OECD Guidelines on Measuring the Quality of the Working Environment

OECD

OECD Better Life Initiative

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BETTER POLICIES FOR BETTER LIVES

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Foreword

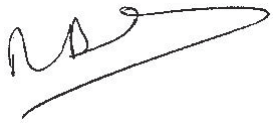
The need to inform policy making and society's deliberations with indicators that go beyond traditional measures of economic growth is so widely recognised today that we may fail to appreciate how much distance the statistical community has travelled since 2009, when the Stiglitz-Sen-Fitoussi Commission gave heightened visibility to long-standing concerns about the limits of GDP as a welfare measure. Since then, the statistical community has been engaged in a dual process of both making the best use of statistics that already exist to provide a parsimonious but comprehensive view of the conditions of individuals, regions and countries, and laying the basis for the statistics needed for tomorrow. These Guidelines, *developed in the context of the OECD Better Life Initiative launched in 2011, represent a milestone in this journey.*

The case for looking at the quality of the working environment as a critical aspect of people's conditions is straightforward. Indeed, work is of fundamental importance for the well-being of workers. Policy demand for this type of data is already high and set to increase further in the near future. One of the goals of the 2030 Agenda agreed by the UN General Assembly in September 2015 is to "Promote inclusive and sustainable economic growth, employment and decent work for all" (Goal 8), with more specific targets to "achieve full and productive employment and decent work for all", "protect labour rights and promote safe and secure working environments for all workers", and "eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour". While a first set of indicators for the global monitoring of this goal has already been identified by the statistical community, this set will need to evolve in the future to better match today's labour-market realities. The OECD is also currently revisiting its "Job Strategy" – the blueprint that has underpinned the labour-market reforms implemented by many of its member countries since the 1980s and 1990s. This is giving an important role to the concept of Job Quality, which includes the quality of the working environment as one of its three dimensions, along with earnings quality and labour market security. Hence, labour market conditions are not only assessed in terms of quantity of jobs but also in terms of the quality of jobs that can provide the basis for a dignified existence.

As compared to other aspects of the "Beyond GDP" agenda, a substantial body of evidence and statistical practice already exists in the field of the working environment, largely reflecting long-established regulations to address health and safety concerns in the workplace. But much of the available evidence is based on non-comparable country surveys, with comparative evidence largely limited to European countries. Also, the nature of the working environment has evolved over time, reaching beyond the physical risk-factors that were the focus of traditional health and safety regulations. Comparable evidence on the much broader range of socio-environmental aspects that shape working conditions remains limited, despite evidence of their importance for both workers' well-being and firms' productivity. The consequences of a poor working environment manifest themselves in burnout, disengagement, absences from work and mental health problems among workers. Better data are needed to establish which developments in the work environment lead to an increase in psychological ill health and how employers can mitigate the sources of stress by improving

the design of work. Failure to do this would lead to escalating costs for the budgets of welfare and public health systems.

Developing good comparative data on the working environment is central to human progress, to anchor the notion of job quality in policy discussion, and to provide answers to workers' demands in this field. The implementation of the OECD Guidelines by national statistical offices holds the promise of providing the evidence base needed to assess the future of work and to respond to workers' demand for better quality jobs.



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These *Guidelines* were produced as part of the overall OECD work programme on Job Quality. The report was prepared by Hande Inanc and Sandrine Cazes, and finalised by Marco Mira d'Ercole and Fabrice Murtin (all from the OECD Statistics Directorate). Chapter 3 was prepared by Professor Duncan Gallie, University of Oxford.

An expert group gathering statisticians and experts in the field of working environment provided valuable comments and advice on the drafting of the report. Members of this expert group included Thomas Coutrot (DARES, France); Hanna Strzelecka (Central Statistical Office, Poland); Irena Svetin (Statistical Office, Republic of Slovenia); Maury Gittleman (Bureau of Labor Statistics, United States); Sophie George and Eleanor Jones (Office National Statistics, United Kingdom); Rodrigo Negrete Prieto (INEGI, Mexico); Lisa Guenther (DESTATIS, Germany); Mark Feldman (Central Bureau of Statistics, Israel); Christian Wingerter (Eurostat, Luxembourg); Agnès Parent-Thirion (European Foundation for the Improvement of Living and Working Conditions, Ireland); Robert Karasek (Øresund Synergy and JCQ Center); Johannes Siegrist (University of Düsseldorf); and Duncan Gallie (University of Oxford).

The report has benefitted from comments from Martine Durand and Carrie Exton (OECD Statistics Directorate), as well as from delegates of the OECD Committee on Statistics and Statistical Policy. Patrick Hamm, Anne-Lise Faron and Virginie Elgrably ensured the final editing of the document.

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Executive summary

These OECD Guidelines aim to support the measurement of the quality of the working environment among official statistics. They describe the conceptual frameworks that have underpinned the measurement initiatives undertaken in this field in the past, discuss their operationalisation and methodological issues, and propose different survey modules that could be included by national statistical offices (NSOs) into their regular household surveys.

In this report, as well as in the broader OECD framework on job quality, the "working environment" is understood as a *combination of job characteristics* defining the setting where workers operate. The concept is multidimensional and encompasses a broad range of non-pecuniary characteristics of the job, ranging from the nature of the work tasks assigned to each worker to the physical and social conditions under which these tasks are carried out, the characteristics of the firm or organisation where work takes place, the scheduling of working time, the prospects that the job provides to workers and the intrinsic rewards associated with the job. The concept denotes those *observable characteristics* of the job as they are experienced by workers. These Guidelines recommend that job characteristics are measured by looking at *outcomes* rather than *procedures* (e.g. labour codes or firm-level practices), refer to experiences made by *individual workers* rather than what is observed at the aggregate level, and capture *objective* aspects of the job rather than *subjective* evaluations of it.

These Guidelines extend previous work on the measurement of social conditions and progress. They complement the OECD's *Job Quality Framework* (Cazes, Hijzen and Saint Martin, 2015) as well as UNECE's *Handbook on Measuring Quality of Employment* (2015), aiming to: i) improve the international comparability of measures in this field; ii) increase data availability on less conventional aspects of the working environment such as psychological risks, emotional demands and intrinsic rewards; iii) increase the periodicity of the data collected, facilitating monitoring and policy intervention; and iv) raise the number of countries for which high-quality measures of the quality of the working environment are currently produced.

These Guidelines are intended as a resource for both data producers and data users interested in the measurement of the quality of the working environment, with different chapters of this report addressing the needs of different types of users. Chapter 2 describes the current situation of data on the working environment and the policy initiatives that have focused on the working environment and the broader notion of job quality. Chapter 3 documents the significant inequalities in working conditions that exist between different groups of workers and the conceptual frameworks that have been used to understand how the working environment impacts upon workers' well-being, their health and productivity. Chapter 4 presents the measurement framework used in this report to describe the quality of the working environment and how this framework compares to other used in the

literature in this field. Chapter 5 operationalises this measurement framework through survey questions that are empirically assessed for their statistical validity (by examining the extent to which questions from different international surveys produce consistent results across countries) covering six broad dimensions and 17 more detailed job characteristics included in them with each characteristic categorised as either a "job demand" or as a "job resource" available to workers. Finally, Chapter 6 provides guidance on a number of methodological issues that needs to be considered when collecting information on the quality of the working environment.

These Guidelines also propose three prototype question modules on the working environment (ranging from an *extended module* of 25 questions covering all the 17 job characteristics that could be included as a stand-alone module or survey, to a *condensed module* of 13 questions with the strongest evidence on statistical validity and limited to the 11 job characteristics that are most relevant for workers' well-being, to a *core module* of four questions that could be included in non-specialised general social surveys and implemented on a yearly basis.

Overall, these Guidelines underscore how differences in the working environment shape the disparities that people experience in the labour markets, and the strong policy demands for better metrics of people's working conditions (witnessed by the inclusion of targets relating to job quality and decent work in the 2030 Agenda).

Overview and recommendations

What are these *Guidelines*?

These *OECD Guidelines* aim to support the measurement of the quality of the working environment by official statistics. They describe the conceptual frameworks that have underpinned the measurement initiatives undertaken in this field in the past, discuss their operationalisation and methodological issues, and propose different survey modules that could be included by national statistical offices (NSOs) in their regular household surveys. In particular, the *Guidelines* are intended to:

- improve the international comparability of measures of working conditions by providing guidance to NSOs and other data producers;
- summarise the large body of research on the effects of the working environment on workers' well-being and provide a unifying conceptual framework capturing the main channels through which the working environment affects workers;
- operationalise this conceptual framework and propose several survey modules to be integrated into surveys run by NSOs;
- in the longer run, increase the number of countries for which comparable measures of the quality of the working environment are produced, so as to improve the monitoring of job quality across countries and over time.

What is the working environment?

The "working environment" is understood in this report – as in the broader OECD framework on job quality – as a *combination of job characteristics* defining the setting where workers operate. The concept is multidimensional and encompasses a broad range of non-pecuniary characteristics of a job, ranging from the nature of the work tasks assigned to each worker to the physical and social conditions under which these tasks are carried out, the characteristics of the firm or organisation where the work takes place, the scheduling of working time, the prospects that the job provides to workers and the intrinsic rewards associated with the job. The concept denotes those *observable characteristics* of the job as they are experienced by workers.

Following this definition, a number of *guiding principles* for measurement follow. First, the working environment should be measured by looking at *outcomes* rather than *procedures*. While labour-market policies, labour codes and firm-level practices influence, to a significant extent, working conditions at both the country and the firm levels, the job conditions experienced by individual workers may be very different from what existing procedures suggest. For instance, the maximum working hours can be set at 35 hours per week by national legislation, but some workers may routinely work longer hours than this. The quality of the working environment, therefore, is best captured by focusing on

outcomes, with data on procedures and regulations used only as a second-best solution in the absence of outcome measures.

Second, the focus should be on outcomes as experienced by *individual workers* rather than what is observed at the aggregate level. As the working environment differs across workers (even when employed by the same firm), its measurement should be individual-based. Differences in the quality of the working environment are typically larger across workers within the same country than they are across countries.

Lastly, quality measures should capture, as much as possible, *objective* aspects of the job rather than *subjective* evaluations of it, which nevertheless do provide useful complementary information. While the quality of the working environment refers to a combination of objective job features, how workers evaluate their own job obviously varies from one worker to another. However, the consequences (or subjective impacts) of a good or bad quality of the working environment are logically distinct from the quality of the working environment *per se*, as workers' evaluations and experiences of their job are shaped by factors other than the working environment itself (e.g. personal characteristics or family circumstances). For this reason, these *Guidelines* recommend focusing on objective aspects of the working environment, but also that surveys include – when space allows – questions on how the working environment impacts workers' subjective well-being and productivity.

Why have these *Guidelines* been produced?

There is a strong policy need for better measures of job quality in general, and of the quality of the working environment in particular. A long-standing tradition of empirical research has linked various aspects of the working environment to workers' physical and mental well-being. For instance, epidemiological research has established a robust link between working conditions and physical health outcomes across different countries and groups of workers. Links have also been established between a poor work environment and the mental health of workers.

From a policy perspective, good data on the working environment are crucial to: 1) measure social conditions and their progress for an entire country or community along the lines described in the Stiglitz Commission report; 2) improve workers' health and well-being, as there is increasing concern that more intensive work systems, combined with greater competitive pressures at the international level, may give rise to higher levels of mental-health problems (OECD, 2015); 3) increase productivity and competitiveness, as there is evidence that the quality of the working environment is important for work performance, an effect that may become stronger in a technologically advanced economy.

Along these lines, the OECD *Guidelines* complement the OECD's Job Quality Framework as well as the 2015 UNECE's *Handbook on Measuring Quality of Employment,* a set of internationally agreed principles for compiling statistics on the quality of employment. The OECD *Guidelines* look in greater depth at some of the UNECE dimensions and sub-dimensions that relate to the working environment – namely safety and fair treatment at work (sub-dimensions 1.a and 1.c), working time and work-life balance (dimension 3), skills development and training (dimension 6), employment-related relationships and work motivation (dimension 7).

Another objective of the *Guidelines* is to help close the gap in terms of the geographical coverage of existing data. Few non-European OECD countries currently produce statistics on the quality of the working environment and, even when they do so, these measures usually focus on the physical aspects of the work, ignoring other important facets such as task

discretion and autonomy, or learning opportunities at work. The OECD *Guidelines* propose a set of questions to capture the several facets of the concept that should be measured, and that could help both data users and data producers (e.g. national statistical offices) with limited experience in collecting statistics in this field.

In sum, the set of survey questions on the quality of the working environment proposed in the *Guidelines* aim to contribute to:

- improve the *international comparability* of measures in this field by providing a common reference point for national statistical agencies
- increase *data availability on less conventional aspects* of the working environment such as psychological risks, emotional demands and intrinsic rewards
- increase *the periodicity of the data collected*, facilitating monitoring and policy intervention
- raise *the number of countries* for which high-quality measures of the quality of the working environment are produced.

How should these *Guidelines* be used?

These *Guidelines* are intended as a resource for both data producers and data users interested in the measurement of the quality of the working environment. Readers of the *Guidelines* will find different parts of this document valuable depending on their needs.

- Chapter 2 describes the current situation of data on the working environment. It also provides an overview of various policy initiatives that have focused on the broader notion of job quality and on how the concept of the working environment features in them. It then describes existing data sources and measurement initiatives in this field, identifying a number of gaps.
- Chapter 3 describes the existing evidence and conceptual frameworks that help to understand how the working environment impacts upon workers' well-being and their health and productivity. First, it documents the significant inequalities in working conditions that exist between different groups of workers. Second, it assesses the evidence on how the quality of the working environment affects workers' psychological and physical health and well-being with the help of the main theoretical frameworks used in research. Third, it reviews evidence on how the quality of the working environment affects workers' attitudes to work and their performance on the job.
- Chapter 4 presents the measurement framework used to describe the quality of the working environment; this framework focuses on those key job characteristics that could be observed by a third party at the level of individual workers. Other approaches to the notion of the quality of the working environment used in the literature, such as "job satisfaction" and the "person-job fit" approaches are also described; these approaches should be understood as measuring how the working environment, alongside a range of other factors (such as earnings and personal circumstances), might have an impact on workers' well-being.
- Chapter 5 explains how this measurement framework can be operationalised through survey questions. This is done by assessing the statistical validity of data sourced from surveys covering various job characteristics. For each characteristic, the chapter presents questions from existing international and national surveys, describes how these dimensions have been operationalised, and examines the extent to which questions from different international surveys produce consistent results across countries.

- Chapter 6 raises a number of methodological issues that need to be considered when collecting information on the quality of the working environment. It notes the importance of collecting data that cover the characteristics of both jobs and workers and that are relevant to both employees and self-employed workers. The chapter also reviews evidence on how survey modes and the place of interview affect the quality of data on the working environment collected through surveys.

The *Guidelines* also include two annexes:

- Annex 5.A reviews the consistency of country scores when assessing various job characteristics based on different international surveys. This evidence provides an additional criterion for question selection when designing a survey on the quality of the working environment.
- Annex 6.A proposes three prototype question modules on the working environment.
  - An extended module contains 25 questions selected from existing national and international surveys related to the 17 job characteristics used in the measurement framework. This module aims to provide a comprehensive assessment of the working environment, and could be implemented around every four to six years to get an in-depth appreciation of how the working environment has been changing.
  - A condensed module asks 13 questions pertaining to 11 job characteristics. The items included are those with the highest relevance to workers' well-being and with the strongest evidence on their statistical reliability.
  - Finally, a core module provides a minimal set of questions on the working environment (four) that could be included in general social surveys and implemented on a yearly basis.

Main recommendations and guidance

The main conclusions and recommendations from these *Guidelines* are summarised below. These are organised under five headings, each reflecting the content of the substantive chapters of the *Guidelines*.

Stocktaking of data and policy initiatives

Policy initiatives

- Concerns about job quality have featured prominently in the policy agenda. In Europe, the Lisbon and Nice European Councils in 2000 were among the first high-profile policy initiatives recognising the importance of job quality. In this respect, the European Commission and Council developed a set of indicators presented at the European Council in Laeken (Belgium) in 2001. Following the adoption of the European Union's Lisbon agenda, both EU employers' and trade unions' associations have proposed their own sets of job quality indicators.
- The International Labour Organisation (ILO) launched its Decent Work Agenda in 1999, adopting a set of indicators in 2012 in order to monitor implementation. More recently, the United Nations Commission for Europe (UNECE) set up an expert group – composed of representatives of the ILO, Eurostat, the OECD, Eurofound, the UNECE and Women in Informal Employment Globalising and Organising (WIEGO) as well as national statistical offices – and developed a *Handbook* to define *employment* quality.

- Finally, in 2015 the OECD presented its Job Quality Framework, which was subsequently adopted by the G20; in this context, the OECD also developed a composite Job Strain index to measure the prevalence of jobs in which workers face an imbalance between job demands and job resources. The notion of job quality features prominently in the ongoing preparation of the new OECD Job Strategy, to be presented for adoption at the OECD Ministerial Council Meeting of June 2018.

Available data

A large number of surveys have been launched to measure several aspects of the working environment. The main data sources used in these *Guidelines* are: 1) the European Working Conditions Survey (EWCS), which is the most important international data source on the quality of the working environment currently available, as it covers a wide range of topics and has been conducted in most European countries every five years since 1991; 2) the European Social Survey (ESS), a research programme co-funded by the European Commission, the European Science Foundation and national research bodies; 3) the International Social Survey Programme (ISSP), a continuous programme of cross-national surveys that has been running since 1984, which has included a rotating Work Orientations module in 1987, 1998, 2005 and 2015/6; 4) the Gallup World Poll (GWP), conducted yearly since 2005 in over 160 countries, based on samples that are representative of the civilian, non-institutionalised population aged 15 and over; 5) national surveys such as the French *Enquête Santé et Itinéraire Professionnel* (2006 and 2012), the *British Skills and Employment Surveys* (2012 and 2006) and the *Effort-Reward Imbalance Questionnaire*.

Data gaps and limitations

Despite the range of data on the quality of the working environment that is collected through various international and national household surveys, this information remains limited in many important respects:

- In terms of comprehensiveness, while there is good coverage of some aspects of the working environment for many countries, other aspects are not covered at all, or covered less well. For example, physical risk factors and work intensity are generally well covered, while data on workers' self-realisation or on the quality of management practices are seldom collected.
- Comparability is limited both across countries and in terms of different sources available for the same country. Some data sources enable international comparisons, but most of them are limited to European countries. Only a few of these sources (ISSP, GWP and ESS) cover non-European countries, but the information on the working environment collected by these is less detailed.
- In terms of frequency, the only high-quality survey on the working environment that is conducted regularly is the EWCS, which is repeated every four or five years. The ISSP Work Orientation module, currently the only survey gathering information for a large number of non-European countries, is carried out only every 8-10 years.
- Finally, most international surveys have small sample sizes (between 500 and 3 000 individuals per country), which limits the scope for disaggregating data by age, occupation or industry.

Understanding the quality of the working environment

In order to target policy initiatives, it is important to know whether there are large inequalities between different groups of workers in the quality of their working environments, whether disadvantages tend to be cumulative or counter-balancing, and how specific aspects of the working environment affect individual workers – in terms of their well-being, motivation and ability to work effectively.

Inequalities in the working environment

- While women experience much lower pay and career opportunities than men, there are no significant differences between men and women in the quality of the working environment.
- While part-timers have poorer training opportunities, job control and security, their jobs are better than those of full-time workers in terms of work pressure and the physical work environment.
- Young workers are disadvantaged with regard to job control, work pressure, the physical work environment and job insecurity, but they are as likely as others to have training opportunities.
- The three groups of workers that do experience cumulative disadvantages across a wide range of dimensions of the work environment are the low-skilled, those employed in the hotel and restaurant sector, and temporary workers.

Main conceptual frameworks

Over recent decades, an impressive body of research has demonstrated the relevance of the quality of the working environment for workers' well-being and health conditions. The three most influential models in this field have, however, emphasised different drivers of workers' well-being and psychosocial risks:

- The *demand-control model,* developed in the 1980s by Robert Karasek and colleagues, stresses the importance of job control in reducing the risk of ill health resulting from high job demands.
- The *effort-reward imbalance model,* developed by Johannes Siegrist, has emphasised the importance of norms of reciprocity and perceived fairness between the effort required of workers and the rewards that they receive in terms of pay, status recognition and security.
- The *job demands-resources model,* developed more recently by Demerouti and colleagues, has pointed to the importance of balancing the demands of the job and the resources that are available to workers to meet those demands.

While the first two models have identified distinct sets of risk factors, providing complementary explanations of the ways in which the working environment affects workers' psychological and physical health, the third model seeks to bring together the mechanisms highlighted by the other two into a broader framework, emphasising the importance of a broader range of factors in the working environment for the worker's well-being.

As the job demands-resources model includes a broader range of factors, it has been used as the main workhorse to measure the quality of the working environment in the OECD Job Quality framework. This model is also used in these *Guidelines* to identify whether a given characteristic of the working environment can be understood as either a job demand or a job resource.

Impacts on productivity

- The research evidence on the effects of the working environment on firms' productivity is less substantial than that available with respect to the effects on workers' well-being. The strongest evidence relates to its impact on absences from work, job turnover and job performance.
- The research on work engagement, organisational commitment and innovative behaviour point in a similar direction. Evidence indicates that the quality of the working environment has either positive effects or no effects on firms' performance. There is, in other words, no support for the view that the pursuit of a good working environment comes at a cost for organisational performance.

Measuring the quality of the working environment

This section lays out the measurement framework used to assess the quality of the working environment. A number of general criteria are established, before describing the key job characteristics of the working environment. This approach is then compared to other alternatives.

General criteria

- *Outcomes rather than procedures*. Work regulations provide a weak basis for assessing working conditions. These *Guidelines* hence recommend focusing on outcomes to measure the working environment. Major issues with focusing on procedures are the substantial variation between countries, industries and firms with respect to compliance, and the delay between the moment when the regulations are set in place and when they produce their effects in the workplace.
- *Individual rather than aggregate measures*. The working environment is a multidimensional concept that can be captured only at the individual level through the use of micro-level data. Another advantage of defining the quality of the working environment at the individual level is that it allows going beyond country averages to look at inequalities.
- *Objective rather than purely subjective aspects*. These *Guidelines* conceptualise the working environment as a collection of job features that are observable by a third party, implying somehow an objective standpoint. However, the consequences of the working environment on the subjective well-being of workers provide complementary information to be included in surveys.

Identifying key job characteristics

A careful review of previous research and intensive consultation with the Expert Group created to support the production of these *Guidelines* have identified 17 key job characteristics, viewed either as a job resource or a job demand, organised into six broad dimensions:

- The physical and social environments of work include physical risk factors and physical demands (i.e. job demands) and social support at work (i.e. job resources).
- Job tasks capture work intensity and emotional demands (i.e. job demands) and autonomy or task discretion (i.e. job resources).
- Organisational characteristics cover organisational participation and workplace voice, good managerial practices, task clarity and performance feedback (i.e. job resources).

- Working-time arrangements are related to unsocial work schedules (i.e. job demands) and the flexibility of working hours (i.e. job resources).
- Job prospects are linked to perceptions of job insecurity (i.e. job demands), training and learning opportunities as well as opportunities for career advancement (i.e. job resources).
- The intrinsic aspects of the job refer to opportunities for self-realisation and intrinsic rewards (i.e. job resources).

Taken together, these six dimensions allow a comprehensive assessment of the working environment, suitable for comparing countries, sectors and firms. Key advantages of the job characteristics approach are its reliability, the ability to test for its validity, comparability across respondents, countries and time and its policy amenability. It is, however, costly to implement due to the volume of information needed.

Other approaches

- A simpler approach consists of using a subjective measure of job satisfaction as a single indicator of job quality, an approach that has the advantage of capturing the individual preferences of workers. However, job satisfaction also has drawbacks: 1) it captures other aspects of the job that are not related to the quality of the working environment, such as earnings; 2) its determinants are difficult to uncover; and 3) adaptation to bad jobs may send an inaccurate signal about the quality of these jobs.
- The "person-fit" approach posits that the quality of the working environment can be assessed by looking at the match between the characteristics of the worker and those of the job: strain arises when there is a mismatch between the person and the environment, which could be due to the lack of adequate means to meet the person's needs, or because the abilities of the person fall short of the job demands. Despite its flexibility, this measurement approach is affected by self-selection of workers to well-fitting jobs, downward adaptation and limited cross-country comparability.

