-wage benefits</b>					
Yes	0.311	0.147	0.084	0.334	0.088
No	0.689	0.853	0.916	0.666	0.912
<b>Uncompensated flexible working times (overtime or Sunday work)</b>					
No overtime or Sunday work + compensated overtime or Sunday work	0.916	0.974	0.273	0.343	0.779
Non-compensated overtime or Sunday work	0.084	0.026	0.727	0.657	0.221
<b>Information on occupational health and safety</b>					
Well or very well informed	0.952	0.863	0.817	0.942	0.841
Not very well informed	0.036	0.109	0.132	0.049	0.100
Not at all well informed	0.013	0.028	0.051	0.009	0.060
<b>(Involuntary) part-time work</b>					
Full-time job	0.814	0.882	1.000	0.998	0.036
Voluntary part-time job	0.169	0.078	0.000	0.000	0.685
Involuntary part-time job	0.018	0.040	0.000	0.002	0.279
<b>Long working hours</b>					
Less than 48 hours a week and rarely working in free time	0.692	0.885	0.265	0.115	0.793
Less than 48 hours a week and frequently working in free time	0.301	0.109	0.132	0.306	0.207
48 hours or more a week and rarely working in free time	0.004	0.006	0.412	0.241	0.000
48 hours or more a week and frequently working in free time	0.004	0.000	0.191	0.338	0.000
<b>Regular working times</b>					
Low	0.198	0.057	0.305	0.532	0.339
Medium	0.280	0.188	0.297	0.268	0.306
High	0.522	0.755	0.398	0.200	0.356



	High-quality SER-like	Instrumental SER-like	Precarious extensive	Portfolio	Precarious unsustainable
<b>Availability of employee representative</b>					
Yes	0.642	0.420	0.288	0.581	0.306
No	0.358	0.580	0.712	0.419	0.694
<b>Communication and participation with superiors</b>					
Low	0.134	0.440	0.428	0.091	0.408
Medium	0.169	0.216	0.217	0.146	0.217
High	0.697	0.344	0.355	0.763	0.376
<b>Self-determination of work schedule</b>					
Working hours are entirely determined by employee	0.036	0.007	0.045	0.160	0.090
Employee has a certain degree of freedom with regard to working hours	0.324	0.094	0.150	0.379	0.332
Employee's working hours are set by the company with no possibility for changes	0.641	0.900	0.805	0.462	0.578
<b>Training paid/provided by the employer</b>					
Training paid by employer or on-the-job training	0.699	0.281	0.280	0.689	0.368
No training	0.301	0.719	0.720	0.311	0.632

## Distribution of the job typology across worker and organisational characteristics

Here, the job typology is described in relation to selected individual worker characteristics and organisational features. Identifying the associations with employees' age, educational attainment, occupational group, as well as the economic sector and size of their employing organisations, will further an understanding of who, specifically, are the people holding the types of jobs described by the clusters.

The distribution of the clusters is described in Table 5, where mean cluster probabilities for each category of the descriptive variables are shown. It thus indicates the probability of belonging to one of the five clusters in each category of gender, age, occupational group, economic sector and organisation size. For instance, male employees below the age of 35 have a probability of 28% of belonging to the high-quality SER-like job type. Results are reported in a gender-disaggregated way.

The high-quality SER-like cluster is more frequently found among employees with a high educational level, professionals and technicians and associate professionals, public sector employees and among workers employed in big (more than 50 employees) and very big (more than 500 employees) organisations. Young workers, employees in elementary occupations and skilled agricultural and fishery workers have a particularly low probability of holding a job in this cluster. The results for men and women are very similar, although small differences regarding the prevalence of occupational groups can be noticed.

Instrumental SER-like jobs are less prevalent among employees with a high educational attainment and among legislators, senior officials and managers and professionals. There is an over-representation of this job type among occupations such as in craft and related trades workers and skilled agricultural and fishery workers, for men and in craft and related trades workers and plant and machine operators and assemblers, for women. Instrumental SER-like jobs are also more prevalent among employees working in the industrial sector. Again, the results for men and women are very similar.

There is an over-representation of the precarious extensive type in the following groups of workers: younger workers, employees working in the agricultural sector and employees working in a (very) small organisation (fewer than five employees). For men, the occupational categories with the highest prevalence are service workers and shop and market sales workers, followed by employees in elementary occupations. For women, skilled agricultural and fishery workers, plant and machine operators and assemblers are most likely to be found in the precarious extensive job type. Highly educated workers and professionals are rarely found in this cluster.

In the portfolio cluster, higher proportions of highly educated workers, legislators, senior officials and managers and employees working in very big organisations (more than 500 employees) are seen. This job type is also more prevalent among employees working in services or the public administration sector. Among men, in this job type, there is a slight over-representation of middle-aged employees, while this is not the case among women.

Finally, the cluster of precarious unsustainable jobs is more present among women, all younger workers as well as older women, service workers and shop and market sales workers, as well as employees in elementary occupations. The prevalence of this cluster decreases with the size of the employing organisation. Employees who work alone are most over-represented in this regard. For women, there is also a clear over-representation of employees with a low educational attainment and employees working in the service sector.

Table 5: *Distribution of the cluster probabilities over individual and organisational characteristics*