Statistical validity of survey questions

Most of the 17 job characteristics identified by these *Guidelines* are covered by various international and national surveys. Evidence from these surveys can be used to evaluate the convergent validity of the survey questions pertaining to each of these job characteristics. Key conclusions include the following:

- While available surveys provide good coverage of some aspects of the working environment, other aspects are less well covered. For example, the seven international surveys considered include questions on physical risk factors and work intensity, but only two of them have questions on the opportunities that a job provides for workers' self-realisation and on the quality of management practices. Comparative information on several aspects of the working environment (e.g. physical demands, task discretion and autonomy, training and learning opportunities at work, intrinsic rewards of one's job, the work-life balance, unsociable work hours and the flexibility of working hours) is currently available only for European and a few other OECD countries.
- Despite their uneven coverage, most of the job characteristics discussed in the *Guidelines* have been measured in fairly reliable ways across surveys. More specifically, survey questions on physical risk factors, training opportunities, job insecurity, social support at work, opportunities for career advancement and self-realisation, task discretion and autonomy, and the flexibility of working hours produced similar values for the countries

covered by different surveys. The results for other job characteristics, such as intrinsic rewards, are more sensitive to the question wording (e.g. negative or positive wording) and the response scales used.

- There is good evidence of convergent validity for a number of survey questions. Regarding job demands, this is the case of data on working in noisy or polluted environments, carrying heavy loads, experiencing stress and worry due to work and working during weekends, as well as hours worked per week and the perceived risks of losing one's job in the near future. Regarding job resources, this concerns data on assistance from co-workers, ability to organise the order of tasks, involvement of staff in work organisation, ability to decide about breaks or holidays, availability of training, learning new things on the job, and good opportunities for career advancement.

Methodological issues

Implementing surveys on the working environment requires making decisions about what aspects to measure and the best approaches to measuring them. General principles in this field include the following:

- *Data sources*. Primary sources of data should be preferred over secondary ones. The most appropriate sources for measuring the working environment are sample surveys covering the whole working population.
- *Unit of analysis*. The preferred unit of analysis should be the individual worker, rather than the firm or the country. Firm-level data may provide a shortcut to measuring some aspect of the working environment, in so far as management and HR practices influence working conditions, but also conceal differences across workers.
- *Self-employed workers*. The working environment is as relevant to the self-employed as it is to employees; thus, self-employed individuals should not be excluded from surveys designed to measure the quality of the working environment. Carefully worded questions that refer to the job rather than to firm-specific practices allow the same questions to be asked to both employees and self-employed workers. However, surveys should also contain questions to identify the self-employed, who often self-select into jobs with specific job characteristics, such as high autonomy.
- *Contextual questions*. The questions specifically measuring the quality of the working environment should be complemented with contextual questions covering eligibility (e.g. paid work, main job and employment status), demographic characteristics (e.g. age, gender and ethnicity), contract (e.g. temporary or permanent contracts) and employment characteristics (occupation, industry, working hours and job tenure) as well as items on workers' well-being outcomes and at-work productivity.
- *Proxy respondents*. Survey questions on the working environment cannot be answered by proxy respondents. If the survey vehicle that contains questions on the working environment allows proxy responses in its design, skip patterns should be used to prevent proxy respondents from providing answers to these questions.
- *Survey mode*. Self-administered surveys (telephone or internet surveys) produce lower response rates and higher non-completion rates than interviewer-led surveys. Also, individuals respond more negatively to questions of a subjective nature in self-administered surveys. More factual questions – as recommended in these *Guidelines* – are less likely to be affected by survey mode effects.

- *Sampling frame*. The sample should be representative of the working population. The most appropriate sampling frame is hence represented by all individuals within an age band who have done paid work in the reference week of the survey. However, household surveys or social surveys with a sampling frame that covers all people living in private households can also be used for measuring the quality of the working environment. In these cases, sample weights should be applied in order to correct for over-representation of members of the same household.
- *Survey frequency*. Statistics on the quality of the working environment should be collected on a regular basis. If collected approximately every five years, specialised working conditions surveys may capture major changes in the quality of the working environment. More frequent (i.e. annual or quarterly) collection of core questions on the working environment in general surveys, on the other hand, would allow working conditions to be more closely monitored for policy action.

Conclusions

As compared to other aspects of the "Beyond GDP" agenda, a substantial body of evidence and statistical practice already exists in the field of the working environment, mainly reflecting long-established regulations to address health and safety concerns in the workplace. But both the nature of the working environment and the key aspects shaping it have evolved over time, reaching beyond the physical risk factors that were the focus of traditional health and safety regulations, to encompass a much broader range of socio-environmental aspects. In a context where changes in work organisations and labour-market practices increasingly highlight the limits of metrics exclusively focused on the *quantitative* aspects of jobs (e.g. employment counts based on whether people have worked for at least one hour during the survey reference week), and where disparities in how labour markets shape people's lives depend on the *quality* of the jobs that people hold, policy demands for better metrics of people's working conditions are bound to increase in the future, as witnessed *inter alia* by the inclusion of targets relating to job quality and decent work in the 2030 Agenda.

Chapter 1

Introduction: Rationale and motivation for these Guidelines

This chapter sets out the scope and goals of these Guidelines on Measuring the Quality of the Working Environment, and the rationale for their production. It provides a definition of what the working environment is, and discusses its importance for both workers' well-being and firms' productivity.

1.1. Introduction

The concept of the "working environment" refers to the *combination of characteristics* defining the setting where workers operate. The concept is multidimensional and encompasses a broad range of non-pecuniary characteristics of the job, ranging from the nature of the work tasks assigned to each worker to the physical and social conditions under which these tasks are carried out, the characteristics of the firm or organisation where work takes place, the scheduling of working time, the prospects that the job provides to workers and the intrinsic rewards associated with the job. The concept denotes those *observable characteristics* of the job as they are experienced by workers.

A number of measurement implications follow from this definition. The first is that the quality of the working environment should be measured by looking at *outcomes,* rather than *procedures*. The second is that the focus should be on outcomes experienced by *individual workers* rather than on what is observed at the aggregate level. The third is that measures should capture, as much as possible, *objective* aspects of the job rather than *subjective* evaluations of it. While the rationale for each of these criteria is described in greater detail in Chapter 4, a first take is provided below:

- *Outcomes versus procedures*. While labour-market policies, labour codes and firm-level practices influence, to a significant extent, working conditions at both the country and the firm levels, work is carried out by individual workers in conditions that may differ widely. For instance, the maximum working hours can be set at 35 hours per week by national legislation but actual work hours can be significantly higher than this threshold for some workers. Similarly, a firm can provide training courses for employees, yet some workers may be unaware of their existence or have too much work to attend them. The quality of the working environment, therefore, is best captured by focusing on outcomes, with data on procedures and regulations used only as a second-best solution in the absence of outcome measures.
- *Individual-level versus aggregate measures*. As the quality of the working environment differs across workers (even when employed by the same firm), any measure of it should be individual-based. A high-quality working environment will reflect the combination of different characteristics, which can be assessed only if information on all these aspects is available for the same person. Differences in the quality of the working environment are typically larger across workers within a country than they are across countries. Adequate policies can be developed only when workers with poor-quality jobs are identified. In other words, while individual-level information on the quality of the working environment can be aggregated at the level of socio-demographic groups, firms, sectors or countries, measurement should be carried out at the level of individual workers, with aggregate data (e.g. economy-wide data on the number of work-related accidents) used only as "space holders" in the absence of individual-level measures.
- *Objective versus subjective aspects*. These *Guidelines* refer to "objective aspects" as those that are, in principle, observable by a third party. While the quality of the working environment

refers to a combination of objective job features, how workers evaluate their own jobs is obviously a crucial element of workers' experiences on the job, and many aspects of the working environment can be based only on self-reports by individual workers. But the consequences of a good or bad quality of the working environment are logically distinct from the quality of the working environment *per se*, as workers' evaluations and experiences of their job are shaped by factors other than the quality of the working environment itself (e.g. personal characteristics, or family circumstances). For this reason, these *Guidelines* recommend that, beyond measuring various aspects of the working environment, surveys also include – when space allows – questions on how these impact on workers' well-being and productivity.

1.2. Why is the quality of the working environment important?

The quality of the working environment is important for both intrinsic and instrumental reasons.

Intrinsic aspect

The report by the Commission on the Measurement of Economic Performance and Social Progress, led by Joe Stiglitz, Amartya Sen and Jean-Paul Fitoussi,[1] argued that: "Paid work matters for quality of life partly because it provides identity to people and opportunities to socialise with others. However, not all jobs are equally valuable in this respect. This underscores the importance of collecting more systematic information on the quality of paid work" (Stiglitz, Sen and Fitoussi, 2009). Indeed, some jobs have undesirable attributes such as exposure to high physical risks and long working hours that are bad in themselves. When workers holding these *bad* jobs are rewarded with higher wages, then job quality is not necessarily an issue. The theory of "compensating wage differentials" argues that wage differences typically offset differences in various non-monetary attributes of jobs, hence effectively equalising the quality of jobs.[2] In this perspective, a competitive labour market should lead to a situation where workers with similar skills and productivity are still paid different wages, as employers compensate those workers who are available to work in less desirable conditions through higher pay.

There is, however, much empirical evidence that jobs with a poor working environment *do not* always pay higher wages. For instance, Duncan and Holmlund (1983) showed that, while there is evidence of wage compensation for dangerous and stressful working conditions in the United States, this does not apply to hard physical labour and inflexible hours. Similarly, Fernández and Nordman (2009) found that jobs with poor working conditions in the United Kingdom paid *lower* earnings, contrary to the claims of the theory of compensating differentials. Ose (2005) showed that Norwegian workers are not fully compensated for higher levels of noise in their working area, or for heavy or frequent lifting of weights or for poor work postures.[3] The existence of only partial or no compensating wage differentials implies that, for any assessment of the overall quality of jobs, the quality of the working environment should be measured alongside earnings and other labour-market features.

The link to workers' well-being

A long-standing tradition of empirical research has linked various aspects of the working environment to workers' physical and mental well-being. For instance, epidemiological research has established a robust link between working conditions and

physical health outcomes across different countries and groups of workers (for a review, see OECD, 2014, Annex 3.A.1). These studies typically measure work characteristics through a baseline questionnaire administered to individual workers, who are then followed over a number of years; some of these studies also link initial working conditions with workers' health status in later periods, through official health registers, clinic examinations or self-reports by employees.[4] These studies provide good evidence on the *causal role* of a poor working environment, with a strong adverse effect of job strain on a number of health outcomes, such as cardiovascular and coronary heart diseases, high blood pressure and musculoskeletal diseases (e.g. Kivimäki et al., 2012; Slopen et al., 2012).

Links have also been established between a poor work environment and workers' mental health. Most of this evidence comes from cross-sectional analyses based on self-reported measures of both working conditions and health status (Bakker and Demerouti, 2007). Because of the cross-sectional nature of the data used in most of these studies, establishing the direction of causation is obviously complex: workers facing poor working conditions are more likely to report mental health disorders because of high job strain, but individuals with mental health problems are also more likely to report high job strain because of their poor health conditions. To deal with possible reporting bias, some studies have used scoring of workplace conditions at the level of work units, finding evidence of an adverse health effect of job strain, and lending support to the view that the causal link runs from job strain to health outcomes, rather than the other way around (Kolstad et al., 2010). Longitudinal studies tend to confirm this conclusion (Stansfeld and Candy, 2006; Netterstrøm et al., 2008); in particular, when controlling for the duration and intensity of exposure to job strain, these studies typically find evidence of strong links between job strain and the development of mental health disorders (e.g. Stansfeld et al., 2012).

The link to firms' productivity

A second instrumental reason for focusing on the quality of the working environment is the possibility that it could enhance firms' productivity. Research on the link between job quality and productivity is still at an early stage, with most studies relying on cross-sectional analysis and on measures of workers' attitudes that might be expected to be associated with higher firm productivity (e.g. work engagement, innovative behaviours), rather than on matched workers-firms micro-data (see Chapter 3). Despite these limitations, a recent OECD-wide meta-analysis (Arends, Prinz and Femke, 2018) reported *strong evidence* of a negative relationship between job stress and job strain, on one side, and at-work productivity, on the other, and of a positive relationship between job rewards and productivity, with *moderate evidence* of a significant relationship for a range of other work aspects. Longitudinal or quasi-experimental studies also indicate that the quality of the working environment is connected to productivity through both direct and indirect links. For example, more skilled workers typically have higher work performances, with positive effects for the performance of the firm that they work for; for this reason, jobs that provide opportunities for learning and training tend to have higher productivity. Dearden, Read and Van Reenen (2006) used longitudinal data to show that training which enhances skills is associated with higher productivity (measured as real value added per worker). Another job feature with a direct link to productivity is work accidents, which cause a loss of working days and grief among employees.

The indirect effect of a good-quality working environment on a firm's productivity also stems from the "happy worker-productive worker" thesis (Wright and Cropanzano, 2004),

i.e. the notion that employees who are more satisfied with their job will also work harder. There are a number of mechanisms through which good-quality jobs might increase workers' productivity. For example, work autonomy provides greater scope for employees to shape their jobs and enhances the person-job fit, and thus both workers' well-being and their productivity (Daniels, 2011). Information sharing is likely to increase workers' knowledge of their firm's objectives and plans, reduce uncertainty in the work environment and increase productivity (Wood et al., 2012). Finally, jobs that are seen as enhancing careers contribute to higher job satisfaction (Warr, 2007) and higher performance on the job. In short, there is enough evidence that the greater well-being, job satisfaction and motivation associated with better-quality working environments have a positive impact on a firm's staff turnover, "presenteeism"[5], sickness leave and other measures of job performance, with positive spill-overs for its productivity.

1.3. How could better data on the quality of the working environment help policies?

The importance for policy of good data on the quality of the working environment can be linked to three different considerations:

- first, the importance of measuring social conditions for an entire country or community
- second, the importance of improving workers' health and well-being
- third, the goal of increasing productivity and competitiveness in the context of technologically advanced economies.

With respect to the first element, the need to inform policy making with indicators of social conditions that go beyond traditional measures of economic growth is now widely recognised: measures of economic growth fails to capture important changes in the social environment that affect people's well-being (Stiglitz, Sen and Fitoussi, 2009). The need for measures of the quality of the working environment is a clear example of this. The experience of work is of fundamental importance for the psychological and physical well-being of workers. But, since economic growth can be achieved through different systems of work organisation – with better or worse implications for the working experiences – it cannot capture changes in working conditions. While this has long been recognised with respect to physical working conditions, leading to programmes to regulate health and safety at work, more recent research has documented the links between the work environment and workers' psychological well-being. Better data on the work environment can provide a more comprehensive picture of social development and are vital for understanding other important social outcomes such as people's health status, their competencies, their political voice and subjective well-being.

With respect to the second element, the ability of policy makers to track changes in the quality of the working environment and to introduce relevant reforms has obvious implications for the challenges that they confront with respect to health provision. There is increasing concern that more intensive work systems, combined with greater competitive pressures at the international level, may give rise to higher levels of mental health problems. Mental health problems are a substantial source of absences from work, with high economic costs due to lost production and to increased demands on health care and welfare provision (Chandola, 2010; HSE, 2013; OECD/EU, 2016). In OECD countries, people diagnosed with a mental disorder account for 30-40% of disability benefit caseloads, at a cost of around 0.7% of GDP (OECD, 2015). There are similar implications for sickness benefit and social assistance

programmes. Policy makers hence need better data to establish which developments in the work environment lead to an increase in psychological ill health, and how sources of stress can be mitigated by improved work design on the part of employers. Failure to do so could lead to escalating costs that fall on the budgets of welfare and public health systems as externalities from a poor working environment.

Finally, as mentioned already, there is also evidence that the quality of the working environment is important for work performance, an effect that may become stronger in a technologically advanced economy. The strongest effect of technological change on occupational structure has been the growing share of highly skilled jobs (Handel, 2012; Fernández-Macías et al., 2012). These jobs typically require stronger motivation and greater discretionary effort by workers. Skilled work involves greater complexity and uncertainty, making tasks more difficult to specify in advance and to monitor effectively. In these conditions, the quality of work depends, to a greater extent than before, on workers' motivation, willingness and capacity to use their own initiative. Policies to increase workers' productivity and firms' competitiveness need to be informed by good evidence on those characteristics of the work environment that enhance workers' motivation and provide scope for their initiative and discretionary effort.

Providing reliable evidence to policy makers on how the quality of the working environment is changing requires the regular collection of high-quality and representative data. The past two decades have witnessed a substantial increase in the evidence base available, partly as a result of national studies and partly through cross-country studies, mainly on countries in the European Union.[6] However, we are still far from the ideal situation of being able to draw on cross-country comparable datasets with large samples. While it is currently possible to compare *average* differences in the quality of the working environment across countries and, less reliably, between broad groups of workers – e.g. by gender, education level and economic sector – it is difficult to draw reliable conclusions about country differences for smaller sub-groups of the workforce or by occupation. These differences are nonetheless highly important for policy discussion. For instance, while there has been much debate about the benefits and disadvantages of temporary contracts, it is difficult, with currently available datasets, to compare cross-nationally the conditions experienced by different types of temporary workers and to know how these vary by gender, age and skill level. This limits both the ability of researchers to explore whether the social consequences of temporary work are affected by the institutional framework of different countries and the capacity of policy makers to draw conclusions about the types of measures that might be most effective.

Finally, the good-quality cross-country data that currently exist are mainly limited to developed countries. An important priority for future work will be to extend coverage to a much wider range of countries, while responding to the challenge of selecting the indicators that are relevant to structurally different economies and that take account of the diversity of working conditions that this implies.

1.4. Objectives of these Guidelines

All too often, in policy, *what is not measured is not acted on*. In other words, public policy seldom targets areas where no credible statistics exist. While a multitude of academic and national surveys on the quality of the working environment exist, the area requires further steps to *streamline* on-going initiatives. Moreover, there is a substantial gap in terms of the

geographical coverage of existing data. Few non-European OECD countries produce statistics on the quality of the working environment and, even when they do so, they usually focus on physical aspects of the work, ignoring other important aspects such as task discretion and autonomy or learning opportunities at work. These OECD *Guidelines* propose, based on the best evidence and research that is currently available, a set of questions to capture the several facets of the concept that should be measured together and that could help both data users and data producers (e.g. national statistical offices) with limited experience in collecting statistics in this field.

The *set of survey questions* on the quality of the working environment proposed by these *Guidelines* aim to:

- improve the *international comparability* of measures in this field by providing a common reference point for national statistical agencies
- *increase data availability on less conventional aspects* of the quality of the working environment such as psychological risks, emotional demands, intrinsic rewards, etc.
- *increase the periodicity of the data collected*, facilitating better monitoring and policy intervention
- *raise the number of countries* for which high-quality measures of the quality of the working environment are produced.

The OECD *Guidelines* presented in this report complement the UNECE's *Handbook on Measuring Quality of Employment* (2015), a set of internationally agreed principles for compiling statistics on the quality of employment. As in the OECD's Job Quality Framework (Cazes, Hijzen and Saint Martin, 2015), the UNECE Statistical Framework defines employment at the individual level and as a multidimensional concept, based on 7 dimensions and 12 sub-dimensions. These OECD *Guidelines* look in greater depth at some of the UNECE dimensions and sub-dimensions that relate to the quality of the working environment – namely, safety and fair treatment at work (sub-dimensions 1.a and 1.c), working time and work-life balance (dimension 3), skills development and training (dimension 6), and employment-related relationships and work motivation (dimension 7). In other words, the *OECD Guidelines* build upon the UNECE Statistical Framework, aiming to expand the information base available in this field.

Notes

1. *Report by the Commission on the Measurement of Economic Performance and Social Progress* (Stiglitz, Sen and Fitoussi, 2009).
2. Adam Smith, in *The Wealth of Nations*, first argued that "The wages of labour vary with the ease or hardship, the cleanliness or dirtiness, the honourableness or dishonourableness of the employment" (Smith, 1776).
3. For a detailed review of the theory of compensating wage differentials, see Muñoz de Bustillo et al. (2011).
4. Well-designed epidemiological studies select participants who are free of the health outcome in question at the baseline stage and control for common risk factors such as lifestyle factors (e.g. tobacco smoking, alcohol intake and physical activity) and coronary risk factors (e.g. cholesterol and diabetes status).
5. The term "presenteeism" is generally used to denote situations where workers feel compelled to be at work despite being sick, with consequences in terms of lower productivity, further declines in their health, exhaustion and possible epidemics at the workplace.
6. As argued at greater length in Chapter 2, the different sources of available data have distinctive advantages and disadvantages. National studies typically have larger samples and provide evidence

across longer periods of time, allowing a detailed examination both of differences in the working environment for different groups of workers and of how these have changed across time; they are, however, difficult to compare across countries due to differences in survey design, question wording, response scales and indicators used to measure specific job characteristics. Cross-national studies provide a stronger basis for comparison between countries, but they are usually restricted to small samples that make it difficult to disaggregate the data to examine the conditions affecting detailed categories of workers.

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Chapter 2

The current situation of data on the quality of the working environment

This chapter provides an overview of various policy initiatives that have focused on the broader notion of job quality and at how the concept of the quality of the working environment features in them. It then describes existing data sources and measurement initiatives in this field, identifying a number of gaps.

2.1. Introduction

Labour-market policies have typically focused on creating jobs and reducing the most visible forms of labour under-utilisation (i.e. unemployment). While this obviously remains important, especially in the aftermath of the 2007 financial crisis and in the light of concerns about the impact on work of technology and innovation, there has also been growing recognition that focusing *only* on the quantity of jobs provides a very partial view of the challenges facing societies. Increasingly, access to paid employment fails to provide the means to a successful career and often leads to jobs that do not pay enough to assure adequate living standards for workers and their families. As a result, a growing number of policy initiatives pursued since the year 2000 have paid attention to the notion of *job quality* and, within this, to the conditions in which workers perform their duties.

This chapter provides an overview of how the concepts of job quality and quality of the working environment have been used in the context of broad policy strategies focused on the labour market and social exclusion. It describes the dimensions and indicators that these strategies have used, and the demand that they have raised for better statistics in this field (Section 2.2). The chapter then describes the current data situation and the various measurement initiatives that have been undertaken to meet this demand (Section 2.3) as well as the persistent gaps that remain in this field (Section 2.4).

2.2. Policy initiatives on job quality

The European Union's processes

Concerns about job quality have featured prominently at the European level. The Lisbon and Nice European Councils in 2000 were among the first high-profile policy initiatives recognising the importance of job quality in the context of the European Strategy against poverty and social exclusion.[1] For this purpose, the European Commission and Council developed a set of indicators that were presented at the European Council in Laeken (Belgium) in 2001. The Laeken process defined quality of work as a multidimensional concept involving "the objective characteristics related to employment, both the wider work environment and the specific characteristics of the job; worker characteristics – the characteristics the employee brings to job; the match between worker characteristics and job requirements; and the subjective evaluation (job satisfaction) of these characteristics by the individual worker" (European Commission, 2001). The Commission operationalised the notion of quality of employment along 10 dimensions relating to the characteristics of jobs and workers as well as to the wider socio-economic and labour-market contexts. These 10 dimensions are organised in two major areas: the *characteristics of work* and the *work and wider labour-market context*. The Council recommended a number of indicators to measure each of the 10 dimensions except for social dialogue, for which no agreement was reached (Table 2.1).

The Laeken indicator set was pioneering in measuring the quality of the working environment, as some of its dimensions cover its most important aspects, e.g. intrinsic job quality, lifelong learning and career development, health and safety at work, work

Table 2.1. **EU Laeken indicators of job quality, 2001**

Dimensions	Indicators
	I. Characteristics of work
(1) Intrinsic job quality*	• Transition between non-employment and employment by pay level • Transition between non-employment and employment by contract type • Satisfaction by type of work in present job
(2) Lifelong learning and career development*	• % of working population by age in education and training • % of the labour force using computers in work
	II. Work and wider labour-market context
(3) Gender equality	• Ratio of women's gross hourly earnings to men's for paid employees • Gap in employment rates between men and women • Gender segregation in sectors
(4) Health and safety at work*	• The evolution of the incidence rate of accidents
(5) Flexibility and security	• No. of employees working part-time or with fixed-term contract
(6) Inclusion and access to the labour market	• Transitions between employment, unemployment and inactivity • Transitions between non-employment, employment and training • Total employment rate, by age group and education • Total long-term unemployment rate, by gender • Percentage of early school leavers • Youth unemployment ratio
(7) Work organisation and work-life balance*	• Differences in employment rates for individuals aged 20-50 with or without children aged 0-6 • Children cared for as a proportion of all children in the same group • Employees who over the last year left their job for family duties but intend to go to work
(8) Social dialogue and workers' involvement*	(*No indicator was agreed upon*)
(9) Diversity and non-discrimination*	• Gap in employment rate between workers aged 55-64 and those under 55 • Gaps in employment and unemployment rates for ethnic minorities and immigrants
(10) Overall economic performance and productivity	• Growth in labour productivity (per hour worked and per person employed) • Total output (per hour worked and per person employed) • Percentage of the population having achieved at least upper secondary education (by gender, age group and employment status)

Note: * denotes dimensions and indicators that refer to the quality of the working environment.
Source: Authors' elaboration from: European Commission (2001), "Employment and Social Policies: A Framework for Investing in Quality", Brussels.

organisation and work-life balance, social dialogue and workers' involvement, and non-discrimination. However, the indicators selected for these dimensions were either only weakly related to the quality of the working environment itself or were only measured at the aggregate level. For instance, the key policy objective of the *intrinsic job quality* dimension of the Laeken indicators is to ensure that jobs are intrinsically satisfying and compatible with workers' skills and abilities and that they provide appropriate levels of income. However, upon inspection, neither skill match nor earnings levels are directly linked to the *intrinsic characteristic of the job*; moreover, none of the proposed indicators captured the non-pecuniary aspects of jobs, focusing instead on labour-market transitions (i.e. transition rates between non-employment and employment by pay levels and contract type). This dimension also includes a subjective measure of overall satisfaction with the job, alongside objective indicators of some of the key drivers of job satisfaction, which implied some double counting.

Similarly, the *lifelong learning and career development* dimension of the Laeken indicators aimed at capturing the extent to which the work environment provided workers with opportunities for development and career progression. However, the indicators proposed for this dimension captured this important aspect only to a limited extent. For

instance, one of the proposed indicators was the *share of the labour force using computers at work*, which – while capturing the skills level of the workforce – says little by itself about the conditions in which computers are used in the workplace.

Finally, some of the indicators used for measuring *work organisation and work-life balance* and *non-discrimination* were also designed to account for the distribution of job quality across population groups (e.g. differences in employment rates for people aged 20-50, with or without children below the age of 7; or employment and unemployment gaps for minorities and migrant groups). However most of these indicators are about access to the labour market rather than the quality of the working environment *per se*.

The main rationale for the selection of the Laeken indicators is in the fact that they were drawn from information that happened to be available (e.g. the European Commission Household Panel and the European Labour Force Survey) rather than on reflection about what should have been measured in order to adequately describe the quality of the working environment. In addition to the inability to measure what should have been measured, the set of indicators included both outcomes and contextual variables, covering too many items at once and lacking a coherent conceptual framework (e.g. work and worker characteristics, subjective evaluations, worker-job fit, etc.). At the same time, other critical aspects of the quality of the working environment, such as hours worked and the nature of work tasks, were simply not included among the Laeken indicators. Despite these shortcomings, this EU initiative marked an important step for raising the profile of the quality of the working environment in the policy debate and generated follow-up initiatives by social partners aimed at better measuring some of its key aspects (Box 2.1).

Box 2.1. **Job quality indicators proposed by EU social partners**

Following the adoption of the European Union's Lisbon agenda, both EU employers' and trade unions' associations have put forward their own set of job quality indicators. With respect to employers, in 2001 BusinessEurope (the former Union of Industrial and Employers' Confederation of Europe, UNICE) proposed the set of job quality indicators shown in Table 2.2. While expressing broad support for the EU's policy agenda, the employers' confederation also stressed the importance of focusing on a *limited* number of objectives, relying on comparable and up-to-date indicators drawn from available data (UNICE, 2001). The nine indicators proposed by UNICE focus on health and safety at work, productivity and skills, and overall labour-market performance. Only two of these indicators, however, relate

Table 2.2. **Business Europe indicators of job quality, 2001**

(1) Number of fatal and serious accidents*
(2) Rate of occupational diseases*
(3) Number of days lost due to sickness
(4) Labour productivity
(5) Proportion of working population by levels of education
(6) Proportion of population by levels of ICT literacy
(7) Average time taken to find first or new job
(8) Employment rate and unemployment rate
(9) Proportion of working-age population creating their own enterprise

Note: * dimensions and indicators that refer to the quality of the working environment.
Source: Authors' elaboration from the Union of Industrial and Employers' Confederation of Europe (UNICE) 2001 report, UNICE position paper on the Commission Communication: "Employment and social policies: A framework for investing in quality".

Box 2.1. **Job quality indicators proposed by EU social partners** *(cont.)*

to the quality of the working environment *per se*, i.e. those pertaining to physical health risks at work (number of fatal and serious accidents at work, and occupational diseases). An indicator on the number of days lost due to sickness was also recommended by UNICE as capturing other characteristics of work that may affect workers' well-being, such as psychosocial risks or job content.

A few years later, in 2008, the European Trade Union Institute (ETUI), the research arm of the European Trade Union Congress, proposed a job quality index in order to monitor progress in creating *more and better jobs* – the goal of the European Employment Strategy. This index has six sub-indices pertaining to: 1) wages; 2) non-standard forms of employment; 3) working-time and work-life balance; 4) working conditions and job security; 5) skills and career development; and 6) collective interest representation (Table 2.3). Half of these sub-indices are related, at least partly, to the working environment, which makes the ETUI's index one of the first initiatives to measure the working environment at the international level. The *working time and work-life balance* sub-index included indicators of long work hours, shift work and unsocial work hours, as well as satisfaction with work-life balance. The *working conditions and job security* sub-index considered indicators on how the work is done (i.e. intensity, autonomy and physical conditions) as well as on the perceived likelihood of job loss. The *skills and career development* sub-index included measures of career prospects and participation in education and training (although without distinguishing whether training is work-related or not or is provided by employers or by general educational institutions). These various indicators mainly relied on individual-level observations, using micro datasets such as the European Union Labour Force Surveys and European Working Conditions Surveys,[2] with each dimension reported at the country level with gender breakdowns. While planned to be updated annually, these indicators were compiled only for 2008 and 2012, due to data limitations (the European Working Conditions Survey being conducted only every five years). Beyond gathering data on the various indicators, the ETUI also presented composite measures for the six dimensions as well as a synthetic index obtained by summing the un-weighted and normalised scores from the sub-indices.

Table 2.3. **The ETUI job quality index**

Dimension	Indicators
(1) Wages	• Nominal compensation per employee in euros at purchasing power parities • In-work poverty rate
(2) Non-standard forms of employment	• Percentage of temporary employees (by involuntary status) • Percentage of part-time employees (by involuntary status)
(3) Working time and work–life balance*	• Share of employees working more than 48 hours a week • Share of workers in shift work or unsocial hours schedules • Share of voluntary part-time workers • Share of workers who are satisfied with their work-life balance
(4) Working conditions and job security*	• Work intensity • Work autonomy • Physical work factors • Perceived work security
(5) Skills and career development*	• Share of population participating in education and training (aged 25-64) • Perceived career prospects from current job
(6) Collective interest representation	• Collective bargaining coverage • Trade union density • Whether the worker is consulted about changes in work organisation

Note: * dimensions and indicators that refer to the quality of the working environment.
Source: Authors' elaboration from: Leschke, J. and A. Watt (2008), "Job quality in Europe", *ETUI-REHS Working Paper*, No. 2008/07, *www.etui.org/Publications2/Working-Papers/Job-quality-in-Europe*.

As a follow-up to the Lisbon and Nice European Councils in 2000 and the Laeken indicators, and in an effort to help overcome the economic crisis, the EU Employment Committee (EMCO, the main advisory committee for Employment and Social Affairs Ministers in the employment field) released in 2010 a report that stressed the importance of the quality of work (encompassing both job and worker characteristics) and the adaptability of the workforce. The EMCO defined the quality of work along four dimensions and proposed a set of indicators for monitoring purposes, which included: 1) socio-economic insecurity (measured by adequate earnings, and measures of job and career security); 2) education and training (skills development and employability); 3) working conditions (health and safety at work, work intensity, autonomy and collective interest representation); and 4) the work-life and gender balance (Table 2.4).

Table 2.4. **EU Employment Committee's quality of work indicators**

Dimension	Sub-dimension	Indicators
(1) Socio-economic security	1a. Adequate earnings	• Mean monthly earnings in Purchasing Power Parities, companies with 10 employees or more • In-work at-risk-of-poverty rate • Transitions by pay level (fraction of individuals with at least the same pay) • Am well paid for the work I do
	1b. Job and career security	• Involuntary temporary employment • Labour transition – employment security • Labour transition temporary to permanent • Job offers good prospects for career advancement
(2) Education and training	2a. Skills development*	• Continuing vocational training (CVT) hours per participating person • CVT participation • Main paid job involves learning new things • Tasks do require different skills • On-the-job training over last 12 months • Present skills correspond well with my duties
	2b. Employability	• Participation in lifelong learning employed people (Labour Force Survey, LFS) • Participation in lifelong learning, unemployed people (LFS) • Early leavers from education and training, share of the population (LFS) • Percentage of the population aged 25-64 having completed at least upper secondary education (LFS) • E-skills of adults – Computer skills. Persons with at least medium computer skills
(3) Working conditions	3a. Health and safety at work*	• Serious accidents at work per 100 000 persons in employment • Non-exposure to unhealthy environment • Healthy physical conditions • Well informed on health and safety risks • Think that health or safety is NOT at risk because of your work • Work does NOT affect health • Non-exposure to harassment, humiliation, etc.
	3b. Work intensity*	• Work when sick over last 12 months/not sick • NOT working at very high speed • NOT working to tight deadlines • Enough time to get the job done • NO experiencing of stress in your work
	3c. Autonomy*	• Work pace NOT dependent on automatic speed of a machine or movement of a product • Work pace NOT dependent on the direct control of your boss • Occasionally/never interrupt a task in order to take on an unforeseen task • Self-responsibility • Team members decide by themselves on the division of tasks • Team members decide by themselves the timetable of the work
	3d. Collective interest representation	• Union density • Collective pay agreement, share any • Have raised work-related problems with an employee representative over last 12 months • Employee is acting as an employee representative • Management holds meetings in which you can express your views about what is happening in the organisation

Table 2.4. **EU Employment Committee's quality of work indicators** *(cont.)*

Dimension	Sub-dimension	Indicators
(4) Work-life and gender balance	4a. Work-life balance*	• Inactivity due to family or personal responsibilities • Part-time work due to family or personal responsibilities • Lacking formal care for small children: % of children <3 years not formally cared for • Employment impact of parenthood – men • Employment impact of parenthood – women • Certain possibilities to adapt working time • Taking one or two hours off to take care of personal or family matters is NOT (too) difficult • NO long working hours • Working hours fit with family or social commitments outside work well or very well • Less often/never worked in free time in order to meet work demands
	4b. Gender balance	• Gender pay gap by socio-economic status 2010 • Gender employment gap LFS • Immediate boss a woman

Note: * dimensions and indicators that refer to the quality of the working environment.
Source: Authors' elaboration from EMCO (2010), Quality in Work – Thematic Review 2010, Brussels.

Two of these four dimensions, i.e. *working conditions* and *work-life and gender balance*, clearly pertain to the quality of the working environment; however, the indicators used had different units of observation and combined outcome and input measures. The *working conditions* dimension included measures not only of "health and safety at work" (which are important for the sustainability of employment) but also of psychosocial risks (i.e. "work intensity" and "autonomy"). While these are measured at the individual level and through outcome-based indicators, the indicator for *collective interest representation* refers to procedures rather than outcomes. Finally, the *work-life and gender balance* dimension focused predominantly on integrating women in the labour market, ignoring women's experiences in the workplace.

The International Labour Organisation's decent work agenda

The International Labour Organisation (ILO) launched its Decent Work Agenda in 1999, adopting a set of indicators in 2012 in order to monitor implementation. The indicators correspond to ten strategic elements of the Agenda: 1) employment opportunities; 2) adequate earnings and productive work; 3) decent working time; 4) combining work, family and personal life; 5) work that should be abolished; 6) stability and security of work; 7) equal opportunity and treatment in employment; 8) safe work environment; 9) social security and social dialogue; and 10) employers' and workers' representation (Table 2.5). A number of these elements – such as decent work time, combining work and family file, and safe work environment – relate to the quality of the working environment.

The purpose of these indicators was to allow governments and social partners to assess progress towards decent work and offer comparable information for analysis and policy development. For this reason, the indicators were not used to generate country rankings and synthetic indices. Decent work indicators have one notable strength, i.e. a broader geographical coverage than European initiatives, as they consider the labour-market characteristics of both developing and emerging economies. In order to account for differences in the regulations and labour markets of different countries, these indicators are supplemented by a set of legal framework indicators.[3] The indicators are selected according to the availability of official data and good documentation on the measurement properties of each indicator.

Table 2.5. **ILO decent work indicators**

Dimensions	Indicators
(1) Economic and social context for decent work	• Children not in school (percentage by age) • Estimated percentage of working-age population who are HIV-positive • Labour productivity (GDP per employed person, level and growth rate) • Income (consumption) inequality (percentile ratio P90/P10) • Inflation rate (Consumer Price Index, CPI) • Employment by branch of economic activity • Education of adult population (adult literacy rate, adult secondary school graduation rate) • Labour share of GDP • Real GDP per capita in USD at purchasing power parities (level and growth rate) • Female share of employment by economic activity (International Standard Industrial Classification, ISIC) • Earnings inequality (percentile ratio P90/P10) • Poverty measures
(2) Employment opportunities	• Employment-to-population ratio • Unemployment rate • Youth not in education and not in employment • Informal employment rate • Labour force participation rate • Youth unemployment rate • Unemployment by level of educational attainment • Employment by status in employment • Proportion of own-account workers and contributing family workers in total employment • Share of wage employment in non-agricultural employment
(3) Adequate earnings and productive work	• In-work poverty rate • Low pay rate • Average hourly earnings in selected occupations • Average real wages • Minimum wage as percentage of median wage • Manufacturing wage index • Employees with recent job training (past year)
(4) Decent working time*	• Employment in excessive working time (more than 48 hours per week) • Employment by weekly hours worked (hours in standardised hour bands) • Average annual working time per employed person • Time-related underemployment rate
(5) Combining work and family life*	• Asocial/unusual hours • Maternity protection
(6) Work that should be abolished	• Child labour rate • Hazardous child labour rate • Rate of worst forms of child labour other than hazardous work • Forced labour rate • Forced labour rate among returned migrants
(7) Stability and security of work	• Precarious employment rate • Job tenure • Subsistence worker rate • Real earnings of casual workers
(8) Equal opportunity and treatment in employment	• Occupational segregation by sex • Female share of employment in senior and middle management • Gender wage gap • Share of women in wage employment in the non-agricultural sector
(9) Safe work environment*	• Occupational injury frequency rate, fatal • Occupational injury frequency rate, non-fatal • Time lost due to occupational injuries • Labour inspection (Inspectors per 10 000 employed persons)
(10) Social security	• Share of population above the statutory retirement age (65+) benefiting from an old-age pension • Public social security expenditure (percentage of GDP) • Health expenditure not financed out of pocket by private households • Share of economically active population contributing to a pension scheme
(11) Social dialogue, workers' and employers' representation	• Trade union density rate • Enterprises belonging to an employers' organisation • Collective bargaining coverage rate • Days not worked due to strikes and lockouts

Note: * denotes dimensions and indicators that refer to the quality of the working environment.
Source: Authors' elaboration from ILO (2012), *Decent Work Indicators: Concepts and Definitions: ILO Manual*, International Labour Office, Geneva.

However, these indicators also have their weaknesses. First, some of the most important aspects of the working environment are not covered, such as work intensity, work autonomy and psychosocial risks. Second, some indicators pertain to both procedures and outcomes: for instance, for the dimension *safe work environment*, the indicator on the number of injuries relates to outcome, whereas that on the number of labour inspectors focuses on procedures. Third, as most indicators are defined at the aggregate level, they do not allow assessing the quality of the working environment for population sub-groups. These limitations mainly reflect the limited availability of data, especially for non-European countries.

UNECE's Handbook for measuring the quality of employment

Starting from the 2000s, two expert groups from the United Nations Commission for Europe (UNECE) worked towards producing a statistical toolbox on the quality of employment that could be used in various country contexts. The second expert group – composed of representatives of the ILO, Eurostat, the OECD, Eurofound, the UNECE and Women in Informal Employment: Globalising and Organising (WIEGO) as well as national statistical offices[4] – developed a *Handbook* that takes, as its point of departure, the perspective of individual workers (as opposed to that of firms or of society as a whole) in defining employment quality (UNECE, 2015). Employment quality was defined as the conditions, ethics, working-time arrangements, and monetary and non-pecuniary benefits associated with the employment and work-life balance of an individual. Like other frameworks, it acknowledges that employment quality is a multidimensional concept that relates, in different ways, to human needs. These dimensions are related to one another, but also separate and with no hierarchy among them (Table 2.6).

Table 2.6. **UNECE Job Quality Framework**

Dimension	Sub-dimension	Indicators
(1) Safety and ethics of employment*	(1a) Safety at work*	• Fatal occupational injuries • Nonfatal occupational injuries • Exposure to physical health risk factors • Exposure to mental health risk factors
	(1b) Child labour and forced labour	• Child labour rate • Hazardous child labour rate • Forced labour rate • Forced labour rate among returned migrants • Other worst forms of child labour
	(1c) Fair treatment in employment*	• Pay gap • Access to managerial occupations • Discrimination at work
(2) Income and benefits*	(2a) Income	• Average earnings • Employees with low pay • Earnings by decile • Employment related income of selfemployed
	(2b) Nonwage pecuniary benefits	• Paid leave entitlement • Days of paid leave entitlement • Actual days of paid leave • Sick leave entitlement • Days of sick leave entitlement • Actual days of sick leave
(3) Working time and worklife balance	(3a) Working hours*	• Mean weekly working hours • Long working hours • Involuntary parttime work • Distribution of weekly working hours • Multiple job holders

Table 2.6. **UNECE Job Quality Framework** *(cont.)*

Dimension	Sub-dimension	Indicators
	(3b) Working time arrangements*	• Night work • Evening work • Weekend work • Flexible work schedules
	(3c) Work-life balance*	• Employment rate of mothers and fathers • Possibility to work at home • Commuting time • Care leave entitlement • Parental leave • Child care use
(4) Security of employment and social protection	(4a) Security of employment	• Fixed-term contracts • Job tenure • Own account workers • Self-employed with one client • Perceived job security • Temporary employment agency workers • Lack of formal contract • Precarious employment rate • Informal employment rate
	(4b) Social protection	• Pension insurance coverage • Unemployment insurance coverage • Medical insurance coverage
(5) Social dialogue		• Collective bargaining coverage • Trade union density rate • Days not worked due to strikes and lockouts • Employer organisation density rate
(6) Skills development and training*		• Training participation • Volume of training • Usefulness of training • Learning at work • Employability • Skills match
(7) Employment-related relationships and work motivation*	(7a) Employment-related relationships	• Relationship with co-workers • Relationship with supervisor • Employment-related violence
	(7b) Work motivation	• Job autonomy • Feedback from supervisor • Intrinsic rewards • Work intensity • Organisational participation

Note: * denotes dimensions and indicators that refer to the quality of the working environment.
Source: Authors' elaboration from: UNECE (2015), *Handbook on Measuring Quality of Employment – A Statistical Framework*, United Nations, New York and Geneva, *www.unece.org:8080/fileadmin/DAM/stats/publications/2015/ECE_CES_40.pdf* (accessed on 1 February 2017).

Based on these principles, the UNECE *Handbook* defined the quality of employment in terms of seven dimensions, which are divided into sub-dimensions: 1) the safety and ethics of employment; 2) the income and benefits from employment; 3) working time and work-life balance; 4) security of employment and social protection; 5) social dialogue; 6) skills development and training; and 7) employment-related relationships and work motivation. These dimensions include a number of indicators on the quality of the working environment, such as physical health risk factors, discrimination and intimidation at the workplace, training and learning at work, work intensity, work autonomy, organisational participation and social support at work.

The UNECE *Handbook* also provided indicator sheets for each item, explaining how the concept should be measured, the available data sources, recommended metadata and

disaggregation, how the item should be interpreted, and how it relates to other indicators in the framework. The *Handbook* is comprehensive and provides an essential toolbox for national statistical offices around the world wishing to measure the quality of the working environment, while it does not define which indicators to prioritise when resources are limited.

The OECD's Job Quality Framework

Building on the work pursued by researchers and other international organisations, the OECD Job Quality Framework identifies three key dimensions of job quality that shape workers' well-being, i.e. earnings quality, labour-market security and the working environment (Table 2.7). This framework follows two of the principles of the broader agenda recommended by the Stiglitz-Sen-Fitoussi Commission and used in the OECD Better Life Initiative, notably: to focus on outcomes as experienced by workers, as opposed to drivers; and to look at people, implying that all OECD indicators are measured using micro-data to go beyond country averages (OECD, 2014). The OECD framework relies on measures of objective features of job quality (i.e. objective and self-reported outcomes, rather than individual perceptions of job satisfaction). Finally, the OECD framework recommends using job quality indicators that can be produced for different socio-demographic groups and countries so as to maximise their policy relevance. This stems partly from the possibility of tailoring the building blocks of the OECD framework to specific features of certain countries (including data availability), while retaining the same conceptual foundations.

Table 2.7. **OECD Job Quality Framework, 2015**

Dimension	Headline indicator	Sub-indicators
(1) Earnings	Earnings quality	• Average earnings • Earnings inequality
(2) Labour-market Security	Labour-market security against unemployment	• Unemployment risk • Unemployment insurance
	Labour-market security against extremely low pay	• Probability of falling into extremely low pay • Probability of getting out of extremely low pay
(3) Quality of the Working Environment*	Job strain	• Excessive job demands ❖ Time pressure at work ❖ Physical health risk factors • Insufficient job resources ❖ Work autonomy and learning opportunities ❖ Social support at work
	Supplementary indicator: Working very long hours	

Note: *denotes dimensions and indicators that refer to the quality of the working environment.
Source: Cazes, S., A. Hijzen and A. Saint-Martin (2015), "Measuring and assessing job quality: The OECD Job Quality Framework", *OECD Social, Employment and Migration Working Papers*, No. 174, OECD Publishing, Paris, *http://dx.doi.org/10.1787/5jrp02kjw1mr-en*.

In the OECD framework, the quality of the working environment captures the non-economic aspects of job quality, such as the nature and content of the work performed, working-time arrangements and workplace relationships. Further, the OECD argued that the combination of high *job demands* – e.g. time pressure or physical health risk factors – and low *job resources* – e.g. work autonomy or social support at work – prevents workers from being able to successfully accomplish their requires duties, and constitutes a major threat to their well-being. Therefore, it proposed that the quality of the working environment could be measured by an (individual level) measure of the incidence of job strain, i.e. the share of workers in a situation combining high job demands and limited job resources.

Taking into account data availability, two types of job demands were used in OECD (2014) to compute this job strain index: 1) time pressure, which encompasses long working hours, high work intensity and working-time inflexibility; and 2) physical health risk factors, such as carrying and moving heavy loads or working in painful and tiring positions. Similarly, two types of job resources were considered: 1) work autonomy, which includes workers' freedom to choose and change their work tasks and methods, as well as learning opportunities such as formal (i.e. training) and informal learning opportunities at work; and 2) social support at work, which measures the extent to which workers can get support from managers and colleagues. A composite Job Strain index was presented in OECD (2014) that measures the prevalence of jobs in which workers face an imbalance between demands and resources.[5] The methodology underpinning the OECD Job Strain index is currently being revisited in light of the changes that have been introduced into the ISSP and EWCS, in the perspective of including a larger number of job demands and job resources.

When detailed micro data are lacking, as is typically the case for many emerging countries, the quality of the working environment dimension was proxied by an indicator on the incidence of very long working hours (OECD, 2014). Numerous studies on occupational health have investigated the impact of long working hours on workers' well-being: while the evidence is mixed regarding the relationship between long working hours and life satisfaction (Hewlett and Luce, 2006; Gray et al., 2004), results suggest that working very long hours impairs workers' physical and mental health, in particular when employees have little control over the number of hours that they work and/or that are on their work schedules (Bassanini and Caroli, 2015; Frijters, Johnston and Meng, 2009; Dembe et al., 2005; Burke et al., 2009; Caruso et al., 2004). Ultimately, using long hours as a proxy for working conditions in emerging economies seems to be reasonable, as it allows a broad coverage of emerging economies as well as a breakdown between formal and informal jobs. The analysis supports this approach, as it shows a strong positive correlation between job strain and long hours across a broad group of countries where both measures are available.