	High-quality SER-like jobs		Instrumental SER-like jobs		Precarious extensive jobs		Portfolio jobs		Precarious unsustainable jobs	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Cluster size</b>	0.332	0.326	0.289	0.290	0.178	0.119	0.138	0.062	0.063	0.204
<b>Age</b>										
<35 years	0.283	0.282	0.289	0.286	0.221	0.156	0.106	0.060	0.102	0.217
35–49 years	0.359	0.345	0.285	0.294	0.167	0.110	0.164	0.065	0.025	0.186
50+ years	0.364	0.358	0.297	0.289	0.130	0.080	0.145	0.061	0.064	0.212
<i>Significance level</i>	***	***			***	***	***		***	***
<b>Educational attainment</b>										
Low	0.271	0.232	0.340	0.293	0.225	0.127	0.090	0.036	0.074	0.312
Medium	0.300	0.280	0.330	0.350	0.200	0.145	0.107	0.038	0.063	0.187
High	0.457	0.472	0.163	0.213	0.089	0.080	0.244	0.115	0.047	0.120
<i>Significance level</i>	***	***	***	***	***	***	***	***	***	***
<b>Occupational group (ISCO)</b>										
Legislators, senior officials and managers	0.361	0.417	0.103	0.146	0.096	0.100	0.418	0.254	0.022	0.083
Professionals	0.506	0.540	0.137	0.178	0.069	0.062	0.243	0.124	0.044	0.095
Technicians and associate professionals	0.469	0.417	0.214	0.281	0.096	0.073	0.166	0.072	0.056	0.157
Clerks	0.370	0.325	0.376	0.374	0.127	0.081	0.071	0.031	0.056	0.189
Service workers and shop and market sales workers	0.208	0.230	0.215	0.263	0.310	0.196	0.122	0.033	0.145	0.305
Skilled agricultural and fishery workers	0.185	0.132	0.435	0.303	0.215	0.251	0.061	0.021	0.104	0.293
Craft and related trades workers	0.306	0.199	0.413	0.503	0.177	0.167	0.072	0.022	0.032	0.109
Plant and machine operators and assemblers	0.285	0.235	0.327	0.478	0.247	0.208	0.111	0.027	0.031	0.052
Elementary occupations	0.160	0.117	0.369	0.321	0.283	0.157	0.044	0.014	0.144	0.392
<i>Significance level</i>	***	***	***	***	***	***	***	***	***	***

	High-quality SER-like jobs		Instrumental SER-like jobs		Precarious extensive jobs		Portfolio jobs		Precarious unsustainable jobs	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>Economic sector</b>										
Agriculture, forestry and fishing	0.184	0.156	0.284	0.304	0.343	0.296	0.099	0.040	0.091	0.204
Industry	0.334	0.287	0.352	0.405	0.174	0.144	0.109	0.042	0.031	0.122
Services (excluding public administration)	0.293	0.255	0.260	0.291	0.209	0.151	0.158	0.061	0.080	0.243
Public administration and defence + other services	0.420	0.396	0.231	0.254	0.110	0.082	0.156	0.069	0.082	0.198
<i>Significance level</i>	***	***	***	***	***	***	***	***	***	***
<b>Size of the employing organisation</b>										
1 employee	0.222	0.123	0.136	0.234	0.370	0.217	0.131	0.046	0.141	0.380
2–4 employees	0.218	0.210	0.299	0.309	0.291	0.189	0.094	0.035	0.099	0.256
5–9 employees	0.276	0.271	0.323	0.307	0.202	0.138	0.114	0.050	0.085	0.234
10–49 employees	0.320	0.349	0.305	0.289	0.186	0.100	0.131	0.057	0.058	0.205
50–499 employees	0.401	0.409	0.280	0.285	0.122	0.087	0.156	0.080	0.041	0.139
500+ employees	0.457	0.468	0.216	0.241	0.099	0.069	0.214	0.130	0.014	0.093
<i>Significance level</i>	***	***	***	***	***	***	***	***	***	***

Notes: Mean cluster probabilities and significance levels of the one-way ANOVA F-test are reported; \* p <0.05, \*\* p <0.01, \*\*\* p <0.001.

## Distribution of the job typology across countries

Figure 13 shows clear country differences with regard to the prevalence of the five job types. The prevalence of the high-quality SER-like jobs is lowest, respectively, in Italy, Turkey, Malta, Latvia and the former Yugoslavian Republic of Macedonia. The prevalence of this type of job is also rather low in Montenegro, the United Kingdom and Croatia. In contrast, the highest prevalence can be found in Sweden, Kosovo, the Czech Republic, Finland and the Netherlands. Most northern and north-western European countries have a prevalence for this type of job, of above 40%.

Instrumental SER-like jobs are most prevalent in Italy, Cyprus, Croatia, Malta and France. The probability of holding a job that belongs to this cluster is lowest in Kosovo, Turkey, the Czech Republic, the Netherlands and Albania. When comparing the country distribution of the high-quality SER-like and the instrumental SER-like type of jobs, it can be seen that, to a certain extent, these are ‘communicating vessels’. This suggests that the instrumental SER-like cluster can be seen (in some countries) as a ‘less-complete equivalent’ of the high-quality SER-like job type.

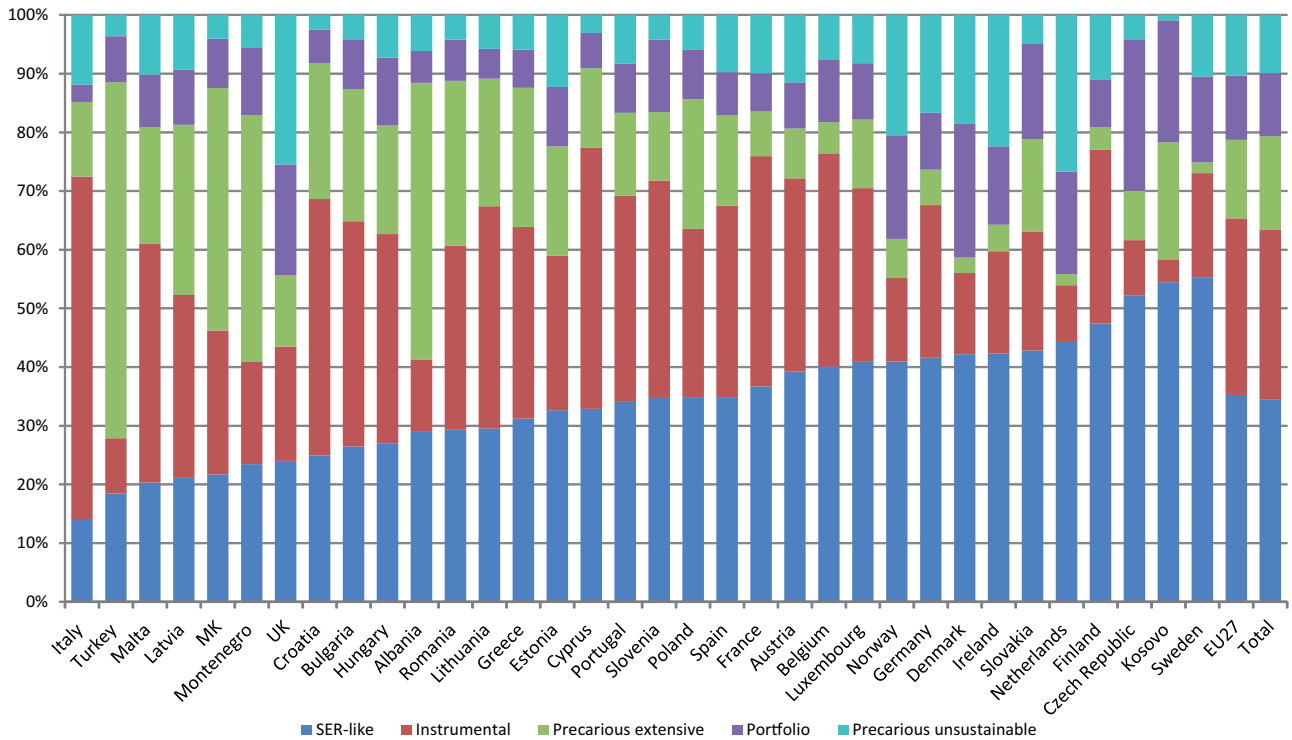
The precarious extensive cluster is most prevalent in Turkey, Albania, Montenegro, the former Yugoslavian Republic of Macedonia and Latvia, and least prevalent in Sweden, the Netherlands, Denmark, Finland and Ireland. Without exception, northern European countries show a low prevalence for this job type, while a higher prevalence is seen in most eastern European and southern European countries.

The probability of holding a job belonging to the portfolio cluster is highest in the Czech Republic, Denmark, Kosovo, the United Kingdom and Norway. The five countries with the lowest probability of belonging to this cluster are Italy, Lithuania, Albania, Croatia and Cyprus.

Finally, the precarious unsustainable cluster is most prevalent in the Netherlands, the United Kingdom, Ireland, Norway and Denmark. A rather high prevalence for this cluster can also be seen in Germany. The lowest probability of holding

a job that belongs to this cluster are found, respectively, in Kosovo, Croatia, Cyprus, Turkey and the former Yugoslavian Republic of Macedonia.

Figure 13: Distribution of prevalence of types of jobs in 2010, by country



Note: MK = former Yugoslav Republic of Macedonia

### Relationship between job typology and intrinsic job quality indicators

In Table 6 the associations of the different job types with the following indicators of the intrinsic quality of jobs are shown:

- control;
- co-worker support;
- superior support;
- unwanted social contacts at work;
- environmental risks;
- ergonomic risks;
- emotional demands;
- work speed.

The associations reported in the table indicate how strongly the job types are related with the indicators of intrinsic job quality. The values of the association can vary between -1 and 1. The closer the value approaches 1, the stronger the relationship between the two variables. Negative values point at negative associations: a low score on one variable means a high score on the other variable. Consequently, in the theoretical situation that the association would take a value of 1 or -1, there would be a situation of complete determination. Such a situation almost never arises in the social sciences: associations are usually well below 0.300.

Table 6: *Bivariate relationship between the cluster probabilities and the other indicators of the intrinsic job quality*

	Control	Co-worker support	Superior support	Unwanted social contacts at work
High-quality SER-like	0.298**	0.120**	0.137**	0.003 n.s.
Instrumental SER-like	-0.237**	-0.091**	-0.058**	-0.046**
Precarious extensive	-0.178**	-0.072**	-0.073**	0.017**
Portfolio	0.219**	0.047**	0.019**	0.036**
Precarious unsustainable	-0.081**	-0.005 n.s.	-0.039**	0.003 n.s.
	Environmental risks	Ergonomic risks	Emotional demands	Work speed
High-quality SER-like	-0.058**	-0.200**	0.095**	-0.046**
Instrumental SER-like	0.074**	0.129**	-0.171**	-0.067**
Precarious extensive	0.124**	0.185**	0.060**	0.134**
Portfolio	-0.031**	0.136**	0.152**	0.116**
Precarious unsustainable	-0.115**	0.013*	-0.099**	-0.099**

Notes: The results presented in this table are bivariate Pearson correlations. A positive correlation points to a positive relationship between cluster and indicator, whereas a negative correlation points to a negative relation. The closer the correlation approaches -1 or 1, the stronger the relationship. SER = standard employment relationship; \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001.

As Table 6 shows, workers holding a job that belongs to the high-quality SER-like cluster are most likely to have a high amount of control in their jobs. They are followed by employees allocated to the portfolio cluster. Employees from the three other job types are more likely to experience low amounts of control. This is especially the case for employees holding a job that belongs to the instrumental SER-like cluster.

High co-worker support is most prevalent among employees holding a job that belongs to the high-quality standard employment relationship-like cluster, followed again by the portfolio workers. Employees from the precarious extensive cluster or the instrumental standard employment relationship-like type are less likely to experience high co-worker support.

There is a positive relationship between the likelihood of superior support and the high-quality SER-like cluster or the portfolio cluster. The opposite is true for the three other clusters. Employees with jobs from the precarious unsustainable type, the instrumental SER-like and the precarious extensive cluster are more likely to experience low superior support.

Portfolio workers have the highest risk of reporting unwanted social contacts at work. There is also a positive relation between the risk of unwanted social contacts at work and the probability of belonging to the precarious extensive cluster. In contrast, workers in the instrumental SER-like cluster have the lowest risk of facing unwanted social contacts at work.

Workers belonging to the precarious extensive cluster and the instrumental SER-like cluster are most likely to face environmental risks. Those least likely to face these risks are employees holding a precarious unsustainable job, followed, respectively, by portfolio workers and those from the high-quality SER-like cluster.

Ergonomic risks are most likely to be reported by employees holding jobs that are allocated to the precarious extensive cluster, as well as by instrumental SER-like workers and by employees with a job that belongs to the precarious unsustainable cluster. Workers with a high-quality SER-like job and portfolio workers report ergonomic risks less often.

Emotional demands are most found among portfolio workers. A positive association also exists with the high-quality SER-like cluster and the precarious extensive type of jobs. Jobs from the precarious unsustainable cluster and especially the instrumental SER-like cluster are related with a lower risk of emotional demands.