2.3. Data sources on the quality of the working environment

To review the available information on the quality of the working environment, the OECD has undertaken a stocktaking exercise aimed at compiling relevant questions from a number of existing surveys. This inventory draws on the majority of the cross-country surveys providing information on the characteristics of people's jobs[6] conducted since the early 1990s. All these surveys are based on individuals' self-assessment of their current job. The survey questions are grouped into 19 fields, with binary codes (1 and 0) for each field showing whether indicators are available for the various countries and years. The inventory, which covers 160 countries over 25 years, also provides users with detailed documentation on the questions used in the various surveys for measuring these indicators.

This inventory of survey questions serves several purposes. First, it gathers information covering all aspects of the quality of the working environment, which permits gauging the availability of comparable information across countries.[7] Second, it helps to identify data gaps, notably in terms of geographical and thematic coverage as well as in the periodicity of available information. Third, the inventory documents all the relevant questions that have been used to measure the various aspects of the quality of the working environment, thus providing guidance to researchers, international organisations and national statistical offices in operationalising the concept at hand. This section summarises the key characteristics of

the main data sources that include comparative information on the quality of the working environment based on this OECD inventory.

Table 2.8. **Selected international frameworks for measuring job quality: Features and purpose**

	Geographical coverage	Level of observation	Outcomes or procedures	Nature of the indicators	Composite index	Progress monitoring	Provision of methodological guidance
EU Laeken (2001)	European Union	Individual and aggregate	Both outcomes and procedures	Objective and subjective	No	Yes	No
Business Europe (2001)	European Union	Mostly aggregate	Both outcomes and procedures	Objective	No	No	No
ETUI (2008)	European Union	Mostly individual	Mostly outcomes	Mostly objective	Yes, equal weights	Yes	No
EMCO (2010)	European Union	Mostly individual	Mostly outcomes	Objective and subjective	No	Yes	No
ILO (2012)	Global	Aggregate	Both outcomes and procedures	Objective	No	Yes	Yes
Eurofound (2012)	EU28, Norway, Former Yugoslav Republic of Macedonia (FRYOM), Turkey, Albania, Kosovo and Montenegro	Individual	Outcomes	Objective and self-reported	Yes	Yes	Yes
UNECE (2014)	Global	Individual and aggregate	Outcomes	Objective and subjective	No	No	Yes
OECD (2015)	OECD countries and selected emerging economies	Individual	Outcomes	Mostly objective	No	Yes	Yes

Source: Authors' elaborations from: European Commission (2001), *Employment and Social Policies: A Framework For Investing In Quality*, Brussels; UNICE (2001), *UNICE Position Paper* on the Commission Communication "Employment and social policies: A framework for investing in quality", Leschke, J. and A. Watt (2008), "Job quality in Europe", *ETUI-REHS Working Paper*, No. 2008/07; EMCO (2010), *Quality in Work – Thematic Review 2010*, Brussels; ILO (2012), *Decent Work Indicators: Concepts And Definitions: ILO Manual*, International Labour Office, Geneva; Eurofound (2012), "Trends in job quality in Europe", Publications Office of the European Union, Luxembourg; UNECE (2015), *Handbook on Measuring Quality of Employment – A Statistical Framework*, United Nations, New York and Geneva; Cazes, S., A. Hijzen and A. Saint-Martin (2015), "Measuring and assessing job quality: The OECD Job Quality Framework", *OECD Social, Employment and Migration Working Papers*, No. 174, OECD Publishing, Paris.

European Working Conditions Survey

The European Working Conditions Survey (EWCS) is the most important international data source on the quality of the working environment currently available. The survey covers a wide range of topics and has been conducted every five years since 1991 in European countries. Among all the international surveys reviewed here, the EWCS is the only one that explicitly aims at collecting information on working conditions (Table 2.9). The focus of the survey is on objective job features as reported by individual workers, providing information on their socio-demographic characteristics, their well-being outcomes and the characteristics of the firms where they work. The survey is designed and conducted by the experts of the European Foundation for the Improvement of Living and Working Conditions (Eurofound), which ensures high comparability among the participating countries. Another advantage of the EWCS is that its methodology is very transparent and that good methodological documentation is available. Finally, since the core questionnaire has not undergone significant change, EWCS data allow examining changes in the working environment for a period covering over a quarter of a century. The survey has improved substantially over time, with poor-quality questions excluded and new questions added.

Table 2.9. **Quality of the working environment in the EWCS**

Countries covered	EU 28, Norway, Turkey, Former Yugoslav Republic of Macedonia (FRYOM), Albania, Kosovo and Montenegro
Years covered, frequency	1991, 1996, 2000/2001, 2005, 2010, 2015* (planned every 5 years)* in progress
Target population	All persons aged 15 and over (16 and over in Spain, the UK and Norway, complying with Labour Force Survey universe definition) whose usual place of residence is in the territory of the countries included in the survey and who were in employment during the reference period
Sample size	Varies between 500 (i.e. Luxembourg and Malta) and 4 000 (i.e. Belgium). Mean sample size: 1 150
Aspects of the quality of the working environment covered	Physical risk factors; Physical demands; Work intensity; Intimidation and discrimination at workplace; Emotional demands and work stress; Subjective job insecurity; Task discretion and autonomy; Training and learning opportunities; Opportunity for career advancement; Opportunity for self-realisation; Organisational participation and workplace voice; Intrinsic rewards; Good managerial practices; Task clarity and performance feedback; Social support and good relationships at work; Work-life balance; Unsocial work schedule; Flexibility of working hours

Source: Authors' elaboration based on information sourced from Eurofound.

EWCS samples are representative of all persons employed and living in private households. One limit of the survey is its small sample size (on average 1 000 respondents per country, but up to 3 300 respondents in countries providing extra funding). This makes it difficult to go beyond country averages to investigate data by socio-demographic groups, occupations or sectors. That said, other surveys discussed in this chapter have similarly small sample sizes once limited to people in employment.

Drawing on a number of questions from the 5th European Working Conditions Survey conducted in 2010, Eurofound published in 2012 various synthetic Job Quality Indices for 34 European countries. These indices, normalised so that they range between 0 and 1, include: 1) Earnings index; 2) Prospects index; 3) Intrinsic Job Quality index; and 4) Working-time index (Table 2.10). The internal validity of the items included in each index is assessed through statistical methods (Cronbach's alpha), and items are aggregated with equal weights. All four indices are strongly associated with workers' well-being, as measured by questions on the number of health problems that they experienced, health issues caused by work, subjective well-being, the work-life balance and the meaningfulness of work. These indices are based on a framework focused on job features, which defines a good job as one that offers workers opportunities to influence their work while at the same time allowing them to pursue their personal work-related goals. The framework focuses on job characteristics that overall, or on average, meet workers' needs, while omitting personal preferences and characteristics, based on indicators that unambiguously contribute to

Table 2.10. **Eurofound job quality index**

Dimension	Indicators
(1) Earnings	• Hourly earnings
(2) Prospects	• Job security • Career progression • Contract quality
(3) Intrinsic Job Quality*	• Skills and discretion (skills and autonomy) • Good social environment (social support, absence of abuse) • Good physical environment (low level of physical or posture-related hazards) • Work intensity (pace of work, work pressure, emotional/value conflict demands)
(4) Working-time Quality*	• Duration • Scheduling • Discretion • Short-term flexibility over working time

Note: * Dimensions and indicators that refer to the quality of the working environment.
Source: Authors' elaboration from Eurofound (2012), "Trends in Job Quality in Europe", Publications office of the European Union, Luxembourg, *www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef1228en_0.pdf*.

meeting workers' needs, including both positive and negative job features. This framework was updated with the 6th wave of EWCS (Eurofund, 2016): the seven indices are now presented independently, and the intrinsic job quality index is constructed as a combination (with equal weights) of indices on the physical environment, the social environment, work intensity, and skills and discretion. New variables were also included to reinforce the construction of the various indices. All seven indices are strongly and independently associated with workers' well-being, as measured by questions on the number of health problems experienced, health issues caused by work, subjective well-being, sustainable work, work-life balance, engagement, motivation, social climate in companies and meaningfulness of work.

European Quality of Life Surveys

Another survey carried out by the European Foundation for the Improvement of Living and Working Conditions (Eurofound) is the European Quality of Life Survey (EQLS), which takes place every four years. This survey aims at examining the objective circumstances of people's lives and how they feel about those circumstances. It covers key aspects of people's lives, such as quality of accommodation, civic participation, trust, family ties, health status, access to social services and work. The section on work includes a number of questions on the quality of the working environment, covering physical risk factors, work intensity, emotional demands, work stress, job insecurity, task discretion and autonomy, training and learning opportunities, opportunities for career advancement, self-realisation and intrinsic rewards (Table 2.11).

Table 2.11. **Quality of the working environment in the EQLS**

Countries covered	EU28, Norway, Turkey, Former Yugoslav Republic of Macedonia (FRYOM), Serbia, Kosovo, Montenegro
Years covered, frequency	2003, 2007, 2012/3, 2016
Target population	All people aged 18 and over whose usual place of residence is in the territory of the countries included in the survey
Sample size	600 in smaller countries (i.e. Estonia, Slovenia, Malta, Luxembourg); up to 3 000 in bigger countries. Mean sample size:1 100
Aspects of the quality of the working environment covered	Physical risk factors; Work intensity; Emotional demands and work stress; Subjective job insecurity; Task discretion and autonomy; Training and learning opportunities; Opportunity for career advancement; Opportunity for self-realisation; Intrinsic rewards; Work-life balance; Flexibility of working hours

Source: Authors' elaboration sourced from Eurofound European Quality of Life Survey.

The EQLS survey is particularly useful for assessing the work-life balance because of its household focus and its questions both on the employment and contractual status of household members and on their working-hour arrangements. It assesses not only the work-life balance in different work and family situations, but also the obstacles that people face in balancing work and family life. The survey provides information on a number of aspects of the quality of the working environment, complemented by attitudinal questions. Although its sample size ranges between 1 000 and 3 000 per country, a drawback is that (being a general population survey) the number of respondents who are eligible for the questions on paid work is smaller.

The European Union Labour Force Survey ad hoc modules

The European Union Labour Force Survey (EU-LFS), which is co-ordinated by Eurostat, is a cross-sectional micro dataset based on a sample of households, with a longitudinal component. The dataset includes data on the labour-market participation of persons over

the age of 15 for the EU-28 members, three EFTA countries and the EU candidate countries. Since 1999, the EU-LFS has also included so-called ad hoc modules (AHMs), which rotate on a yearly basis and provide more detailed information on specific issues. Several of these AHMs have covered aspects that are encompassed by the broad concept of the quality of the working environment (e.g. physical risk factors, physical demands, work intensity, intimidation and discrimination at the workplace, learning and training opportunities, the work-life balance, unsocial work schedules, and the flexibility of working hours). The combination of core and ad hoc modules provides rich information on a very large number of individuals and households.[8]

Table 2.12. **Quality of the working environment in the EU LFS ad hoc modules**

Countries covered	EU28, Norway, Switzerland, Former Yugoslav Republic of Macedonia (FRYOM)
Years covered and frequency	2003, 2004, 2005, 2007, 2010, 2013, 2018*, 2019*, 2020*
Target population	Household sample of persons aged 15 and over
Sample size	Varies between 3 000 (i.e. Malta and Iceland) and 300 000 (i.e. Germany). Mean sample size: 50 000
Aspects of the quality of the working environment covered	Physical risk factors; Physical demands; Work intensity; Discrimination at workplace; Training and learning opportunities; Work-life balance; Atypical working hours; Flexibility of working hours

Note: * refers to planned ad hoc modules with a focus on aspects of the quality of the working environment.
Source: Authors' elaboration based on EU Labour Force Survey data.

While the EU-LFS ad hoc modules are an important source of information on some aspects of the quality of the working environment, they also have limits.

- First, as the working environment is a multidimensional concept, it is not possible to obtain an overall assessment of its quality using the various EU-LFS ad hoc modules as each module concentrates on one specific dimension of the quality of the working environment.
- Second, ad hoc modules are not strictly comparable across countries. While concepts are harmonised and explanatory notes support comparability, national statistical offices have some degree of freedom in implementing these questionnaires, e.g. in terms of question wording and placement in the questionnaire. This can be a serious shortcoming when it comes to the quality of the working environment, which relies on individuals' assessments of various aspects of their work characteristics. In general, LFS variables are designed to capture objective information, with subjective elements avoided as far as possible. Still, methodological effects from different national implementation cannot be excluded. For instance, the results may differ between countries where questions about workplace accidents are asked before questions on health status and those where the order of the questions is reversed.[9] Similarly, questions from an ad hoc module might be asked in one block at the end of the LFS interview or be integrated into the interview according to the topic assessed.
- Finally, almost one-third of responses to the EU-LFS questionnaire are provided by proxy respondents, and their composition is typically non-random (i.e. workers with the most demanding jobs are more likely to be absent when contacted for an interview, and thus proxied); ad hoc modules may thus under-sample workers who hold the most demanding jobs, while over-sampling those with less demanding jobs. Even though LFS questions are phrased in a way that allows their use for proxy interviews, questions on job quality are best answered by respondents in person. While the 19th International Conference on Labour Statisticians recommended that LFSs should in the future rely only on direct respondents, this requirement is still not met in many OECD countries.

European Social Survey

The European Social Survey (ESS) is a research programme co-funded by the European Commission, the European Science Foundation and national research bodies. Representative population surveys are carried out in 36 countries and data are collected via face-to-face interviews. Eight waves of the ESS have been conducted (every two years) between 2002 and 2016, with two of them – Round 2 (2004) and Round 5 (2010) – containing unique modules on the quality of work and well-being (Table 2.13).

Table 2.13. **Quality of the working environment in the ESS**

Countries covered	EU28, Norway, Switzerland, Turkey, Israel, Russia, Ukraine
Years covered, frequency	2004, 2010
Target population	All persons aged 15 and over (no upper age limit) resident within private households in each country, regardless of their nationality, citizenship or language
Sample size	Varies between 600 (i.e. Iceland) and 3 000 (i.e. Czech Republic and Germany). Mean sample size: 1 900
Aspects of the quality of the working environment covered	Physical risk factors; Work intensity; Emotional demands and work stress; Subjective job insecurity; Task discretion and autonomy; Training and learning opportunities; Opportunity for career advancement; Organisational participation and workplace voice; Intrinsic rewards; Social support and good relationships at work; Work-life balance; Unsocial work schedule; Flexibility of working hours

Source: Authors' elaboration based on European Social Surveys.

The ESS Work, Family and Well-being modules include a rich set of questions related to job characteristics, worker preferences and work-related well-being that were designed by an international team of experts. This, together with the Core Scientific Team's rigour in implementing the survey according to the same standards cross-nationally, makes the ESS modules an excellent source of comparative data on the quality of the working environment in a number of European (and some non-European) countries. However, as a general population survey, its sample size is small when restricted to people in paid employment. Moreover, whether these modules will continue to be repeated in the future or not depends on how the ESS Core Scientific Team evaluates the relevance of competing modules; this implies that the ESS cannot be counted on as a timely and recurrent source for information of this type.

Eurobarometer flash module on working conditions

Eurobarometers are the public opinion polls of the European Commission. Carried out since 1973, Flash Eurobarometers are ad hoc polls collected via phone interviews that enable the Commission to get quick results on specific themes. Flash Eurobarometer number 398 focused on working conditions, and was conducted in April 2014 in 28 EU countries. The survey, covering people aged 15 and over, was undertaken in order to explore Europeans' *actual* experiences of their working conditions, and included general questions about working conditions in the country; satisfaction with working conditions and with specific areas such as working hours, autonomy, and work-life balance; access to paid holidays, rest periods and flexibility at work; information and consultation in the firm; and health and safety at work (Table 2.14).

The Flash Eurobarometer on Working Conditions covered both people currently in employment and those currently looking for a job or out of the labour market. Most of the questions were directed to people who currently do paid work and relate to the characteristics of their jobs. Additionally, the survey included questions asked to all survey participants on their perception of working conditions in the country, based on their

Table 2.14. **Quality of the working environment in the Eurobarometer flash module**

Countries covered	EU-28
Years covered, frequency	2014
Target population	Population of the respective nationalities of the European Union Member States, resident in each of the 28 Member States and aged 15 years and over
Sample size	Varies between 500 (i.e. Iceland, Luxembourg and Malta) and 1 000 (all other countries). Mean sample size: 948
Aspects of the quality of the working environment covered	Physical risk factors; Physical demands; Work intensity; Intimidation and discrimination at workplace; Emotional demands and work stress; Task discretion and autonomy; Organisational participation and workplace voice; Intrinsic rewards; Good managerial practices; Social support and good relationships at work; Work-life balance; Unsocial work schedule; Flexibility of working hours

Source: Authors' elaboration based on Eurobarometer.

personal experience and/or on what they know from their friends and relatives who are currently working.

The survey had a relatively small sample size, on average 1 000 respondents per country. It is a useful one-off source of data to measure the quality of the working conditions in the European Union as well as people's satisfactions with their own jobs and with jobs in general in their respective country. However, as the survey is conducted by phone, most questions have simple response scales, which limits the analytical usefulness.

International Social Survey Programme

The International Social Survey Programme (ISSP) is a continuous programme of cross-national surveys that has been running since 1984, covering various topics related to contemporary society. Over time, its country coverage has broadened from Australia, Great Britain, Germany and the United States to 45 countries (both European and non-European) in 2017. In addition to its core module, rotating modules conducted each year cover different themes. The Work Orientations module, repeated in 1987, 1998, 2005 and 2015/6, provides great consistency in terms of the questions included, thereby enabling time-series comparison across countries, and it is rich in terms of individual preferences on specific work aspects and various job characteristics, as well as job satisfaction. The latest wave included questions on job insecurity, opportunity for career advancement, the work-life balance, intrinsic rewards, task discretion and autonomy, flexibility of working hours, work intensity, learning and training opportunities, physical demands, emotional demands, work stress, physical risk factors, social support, relationships at work and job satisfaction (Table 2.15).

Table 2.15. **Quality of the working environment in the ISSP**

Countries covered	Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Israel, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States, Latvia, The Russian Federation, South Africa, Bulgaria, Bangladesh, Dominican Republic, Philippines, Chinese Taipei
Years covered, frequency	1989, 1997, 2005, 2015/6** in progress
Target population	Nationally representative random sample of the adult population
Sample size	Varies between 900 (i.e. United Kingdom, Canada, Japan and the Netherlands) and 2 800 (i.e. South Africa). Mean sample size: 1 400
Aspects of the quality of the working environment covered	Physical risk factors; Physical demands; Work intensity; Emotional demands and work stress; Subjective job insecurity; Task discretion and autonomy; Training and learning opportunities; Opportunity for career advancement; Intrinsic rewards; Task clarity and performance feedback; Social support and good relationships at work; Work-life balance; Flexibility of working hours

Source: Authors' elaboration based on information sourced from the International Social Survey Programme.

The ISSP covers the adult population of participating countries, with specific work orientation questions applicable only to employed people. The sample size varies between 900 and 2 800 per country, with work questions applicable only to a much smaller share of respondents (ranging between around 250 respondents in the Philippines and around 950 in Chinese Taipei). The ISSP is a valuable source, since it allows assessing the overall quality of the working environment at the individual level for a large number of countries. One weakness is a lack of full consistency in how the survey is implemented across countries: country teams have some autonomy in how they carry out the survey, which makes cross-country comparison problematic, especially for subjective indicators that are very sensitive to survey methodology.

Gallup World Poll

The Gallup World Poll (GWP) has been conducted yearly since 2005 in over 160 countries, based on samples that are representative of the civilian, non-institutionalised population aged 15 and over. GWP questionnaires include both global and region-specific questions. While the survey mainly measures the public's views on political, economic and social issues, it also includes questions on the jobs of respondents. Thanks to its broad geographical coverage, it is the only international data source currently available that provides comparative information on the working environment for a number of less developed countries (Table 2.16). GWP questionnaires are translated into a large number of languages, which enables interviewing respondents in their own language. Interviews are conducted via telephone (in countries where phone coverage is at least 80% of the population) and face-to-face (in other countries); these differences in survey mode can potentially affect cross-country comparisons. Other weaknesses are that the response scales are often binary, restricting variation in the data, and that sample sizes are limited to around 1 000 respondents per country.

Table 2.16. **Quality of the working environment in the GWP**

Countries covered	Over 150 countries worldwide
Years covered, frequency	2005/6, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014 (yearly)
Target population	Entire civilian, non-institutionalised, aged 15 and older population
Sample size	Varies between 500 and 13 500. Mean sample size: 1 250
Aspects of the quality of the working environment covered	Physical risk factors; Work intensity; Emotional demands and work stress; Subjective job insecurity; Opportunity for career advancement; Opportunity for self-realisation; Organisational participation and workplace voice; Good managerial practices; Task clarity and performance feedback; Social support and good relationships at work

Source: Authors' elaboration based on information sourced from the Gallup World Poll.

National surveys

In addition to participation in the international studies described above, many countries have national measurement initiatives with larger samples and more frequent periodicity. A list of these national surveys as well as a few regional surveys conducted in OECD countries is provided in Table 2.17.

2.4. Gaps and challenges in measuring the quality of the working environment

Despite the range of data on the quality of the working environment that is collected through various international and national household surveys, this information remains limited in many important respects.

Table 2.17. **National surveys related to the quality of the working environment**

Country	Name of the Survey	Periodicity
Australia	Household, Income and Labour Dynamics in Australia Survey (HILDA)	Since 2001, annually
	Australian Work and Life Index (AWALI)	2007, 2008, 2009, 2010, 2012
Austria	Work Climate Index	Since 1997, biannually
Canada	Changing Employment Relationships Survey	2000
	Québec Survey on Working and Employment Conditions and Occupational Health and Safety (EQCOTESST)	2007
Chile	Chilean National Survey of Employment, Work and Health and Quality of Life of Workers (ENETS)	2009-2010
Czech Republic	Quality of working life	2005, 2006
	Value of health	2007
	Our society 2008	2008
Denmark	Danish Work Environment Cohort Study (DWECS)	1990, 1995, 2000, 2005, 2010
	Working Environment and Health in Denmark 2012–2020 (WEHD)	2012-2020
Estonia	Estonian Working Life Survey	2009, 2014/2015
	Employment Contract Act Survey	2012
Finland	Finnish Quality of Work Life Survey	1977, 1984, 1990, 1997, 2003, 2008, 2013
	Working Life Barometer (WLB)	Yearly since 1992
	National Finnish Work and Health Survey	1997, 2000, 2003, 2006, 2009, 2012, 2015
	MEADOW	2012
France	Working conditions survey (Enquête conditions de travail)	1978, 1984, 1991, 1998, 2005, 2013
	Medical Monitoring Survey of Professional Risks	1987, 1994, 2003, 2010, 2017
Germany	BIBB/BAuA – Employee Survey	1979, 1985/1986, 1991/1992, 1998/1999, 2005/2006, 2011/2012, 2017/8
	German Socioeconomic Panel Study (SOEP)	Yearly, since 1984
Israel	Working Conditions Survey	
Italy	Quality of work survey	2002, 2006, 2010, 2014
	Survey of changes in work	2002, 2009
	PLUS – Participation, Labour, Unemployment Survey	2005, 2006, 2008, 2010, 2011 and 2014
Japan	Japanese Panel Study of Employment Dynamics	2016
Korea	Working conditions survey*	2006, 2010
Norway	Working Environment, Survey on Living Conditions	Every 3 years (last in 2016)
Slovak Republic	Information System on Working Conditions (ISWC)	1994, yearly
Spain	National Survey on Working Conditions	Every 3 or 4 years (last in 2015)
	National Survey on Quality of Life in the Workplace	Yearly, between 1999-2010
Sweden	The work environment	Every 2 years (last in 2015)
	Work-related disorders	Every year (from 1991 to 2006) every 2 years since 2008 (last in 2014)
United Kingdom	Skills and Employment Survey	1986,1992,1997, 2001, 2006, 2012
	Workplace Employment Relations Survey (WERS)	1980, 1984, 1990, 1998, 2004, 2011
United States	General Social Survey, Quality of Worklife Module	2010
	Occupational Requirements Survey	2015
	American Working Conditions Survey*	2015

Note: * Modelled on European Working Conditions Surveys.