Finally, the risk of high work speed is positively related with the portfolio cluster and especially with the precarious extensive cluster. Employees from the precarious unsustainable job type, the instrumental SER-like cluster and the high-quality SER-like cluster are less likely to report high work speed.

## Relationship between job typology and well-being and health outcomes

### Objectives and methods

The principal objective of this section is to explore in more depth the relationship between the types of jobs that resulted from the cluster analysis and various worker outcomes. In the first section, the relationship between the job typology and a set of employment-related worker outcomes are investigated: job satisfaction, perceived job insecurity, perceived employability, the ability to do the same job until the age of 60, work–family interaction and sick leave. Then, in the second section, the relationship with workers' health and well-being outcomes are analysed.

Multilevel logistic regression was used for the analyses. This technique allows one to control the results for possible bias coming from gender and age differences characterising the job types, as well as the effects coming from the country level (Models A). In the Models B, an additional control for influences coming from characteristics of the job content and working conditions is included. As a consequence, in Models B, associations between the job typology and the outcome measures cannot be attributed to other characteristics of work. For example, the finding of less favourable general health in precarious extensive jobs in one of the Models B cannot be attributed to the higher exposure to potentially harmful working conditions in this job type.

The results in the Tables 7, 8 and 9 are described in the form of odds ratios (ORs). An odds ratio describes the likelihood of belonging to the 'exposure category' of the outcome for the respondents – for example, the odds of experiencing poor general health, in a certain category of the typology, compared to the respondents belonging to the reference category. The reference category in all of the analyses is the high-quality SER-like job cluster. This cluster is most suitable as a reference category because of its bigger size, its resemblance to the theoretical standard employment relationship and because of its association with other work and employment characteristics that are generally conceived as beneficial, such as:

- high skill levels;
- high job control;
- low exposures to risk factors;
- moderate job demands.

In the tables, the odds of the reference category serve as the point of comparison for the other categories. An example makes this clear: the odds ratio of people in precarious unsustainable jobs experiencing poor perceived general health, compared with people in high-quality SER-like jobs, is 1.58. This means that people working in precarious unsustainable jobs are 1.58 times (or 58%) more likely to experience poor general health rather than good general health, compared

with those in the reference category (high-quality SER-like jobs). The confidence interval, in this case 1.41–1.77, shows the reliability of this finding. As a general rule, the confidence interval should exclude the value 1, which is the value of the reference category. As the example above does not include 1, we can rely on the result and reject the hypothesis that this difference in the prevalence of poor perceived health is due to chance. If an odds ratio is below 1, the odds of a certain category experiencing the outcome are lower than the odds of the reference category.

### Relationship between the job typology and employment-related outcomes

Table 7 shows the relationship of the different categories of the job typology with job satisfaction, perceived job insecurity and perceived employability. As shown in the conceptual framework, we identify perceived job insecurity and the probability of finding another job with a similar salary (employability) as self-perceived indicators, related to the more objective job typology based on the quality-of-employment indicators. Job satisfaction is as an important worker outcome, since it determines other outcomes (such as the ability to do the same job until the age of 60 and mental well-being).

Table 7: Main effects of the clusters in relation with job satisfaction, perceived job insecurity and perceived employability

	Job satisfaction		Perceived job insecurity		Perceived employability	
	Model A	Model B	Model A	Model B	Model A	Model B
High-quality SER-like	1.00	1.00	1.00	1.00	1.00	1.00
Instrumental SER-like	0.48*** (0.43-0.55)	0.53*** (0.47-0.60)	2.07*** (1.87-2.30)	1.91*** (1.72-2.13)	0.74*** (0.68-0.80)	0.83*** (0.76-0.90)
Precarious extensive	0.29*** (0.25-0.32)	0.36*** (0.33-0.40)	2.36*** (2.08-2.68)	2.00*** (1.75-2.30)	0.86** (0.77-0.95)	0.93 (0.83-1.02)
Portfolio	0.85 (0.70-1.03)	0.90 (0.75-1.08)	1.18* (1.03-1.35)	1.13* (1.00-1.26)	1.20** (1.06-1.37)	1.15* (1.02-1.30)
Precarious unsustainable	0.47*** (0.39-0.59)	0.48*** (0.40-0.59)	2.56*** (2.14-3.04)	2.52*** (2.11-3.02)	1.05 (0.92-1.19)	1.18* (1.03-1.35)

Notes: OR value, significance level of the Wald statistic and 95% confidence interval of the OR are reported; \* p<.05, \*\* p<.01, \*\*\* p<.001; Model A is controlled for gender and age; Model B is controlled for gender, age, working conditions and job content (control, environmental risks, ergonomic risks, other psychological demands, work speed); SER = standard employment relationship.

Regarding job satisfaction, the exposure category is ‘being satisfied with working conditions’, thus an OR higher than 1 means being more likely to experience satisfaction with work than the reference category, high-quality SER-like jobs. In Models A and B, workers in all types of other jobs are less likely to experience satisfaction than those in high-quality SER-like jobs. Only people working in portfolio jobs are more or less on the same level as those in high-quality SER-like jobs. Workers in the precarious extensive job type are the least likely to experience job satisfaction (OR 0.29 in Model A and OR 0.36 in Model B), followed by the precarious unsustainable jobs (OR 0.47 in Model A and OR 0.48 in Model B) and instrumental SER-like jobs (OR 0.48 in Model A and OR 0.53 in Model B).

The perceived risk of losing one’s job within the next six months gives an approximation of perceived job insecurity. A relationship between the job types and perceived job insecurity may be assumed since type of employment contract is one of the constituting indicators of the typology. The type of contract may be seen as an objective indicator of the stability of further employment and thus as a predictor of perceived job security. There is a significant relationship between having a permanent contract (or not) and perceived job security (0.232) (Pearson correlation). This means that workers who are not in a permanent job are more likely to perceive that they could lose their job within the next six months.

Although the characteristics of high-quality SER-like jobs are broader than only their stability, employees working in precarious unsustainable jobs are 2.52 times more likely to perceive it possible that they will lose their job, after controlling for gender, age and intrinsic job quality. Comparable findings hold for the precarious extensive job type (OR 2.00) and instrumental SER-like jobs (OR 1.91). The portfolio jobs do not significantly differ from high-quality SER-like jobs.

Perceived employability is conceived here as workers’ perceived ability to get another job with a similar salary if they need to. Employees in portfolio jobs are more likely to think they will find a job with a similar salary than workers in high-quality SER-like jobs (OR 1.20 in Model A and 1.15 in Model B). The same holds for precarious unsustainable jobs when additionally controlling for working conditions and job content (Model B). The only groups of workers who feel less likely to be able to change their job for a similar one, compared to the high-quality SER-like jobs are those in instrumental SER-like jobs. The small differences of all other job types with high-quality SER-like jobs for this indicator of perceived employability need some contextualisation: since the high-quality SER-like job type represents a favourable combination in terms of employment conditions and employment relations (including income and other rewards), it may be assumed that their characteristics are also the most difficult to maintain in the case of job change. This is less the case with, for example, instrumental SER-like jobs.

Table 8 shows the relationship of the job typology with the ability to do the same job until the age of 60, advantageous work–family interaction and sick leave. The first outcome refers to the capacity of employees to continue doing their current job until they reach the age of 60. Both in Model A and B, the employees belonging to each of the other job types think themselves less likely to continue in the same job until 60 years old than those in high-quality SER-like jobs. Only people working in portfolio jobs are more or less on the same level as those in the high-quality SER-like jobs. Again, workers in precarious extensive jobs are the least likely to do so (OR 0.47 in Model A and OR 0.60 in Model B), followed by precarious unsustainable jobs (OR 0.68 in Model A and 0.73 in Model B) and instrumental SER-like jobs (OR 0.69 in Model A and 0.76 in Model B).

Table 8: *Main effects of the clusters in relation with ability to do the same job until the age of 60, advantageous work–family interaction and sick leave*

	Ability to do the same job		Advantageous work-family		Sick leave	
	Model A	Model B	Model A	Model B	Model A	Model B
<b>High-quality SER-like jobs</b>	1.00	1.00	1.00	1.00	1.00	1.00
<b>Instrumental SER-like jobs</b>	0.69*** (0.62-0.77)	0.76*** (0.69-0.84)	0.95 (0.86-1.05)	1.03 (0.94- 1.14)	1.06 (0.96-1.18)	1.02 (0.92-1.13)
<b>Precarious extensive jobs</b>	0.47*** (0.42-0.53)	0.60*** (0.54-0.66)	0.28*** (0.25-0.31)	0.33*** (0.29-0.38)	0.95 (0.85-1.04)	0.83*** (0.76-0.92)
<b>Portfolio jobs</b>	0.93 (0.80-1.09)	1.01 (0.87-1.17)	0.34*** (0.29-0.40)	0.36*** (0.31-0.42)	0.78** (0.66-0.91)	0.74*** (0.64-0.87)
<b>Precarious unsustainable jobs</b>	0.68*** (0.58-0.81)	0.73** (0.62-0.88)	1.09 (0.90-1.32)	1.12 (0.91-1.38)	0.59*** (0.50-0.68)	0.57*** (0.49-0.67)

Notes: OR value, significance level of the Wald statistic and 95% confidence interval of the OR are reported; \* p<.05, \*\* p<.01, \*\*\* p<.001; Model A is controlled for gender and age; Model B is controlled for gender, age, working conditions and job content (control, environmental risks, ergonomic risks, other psychological demands, work speed); SER = standard employment relationship.

With the work–family interaction outcome, the fit between working hours and family or social commitments outside work was analysed. The exposure category is having an advantageous work–family interaction. In both models, precarious unsustainable jobs and instrumental SER-like jobs are more or less on the same level as the reference category of high-quality SER-like jobs. In contrast, people in precarious extensive and portfolio jobs are significantly less likely to experience an advantageous work–family interaction compared with the high-quality SER-like job type (OR 0.33 in precarious extensive jobs and OR 0.36 in portfolio jobs, both in Model B). This can be explained because both precarious extensive jobs and portfolio jobs are characterised by long working hours, low regularity and Sunday work. In contrast,



the standard or relatively short working hours – typical for the precarious unsustainable, instrumental SER-like and high-quality SER-like job types – are rather beneficial for combining family and work, as is shown by precarious unsustainable and instrumental SER-like jobs. Of course, precarious unsustainable jobs can also have less advantageous characteristics, such as low wages, which reinforce the dependence of workers – mostly women – on the earnings of their partner (MacPhail and Bowles, 2008).

As for sick leave, the analysis examined whether employees took more than five days off due to illness in the previous 12 months. All types of jobs, except for instrumental SER-like jobs, are less likely to report sick leave than high-quality SER-like jobs. After controlling for working conditions and job content, precarious unsustainable workers are the least likely to report sick leave (OR 0.59 in Model B), followed by portfolio workers (OR 0.74). In contrast to this finding regarding sick leave, the analysis of health outcomes (see Table 9) shows that workers from the precarious unsustainable, precarious extensive and portfolio types do not report more favourable health outcomes than those from the high-quality SER-like type. A possible explanation – rather than being more ill – is that people in high-quality SER-like and in instrumental SER-like jobs are more able to take a day off when they are ill, in comparison with the other types. Contractual instability or high work pressures may provoke ‘sickness presenteeism’ in the other job types. Similar differences regarding sick leave between standard and non-standard workers have been shown before (Benavides et al, 2000; Vosko, 2006).

### Relationship between the job typology and health outcomes

Table 9 shows the associations of the clusters with three indicators of health and well-being: perceived general health, mental well-being and physical complaints. Workers in all other types of jobs – with the exception of portfolio jobs – are more likely to experience poor perceived general health, compared to workers in high-quality SER-like jobs (Model A and B). More specifically, people working in precarious extensive jobs are most likely to suffer poor perceived general health. The odds ratio of poor perceived general health for workers in precarious extensive jobs when controlled for gender, age, working conditions and job content is 1.67. It is noteworthy that precarious extensive jobs are also characterised by poor working conditions and low control. This probably explains the quite strong reduction of the associations in the second model, where working conditions and job content are included as controlling variables. However, even when controlling for these confounding variables, precarious extensive jobs remain strongly associated with adverse outcomes of health and well-being. That is to say, that the associations shown are not caused by an over-representation of less-favourable working conditions and job content in the precarious extensive type. In addition, workers in precarious unsustainable jobs experience higher odds of poor perceived general health in both models, compared to workers in high-quality SER-like jobs. When controlled for working conditions and job content, people working in precarious unsustainable jobs are 1.6 times more likely to experience poor health. In contrast, workers in instrumental SER-like jobs are less likely to suffer poor perceived general health than people in precarious extensive and precarious unsustainable jobs, but still 1.47 times more likely than workers in high-quality SER-like jobs (Model B).