Comprehensiveness

As shown by the OECD inventory, while there is extensive coverage of some aspects of the quality of the working environment for many countries, other aspects are not covered, or covered less well. For example, all the seven international surveys reviewed in Section 2.3 covered physical risk factors and work intensity, but only two of them (EWCS and GWP) included questions on the opportunities that a job provides for workers' self-realisation or on the quality of management practices. In addition, information on several aspects of the working environment (e.g. physical demands, task discretion and autonomy, training and learning opportunities at work, the intrinsic rewards of one's job, the work-life

balance, unsociable work hours and flexibility of working hours) is available only for European and a few other OECD countries.

Comparability

Comparability is limited both across countries and in terms of different sources available for the same country. With respect to the first aspect, while there are several data sources that enable international comparisons, most of them are limited to European countries. Only a few of these sources (ISSP, GWP and ESS) cover non-European countries.[10] With respect to the second aspect, different agencies currently conduct surveys covering different features of the quality of the working environment: in the European Union, these include national statistical offices (through ad hoc modules of the EU-LFS); private foundations and agencies outside the official statistical system (e.g. Eurofound, through the EWCS and the EQLS); researcher networks (e.g. ESS and ISSP); and commercial providers (e.g. GWP). This heterogeneity of providers leads to differences in the overall assessment of the quality of the working environment, depending on which data sources are used.

Timeliness

The only surveys on the quality of the working environment that are conducted regularly are the EWCS and EQLS, which are repeated every four or five years. Other European surveys are either one-off (e.g. Eurobarometer's Flash module on jobs) or repeated irregularly as a special module of general surveys (e.g. the 2nd and the 5th rounds of the ESS, and the Work Orientation modules of the ISSP). The ISSP, currently the only survey gathering information for a number of non-European OECD countries, is carried out every 8-10 years, leading to data that become out-of-date much too quickly.

Sample size

Most international surveys have small sample sizes (between 500 and 3 000 individuals per country), which limits the scope for disaggregating data by age, occupation or industry. This stems from the fact that most surveys with comprehensive coverage on the quality of the working environment are general population surveys, implying that the relevant sample is significantly lower when restricting attention to employed people. Only the EWCS interviews people who are employed in the reference week, but in most countries the sample size is limited to 500 to 1 000 respondents. While LFSs are based on large samples, most EU LFS ad hoc modules focus on sub-dimensions of working conditions one at a time, which does not allow a comprehensive view of the multidimensional aspects of the quality of the working environment.

2.5. Conclusion

The range of high-profile political initiatives launched since 2000 bears testimony to the growing policy interest in the notion of the quality of the working environment and of the growing consensus on the need for policy makers to look beyond the *quantity* of jobs created to also consider their *quality*.

While all these policy initiatives have relied on frameworks that identify key dimensions of job quality and of the working environment, which are operationalised through various indicator sets, their policy impact has remained limited due to both the diversity of approaches and the paucity of available data. Initiatives to measure the quality of the working environment to respond to this policy demand do exist, but they remain

limited due to a combination of infrequent or one-off surveys, small sample sizes, limited comparability across countries, etc. Responding to this policy demand requires that large-scale official surveys are deployed by national statistical offices, subject to the same quality requirements that apply to other types of official statistics.

Notes

1. With this strategy, the Commission aimed at "defining a clear approach to improve quality of work, establishing a coherent and broad set of indicators on quality in work, and ensuring that the goal of improving quality is fully integrated in employment and social policies through quality reviews" (UNICE 2001).
2. For the "wages" and "collective interest representation" dimensions, macro-level observations are included using the Annual Macro Economic database (AMECO) and the Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts (ITWWSS) database, respectively.
3. These legal framework indicators pertain to labour administration, government commitment to full employment, unemployment insurance, a statutory minimum wage, maximum hours of work, paid annual leave, maternity leave, parental leave, child labour, forced labour, termination of employment, equal opportunity and treatment, equal remuneration of men and women for work of equal value, employment injury benefits, OHS labour inspection, pension (public/private), incapacity for work due to sickness/sick leave, incapacity for work due to invalidity, freedom of association and the right to organise, collective bargaining rights and tripartite consultations.
4. The national statistical offices of Azerbaijan, Australia, Canada, Finland, France, Germany (chair), Israel, Italy, Luxembourg, Mexico, Republic of Moldova, the Netherlands, Poland, Switzerland and the United Kingdom were members of the UNECE expert group on quality of employment.
5. As no single source is available for all OECD countries, the Job Strain index is obtained by combining two international surveys: the special modules of the European Working Conditions Survey (EWCS) and the Work Orientations module of the International Social Survey Programme (ISSP) collected in 2005 and 2015. Both surveys contain questions on the job demands and job resources discussed above; these questions differ, however, in terms of question wording, response scales and question order, which may result in differences in individuals' responses across countries. To overcome these problems, the OECD conducted an extended analysis in order to assess the degree of comparability between the two surveys for the 16 common countries: this analysis shows that choosing the most similar questions and applying certain thresholds yields a correlation coefficient of 0.89 between the job strain indices computed from the two surveys. The OECD Job Quality Database provides information on the composite Job Strain index (EWCS and rescaled ISSP indices), as well as the share of workers facing time pressures or physical health risk factors, enjoying work autonomy or learning opportunities, and reporting good workplace relationships.
6. This "Inventory of Survey Questions on the Quality of Working Environment" is available online in the OECD Statistics Database (*http://stats.oecd.org/Index.aspx?DataSetCode=JOBQ_I*).
7. Note that the number of sub-dimensions included in the inventory is larger than the number referred to in the OECD Employment Outlook chapters and the Job Quality Database.
8. Themes covered by AHMs so far include: *Accidents at work and occupational diseases*, 1999; *Transition from school to working life*, 2000; *Length and patterns of working time*, 2001; *Employment of disabled people*, 2002; *Lifelong learning*, 2003; *Work organisation and working-time arrangements*, 2004; *Reconciliation between work and family life*, 2005; *Transition from work to retirement*, 2006; *Work-related accidents, health problems and hazardous exposure*, 2007; *Labour-market situation of migrants*, 2008; *Entry of young people into the labour market*, 2009; *Reconciliation between work and family life*, 2010; *Employment of disabled people*, 2011; *Transition from work into retirement*, 2012; *Accidents at work and other work-related health problems*, 2013; *Labour-market situation of migrants and their immediate descendants*, 2014; *Young people on the labour market*, 2016; and *Self-employment*, 2017. Other AHMs are planned in the future: *Reconciliation between work and family life* in 2018; *Work organisation and working-time arrangements* in 2019; *Accidents at work and other work-related health problems* in 2020; and *Labour situation of migrants and their descendants* in 2021.
9. For instance, France did not conduct the ad hoc module on Work accidents because questions relating to exposure to risk factors were recommended to follow questions on health status, thus priming the respondents to overstate risk factors at work.
10. The Gallup World Poll has broad country coverage but not all countries participate in all waves.

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Chapter 3

Understanding the quality of the working environment: Main issues and interpretative models

This chapter considers the relevance for policy development of well-designed data to map and monitor the quality of the working environment. It presents evidence about three issues of importance for designing and implementing adequate policies. First, it examines whether there are significant inequalities in working conditions between different groups of workers. Second, it assesses the implications of the quality of the working environment for workers' psychological and physical health and well-being with the help of the three main theoretical frameworks used in research. Third, it reviews evidence on how the quality of the working environment affects workers' attitudes to work and their performance on the job.

3.1. Introduction

Having reliable data available for monitoring the quality of the working environment is essential for policy. These data enrich our assessment of social progress and provide a guide to potential problems with respect to the well-being, health and motivation of the workforce. To ensure effective policy to improve working conditions, it is necessary to have information about differences in the quality of the working environment across categories of the workforce, the direction and nature of changes over time, and the job characteristics that most affect workers' health and motivation. This chapter provides an overview of some of the more salient conclusions on these issues that have emerged from existing research and points to some questions that require further investigation on the basis of improved data.

In order to target policy initiatives, it is important to know whether there are substantial inequalities between different categories of workers in the quality of their working environments, whether disadvantages tend to be cumulative or counter-balancing, and whether disparities in working conditions are increasing or decreasing over time. It is also important to know how far patterns in various countries are common to, or vary between, societies at a broadly similar level of economic development, as this provides an initial indication of whether the causes of disadvantage relate to general structural factors in advanced economies or reflect the outcomes of specific policy contexts.

To design and implement adequate policies, it is also essential to know how specific aspects of the working environment affect individual workers – in terms of their well-being, motivation and ability to work effectively. This evidence helps to provide a clearer picture of the individual and social costs inherent in existing practices, to establish the priorities for initiatives to improve working conditions, and to clarify whether specific improvements would involve a trade-off between workers' well-being and firms' efficiency in production, or would be advantageous for both.

The chapter first examines the current state of evidence about differences in the quality of the working environment of various groups of workers, with a particular emphasis on occupation, sector of employment, gender, age and contract type. The chapter then turns to the implications of the working environment for workers' well-being, focusing on the most influential theoretical models specifying the job characteristics that are most significant for workers' psychological and physical health. It concludes with a discussion of the growing evidence about the implications of the work environment for workers' attitudes and productivity.

3.2. Inequalities in the working environment

Policy initiatives to improve the quality of the working environment require reliable information on the distribution of disadvantage among specific categories of workers; this is important both to establish priorities and to develop targeted measures. Policy makers also

need evidence about trends over time if they are to prevent growing inequalities in working conditions. Research shows that well-designed surveys can identify distinctive profiles of disadvantage among different types of workers. The current scale of such surveys, however, rarely allows for very extensive disaggregation, and, in most countries, there is still a scarcity of detailed evidence on changes over time. Existing studies have, however, provided evidence of significant inequalities in the quality of the working environment relating to occupation, economic sector, gender, age and type of employment contract.

Occupation

There is a long tradition of theory and research on the implications of occupational class for job quality. Occupational classes represent clusters of occupations ranked in terms of broad skill levels (Handel, 2012; Tahlin, 2013). Direct measures of job skill are relatively scarce, although the situation is improving as a result of the OECD Survey of Adult Skills programme (OECD, 2013). In the absence of such measures, occupational class rankings are usually operationalised in terms of the *major* or *first* digit categories of national or international classifications of occupations. These typically place managers and professionals as the most skilled occupational classes and machine operators and workers in elementary or routine occupations as the least skilled ones. An alternative approach has been to use broad pay categories as proxies of the skill level of occupations, although pay levels are affected by other factors such as unionisation and cultural norms.[1]

Occupations with higher skill levels are thought to be associated with better quality working environments for a number of reasons. More skilled work is inherently more complex and offers greater variety in task activities. Also, skilled task activities usually involve longer time horizons than less skilled work and are more difficult to monitor in a detailed way, encouraging policies that give workers greater scope for initiative and autonomy in the work process. Finally, skilled workers have greater power over resources to improve their working environment: they are more likely to possess specialist knowledge that is essential for the functioning of the organisation, implying that the withdrawal of workers' co-operation can lead to substantial costs for firms. These occupations are also more likely to be in high demand on the labour market, giving employers an incentive to provide working conditions that are sufficiently attractive to retain these workers over time.

Empirical research in both the United States and Europe has revealed widely varying types of working environments for workers in different occupations. Higher skilled occupations are typically associated with jobs that require more complex tasks and that offer more opportunities for problem-solving (Smith et al., 2008). They also involve a greater variety of tasks, more frequent learning experiences through the work itself (Handel, 2012) and substantially more access to employer-paid training (Dieckhoff, 2013). There is also strong evidence of a marked "class gradient" in terms of differences in job control (Gallie and Zhou, 2013). The same broad conclusions emerge from the 2015 European Working Conditions Survey. Higher skilled occupations had better jobs in terms of skills and discretion, the physical work environment, career prospects and earnings, while working time was more evenly distributed across classes. In terms of more aggregated job quality profiles, the higher skilled occupations were the most likely to be in the best jobs and the least likely to be in poor quality jobs (Eurofound, 2016).

The level of job security is one of the principal differences in working conditions between occupations. Meta-analysis of the determinants of job insecurity confirms that

blue-collar workers have higher levels of job insecurity (Keim et al., 2014). However, research in the United Kingdom also suggests that skill-related differences in perceived job security may have narrowed over the past two decades, primarily reflecting a growth of insecurity among professionals and managers in the public sector in the wake of public-sector restructuring in the post-recession period (Gallie, 2015).

While there is consistent evidence of a positive association between skill level and the quality of the working environment, the evidence to date about trends is far from consistent. Theoretical predictions have offered sharply contrasting scenarios – from growing divergence in working conditions between more and less skilled occupational categories to growing convergence. Taking a summary index of work quality, which included skill level, skill development and task discretion, Green et al. (2013) examined data for 15 EU countries over the period 1995 to 2010. They reported a widening gap in work quality between professionals, whose jobs were improving, and all other categories, who either showed no substantial change or, in the case of service workers, experienced a deterioration of their working conditions. However, analyses more specifically focused on task discretion found very diverse trends between European countries. In the 1990s, in a study of Britain, France, Germany, Sweden and Spain, only Britain and Spain experienced a significant divergence in task discretion between high and low-skilled occupations (Gallie, 2007). Similarly, over the period 2004 to 2010, there was little change in skill-related differences in task discretion in European countries, with the exceptions of Britain and Ireland (Gallie and Zhou, 2013; Eurofound, 2013b).

Work intensity generally increased in European countries in the period following the 2008 economic crisis, both for higher and lower-skilled occupations (Green et al., 2013). Among the European countries analysed in this study, there was no overall skill gradient with respect to working-time quality (although craft workers and operatives were particularly disadvantaged). Physical working conditions were notably better among those in higher skilled occupations, but the overall gap between high-skilled and low--skilled workers did not change over time. Finally, working-time quality showed a very general improvement across all occupations apart from professionals. In short, it is primarily with respect to skills, skill development and, in some countries, task discretion that there is evidence of growing inequality between the high-skilled and low-skilled in European countries.

Economic sector

The nature of work tasks and the patterns of work organisation are very different depending on the type of goods or services produced by the firm or organisation. A rich literature has focused on the implications for the quality of the working environment of two specific factors: changing technologies associated with particular types of manufacturing production, and the growth and diversification of service industries (Kerr et al., 1960; Blauner, 1964; Bell, 1974; Braverman, 1974; Piore and Sabel, 1984). Different theoretical perspectives provided quite contrasting scenarios of whether structural change led to an improvement or to little overall change in working conditions. There has been less systematic comparative empirical research on differences in work quality across economic sectors.

The interpretation of differences in the quality of the working environment between economic sectors has to take into account that ownership patterns tend to vary across sectors. This implies that it can be difficult to disentangle the effects attributable to the

types of activity and technology, on the one hand, from those due to differences relating to ownership, on the other. One salient point is that major parts of the service sector – such as education, health and public administration – have been predominantly state-owned. In many countries, at least in the early decades following the Second World War, governments viewed the conditions of employment in the public sector as a way of setting an example for other sectors of the economy.

Cross-country comparison of the quality of the working environment between sectors is also complicated by the fact that particular types of activities can be classified into different sectors, depending on the business strategy of the firm. For instance, if research and design functions are internalised by manufacturing corporations, these types of employment will be classified as manufacturing industry and will influence indicators of the quality of the working environment in that industry. Conversely, if research and design functions are sub-contracted to specialist organisations, the same activities may be categorised as business services and be ignored in assessments of the quality of work in manufacturing.

Despite these qualifications, there do appear to be some relatively stable differences in the quality of the working environment between sectors. A major point of difference concerns the prevalence of physical health risks. In 2012 in the EU, around two-thirds of all fatal accidents at work and nearly half (47%) of all non-fatal accidents took place in the sectors of construction, manufacturing, transportation and storage, and agriculture, forestry and fishing (Eurostat, 2016); indeed, one-fifth (21%) of fatal accidents were attributable just to construction. Historically, the contraction of some of the most dangerous industries such as coal mining and shipping led to a major overall decline in the number of people killed in work accidents. Employment in the service sector is associated with notably safer work environments with respect to fatal injuries, although there are important differences by type of service activity with respect to non-fatal accidents. For instance, non-fatal accident rates are relatively high in the wholesale and retail sector, as well as in health care and social work.

Recent evidence based on workers' self-reports of their working environments (Eurofound, 2016) shows that economic sectors have distinctive combinations of advantages and disadvantages across various dimensions of job quality. For example, financial services showed high scores across a wide range of aspects – skills and work discretion, the social and physical environment, job prospects (such as career opportunities and security), working-time quality and earnings. Education was also relatively high on several job-quality dimensions, with the exception of job prospects and earnings where it was intermediate. Other economic sectors combined high or intermediate scores on some dimensions of work with low scores on others. For instance, workers in the health care sector reported a relatively poor social environment and high levels of work pressure, but an intermediate position on most other dimensions of job quality. Conversely, workers in agriculture reported both a relatively good social environment at work and low work intensity, but they had a relatively poor physical work environment and ranked the lowest with respect to future prospects. Workers in the hotel and restaurant sector reported a poor working environment across a wide range of job characteristics.

Gender

The theoretical literature on labour-market segmentation pointed to processes that are likely to create cumulative disadvantage in the quality of women's jobs (Reich, Gordon

and Edwards, 1973; Barron and Norris, 1976). Employers, it was argued, often regard women as secondary earners and, given the risk of career discontinuity, are reluctant to invest in the development of their skills. High levels of gender segregation in the employment structure reduce the visibility of differences in working conditions between men and women and make it difficult to challenge disadvantageous working conditions. Women are also less likely to be organised in trade unions and therefore have less leverage for protecting their working conditions.

The empirical literature, however, has produced a more complex picture. There is certainly much evidence that women tend to be disadvantaged both with respect to their access to high-skilled work and in the pay that they receive for jobs of a similar skill level. But the evidence to date also suggests that gender inequalities are less consistent with respect to the quality of the working environment.

For example, there is less evidence of differences in the level of autonomy or task discretion that men and women exercise in their jobs, when controlling for skills. Smith et al. (2008) conclude that, for the European Union as a whole, such differences were relatively small with respect to key aspects of job autonomy such as working methods, the speed of work and the order in which tasks were done. Moreover, evidence from the European Working Conditions Survey suggests that gender differences in this respect had disappeared by 2015. Men, however, were more likely to have greater control over job breaks and greater autonomy across a wider range of aspects of the work process. Although men had more autonomy in white-collar jobs, women were more autonomous in blue-collar work. Comparison between different regions of Europe also showed significant variations in patterns. Women had similar levels of discretion over their work in Britain and Ireland, but were disadvantaged relative to men in the Nordic, Continental, Southern and Eastern European countries (Gallie and Zhou, 2013).

The current research evidence is inconclusive about whether women experience disadvantage with respect to training and opportunities for skill development. Studies of continuing vocational training have found that, in broad terms, men and women in European countries were about as likely to receive training. But estimates that take account of individual and work characteristics vary in their conclusions, with some studies finding that women are disadvantaged (Dieckhoff and Steiber, 2011) and others that they have better training opportunities than men (Dieckhoff, 2013).

In other respects, the quality of the working environment for women appears to be little different, or even somewhat better, than that for men. Smith et al. (2008) found that, across 27 EU countries in 2005, gender differences with respect to work monotony were not significant. Women have also been shown to enjoy a better physical working environment, with fewer risks to health and safety (Fagan and Burchell, 2002), to hold jobs characterised by lower work intensity and to have higher working-time quality (Green et al., 2013).

A comparative analysis of job insecurity, drawing on data for European countries from 2005, found no significant difference between men and women as regards worry about job losses in most countries – the exception being Eastern European countries, where women did feel more insecure (Green, 2009). This study also found no evidence of women's disadvantage in job insecurity in the EU in 2015.

Analyses that have relied upon synthetic indicators also find that the disadvantage experienced by women differs depending on the aspect of the working environment considered. Research by Eurofound concluded that, in 2010, although women were less well

paid, they were more likely than men to be employed in jobs with a higher non-pecuniary job quality (Eurofound, 2013a). A more recent study, using the 2015 European Working Conditions Survey, concluded that women were less likely to be in jobs that were particularly high in terms of skills, earnings and prospects, but more likely to be in jobs that offered good conditions in terms of low work intensity and high working-time quality (Eurofound, 2016). A study by the OECD, which classified job quality into three broad categories – earnings quality, labour-market insecurity and job strain – showed a similar pattern for a wider set of developed countries (OECD, 2014): while women were disadvantaged in terms of earnings quality, there is less evidence of disadvantage with respect to other dimensions of job quality. Using a composite measure of job strain, which takes account of the balance between job demands and job resources, the OECD concluded that women were less likely to suffer from job strain than men. There was also little difference between men and women with respect to labour-market insecurity.

Overall, while in many countries women are disadvantaged relative to men with respect to pay, skills and career prospects, they typically have jobs that are very similar to, or even better than, those of men with respect to the quality of the working environment.

Age

Concerns about variations in the quality of the working environment between different age groups have been driven by two considerations. The first is an increased awareness that early labour-market experiences may leave a long-lasting imprint on workers. For instance, there is evidence that those who enter the labour market for the first time in periods of high unemployment remain disadvantaged in terms of job insecurity much later in their careers (De Vreyer et al., 2000). The second is the recognition that, given current demographic trends, making pension systems sustainable requires extending the working life. This raises the issue of the sustainability of work among older workers.

Research on age differences and the quality of the working environment has been less developed than that on gender. Moreover, the interpretation of empirical patterns is complex due to the heterogeneity of age categories, the importance of selection effects, and the possibly transitional nature of current labour-market statuses. For instance, changes in the work environment of young workers (16-24) have to be seen in the context of a sharp rise in the proportion of that age group that has not yet entered the labour market due to increased access to secondary and tertiary education. At the other end of the age range, the work conditions of workers over the age of 60 are those of a selective group of people who remained in the labour market when many of their colleagues either chose or were constrained to withdraw. Decisions to stay or withdraw from the labour market may be closely related to the quality of work in the years immediately preceding people's entry into this age group.

Analysis of the 2010 European Working Conditions Survey (Eurofound, 2012) indicates that younger workers' jobs were distinctive with regard to the relatively high level of ergonomic risks that these involved, particularly for work that involved carrying or moving heavy loads. The age gradient was particularly sharp for men. Young men also reported a high level of work intensity in terms of the speed at which they had to work. At the same time, younger workers of both sexes had lower levels of control over the way that they could do their work and fewer opportunities to apply their own ideas in work. The other notable feature of the work situation of younger workers is their greater contractual insecurity: they are disproportionately concentrated in temporary jobs. In the OECD as a whole, 25% of

dependent workers aged 16-24 years are in temporary jobs, although there are important differences between countries: more than half of the youngest workers were in temporary employment in Germany, Spain, France, Poland, Portugal, Sweden and Slovenia, whereas this was the case for only 11% in Latvia and in Estonia, and for 15% in the United Kingdom (OECD, 2016). The severity of the disadvantage implied by temporary work depends on the extent to which it provides opportunities for moving into better jobs in the future. But the evidence points to a decline in transition rates into permanent positions, a decline that is especially severe among younger workers (Eurofound, 2015).

In many respects, the quality of the working environment of older workers (aged 55 and over) seems considerably more favourable than that of the young. They are less likely to be in physically harsh working conditions (with respect either to heavy lifting or to working in tiring or painful positions); they are less likely to be working at high speed; they have greater control over their task activities and working time; and they feel more secure in their jobs. But there are two important qualifications to this picture. The first is that older workers, irrespectively of their gender, were in jobs that provided fewer learning opportunities: they had less access to employer training and were less likely to be in jobs in which they could learn through the work. The second qualification is that older workers felt that they had very little chance of future progression in their careers (Eurofound, 2012).

Contract type

In the decades between the Second World War and the 1970s, employment contracts were almost exclusively for full-time work and open-ended in terms of duration. From the 1980s, many countries have witnessed an increase in the prevalence of part-time contracts and, since the 1990s, of temporary work, whether these involve a temporary agency or fixed-term contracts with an employer. Some accounts of changing labour-market structure view these different types of non-standard contract as having broadly equivalent consequences in creating a peripheral workforce who experience entrapment and cumulative disadvantage across the different dimensions of job quality (Hakim, 1987).[2] Empirical research, however, has tended to show that workers in these non-standard conditions have somewhat different profiles in terms of the scope and types of disadvantage that they experience.

Part-time work. Research on the inequalities associated with part-time work is based mainly on the work conditions of women working part-time: women constitute the greater share of such employment, and the sample size for male part-timers is usually inadequate for rigorous analysis. However, part-time employment for men has been increasing at a broadly similar rate to that for women. In EU countries, between 1999 and 2009, it rose from 28% to 32% for women, and from 6% to 8% for men. Although some of the reasons for the expectation that part-timers might be disadvantaged with respect to job quality are gender-specific – for instance, employers may be reluctant to invest in women who work part-time because they are thought to be more likely to leave employment to take care of children – other factors are relevant to both men and women. Part-time workers are likely to be disadvantaged in terms of the quality of their working environment because they spend less time in the workforce and are less likely to be unionised, and because part-time status may be taken as a signal of low career commitment.

The prevalence and hours of part-time work vary markedly between countries, affecting both its salience and the severity of the disadvantage that it involves. Whereas 50% of those in employment in the Netherlands are on part-time contracts, this is the case for

only 2.5% in Bulgaria (Eurostat, 2015). There are also substantial country differences in the hours worked by part-timers. For instance, part-timers in Sweden are considerably more likely to work between 30 and 35 hours a week than those in the United Kingdom, Germany or the Netherlands, countries where a substantially higher proportion of part-timers work very short hours (1 to 14 hours a week). This is important because the divergence in work conditions between part-timers and full-timers increases for part-timers working fewer hours (Gallie et al., 2016).

There has been extensive documentation of the concentration of part-timers in low-paid work, in particular with low hourly pay (Bardasi and Gornick, 2008; O'Dorchai, Plasman and Rycx, 2007), although some research indicates that most of this wage gap is accounted for by differences in human capital. With respect to the working environment, however, although part-timers experience disadvantage, the differences are generally small. Overall in the EU, part-time workers were found to have somewhat lower levels of autonomy and task discretion in their jobs (Esser and Olsen, 2012) but a higher control over their working time (OECD, 2010). They reported lower levels of complexity in their jobs than full-timers, but they were only a little more likely than full-timers to find their jobs repetitive or monotonous, and only a little less likely to feel that they are doing "useful work", while they were just as likely to consider that they had "the opportunity to do what they do best" (Sandor, 2011).

Moreover, there are compensatory advantages to part-time work. Part-timers were less likely than full-timers to be in jobs with high work intensity, reflecting the generally strong association between work hours and work pressure. They were also less likely than full-time workers to report that their jobs are stressful or present a risk to their health (OECD, 2014). Their shorter working hours imply relatively high working-time quality, leading to a better balance between work and family life – advantages that largely account for their somewhat higher levels of job satisfaction compared to full-timers (Gallie et al., 2016).

Part-timers, particularly men, have lower levels of job security than full-time workers. This lower job security, however, largely reflects the fact that a higher proportion of part-timers have temporary contracts: once contract duration is controlled for, the job-security penalty of part-time workers falls to 5% for men and disappears altogether for women (OECD, 2010; Petrongolo, 2004).

The most important disadvantage in the quality of the working environment experienced by part-timers is with respect to training and learning opportunities in the job. The degree of disadvantage is strongly related to the hours worked. While part-timers in the EU working between 21 and 30 hours a week had similar opportunities for training as full-time workers (31% compared with 28% in 2005), the proportion fell to 19% among those working 11-20 hours and to 10% among those working less than 10 hours. The pattern of disadvantage for part-timers was very similar with respect to whether they were in jobs where they had an opportunity to learn something new at work. Part-time workers are also the least likely to feel that their jobs offered good prospects for career advancement (Sandor, 2011). While the conditions associated with part-time work may be less uniformly bleak than suggested by some early studies (Beechey and Perkins, 1987), the lack of learning opportunities clearly constitutes an important source of entrapment in the longer term.

Temporary work. The growth of temporary work has been viewed as particularly problematic from the point of view of the quality of the working environment. Arguably,

employers have less interest in investing in or listening to the concerns of workers who will stay with the organisation for a relatively short period than they would have for workers with whom they have a long-term relationship. Such workers are also much less likely to be organised collectively to defend their interests, and their high job insecurity may undermine their willingness to take action to improve their working conditions.

Although some temporary workers establish careers within the firm that they join, the nature of their contracts makes them much more vulnerable than regular workers to the loss of employment, and this is reflected in higher perceived job insecurity. This is particularly the case for those employed through temporary work agencies (OECD, 2014). There is also considerable evidence of a significant pay gap between permanent and temporary workers, even after controlling for occupation.

The disadvantages associated with temporary work extend to the quality of the working environment. In a study covering five countries, drawing on data from the 1990s, Dieckhoff, Jungblut and O'Connell (2007) found that temporary workers generally had fewer training opportunities. Similarly, research drawing on data for all EU countries in 2012 found that temporary workers were disadvantaged with respect to learning activities outside the school system, particularly activities carried out during working hours (Eurofound, 2015). On average, across OECD countries, being on a temporary contract reduced the odds of receiving employer-sponsored training by 14% (OECD, 2014).

There is also consistent evidence that temporary workers have lower levels of discretion over how to carry out their job tasks. A comparative study, based on data from 2010, showed that this was the case in all regions of Europe (Gallie and Zhou, 2013). Green et al. (2013) concluded that temporary agency workers in the EU experienced higher levels of work intensity than workers with a permanent contract.

An overview of temporary work carried out by the OECD (2014) concluded that temporary work was associated with poorer job quality in each of its three key job quality dimensions, with such workers facing lower earnings, higher labour-market insecurity and higher job strain. The disadvantage with respect to job strain was due to the combination of higher exposure to physical health risk factors at work, workplace intimidation, lower autonomy, poorer learning opportunities and weaker social support.

Summing up

Overall, in contrast to simpler accounts of labour-market segmentation, there are differences between disadvantaged groups in key characteristics of the working environment. These differences are summarised in Table 3.1 for the countries of the European Union in 2015. While women experience much lower levels of pay and career opportunities, there are no statistically significant differences between men and women in the quality of the working environment. While part-timers have poorer training opportunities, job control and security, their jobs are better than those of full-time workers in terms of work pressure and the physical work environment. Young workers experience disadvantage with regard to job control, work pressure, the physical work environment and job insecurity, but they are as likely as other workers to have training opportunities. The three groups of workers that do experience cumulative disadvantages across a wide range of dimensions of the work environment are the low-skilled, those employed in the hotel and restaurant sector, and temporary workers.

Table 3.1. **Quality of the working environment for different employee categories**

Relative differences, average of EU countries, 2015

	Share of workers who received employer training in previous 12 months Percentages	Task discretion index	Work pressure index	Poor physical environment index	Share of workers at risk of losing jobs Percentages
EU average	40.2	0.69	2.51	2.06	17.0%
Professional and managers	56.2	0.80	2.50	1.62	14.0%
Low skilled	23.2	0.55	2.52	2.54	21.0%
Financial services	54.9	0.78	2.50	1.41	10.7
Hotels and Restaurants	21.7	0.60	2.93	2.15	21.0
Men	40.4	0.69	2.57	2.33	16.8
Women	39.9	0.70	2.46	1.77	17.2
Prime-age workers (35-49)	42.3	0.70	2.56	2.09	16.1
Young workers (under 35)	40.5	0.65	2.60	2.09	20.4
Full-timers	43.4	0.70	2.58	2.14	15.1
Part-timers	33.4	0.68	2.35	1.84	21.5
Permanent workers	44.3	0.68	2.55	2.02	11.1
Temporary workers	30.0	0.59	2.59	2.17	45.0

Note: The task discretion index is measured as simple average score on three items: whether workers choose or change the order of their work tasks, their methods of work, and the speed or rate of their work. The work pressure index is measured as the average score of three items: whether workers work at very high speed or are subject to tight deadlines and whether they think they do not have enough time to get the job done. The poor physical environment index is measured as the average score of various items: whether workers experience vibrations from machinery, loud noise, high temperatures, low temperatures, breathing in smoke or fumes, tiring or painful positions and carrying or moving heavy loads. Workers at risk of losing jobs are those who agree with the statement that they might lose their job in the next six months.

Source: Authors' analysis of data from the 6th wave of the European Working Conditions Survey, 2015.

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3.3. Quality of the working environment and workers' well-being: The main models

A long history of policy interventions has aimed to improve the quality of the physical working environment – in particular to reduce the risk of death or disability as a result of accidents at work. As discussed above, such risks are heavily concentrated in the extractive, construction, shipping and manufacturing industries. Technological developments in manufacturing, the shift to services and improved regulation of health and safety were widely expected to reduce these work risks in advanced economies, and indeed there is evidence that this has been the case: the incidence of fatal injuries has declined in the EU (HSE, 2016), and there has been some reduction in the prevalence of physical risks, although some hazards such as heavy lifting, repetitive movements and exposure to biological and chemical risks have remained remarkably persistent over the period 2005 to 2015 (Eurofound, 2016).

There is, however, increasing evidence that changes in the nature of work may be increasing other types of risks, namely psychosocial risks, which also have severe longer-term consequences for workers' health and well-being. While there is not unanimity about the definition of psychosocial risks, a report for the French government, based upon a systematic review of the research literature from many disciplines, defined them as "risks for mental, physical and social health, created by employment conditions and the organisational and relational factors that can interact with mental functioning" (Gollac, 2011). The quality of the working environment is clearly a major, if not *the* most important, determinant of psychosocial risks at work.

Over the last three decades, extensive research has been carried out into the relationship between the organisation of work and workers' health status, highlighting specific aspects of working conditions that may increase the risks of depressive symptoms and cardiovascular disease. Three theoretical models have been particularly influential in explaining the rise of psychosocial risks for workers' health: the Demand-Control model; the Effort-Reward imbalance model; and the Job Demands-Resources model.

The demand-control model

The earliest of these models was the "demand-control" (or "job strain") model of work stress formulated by Karasek (1979) and subsequently developed by Karasek and Theorell (1990) and Theorell and Karasek (1996). This model departed from the earlier theoretical tradition of "person-environment fit" (see Chapter 4) by giving priority to factors relating to the work environment as against the characteristics of individuals, and by emphasising the need to take into account the joint effects of work environment factors – in particular, the interaction of job demands and job control. In this model, work that is demanding (within limits) is not in itself the major source of psychosocial risks. The primary source of risk is rather the combination of high work demands with low control over how one meets these job demands (Karasek and Theorell, 1990). This has the important policy implication that attention to job design is essential if high levels of job demand are to be sustainable.

Job control (sometimes termed "job decision latitude" or "discretion") is defined as "the range of decision-making freedom (discretion) available to the worker" (Karasek, 1979). This is conceived as having two inter-related dimensions: "skill (i.e. intellectual) discretion", as reflected in skill utilisation and opportunities for skill development; and "decision authority" (i.e. freedom and influence over work decisions). Job demands refer to the workload, primarily with respect to the intensity and time pressures in work. Strictly speaking, the emphasis in this model is on psychological job demands, since the measures used exclude physical work demands. This reflected the view that psychosocial risks are increasing while traditional physical risks are decreasing as a result of the changing structure of economic activity in advanced economies (Theorell and Karasek, 1996).

As research developed, the model has been extended to include an additional aspect of the work environment – i.e. social support – in what has been termed the "iso-strain model" (Johnson and Hall, 1988; Johnson, Hall and Theorell, 1989; Johnson and Johannsen, 1991; Theorell and Karasek, 1996). As could be expected given the extensive evidence of the importance of social support for workers' well-being (House, 1981), this extension brings benefits in terms of the model's power to predict the prevalence of psychosocial risks among different groups of workers (Johnson and Hall, 1988; Karasek and Theorell, 1990). Social support, however, is multidimensional: there can be differences in both the sources and types of support: it can include support from supervisors and support from co-workers, and the nature of support may be either emotional or instrumental (LaRocco, House and French, 1980). At least with respect to emotional support from co-workers, its inclusion in the model involves the risk that an explanation is less securely rooted in the characteristics of the working environment. Social support may also be more strongly affected by individual characteristics than job demands or job control, perhaps accounting for the fact that social support measures are more heterogeneous in their effects, particularly between men and women (Stansfeld and Candy, 2006). Both the demand-control model and the iso-strain model have been used in research, although most applications have relied on the original demand-control version.

There is now an impressive body of research evidence with respect to the health predictions of the demand-control model. These have focused particularly on the risks of psychological strain and cardiovascular disease. With respect to mental health, a review of research in the 1980s and 1990s found considerable support for both the job strain and iso-strain hypotheses, but less consistent support for the view that job control or social support moderates the effects of job demands (Van der Doef and Maes, 1999). A systematic review of studies published between 1990 and 2013 (Theorell et al., 2015) found moderately strong evidence for an effect of job strain on mental health, with a 74% increase in the odds of depressive symptoms. Although gender differences have been found in decision latitude, with women having lower levels of decision latitude than men, recent Swedish evidence for the period 2008 to 2010 found no difference between men and women in the strength of the relationship between job strain and depressive symptoms (Theorell et al., 2014).

The most comprehensive review (Theorell et al., 2016) of the effects of the work environment on heart disease, using standardised data from different studies covering 200 000 people who were followed for a period of seven years, found moderate evidence for an effect of both job strain and decision latitude, with an odds ratio of 1.3 for job strain and somewhat lower for decision latitude. Given the assessment of the strength of effects used, *moderate* represented the highest level obtainable in the absence of random control trials. Moreover, according to the Theorell review, the association between job strain and ischaemic heart disease has become stronger in recent years. The same study concluded that evidence in favour of the iso-strain hypothesis was more limited, in part because of a lower number of eligible studies. Kivimaki et al. (2012) assessed evidence from 13 European cohort studies carried out between 1985 and 2006, which unusually drew both on published and unpublished analyses and took account of potential reverse causation. The inclusion of unpublished studies in this review is important, as one reason why these studies were not published may have been that they found few significant results. The review by Kivimaki et al. shows that, although these unpublished studies did indeed show weaker effects, they nonetheless generally confirmed the existence of a significant relationship. Overall, Kivimaki et al. (2012) estimated a hazard rate for incident coronary heart disease of 1.23 for job strain versus no job strain. Research has also shown that such effects are as important for women as for men. In the United States, a study following 22 086 women over a 10-year period found that women with high job strain were 38% more likely to experience incident cardiovascular disease than their counterparts with low job strain (Slopen et al., 2012).

One methodological limitation of much research on the job strain model has been the paucity of information about how long people have been exposed to adverse work conditions. It would seem likely that the effects would become more severe the longer workers are exposed to these conditions. There is, however, some relevant evidence. Chandola et al. (2008), drawing on a longitudinal study of British civil servants (the Whitehall Study), found a dose-response relation between psychological stress at work (iso-strain) and coronary heart disease over a 12-year follow-up: workers who were exposed for longer durations had substantially higher scores with respect to metabolic syndrome, heart rate variability and cortisol levels. Drawing on the same study, Stansfeld et al. (2012) found that repeated job strain (taken as a proxy of duration) increased the risk of a major depressive disorder.

The effects of job strain have proved to be remarkably robust to tests of methodological variation and confounding factors. These effects emerge from studies that rely on both workers' self-reports of job control and psychological well-being and on expert assessments.

Moreover, self-reported levels of decision latitude correlate highly with expert ratings (Theorell and Hasselhorn, 2005), and controls for lifestyle factors make little difference to the strength of effects: even when accounting for selection into particular types of work, the effects are reduced but remain significant. An analysis of 8 243 participants in the British 1958 Birth Cohort (Stansfeld and Candy, 2006) has shown that, while distress in childhood and early adulthood could partly account for whether or not people were exposed to job strain in mid-life (age 45), an effect of job strain on psychological distress remains even when disadvantageous earlier background factors have been taken into account.

There are a number of respects in which future research may make measures of job strain more robust. One unresolved issue is whether the joint effects of decision latitude and psychological job demands are additive or interactive. The initial model implied an interactive effect: higher levels of job control should reduce the severity of the effects of high job demands. In their overview of research in the 1980s and 1990s, however, Van der Doef and Maes (1999) found inconsistent support for the view that job control or social support moderates the effects of job demands. A later overview by Stansfeld and Candy (2006) concluded that the effects on mental health were predominantly additive, and that the interaction hypothesis was incorrect. In an overview of studies on the risk of heart disease, however, Theorell et al. (2016) found evidence of an interaction between high psychological demands and low decision latitude: the combination of the two effects had a stronger effect on the risk of heart disease than the mere addition of the two separate effects. Wall et al. (1996) have argued that the failure to find evidence of interaction effects may be due to the fact that the Karasek measure of decision latitude combines indicators of both skill and control, despite a primary emphasis on control; when comparing the conventional decision latitude measure with a purer measure of control, they found that the latter produced an interaction effect that was not evident with the former.

There is also a case for improving the measure of job demands. The job demands dimension of the model shows somewhat lower correlations between individual self-reports and expert ratings than in the case of decision latitude, and greater heterogeneity in effects between sub-groups of workers (Stansfeld and Candy, 2006; Theorell et al., 2016). But perhaps the most evident need is to take into account emotional demands in work, which have been increasingly recognised as important in research on the topic, but which are not captured by indicators of the intensity of task activities or time scarcity (Bakker and Demerouti, 2007; Hochshchild, 1983; Morris and Feldman, 1996).

The notion of control that informs the demand-control model is that of control over the immediate work task. But, as recognised by Karasek and Theorell (1990), control over broader organisational decision-making is also important for workers' well-being and psychosocial risks. Eller et al. (2009) found some evidence in more recent studies that the relative importance of job demands has increased relative to decision latitude in accounting for the risk of heart disease. If this were confirmed by further research, it may reflect two possible developments: first, that the level of work intensity may have crossed a certain threshold, whereby it is no longer readily containable by relatively high task control; second, that control within firms may have become increasingly centralised, taking the form of *post facto* accountability and more frequent alterations of task activities through organisational restructuring. Such developments would imply that control in the form of representation and voice at the firm level may have become increasingly important for workers' well-being relative to control at the level of work tasks. This would also suggest that measures of job control should be extended to include influence at the firm level.

The effort-reward imbalance model

The effort-reward imbalance model (Siegrist, 1996, 2016) takes as its point of departure the importance of norms of reciprocity for workers' well-being (Gouldner, 1960). It posits that an imbalance between work efforts and the rewards from work violates this norm, with negative consequences for the workers' physical and psychological health. The key implication of the model is the importance of ensuring fairness in rewards in a context of rising demands for major efforts.

In this model, effort is conceptualised primarily in terms of time pressure (i.e. the length of working time and the difficulty of completing work within the available time). These can be considered as extrinsic constraints from the working environment. The model also underlines the importance of a personal disposition or motivational pattern – over-commitment – whereby people may have a strong tendency to strive for achievement, leading to a very high work effort that may either directly reduce health conditions or accentuate the effects of externally imposed levels of work effort (Siegrist, 2016). From a work environment perspective, it is the extent of externally imposed effort that is the primary focus of interest.

The conceptualisation of rewards in the model is multidimensional, involving earnings, self-esteem, promotion prospects and job security. In contrast to the demand-control model, the effort-reward model explicitly integrates issues relating to the nature of the employment contract: it can take account, for instance, of the implications for workers' health and well-being of the relationship between the effort required and being employed on a fixed-term or other type of insecure contract. This emphasis on job insecurity fits well with the growing evidence that this has serious negative implications for workers' well-being, with effects that are close to those of unemployment (Burchell, 2011; Keim et al., 2014). However, the model may implicitly introduce the effects of macro-structural factors in addition to the terms of the contract with a specific employer, as perceived job insecurity is strongly affected by the economic cycle and the national level of unemployment.

One tenet of the model is that the severity of the effects of an effort-reward imbalance will be greater in situations where it is difficult for workers to find alternative jobs. When workers have skills that are in high demand in a tight labour market, they may escape from the frustrations of their current employment conditions by simply leaving the firm. But where this is not the case, they are likely to feel a sense of long-term entrapment, which will accentuate the health effects of a lack of reciprocity. Since high labour-market demand is generally associated with higher levels of skills, an effort-reward imbalance should have particularly severe consequences for those in less skilled occupations.

Considerable work has been put into developing a standardised set of measures of effort-reward imbalance that meet acceptable criteria on reliability and validity (Siegrist et al., 2013). Significant changes in the structure of the question formats between earlier and later applications of this model have simplified the survey instrument and increased its comprehensibility for workers with less education. The longer 23-item version of the effort-reward questionnaire has also been supplemented with a short 10-item version for inclusion in surveys that may have a wider set of objectives. The association between effort-reward imbalance and mental health problems holds consistently across the different questionnaire versions (Montano, Li and Siegrist, 2016).

Prospective studies have produced significant evidence in support of the model's predictions with respect to both cardiovascular disease and affective disorders. For instance, a study based on the Whitehall Study of British Civil Servants concluded that the

risk of fatal or non-fatal coronary heart disease (CHD) was 26% higher among workers with high effort-reward imbalance scores compared to those without this imbalance (Kuper et al., 2002). A Finnish longitudinal study found that an effort-reward imbalance was associated with a doubling of the risk of cardiovascular mortality, with hazard ratios of 2.36 to 2.56, depending on the controls included (Kivimaki et al., 2002; Brunner et al., 2004). There is also evidence linking an effort-reward imbalance to depressive symptoms. A review by Rugulies, Aust and Madsen (2016) located nine high-quality studies with relevant evidence; seven studies found a statistically significant association between an effort-reward imbalance and the risk of depressive disorders, with effect estimates generally falling in the range of odds of 1.49 to 2.32 in the high exposure group. The association was robust to the introduction of controls for individual characteristics (including personality measures), occupation and socio-economic status. There is also some, but still limited, evidence in support of the view that the severity of the effects is greater among workers in lower occupational groups (Kuper et al., 2002; Dragano and Wahrendorf, 2016).

It is recognised that there may be ways to extend and refine the theoretical model. Rewards may be differentially important to different sub-groups of the population, leading to variations by age or occupation in the strength of the effects of an effort-reward imbalance (Wahrendorf and Chandola, 2016; Rugulies et al., 2012). It has been suggested that a focus on specific rewards, and the way their effects vary between different types of employees, might enhance the power of the model (van Vegchel et al., 2002). The model focuses on one type of experience of injustice (violated reciprocity in a contractual exchange). An interesting corpus of research has highlighted the importance for worker health of other sources of perceived injustice, i.e. procedural and relational injustice (Kivimaki et al., 2006; Ndjaboue, Brisson and Vezina, 2012). An effort-reward imbalance and organisational justice measures have been shown to make independent contributions to workers' health (Kivimaki et al., 2007). Similarly, a study of public sector workers in Finland has shown that the combination of a large effort-reward imbalance and high organisational injustice led to a greater health risk than a high effort-reward imbalance or organisational injustice alone (Kivimaki et al., 2007; Bourbonnais, 2007). The relative strength of the effects of an effort-reward imbalance, on one side, and of organisational injustice, on the other, may however vary by the type of employee. A longitudinal study of civil servants in the United Kingdom found that an effort-reward imbalance was the stronger predictor of long spells of sickness for men, while relational injustice was the stronger driver for women (Head et al., 2007). The implications of an effort-reward imbalance at the workplace level may also be partly contingent on the broader social context. For instance, the effects of an imbalance due to lower job security may be mitigated by the extent to which broader institutional structures provide financial and job search support to workers in the event of job loss; there is tentative evidence, for example, that an effort-reward imbalance may have less severe consequences for depressive symptoms in Nordic countries and in countries with strong welfare systems (Dragano, Siegrist and Wahrendorf, 2011; Lunau et al., 2013).

Direct comparisons of the strength of the effects of demand-control and effort-reward imbalances are rare. Stansfeld and Candy (2006) concluded that they have broadly similar strengths in explaining the prevalence of various psychosocial risks among workers. Importantly, it has been found that, when included in the same analysis, both remain significant predictors and lead to a higher level of risk than when considering only one set of factors. This indicates that the overall effects of a poor working environment may be greater than appears from research that relies on one model or the other.

The job demands-resources model

The job demands-resources model (JD-C) is rather different in nature from either the demand-control or the effort-reward imbalance models. Its ambition is to provide a *general conceptual framework*, rather than to highlight specific mechanisms that explain workers' well-being and health status. Its proponents have also differed in their views on its status in relation to the earlier models. For Bakker and Demerouti (2007) and Bakker, Van Wedhoven and Xanthopoulou (2010), its greater generality is a clear advantage over the more specific and restricted models. Conversely, for Schaufeli and Taris (2014), the model has different objectives compared to more specific models and is complementary to them. The job demands-resources model has been used by the OECD for describing the quality of the working environment (i.e. the non-economic aspects of employment) in the context of its work on job quality (Cazes, Hijzen and Saint-Martin, 2015).