Table 9: *Main effects of the clusters in relation with selected health outcome measures*

	Poor general health		Poor mental well-being		Physical complaints	
	Model A	Model B	Model A	Model B	Model A	Model B
<b>High-quality SER-like jobs</b>	1.00	1.00	1.00	1.00	1.00	1.00
<b>Instrumental SER-like jobs</b>	1.56*** (1.41-1.73)	1.47*** (1.35-1.60)	1.58*** (1.41-1.76)	1.52*** (1.35-1.70)	1.02 (0.95-1.10)	1.07* (1.00-1.15)
<b>Precarious extensive jobs</b>	1.99*** (1.80-2.20)	1.67*** (1.54-1.81)	2.12*** (1.85-2.42)	1.81*** (1.59-2.07)	1.31*** (1.17-1.46)	1.18** (1.04-1.33)
<b>Portfolio jobs</b>	1.07 (0.94-1.24)	0.99 (0.87-1.13)	1.23 (1.03-1.46)*	1.13 (0.96-1.34)	1.23 (1.09-1.39)**	1.11 (0.99-1.25)
<b>Precarious unsustainable jobs</b>	1.58*** (1.41-1.77)	1.60*** (1.43-1.79)	1.48*** (1.25-1.77)	1.51*** (1.29-1.77)	1.01 (0.89-1.15)	1.09 (0.97-1.25)

Notes: OR value, significance level of the Wald statistic and 95% confidence interval of the OR are reported; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ ; Model A is controlled for gender and age; Model B is controlled for gender, age, working conditions and job content (control, environmental risks, ergonomic risks, other psychological demands, work speed); physical complaints exclude musculoskeletal complaints; SER = standard employment relationship.

The same pattern of perceived general health is repeated for low mental well-being. Workers in all types of jobs, with the exception of portfolio jobs (in Model B), are more likely to suffer low mental well-being, compared with the reference category of high-quality SER-like jobs. Those with the highest odds are the workers in precarious extensive jobs (OR 2.12 in Model A and OR 1.81 in Model B), followed by instrumental SER-like jobs and precarious unsustainable jobs.

For physical health complaints, when controlled for gender and age, the prevalence is only significantly higher compared to high-quality SER-like jobs for workers in precarious extensive and portfolio jobs. In Model B this is the case only for precarious extensive jobs, while the association for instrumental SER-like jobs is boundary significant.

In general, people working in precarious extensive jobs are most likely to have poor health, followed by those working in precarious unsustainable jobs and instrumental SER-like jobs. The health of workers in precarious extensive jobs is the most affected by working conditions and job content, as it is the group with the highest decrease in the odds ratio when controlled for these conditions. Nevertheless, when also correcting for working conditions and the content of work, workers in precarious extensive jobs continue to more adverse health and well-being outcomes. This finding demonstrates the autonomous adverse health and well-being consequences of being in low-quality employment, since the precarious extensive job cluster represents the type of jobs where most problematic employment conditions and relations are present.

The adverse health and well-being consequences for people working in precarious unsustainable jobs are lower. This may be due to the fact that these are 'smaller jobs' in terms of work hours and duration, making the exposure to potentially harmful work-related risks lower. For the instrumental SER-like job type, the higher prevalence of complaints remains limited to general self-perceived health and mental well-being. Here, too, an autonomous association remains after controlling for work content and working conditions. These fairly stable and moderately well-paid instrumental jobs are characterised by less favourable employment relations (voice and say). People working in portfolio jobs have similar odds of poor general health, poor mental health and physical complaints than people working in high-quality SER-like jobs, when relations are controlled for working conditions.

Discussion of these results should also consider reverse causation as a possible explanation for the associations observed. Reverse causation refers to the situation in which the effect in reality precedes the cause. Strictly speaking, the results in this report are only documenting associations between employment characteristics (summarised into a typology) and the outcomes. Hereby we assume that employment has an effect on health. Reverse causation, however, would mean that issues such as poor health, job dissatisfaction, poor employability and frequent sick leave cause poor employment conditions and relations (Szklo and Nieto, 2006; Rothman et al, 2008). The inability to rule out empirically the possibility of reverse causation is a common limitation of cross-sectional studies in occupational stress research and epidemiology. However, our findings are in line with previous studies on the associations between non-standard employment situations and adverse outcomes in terms of health, well-being, job satisfaction and work-family conflict (Clarke et al, 2007; Vives, 2010; Vives et al, 2010; Vosko, 2006). This adds external validity to our interpretation of the results as causally going from employment quality to health and well-being outcomes.

# Conclusions and policy implications **5**

## Overview

The creation of high quality jobs is an important precondition for safeguarding sustainable working careers, worker motivation, and productivity of the workforce, as well as in minimising work-related disability and occupational accidents, and in improving occupational health. This report provides an in-depth analysis of the quality of employment conditions and employment relations in the European working population (employees). The report is based mainly on the information provided by the European Working Conditions Survey (EWCS) 2010. The main objectives of this report are:

- to identify problematic or advantageous situations and those workers requiring more attention;
- to examine the evolution for a number of selected indicators of the quality of employment;
- to investigate the relations between the quality of employment and a number of characteristics of individual workers, their employing organisations, their broader work characteristics and variations between countries.

In this report, the quality of employment has been measured through a multidimensional concept based on 12 indicators representing four subdimensions of employment conditions (contract security, income and rights, working times and employability) and two subdimensions of employment relations (employee representation and employee empowerment). These indicators have also been used to calculate an overall employment quality index, and a new typology of jobs constructed through cluster analysis. Moreover, two subjective indicators, perceived employability and perceived job insecurity, have been created. Conceptually, these indicators can be seen as intermediates between quality of employment and the other outcomes.