The core proposition of the job demands-resources model with respect to workers' well-being is that high job demands in a context of low job resources will lead to excessive costs, particularly in terms of physical and psychological effort, with a draining of energy that leads to mental and physical health problems for the workers. Job demands refer to those physical, psychological and organisational aspects of the job that require sustained physical and/or psychological effort (i.e. cognitive and emotional). Job resources refer to the physical, psychological, social and organisational aspects of the job that are important for achieving work goals, reducing job demands and stimulating personal growth (Bakker and Demirouti, 2008).

The model has changed substantially since its initial formulation (Demerouti et al., 2001). The range of ill-health outcomes of relevance to the model has been broadened, the range of work characteristics included within the concepts of job demands and job resources has been extended, and personal factors have been integrated more comprehensively.

The earliest studies using the job demands-resources model focused on the explanation of *burnout*, conceived (more broadly than in earlier usage) as exhaustion and disengagement (Demerouti et al., 2001). These studies argued that job demands were most predictive of feelings of exhaustion, and that a lack of job resources was most predictive of disengagement. In more recent versions of the model, burnout is seen as mediating the relationship between job demands and ill health (depression, cardiovascular disease and psychosomatic complaints). Moreover, the outcomes of interest have been expanded to include *inter alia* absenteeism, accidents and injuries, and interference with the work-family life (Schaufeli and Taris, 2014).

In the initial version of the model, job demands were already specified in a way that was broader than in the demand-control model, and included the physical environment, interpersonal contacts and time pressure. Similarly, the notion of job resources covered factors that were emphasised by both the demand-control model (e.g. job control) and by the effort-reward imbalance model (e.g. rewards, job security). The model could then be seen as primarily concerned with integrating the key tenets of demand-control and effort-reward imbalance models into a single, overarching framework. In its most recent form, however, the range of potentially relevant job demands and resources has expanded well beyond this. Schaufeli and Taris (2014) list 30 different types of job demands and 31 types of job resources that may need to be taken into account, depending upon the specific organisational setting.

Models of psychosocial risks differ in the extent to which they seek to include personal factors among the explanatory factors. The demand-control model focuses exclusively on

the nature of the working environment; the effort-reward imbalance model introduced an individual disposition by incorporating the concept of over-commitment as a personal source of excessive work effort; finally, the job demands-resources model seeks to give an explanatory role to a wide range of individual characteristics, including competencies, personality traits and value orientations (Schaufeli and Taris, 2014). The job demands-resources model is, however, still indeterminate about the role of personal factors, i.e. whether they are mediators, moderators or independent variables.

Given that this model is the most recent, research on the job demands-resources model is understandably more limited than for the demand-control and effort-reward imbalance models, particularly with respect to prospective studies. There is, however, growing evidence supporting some of the model's key insights. It has been tested primarily with small cross-sectional European samples, ranging across quite varied occupations (Brough et al., 2013). Some supportive evidence has also been produced based on longitudinal samples. Hakenen, Schaufeli and Ahola (2008), in a three-year study of Finnish dentists, found that job demands predicted burnout, which in turn predicted future depression. A longitudinal survey of Dutch managers (Schaufeli, Bakker and Van Rhenen, 2009) found that higher job demands (overload, emotional demands and work-home interference) and lower job resources (social support, autonomy, opportunities to learn and feedback) predicted burnout, which in turn contributed to explain the duration of registered sickness. As with the demand-control model, however, interaction effects have not found consistent support; the generalisability of findings to non-European countries also remains unconfirmed (Brough et al., 2013).

The approach to the collection of evidence recommended by proponents of the job demands-resources model differs in some respects from that adopted for the other models. The latter have tended to emphasise consistency in the way that concepts are operationalised, and have produced *standard* questionnaires to encourage the cumulative nature of research. Given its emphasis on the diversity of potentially relevant variables, and the need to adapt the conceptualisation of job demands and resources to specific organisational environments, the job demands-resources model encourages flexibility in the nature of the research instrument and provides a *monitor* of diverse scales that researchers and practitioners can draw upon and combine according to specific circumstances (Schaufeli and Taris, 2014). While statements can still be made about the general consistency of the findings within the framework of the job demands-resources model, the findings may be more relevant to specific organisational settings than in the case of the more general models; also, the use of context-specific research instruments may reduce the comparability of the results, making it more difficult to develop cumulative evidence to confirm specific hypotheses.

Summing up

Over recent decades, an impressive body of research has demonstrated the relevance of the quality of the working environment for workers' well-being and health conditions. Studies have become more refined in their use of high-quality longitudinal data, both in testing for the robustness of findings to changes in the types of measure and in assessing the sensitivity of the results to cultural contexts. This research has shown that the quality of the working environment has a significant impact on the risk to workers of both depressive symptoms and cardiovascular disease. The three most influential models in this field have, however, emphasised different drivers of workers' well-being and of their exposure to psychosocial risks:

- The *demand-control* model has underlined the importance of job control in reducing the risk of ill health resulting from high levels of job demands.
- The *effort-reward imbalance* model has emphasised the importance of norms of reciprocity and perceived fairness between the effort required of workers and the rewards that they receive in terms of pay, status recognition and security.
- The *job demands-resources* model has pointed to the importance of balancing the demands of the job and the resources that are available to workers to meet those demands.

While the first two models have identified distinct sets of risk factors and provide complementary explanations of the ways in which the working environment affects workers' psychological and physical health, the third model seeks to bring together the mechanisms highlighted by the other two into a broader conceptual framework, emphasising the importance of a broader range of factors in the working environment for the worker's well-being.

As the job demands-resources model includes a broader range of factors, it has been used as the main workhorse to measure the quality of the working environment in the OECD Job Quality framework. It will be used in the *Guidelines* when proposing a measurement framework in Chapters 4 and 5 to identify whether a given characteristic of the working environment can be understood as either a job demand or a job resource.

3.4. The quality of the working environment, work attitudes and productivity

A central issue for employers and policy makers is whether or not there is a trade-off between the benefits to workers of improvements in the quality of the working environment and the performance of firms and organisations. While there is a substantial literature relevant to this issue, it consists primarily of studies of workers that examine the implications of a higher quality of the working environment for work attitudes that are important for job performance – in particular, workers' satisfaction with their jobs, their engagement with their work and their commitment to their current organisation – rather than matched workers-firm micro-data that would allow a direct assessment of this link.

Work performance has been viewed typically in terms of two main components, i.e. workers' in-role behaviour and extra-role behaviour. In-role behaviour relates to how well people accomplish the behaviours formally required by their job (e.g. time-keeping, fulfilment of responsibilities in the job description, compliance with rules and regulations), while extra-role behaviour refers to discretionary behaviours that have benefits either for the firm as a whole or for others in the organisation (e.g. helping out others who have a particularly high work load, helping new employees and sharing information with colleagues). Extra-role behaviour has been explored particularly in the literature on "organisational citizenship behaviour" (Organ, 1988, 1997). More recently, a growing literature has explored the links between the working environment and workers' innovative behaviour and creativity.

While there are reasonable grounds for thinking that workers' motivation and creativity are important for productivity, there are still relatively few studies that have sought to establish direct linkages between the quality of the working environment and organisational performance, and those that do exist have relied on different approaches and research strategies.

Job satisfaction

The earliest tradition of research into the effects of the working environment on workers' attitudes focused on job satisfaction, defined as "the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values" (Locke, 1969). An alternative view of job satisfaction is that it is an evaluation by workers of their job in relation to their expectations rather than their values (Clark, 1997). To the extent that job satisfaction is an evaluation in terms of expectations, it may be affected by a downward adaptation of expectations in the light of limited opportunities. Job satisfaction can be measured through either a single-item question about overall job satisfaction or through questions about satisfaction with specific facets of the job, which can then be aggregated to produce an overall job satisfaction measure. Although best considered as a measure of workers' well-being rather than of their motivation, job satisfaction has been shown to predict work absence, job turnover and work performance.

Several factors need to be taken into account in explaining job satisfaction. Drawing on the US Quality of Employment Survey, Kalleberg (1977) showed that job satisfaction was related both to the rewards that people perceived in their work environment and to their work values. However, this analysis also showed that the objective features of the working environment were of central importance. Satisfaction with the intrinsic aspects of work (i.e. the characteristics associated with the task itself) was the strongest influence on overall job satisfaction. This reflected the importance of the interest of the job, i.e. whether it allows for the use and development of abilities and gives scope to be self-directive and to see the results of one's work.

With respect to specific components of the working environment, a meta-analysis by Spector (1986) found that perceived job control (in terms of autonomy and participation in decision making) was strongly associated with higher job satisfaction. Green (2006) showed that roughly half of the decline of job satisfaction in the United Kingdom between 1992 and 2001 was attributable to decline in workers' sense of control at work. A study based on the European Working Conditions Surveys (Lopes, Lagoa and Calapez, 2014) found that the decline in job satisfaction in Europe was due mainly to an increase in work pressure that was not accompanied by greater work autonomy. An OECD study (Clark, 1998), examining comparable data across nine countries, concluded that pay was the least important of six factors that affected job satisfaction: the most important factors were job security and whether the job was interesting, followed by work pressure and interpersonal relationships at the workplace. A cross-national study of 75 813 employees in three large multinational companies (Andreassi et al., 2014) found a strong link between training and job satisfaction in Europe, North America and Asia (although not in Latin America).

There is now extensive evidence linking job satisfaction to work performance. Job satisfaction is associated with both the frequency and duration of absences from work, which in turn have been found to be associated with less effective job performance, as assessed on the basis of company records and supervisory ratings (Viswesvaran, 2002). The effect of job satisfaction on absences from work has been confirmed by longitudinal analysis. For instance, Hardy, Woods and Wall (2003) have shown that overall job satisfaction at a given point was negatively correlated with both the frequency (-0.25) and the duration (-0.27) of work absences in later periods. Moreover, declines over time in job satisfaction were accompanied by higher absenteeism. There is also strong evidence that

job satisfaction is related to the probability of subsequently leaving a job (Griffeth, Hom and Gaertner, 2000; Warr, 2007). Clark (2001) has shown through longitudinal analysis that low overall job satisfaction is a highly significant predictor of voluntary *quits* in the next year.

Estimates of the effects of job satisfaction on job performance are sensitive to the extent to which measures are at similar levels of generality. In a meta-analysis that took this into account, Judge et al. (2001) concluded that the correlation of job satisfaction and job performance was close to 0.30 and that the correlation was stronger in more complex jobs; they interpreted this finding as a reflection of the fact that work attitudes have a stronger potential to affect behaviours in jobs where there are fewer situational constraints. In other words, more complex jobs tend to imply greater autonomy and hence give greater scope for the worker to make a difference.

Despite substantial support for the implications for job performance, measures of job satisfaction have been criticised for failing to capture strong motivational activation by workers. Being *satisfied* is compatible with relatively low levels of arousal, i.e. with comfort rather than enthusiasm (Warr, 2007; Inceoglu and Fleck, 2010). Also, job satisfaction is reactive, reflecting what has already been attained, rather than associated with proactive behaviours in the future (Warr and Inceoglu, 2012).

Work engagement

The concept of work engagement has been developed to better capture high levels of employee motivation at work and the work attitudes required by organisations committed to high-quality work performance. Work engagement is a psychological state involving a "positive, fulfilling, work-related state of mind" (Schaufeli, Bakker and Salanova, 2006), characterised by high levels of energy (vigour) and identification/dedication with work. Work engagement is primarily related to intrinsic rather than extrinsic motivation (Schaufeli and Salanova, 2011). In earlier versions, the concept also included a third dimension, absorption in the job, but it remains controversial whether absorption is best understood as an outcome of energy and identification or as an independent dimension of work engagement (Bakker et al., 2008; Bakker, Albrecht and Leiter, 2011; Schaufeli and Salanova, 2011).[3]

The working environment has a central role in accounts of the determinants of work engagement. Bakker, Albrecht and Leiter (2011) point to two key drivers of engagement: job resources and personal resources (such as self-efficacy and resilience). Job resources include aspects of the working environment such as skill variety, decision latitude (autonomy), opportunities to learn and social support. These resources are viewed as important for motivation partly because they help to fulfil important psychological needs such as those of self-determination and competence, and partly because they are instrumental in facilitating successful job performance. These resources are thought to be particularly likely to predict work engagement in situations of high job demands. A meta-analysis by Halbesleben (2010), based on 74 studies involving 45 683 participants, found that the relationship between job resources and work engagement was confirmed with respect both to measures of overall job resources and to measures of specific resources, particularly job control/autonomy and self-efficacy. There is also some longitudinal evidence confirming the importance of job resources for work engagement. A study of managers in a Dutch company showed that higher job resources predicted higher work engagement in the subsequent year (Shaufeli, Bakker and van Rhenen, 2009). A longitudinal study of Finnish health care personnel (Mauno, Kinnunen and Ruokolainen, 2007) showed that job control was the second-best predictor of

work engagement. However, a large-scale longitudinal study of Australian and Chinese employees found that supervisor or colleague support did not lead to higher work engagement over time (Brough et al., 2013).

Empirical support for the effects of work engagement on workers' performance is still at an early stage, but it is growing. Bakker et al. (2008) argued that engaged workers perform better than others because they experience stronger positive emotions, have better psychological and physical health, are better able to create their own job resources and can transfer their engagement to others with whom they work. Studies have also shown the following: that engaged employees receive higher ratings from colleagues on their in-role and extra-role performance (Bakker, Demerouti and Verbeke, 2004); that work engagement was related positively to in-role performance among employees in a wide range of occupations in the US (Halbesleben and Wheeler, 2008); that engagement was correlated with both in-role and extra-role behaviour (for instance helping co-workers) in a diverse sample of UK employees (Inceoglu and Fleck, 2010); and that it predicted customers' views on the service climate, employee performance and customer loyalty in a study of Spanish restaurants and hotels (Salanova, Agut and Peiró, 2005). Meta-analysis by Halbesleben (2010), while noting the small number of studies available, concluded that work engagement impacts on workers' commitment and *quit* intentions, as well as on performance measures. While work engagement has been found to be generally favourable for workers' performance on the job, there are conditions in which it could have negative effects, aggravating work-family conflict (Halbesleben, 2011) and, at extreme levels, leading to burnout, especially in conditions where employer reciprocity is lacking (Schaufeli and Salanova, 2011).

Organisational commitment

The concept of organisational commitment seeks to capture workers' strength of attachment to their particular employer. It has been defined as "the relative strength of an individual's identification with and involvement in a particular organisation" (Mowday, Steers and Porter, 1979). The most influential model (Meyer and Allen, 1991 and 1997; Meyer, Allen and Smith, 1990) drew a distinction between three components of organisational commitment: 1) affective commitment, which refers to an employee's emotional attachment to, identification with and involvement in the organisation; 2) continuance commitment, which is based on an evaluation of the costs associated with leaving the organisation; and 3) normative commitment, which reflects workers' sense of obligation to continue in employment with the current employer. Research (predominantly carried out in the United States, but extending in geographical scope with time) has focused predominantly on affective commitment, which is the dimension of commitment closest to a positive motivational construct and the most consistently related to work performance (Meyer et al., 2002).

In a review of the literature on the determinants of organisational commitment, based on 155 published and unpublished studies, Meyer and Allen (1997) concluded that the strongest and most consistent correlations with affective commitment were those relating to work experience factors, with organisational or personal characteristics having weaker effects. In particular, workers' affective commitment was associated with the job challenge, the degree of autonomy in the job and the variety of skills the employee uses. An indicator of "job scope", combining several job characteristic variables, proved even stronger than the specific job characteristics considered separately (Mathieu and Zajac, 1990). Relations with supervisors and social support were also important: affective commitment was stronger

among employees whose supervisors allowed them to participate in decision making and who treated them with consideration and fairness. More recently, some longitudinal studies have provided support for the relationship between aspects of the working environment and organisational commitment. An Australian study (Boyd et al., 2011) showed that job autonomy and procedural fairness predicted workers' future organisational commitment. Hakanen et al. (2008) have also shown an indirect effect of job resources on organisational commitment, passing through resources' effect on work engagement.

Organisational commitment, especially affective commitment, has been found by meta-analyses to be positively related to job turnover, absenteeism and performance (Meyer et al., 2002). But, surprisingly given the strongly positive character of the wording of organisational commitment scales (Mowday, Steers and Porter, 1979; Meyer and Allen, 1991), its relationship with workers' performance measures is often weaker than that found in meta-analyses of job satisfaction. For instance, in a study based on 111 samples from 93 published studies, Riketta (2002) found a mean correlation between organisational commitments and performance indicators of 0.20. The correlation was somewhat stronger for extra-role performance (0.25) than for in-role behaviour (0.18), which may reflect the more voluntary nature of the first characteristic and the greater importance of motivational factors. The relatively weak overall relation between affective organisational commitment and performance was broadly consistent with other estimates (Mathieu and Zajac, 1990; Cohen, 1991).[4] This may be due in part to the fact that the items in the most commonly used measures are designed predominantly to tap workers' propensity to stay with or leave the firm that is currently employing them (Solinger, Van Olffen and Roe, 2008), rather than attitudes to the organisation's activities more broadly conceived.

Innovative behaviour

The primary concern of research on workers' attitudes and performance has been with the way in which work attitudes may lead to high levels of performance in the context of firms' established practices. Arguably, however, the increasing pace of technological change and higher levels of competitiveness are creating conditions in which employers need to draw, to a greater extent than before, on workers' abilities and skills to contribute to innovation in work processes. This is reflected in a relatively recent growth of research on "innovative work behaviour", defined as "finding, suggesting and implementing new and beneficial work-related ideas" (De Spiegelaere et al., 2014).

While research on the determinants of workers' innovative behaviour has been predominantly based on relatively small samples in specific organisational contexts, studies have highlighted some interesting results. In a study of UK shop-floor employees, Axtell et al. (2000) argued that it is important to distinguish between the generation of new ideas and their implementation, since these may be affected by different factors. Implementation is more likely to be a social process requiring collaboration with others, given that changes in the design of any one job are likely to affect a number of others. Axell et al. also confirmed that, while individual factors (such as self-efficacy and role breadth) were generally most strongly related to the propensity to generate suggestions, factors at the level of the group or organisation (in particular, the supportiveness of team members for new ideas, and the extent to which decision-making processes are participative) had the greatest influence on implementation. Decision-making participation has a rather special status as the only variable that influenced both suggestions and implementation.

A wide range of studies has found that workers' control over their immediate job (autonomy, task discretion) is an important predictor of their innovative behaviour. In a meta-analysis, Hammond et al. (2011) concluded that, of all predictor categories, job characteristics demonstrated the strongest relationship with individual innovation. The main determinants were autonomy, task complexity and supervisory expectations of creativity; these proved of greater importance for individual innovation than personality factors, education and job tenure. An analysis of the importance of different spheres of decision making (De Spiegelaere, Van Gyes and Van Hootegem, 2016) concluded that workers' control over their methods of work is more important for innovative behaviour than their control over work scheduling and times of work (*flexitime*). Workers' control over their job task is important for innovation, as it enables them to experiment with different approaches and methods and to develop their ideas (De Spiegelaere et al., 2014). Both control over immediate job tasks and involvement in wider organisational decisions are associated with greater opportunities for workers to use their skills and knowledge on the job, as well as with better learning opportunities (Gallie, 2013). These aspects also increase the likelihood that people will share their knowledge with others (Inanc et al., 2015).

The demand-control model of Karasek and Theorell (1990) also predicted an effect of job control on learning and the development of new skills in jobs that combined high control with a high level of job demands. These were depicted as *active* jobs, in which high demands constitute a challenge that could stimulate new learning experiences. This argument, although important for the theoretical development of the model, has led to much less empirical research than the health predictions relating to job strain. While, given the number of studies currently available, any conclusions must be regarded as tentative, existing evidence provides some support for the view that high-control/high-demand jobs are particularly conducive to innovative work behaviour. In particular, on the basis of a study involving 3 098 Belgian employees from 76 companies across a range of industries, De Spiegelaere et al. (2015) found that such jobs were associated with the highest level of innovative work behaviour, even after controlling for education and occupational level. The direct effect of autonomy, however, was the strongest factor, while the effect of the interaction between demand and control was relatively modest.

The working environment and organisational performance

It would be reasonable to expect – given the substantial evidence at the individual level of the effect of the working environment on workers' attitudes that are important for absences, job turnover and job performance – a significant association between average workplace characteristics and firms' performance. There is, however, only a small body of research that has addressed this issue. This partly reflects the fact that the design of studies that would provide relevant evidence is exceptionally complex, requiring the matching of data on the worker and employer level at different points in time. The need to establish causal direction is particularly important, as there are plausible theoretical arguments both for the view that a good working environment may contribute to a high level of organisational performance and for the view that a high level of organisational performance may lead to a better working environment. Causation may, in other words, run both ways.

Research on how the working environment impacts on firms' performance has followed two main approaches to date: the first has examined the association between average work attitudes (in particular job satisfaction) and organisational performance,

while the second has focused on the relationship between specific features of the working environment (in particular forms of worker involvement) and firms' performance.

With respect to the first type of studies, the working environment has been shown to be predictive of productivity-related work attitudes. Research into the relationship between average worker attitudes and organisational performance has found a positive relationship between the two, but varies in its conclusions about whether this relation is causal. For instance, in a study providing data over a two-year period for 193 branches of a US bank (Bartel et al., 2011), those branches in which workers had more favourable attitudes had higher sales, although this could be explained by unobserved characteristics of the workplaces associated with both worker attitudes and performance. In contrast, in a Finnish study matching individuals' data from the European Household Panel over the period 1996-2001 with administrative data on firms' productivity, Brockerman and Ilmakunnas (2012) found a robust causal link between workers' job satisfaction and workplace productivity two years later. Similarly, Bryson, Forth and Stokes (2014), drawing on a panel survey of British workplaces, found that increases in the average level of job satisfaction were associated with higher workplace financial performance, labour productivity and output/service quality, as assessed by managers. Conversely, workplaces characterised by declining job dissatisfaction experienced deterioration in all performance measures. Moreover, this study concluded that the non-pecuniary aspects of job satisfaction were predictive of higher performance by firms, while workers' satisfaction with pay showed no positive relationship. While well-designed studies are too few to draw strong conclusions, to date none have highlighted a negative effect that might suggest a trade-off between workers' well-being and firms' performance.

The second approach has focused on the relationship between organisational performance and managerial practices that could be seen as indicative of a good working environment. A recent OECD study (Arends, Prinz and Abma, 2017) has reviewed evidence on the effect of job quality on "at-work productivity", drawing on 48 studies that met criteria for good quality. The indicators of performance used by these studies were primarily the time spent at work by workers with health problems (which are assumed to lead to productivity loss due to reduced worker efficiency) and self-reported job performance. Only a minority of these studies were longitudinal, but they consistently supported the view that job stress, job resources and job strain affect firm-level productivity. In contrast, most studies did not find any relationship between social support (general job support and supervisory support) and productivity. Arends et al. also highlight the moderating influence of health conditions on the relationship between work factors and at-work productivity: the association between positive work factors (such as job control) or negative work factors (such as job stress) and firms' productivity was strongest for people in good health.

Another source of evidence has drawn on the literature on high-involvement management that emerged in the 1980s (Walton, 1985; Lawler, 1986), which suggested that the greater involvement of workers both in their immediate jobs and in wider organisational decisions would improve firms' performance by increasing workers' commitment. An assessment of the results of such research is made difficult by the fact that the notion of high-involvement management has been operationalised in very diverse ways, with many studies including aspects of human resource practices – such as pay incentives – that are more appropriately considered as *motivational* rather than *involvement* practices. In an analysis of those studies that have used more rigorous measures of workers' involvement, Wood (2010) concluded that, while there was evidence of a positive effect on organisational performance of workers' empowerment at the level of job tasks, there was inconsistent

support for an independent effect (either positive or negative) of wider organisational involvement. For instance, two of the best-designed longitudinal studies came to quite different conclusions: Capelli and Neumark (2001), using the US National Employers' Survey, found no effect of wider organisational involvement practices on workplace performance, while Birdi et al. (2008), analysing the performance of 308 UK companies over 22 years, found a significant link with productivity as measured using data from company accounts. There was stronger evidence that wider organisational involvement was important in interaction with other firms' policies, such as total quality management (Wood and de Menezes, 2008), lean production (MacDuffie, 1995) and human resource policies on training and motivational incentives (MacDuffie, 1995; Wright, Gardner and Moynihan, 1999).