In Europe, there are large differences in the various subdimensions of the quality of employment according to socioeconomic and demographic characteristics of workers, organisational level characteristics, and countries. By and large, the quality of employment is more favourable for middle-aged and older workers, skilled professionals and technicians, office clerks, managers, and, more generally, workers with high educational attainment and those employed in large firms. Indicators related to working time flexibility and highly intensive work schedules are an exception to this pattern, being more common for men, employees from very small companies, highly skilled white collar workers and managers.

## Main findings

Overall, high quality of employment is more common in men, older workers and workers with a high educational status. Employees in service and elementary occupations have the lowest average scores, while professionals and supervising occupations have, on average, the most favourable position in terms of employment quality. Also employees working in smaller organisations and organisations with activities in the primary and service sector have, on average, less favourable scores of employment quality. The overall employment quality score shows strong associations on the country-comparative level. A clear pattern in the distribution of mean scores for overall employment quality according to countries can be seen, with the Nordic countries (Finland, Denmark, Sweden and Norway) having the highest level of employment quality, while eastern and southern countries (Turkey, the former Yugoslavian Republic of Macedonia, Montenegro, Albania, Bulgaria, Romania and Greece) have the lowest.

The new typology of jobs created in this study reflects the structure of the European labour market according to the distribution of the indicators of quality of employment. Five main types of jobs or clusters are identified. The jobs with the highest levels of employment quality are labelled high-quality standard employment relationship (SER)-like jobs (34%) and instrumental SER-like jobs (29%), with the former reflecting the most beneficial situation and the latter being

a less beneficial situation (in terms of non-wage benefits, training, and participation) but still fairly stable (in contracts and pay). A third category of jobs are the so-called portfolio jobs (11%), which reflect the combination of relatively advantageous quality of employment in combination with high levels of work intensity and uncompensated flexible working times. The last categories can be identified as precarious jobs and have the lowest levels of employment quality. We distinguish between precarious unsustainable jobs (10%), with the most adverse employment situation, being additionally characterised by part-time and low pay, and precarious extensive jobs (16%), with overall adverse employment conditions and relations, and most of all characterised by high flexibility and intensive working times. The clusters are strongly related to socio-economic characteristics of the employees, and show a differential country-level distribution. The most favourable types of jobs are thus more prevalent in the Nordic countries, followed by central European, north-western European, southern European and eastern European countries. The job types are also related to a number of outcomes for the employees, such as job satisfaction, the ability to do the same job until the age of 60, sick leave, and health and well being. Overall, jobs that strongly depart from the standard employment job type show less favourable results. Respondents in precarious extensive jobs, precarious unsustainable jobs and, to a lesser extent, instrumental SER-like jobs, have high levels of perceived job insecurity, poor general and mental health, low levels of job satisfaction and low perceived ability to do the same job until the age of 60, compared to high-quality SER-like and portfolio jobs.

### Research and policy implications

In spite of some methodological limitations, this report is one of the first empirical assessments of the quality of employment in a way that transcends those conventional approaches which distinguish only ‘standard jobs’ from ‘atypical contracts’. Whereas this analysis of the EWCS has revealed significant findings, it also underlines the continued need to obtain more comparable and standardised data on the quality of employment. Another limitation to the interpretation of trends lies in the availability of indicators in the EWCS to measure them (for example the entitlement to employee rights, or collective representation). Thus, in some cases, only rough proxies of the concepts are available for analysis. The important improvements that have taken place in the last EWCS editions need therefore to be supplemented with additional information and further expanded.

It is a positive finding that the standard employment contract – with indefinite employment, sustainable wages and fairly balanced employment conditions – is still predominant across Europe: with 34% of the labour force in the beneficial standard employment type and 29% in the relatively beneficial instrumental jobs type. Nevertheless, this also implies that more than one third of the labour force is employed either in the very flexible and intensive portfolio type of jobs or in one of the two precarious types of employment. Certainly, for the latter two groups, the findings show that, apart from their disadvantaged employment position, these employees are also over-proportionally exposed to an adverse general work environment and have less, or much less, favourable outcomes on important issues such as general satisfaction, the ability to stay in employment, and health and well-being related complaints. It is important to stress that the latter holds even when taking into account general working conditions and other characteristics of work tasks. As a consequence, it transpires that objective attributes of these workers’ employment situation (such as type of contract, training, number of working hours, working times organisation and collective representation) have a clear impact on key aspects of importance for maintaining a sustainable labour force in the long term. This situation needs to be improved given the fact that, in many European countries, data show that there is an continuing polarisation of the labour force that implies, on the one hand, a growing number of jobs in the highly time-flexible highly-skilled niche of the labour market and, on the other, jobs in the highly numerically-flexible, poor content, poor reward and low-skilled segment of the labour market. Policies towards imposing more flexibility upon the European labour force should also take into account the related consequences for well-being, health and satisfaction of the employees affected. In the long run, this may not only have adverse consequences for the productivity of the labour force, but also jeopardise the ability of employees to stay in employment until later age.

Another remarkable policy-relevant implication is the low number of European employees (50%) that undergo training, with especially low figures for women, older workers, lower-skilled workers, workers in small companies and, workers in southern and eastern European countries. This is also reflected in the low percentage (32%) of employed workers in Europe reporting good employability prospects (being able to find a job with a similar salary, in the event of losing or quitting their current job). In other words, employability indicators are relatively low – especially in the segments of the labour force that are most vulnerable to flexible and highly volatile jobs. Policy makers should therefore focus on ways of improving the employability of those in the most unstable labour market positions.

Finally, the opportunity for workers to communicate and participate with their superiors about work-related issues remains low. In addition, fewer than half of EU salaried workers (45%) report having an employee representative at their workplace. Workers who report that there is a worker's representative in their workplace tend to work in larger organisations and in the civil service; such workers tend also to be older, higher educated, high-skilled white collar workers. This still leaves an important part of the workforce with no say and no voice.



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# Annex 1: The European Working Conditions Survey series

The European Working Conditions Survey (EWCS), established in 1990, is one of the few sources of information providing an overview of working conditions in Europe for the purposes of:

- assessing and quantifying working conditions of both employees and the self-employed across Europe on a harmonised basis;
- analysing relationships between different aspects of working conditions;
- identifying groups at risk and issues of concern, as well as progress made;
- monitoring trends by providing homogeneous indicators on these issues;
- contributing to European policy development on quality of work and employment issues.

The EWCS was carried out in 1991, 1995, 2000 (with an extension to the then-candidate countries in 2001 and 2002), 2005 and 2010. The growing range of countries covered by each wave reflects the expansion of the European Union. The first wave in 1991 covered only 12 countries, the second wave in 1995 covered 15 countries, and from the third wave in 2000–2002 onwards, all 27 current EU Member States were included. Other countries covered by the survey include Turkey (in 2002, 2005 and 2010), Croatia and Norway (in 2005 and 2010), Switzerland (in 2005), and Albania, Kosovo, Montenegro and the former Yugoslav Republic of Macedonia (in 2010).

## The fifth EWCS

The fieldwork for the fifth EWCS was carried out between January and June of 2010.<sup>2</sup> In total, 43,816 face-to-face interviews were carried out, with workers in 34 European countries answering questions on a wide range of issues regarding their employment situation and working conditions.

The target population consisted of all residents in the 34 countries aged 15 or older (aged 16 or older in Norway, Spain and the UK) and in employment at the time of the survey. People were considered to be in employment if they had worked for pay or profit for at least one hour in the week preceding the interview (ILO definition).

The scope of the survey questionnaire has widened substantially since the first wave, aiming to provide a comprehensive picture of the everyday reality of men and women at work. Consequently, the number of questions and issues covered in the survey has expanded in each subsequent wave. By retaining a core of key questions, the survey allows for comparison over time. By using the same questionnaire in all countries, the survey allows for comparison across countries.

The main topics covered in the questionnaire for the fifth EWCS were job context, working time, work intensity, physical factors, cognitive factors, psychosocial factors, violence, harassment and discrimination, work organisation, skills, training and career prospects, social relationships, work–life balance and financial security, job fulfilment, and health and well-being.

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<sup>2</sup> Fieldwork continued until 17 July 2010 in Belgium, due to the extended sample size, and until 29 August 2010 in Norway, due to organisational issues.

New questions were introduced in the fifth wave to enable more in-depth analysis of psychosocial risks, workplace social innovation, precarious employment and job security, place of work, work–life balance, leadership styles, health, and the respondent’s household situation. The questionnaire also included new questions addressed specifically to self-employed workers (such as financial security). Gender mainstreaming has been an important concern when designing the questionnaire. Attention has been paid to the development of gender-sensitive indicators as well as to ensuring that the questions capture the work of both men and women. Revisions to the questionnaire are developed in cooperation with the tripartite stakeholders of Eurofound.

### Sample

In each country, a multistage, stratified random sampling design was used. In the first stage, primary sampling units (PSUs) were sampled, stratifying according to geographic region (NUTS 2 level or below) and level of urbanisation. Subsequently, households in each PSU were sampled. In countries where an updated, high-quality address or population register was available, this was used as the sampling frame. If such a register not available, a random route procedure was applied. In the fifth EWCS, for the first time, the enumeration of addresses through this random route procedure was separated from the interviewing stage. Finally, a screening procedure was applied to select the eligible respondent within each household.

The target number of interviews was 1,000 in all countries, except Slovenia (1,400), Italy, Poland and the UK (1,500), Germany and Turkey (2,000), France (3,000) and Belgium (4,000). The Belgian, French and Slovenian governments made use of the possibility offered by Eurofound to fund an addition to the initial sample size.

### Fieldwork outcome and response rates

The interviews were carried out face to face in the respondents’ homes. The average duration of the interviews was 44 minutes. The overall response rate for the fifth wave was 44%, but there is considerable variation in response rates between countries, varying between 31% in Spain and 74% in Latvia.

### Weighting

Weighting was applied to ensure that results based on the fifth EWCS data could be considered representative for workers in Europe.

- **Selection probability weights (or design weights):** To correct for the different probabilities of being selected for the survey associated with household size. People in households with fewer workers have a greater chance of being selected into the sample than people in households with more workers.
- **Post-stratification weights:** To correct for the differences in the willingness and availability to participate in the survey between different groups of the population. These weights ensure that the results accurately reflect the population of workers in each country.
- **Supra-national weights:** To correct for the differences between countries in the size of their workforce. These weights ensure that larger countries weigh heavier in the EU-level results.

### Quality assurance

Each stage of the fifth EWCS was carefully planned, closely monitored and documented, and specific controls were put in place. For instance, the design phase paid close attention to information gathered in a data user survey on satisfaction with the previous wave and on future needs, and an assessment was made of how the survey could better address the topics that are central to European policymaking.

In order to ensure that the questions were relevant and meaningful for stakeholders as well as respondents in all European countries, the questionnaire was developed by Eurofound in close cooperation with a questionnaire development expert group. The expert group included members of the Foundation's Governing Board, representatives of the European Social Partners, other EU bodies (the European Commission, Eurostat and the European Agency for Safety and Health at Work), international organisations (the OECD and the ILO), national statistical institutes, as well as leading European experts in the field.

### Access to survey datasets

The Eurofound datasets and accompanying materials are stored with the UK Data Archive (UKDA) in Essex, UK and promoted online via the **Economic and Social Data Service (ESDS) International**.

The data is available free of charge to all those who intend to use it for non-commercial purposes. Requests for use for commercial purposes will be forwarded to Eurofound for authorisation.

In order to download the data, you must register with the ESDS if you are not from a UK university or college. For more information, please consult the ESDS page on **how to access data**.

Once you are registered, the quickest way to find Eurofound data is open the Catalogue search page, select **Data Creator/Funder from the first drop-down list and** enter in the words '**European Foundation**' in the adjacent search box. Once Eurofound's surveys are listed, you can click on the name of the relevant survey for more information and download it using your user name and password.

### For more information

The **overview report** as well as detailed information and analysis from the EWCS are available on the Eurofound website at **www.eurofound.europa.eu**. This information is updated regularly.

For further queries, please contact Sophia MacGoris in the Working Conditions and Industrial Relations unit.

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