Summing up

The research evidence on the effects of the working environment on firms' productivity is less substantial than with respect to the effect on workers' well-being. The strongest evidence relates to its impact on worker attitudes that are important for absences from work, job turnover and job performance. While much of the existing research on how the working environment impacts on workers' attitudes bearing on firms' productivity has focused on job satisfaction, the results of research on work engagement, organisational commitment and innovative behaviour point in a similar direction. Well-designed research examining the effects on firms' performance either of average work attitudes or of organisational characteristics indicative of a good working environment is still scarce and the results are inconsistent. Current evidence, however, indicates that the quality of the working environment has either positive effects or no effects on firms' performance. There is, in other words, no support for the view that the pursuit of a good working environment comes at a cost for organisational performance.

3.5. Conclusion

Reliable and regularly collected data on the quality of the working environment are essential complements for policy purposes to existing indicators of social progress. Measures of economic growth cannot be translated into indicators of the quality of the working environment. It is important to monitor changes in the working environment directly, as they are critical factors in the psychological and physical health of working people. Developments in the types and intensity of work are increasing certain types of work-related risks (psychosocial) even as they reduce others (physical). In this context, the failure to develop preventive policies could lead to higher public costs with respect to both welfare assistance and health care, as well as private costs in the form of lower well-being for workers and their families and the lower productivity of firms. The quality of the working environment is also important for the motivation of people in work, a factor that is likely to become more important for productivity in a highly skilled, technologically advanced economy, and in a context where slow productivity growth has become a matter of major public concern.

Policy intervention requires a good knowledge of the categories of the workforce that are most exposed to a poor working environment and of the specific types of disadvantage that they experience. A central objective of developing high-quality data is to provide a detailed mapping of how various characteristics of the working environment are distributed among workers and to assess the extent to which specific groups of workers are

exposed to cumulative disadvantage. Existing research has provided a much sharper and more detailed picture of the distribution of these work environment characteristics, although only in some countries has it been on the scale needed to move beyond general distinctions between broad categories of workers to highlight the situation of more detailed sub-groups. This research has shown, however, that, in contrast to some earlier descriptions of labour-market segmentation, problematic factors in the working environment differ substantially between specific groups of disadvantaged workers, in terms of both the types of factors that are most salient and the extent to which they are cumulative.

Recent research also has made considerable progress in highlighting the aspects of the working environment that have the most important consequences for workers' psychological and physical health and that it is most important to monitor. This research has provided strong evidence, based on high-quality data, that the nature of the working environment has significant effects both on the risks of mental and physical ill health confronting workers and on their overall well-being. It has underlined in particular the importance of work intensity, task discretion, the adequacy of job resources, personal recognition at work and job security as components of the working environment that affect workers' well-being and health status. Moreover, it has highlighted the importance of taking account of the way in which different aspects of the working environment are combined, showing that the effects of work with high job demands are not inherently negative for worker well-being, but depend upon whether the working environment provides workers with adequate task discretion, rewards and resources.

This important contribution of the job demands-resources model is one reason for using it as an organising framework for identifying the key aspects of the working environment in later chapters of these *Guidelines*. Another practical reason is that this model is somehow flexible and allows considering a large number of factors of various natures. Accordingly, the specific features of the working environment that are conducive to a higher or lower quality of the working environment will be examined in Chapters 4 and 5 as belonging to either a job demand or a job resource.

There has been less extensive research into the implications of the working environment for workers' and firms' productivity. The research that exists, however, has provided consistent evidence of a beneficial effect of a good working environment on productivity-related workers' attitudes – such as job satisfaction, work engagement and organisational commitment – as well as on workers' innovative behaviour. Components of the work environment that have been found to be especially important in encouraging productivity-related attitudes and behaviour are the interest and variety of job tasks, the discretion that workers exercise over how to do their work, the work pressure they face, the adequacy of job resources, supervisory practices, job security and workplace voice. Productivity-related attitudes are associated with fewer absences from work, lower job turnover and better job performance. There are, however, relatively few studies on the relationship between a good working environment and firms' productivity. The results to date suggest either no association or a positive effect. There is no evidence, however, from major longitudinal studies that policies to improve the working environment undermine organisational performance. This is important given the view sometimes advanced that there is a necessary trade-off between improving the quality of the working environment and firm competitiveness.

Notes

1. The pay gap between men and women for broadly comparable work highlights the limitations of using pay as an indicator of skills.
2. Although there has been considerable concern recently about the emergence of other types of non-standard contract arrangements (for instance, zero hour contracts), the research evidence is too limited to provide rigorous conclusions about their implications for the quality of the work environment.
3. A number of instruments have been developed to measure work engagement. The most commonly used is the "Utrecht Work Engagement Scale UWES", which includes absorption as a dimension. Kahn (1990) and Rich, Lepine and Crawford (2010) have proposed an alternative conceptualisation, focused on the physical, cognitive and emotional investment of people in their work roles.
4. Meyer et al. (2002), exceptionally, found a correlation of 0.32 between affective commitment and organisational citizenship behaviour.

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Chapter 4

Measuring the quality of the working environment: The job characteristics approach

This chapter presents some principles that underpin the measurement of the quality of the working environment proposed by these Guidelines *and describes how these principles can be operationalised. It argues that the quality of the working environment should be defined in terms of a number of job characteristics that could be observed by a third party at the level of individual workers. Other approaches to the notion of the quality of the working environment used in the literature, such as job satisfaction and the person-job fit approach, should be understood as measuring not the quality of the working environment* per se*, but rather how the working environment, alongside a range of other factors (such as earnings and personal circumstances), might have an impact on workers' well-being.*

4.1. Introduction

The focus of this chapter is on the measurement framework that underpins these *Guidelines*. The *Guidelines* build on the principles outlined in the OECD's Job Quality Framework (Cazes et al., 2015), which conceptualises job quality in terms of three interrelated dimensions: earnings quality; labour-market security; and the quality of the working environment. This framework has its roots in the broader well-being agenda undertaken by the OECD (the *Better Life Initiative*) following the release of the report by the Stiglitz Commission on the Measurement of Economic Performance and Social Progress (2009). In a spirit that is similar to the one used for measuring the other two dimensions of job quality (i.e. earnings quality and labour-market security), these *Guidelines* argue that the quality of the working environment should be conceptualised at the *individual level* and measured by looking at *outcomes experienced by individual workers*, while focusing on those *objective attributes of jobs* that can be evaluated by a third party, even when they are measured through the self-reports of individuals.

The chapter details the arguments underpinning these choices. Section 4.2 discusses the advantages of: conceptualising the quality of the working environment in terms of outcomes, rather than procedures; focusing upon individual-level measures, rather than on aggregate measures referring to groups of workers or countries; and considering it as an objective phenomenon rather than as a more subjective one. Section 4.3 considers how these general criteria are operationalised in the context of a specific approach, the *job characteristics* approach, which is based on a number of broad dimensions and more detailed aspects of jobs. Section 4.4 then describes two other approaches used in the literature for assessing the quality of the working environment, the *job satisfaction* and the *person-job fit* approaches. These two approaches bring to the fore a number of more subjective aspects, which are shaped by expectations and adaptation, and reflect a broad range of personal characteristics and circumstances that go beyond the working environment *per se*. The chapter argues that workers' evaluations of their jobs and their emotional experiences at work matter when treated as *impacts* of the quality of the working environment, rather than as *dimensions* of it. Section 4.5 summarises the chapter's main arguments.

4.2. General criteria

Procedures versus outcomes

While labour-market policies, labour codes and firm-level practices shape the working environment at both the macro (country) and meso (organisation) levels, paid work is carried out by individual workers in specific contexts that may differ widely even within the same country, sector or firm. The quality of the working environment, therefore, is best captured by concentrating on outcomes experienced by individual workers. Moreover, focusing on outcomes experienced by different workers makes it possible to capture inequalities in the quality of the working environment across population sub-groups as well as between countries.

One major problem with focusing on procedures and regulations is that there is a substantial variation between countries, industries and firms with respect to compliance. In some contexts, regulations are strictly and promptly applied, whereas in others enforcement mechanisms are weak and regulations do not necessarily translate into action. Taking labour regulations and procedures at face value can, for this reason, be misleading when making cross-national or cross-industry comparisons.

Another problem when focusing on regulations concerns the time span between the moments when the regulations are set in place and when they produce their effects in the workplace. Legislation concerning the working environment does not necessarily reflect the actual status of the working environment where workers perform their tasks, as it takes time for working conditions to change after a reform. Therefore, measuring work regulations provides a weak basis for assessing working conditions, and these *Guidelines* recommend looking at outcomes to measure the quality of the working environment.

Having said this, measures of procedures and regulations can be a second-best solution in the absence of data on the job characteristics experienced by workers (Muñoz de Bustillo et al., 2011). For instance, even though work-related physical risks for health are directly relevant for the well-being of the individual, whether health and safety regulations at the workplace exist and are enforced also provides valuable information. Similarly, workers' participation in workplace decision making is an important aspect of the working environment; when data on this participation are unavailable, information on the existence of institutional channels for workers' participation in the workplace provides a useful proxy.

Individual versus aggregate measures

The quality of the working environment is a multidimensional concept that can be defined only at the *individual* level. Workplaces and job tasks have various attributes that shape the overall quality of the work environment of each worker: it is the combination of these negative and positive attributes that determines how good a job is. Negative job attributes, such as time pressure, can be compensated by a higher level of autonomy enjoyed by the worker, buffering the adverse impact on individual well-being. These compensating and interacting effects can be captured only at the individual level through the use of micro-level data.

Another advantage of defining the quality of the working environment at the individual level is that it allows going beyond country averages to look at inequalities, which was one of the key recommendations of the report by the Stiglitz Commission (Stiglitz et al., 2009). This means that differences in the quality of the working environment across the workforce can be examined. Differences in job quality within a country are typically larger than between countries, and individual-level differences in terms of the quality of the working environment can compound, or offset, other inequalities in the labour market. Policies targeting disadvantaged groups can be formulated only if the distribution of poor quality jobs is taken into account. Individual-level measures allow determining whether a group of workers who are disadvantaged in one aspect of the quality of the working environment also experience poor outcomes in another.

While it is very important to define and measure the quality of the working environment at the individual level, this is not always possible due to limitations in the available data. Measuring the multidimensional aspects of the working environment

requires using a single data source, providing information on various job characteristics at the same time and for the same person. As discussed in Chapter 2, while there a number of international and national surveys that can be used for this purpose, most of them are limited to European countries, with their small samples limiting the analysis of distributions.

In the absence of comprehensive, individual-level surveys focused on this topic, a second-best option is to complement an aggregate-level indicator with information on *distribution* coming from a different source. For example, the earnings quality dimension of the OECD's Job Quality framework is measured through data on the level of hourly earnings of full-time workers, based on national accounts and other sources, and on the distribution of earnings, sourced from surveys of workers or firms (OECD, 2014; Cazes et al., 2015). When micro-level data, or other type of data providing information on distribution, are unavailable, a *third-best* approach to measure the quality of the working environment is to calculate *gaps* in job quality between population sub-groups, e.g. gender gaps in working hours or earnings. For instance, the EU's Employment Committee (EMCO) Quality of Work indicators include information on gender pay and employment gaps in order to assess the gender balance at work (2010); similarly, the EU Laeken indicators include measures of employment and unemployment gaps across population sub-groups so as to measure diversity and discrimination (European Commission, 2001).

Even though aggregate-level data do not provide information on the distribution of job quality or on the interactions between job attributes, their advantage is that they can be compiled from a wide range of sources. A number of international initiatives – such as the EU Laeken indicators of job quality (European Commission, 2001), the EMCO Quality of Work indicators (EMCO, 2010) and the International Labour Organisation Decent Work indicators (ILO, 2012) – exploit this advantage of aggregate data, bringing together country-level information on various aspects of job quality from different datasets. These aggregate-level indicators may be sufficient when the goal of the statistical collection is to assess country differences in the quality of the working environment and to monitor changes over time in various job attributes.

Subjective versus objective approaches

One critical issue for any effort to measure the quality of the working environment relates to the very nature of the concept. As further discussed in Section 4.4, some approaches conceptualise the quality of the working environment as the *utility* that individual workers draw from their jobs, where information on this utility can be provided only by the workers themselves. Other approaches, however, conceptualise the working environment as a collection of job features that are observable to a third party, implying a more objective standpoint. Ultimately, the first approach understands the concept as intrinsically subjective (i.e. only individual workers can report on it), while the latter looks at it as intrinsically objective (i.e. the aspect at hand is observable by a third party), even though both approaches rely on workers' self-reports as the method of assessing the quality of the working environment. Box 4.1 further details the relation between the intrinsic nature of the concept of the "quality of the working environment" and the way it is measured.

Box 4.1. ***Subjective* or *Objective?* The intrinsic nature of the quality of the working environment and the choice of the best measurement method**

Concepts that are intrinsically subjective are those where individuals' own views define the very nature of the issue of interest. Objective concepts, on the other hands, are those that can be observed and assessed independently of individuals' personal experiences and evaluations; they are – in principle – observable by others.

The *objective-subjective* distinction about the nature of the concept of interest is logically separate from the choice of the method of measurement. Both subjective and objective concepts can be measured through people's self-reports, which are sometimes described as *subjective measures*; for example, *happiness* is a subjective concept that can be measured by asking individuals how happy they are or, potentially, by observing various bio-markers (e.g. the prevalence of *genuine* smiles, brain activities or cortisol levels). Exposure to chemicals, on the contrary, is an objective concept: although it is experienced by an individual, whether one's job involves exposure to chemicals can be objectively evaluated by a third party or though air sampling stations, even if this objective concept can also be measured through workers' self-reports.

4.3. The "job characteristics" approach

Studies of the quality of the working environment have relied on different theoretical perspectives, which differ in the extent to which they have approached the issue on the subjective/objective spectrum. While some studies have conceptualised job quality, and hence the quality of the working environment, as a utility that each individual derives from their jobs based on their expectations and outside options (e.g. Clark, 1998 and 2015), others have focused on the presence and the intensity of objective characteristics in the job (e.g. Muñoz de Bustillo et al., 2011; Gallie et al., 2014). The approach underpinning these *Guidelines* lies at the objective end of this spectrum.

The job characteristics approach defines the quality of the working environment in terms of a number of specific characteristics that influence workers' well-being, rather than focusing on individuals' subjective evaluations of their conditions. Conceptually, this approach draws on the "capability approach" developed by Amartya Sen (1982, 1992, 1993, 1999, 2009) and Martha Nussbaum (2000, 2003), which is a broad normative framework for assessing individual well-being. The capability approach postulates that, when making evaluations of a person's advantage, it is important to focus on a person's opportunities to do and be what they have reason to value.

The capabilities approach positions itself against two other philosophical approaches: the utilitarian approach and the resource-based approach. It criticises the utilitarian approach, which assesses people's well-being through levels of utility, for excluding non-utility information from moral judgements (Sen, 1997) and for relying on misleading interpersonal or intertemporal comparisons. For a utilitarian, if women are more satisfied at their jobs, they should be paid less, which excludes the information that women do equal work to men (Robeyns, 2005). The capabilities approach is also critical of resource-based theories, which consider income, basic goods or material resources as the only means to enhance people's well-being (e.g. earnings as the only job attribute that matters for workers' well-being) and for not taking into account other aspects of jobs that matter intrinsically to workers.

The capabilities approach rests on four principles. First, it draws attention to non-material dimensions of people's well-being. Second, it postulates that people are the units of moral concern because each person differs in their abilities to transform goods into well-being. Third, it is multidimensional due to its focus on a plurality of capabilities and functionings. Finally, it is interdisciplinary, as it builds on insights from various disciplines around a common research question.[1]

In practice, the job characteristics approach draws on empirical findings from sociology, occupational health, organisational psychology and human resource management. It defines the quality of the working environment as the combination of good and bad job attributes that have an impact on individuals' well-being. This impact is sometimes contingent upon the specific combination of various characteristics: for example, some work elements are not detrimental to health on their own, but only in the presence of other elements.

A long list of job characteristics has been identified in empirical research as having either a positive or a negative impact on well-being.[2] For example, Green focuses on skills, personal discretion, wages and risk as key indicators of job quality. Similarly, Muñoz de Bustillo et al. (2011) developed a European index of job quality that includes pay, the intrinsic quality of work, the quality of employment, health and safety, and the work-life balance. In order to analyse the impact of employment regimes on the quality of life in Europe, Gallie (2009) focused on skills and wages, job-related training, task discretion, work-family conflict and job insecurity. Kalleberg analysed the trends in good and bad jobs in the United States by focusing on pay, fringe benefits, flexibility over work activities and control over the termination of the job (2011).

The key dimensions identified in this literature and adopted in the frameworks developed by national, international, and academic initiatives are reviewed in Chapter 5in detail. The *Guidelines* group them into six broad dimensions:[3]

- the physical and social environment of work
- job tasks
- organisational characteristics
- working-time arrangements
- job prospects
- the intrinsic aspects of the job.

More detailed characteristics within these six dimensions are detailed in Table 4.1. These characteristics refer to several aspects of the working environment and correspond to either a job demand or a job resource as discussed in Chapter 3. For instance, the dimension *job tasks* includes two types of job demand (i.e. work intensity and emotional demands) and one type of job resource (i.e. task discretion and autonomy, i.e. the ability to choose and/or change one's methods of work). Likewise, the dimension *worktime arrangement* includes one type of job demand (i.e. unsocial work schedule, such as working over weekends) and one type of job resource (i.e. the flexibility of working hours, such as being able to take a break when needed).

Advantages and disadvantages of the job characteristics approach

The key advantages of this approach are it *reliability and validity*.

A reliable measure is one that accurately describes the concept being measured. Reliability is an aspect of accuracy, i.e. the extent to which a measure yields consistent

Table 4.1. **Dimensions and characteristics of the quality of the working environment**

Dimensions	Job characteristics	
	Job demands	Job resources
A. Physical and social environment	A.1. Physical risk factors A.2. Physical demands A.3. Intimidation and discrimination at the workplace	A.4. Social support at work
B. Job tasks	B.1. Work intensity B.2. Emotional demands	B.3. Task discretion and autonomy
C. Organisational characteristics		C.1. Organisation participation and workplace voice C.2. Good managerial practices C.3. Task clarity and performance feedback
D. Worktime arrangements	D.1. Unsocial work schedule	D.2. Flexibility of working hours
E. Job prospects	E.1. Perceptions of job insecurity	E.2. Training and learning opportunities E.3. Opportunity for career advancement
F. Intrinsic aspects		F.1. Opportunities for self-realisation F.2. Intrinsic rewards

results when a measurement is repeated over time or under different conditions. If a measure is reliable, differences observed between individuals, countries or periods can be attributed to real differences in the concept under question, rather than to measurement error.

- Reliability can be assessed by checking the internal consistency of multiple items or, for single items, by checking the consistency of different measures of the same underlying concept across countries. There is abundant evidence showing that the measures of most items used by the job characteristics approach are reliable. A common test of multiple-item reliability is the Cronbach's alpha, which indicates an acceptable level of convergence if it is over 0.70. For example, studies using the British Skills and Employment Surveys report a Cronbach's alpha of 0.77 for various measures of task discretion (Green et al., 2014; Inanc et al., 2015), of 0.90 for measures of job insecurity (Gallie et al., 2016) and of 0.72 for work intensity (Green et al., 2014). These high values for Cronbach's alpha suggest that there is a high degree of internal consistency among the multiple items of the same job characteristic.
- While Cronbach's alpha can be calculated only for multiple items, it is also possible to assess reliability by calculating cross-country correlations between single items coming from different data sources and measuring the same underlying concept. For example, OECD (2014) assessed cross-country correlations of a number of job characteristics between the 4th European Working Conditions Survey and the 3rd Work Orientations module of the International Social Survey Programme datasets, both collected in 2005. The rank correlations among 19 countries were 0.75 for time pressure, 0.79 for physical health risk factors, 0.87 for work autonomy and learning opportunities, and 0.67 for good workplace relationships. These high correlations lend support to the reliability of questionnaire items measuring various job characteristics.[4] (The cross-survey reliability of job characteristics is further discussed in Chapter 5.)

While reliability refers to the consistency of a measure, *validity* is about the extent to which a measure actually captures the underlying concept of interest. Most of the elements identified by the job characteristics approach enhance workers' capabilities to achieve well-being and can be considered as valid measures of the underlying concepts. Evidence regarding the validity of the job characteristics identified by this approach comes from different sources:

- *Cognitive testing*. Like any good-quality survey, most surveys on the quality of the working environment rely on cognitive interviews with a small number of respondents in order to assess whether the questions are interpreted in the way that they were intended. In general, respondents have proved capable to answer questions relating to their own jobs and workplaces easily. When there is room for misunderstanding, this is revealed during the cognitive testing stage; questions are then improved to facilitate interpretation (Felstead et al., 2014; Eurofound, 2011).
- *Consistency of measures with other proxies*. Measures of different job characteristics are highly correlated with other proxies of the same concept. Validity is assured when alternative measures of the same concept are correlated with each other. An example is the measure of job insecurity: if the self-reported probability of job losses predicts the actual job losses that occur later, the former can be regarded as having validity. Indeed, using longitudinal data from Germany and Australia, Dickerson and Green (2009) found that people who report a high probability of job loss are much more likely than others to actually lose their jobs in the following year.
- *Consistency with theoretical expectations*. Measures of job characteristics work in the way suggested by theory and common sense. For example, one could expect systematic differences across education groups or between men and women regarding how job characteristics are distributed. In fact, the incidence of physical health risk factors is typically lower for more educated workers and for women, as both groups are less likely to work in manual jobs such as construction and manufacturing (Eurofound, 2012), which is consistent with what one would expect. Moreover, a good physical work environment is positively correlated with the level of skill and discretion and negatively correlated with work intensity. These associations show that questions used in the measurement of job characteristics yield valid measures.
- *Comparability across respondents, countries and over time*. There is vast evidence that objective job characteristics tend to be accurately measured in terms of both reliability and validity. This guarantees that measures of job characteristics reflect the actual level of job quality as experienced by workers and that meaningful comparisons can be made across individuals, population sub-groups and countries and over time when questions are asked in an identical way.

The main disadvantage of the job characteristics approach is its high *costs*. The approach is inherently multidimensional: it conceptualises the quality of the working environment in terms of a number of characteristics whose presence (or absence) enhances people's capabilities for improving their own well-being. Therefore, this approach involves measuring a list of job characteristics all at once, which requires a substantial amount of questionnaire space. Information on the working environment with this detail is available in specialised surveys on work, employment and working conditions, but not in general social surveys covering a range of other aspects. Conversely, these specialised surveys most often do not have sufficiently large sample sizes and are conducted infrequently.

4.4. Other approaches to the quality of the working environment

The job characteristics approach is not the only approach used by theoretical and empirical research on the quality of the working environment. Two other approaches have been influential in research on job quality: the *job satisfaction* approach (already introduced in Chapter 3) and the *person-job fit model*. Both approaches bring to the forefront a range of

subjective aspects. While these approaches are deemed by these *Guidelines* as not suited to identify the constituent elements of the working environment, they are useful to highlight how workers' experiences might be impacted by the quality of the working environment, alongside a range of other factors.

The job satisfaction approach

Job satisfaction measures are widely available from national and international sources and have often been used as a summary measure of job quality.[5] Some academic researchers (e.g. Clark, 1998, 2011, 2015) and international initiatives (e.g. Laeken indicators) conceptualise job quality in terms of workers' *satisfaction* with their job – with *job satisfaction* practically becoming a synonym for job quality. This approach largely reflects a body of literature that has documented strong empirical links between survey measures of job satisfaction and various types of labour-market behaviour (e.g. job quits) together with the increasingly popular research on subjective well-being in the 1990s and 2000s, which considered job satisfaction as work-related well-being. For instance, several researchers have shown that job dissatisfaction is a stronger predictor than wages of workers' voluntary decision to leave their employer (Hamermesh, 1977; Freeman, 1978; Green, 2010). Similarly, high job dissatisfaction has been found to be related to absenteeism (Clegg, 1983) and shirking work (Mangoine and Quinn, 1975). Focusing on the health consequences of well-being at work, early research found that low job satisfaction was correlated with poor mental health (Wall et al., 1978) and a higher likelihood of coronary heart disease (Sales and House, 1971), while high job satisfaction was associated with higher longevity (Palmore, 1969).

Does this empirical evidence and wide data availability make job satisfaction a good statistical indicator of the quality of the working environment? In order to answer this question, it is important to understand what job satisfaction is. Psychologists define job satisfaction as a cognitive response by workers to a job or to one of its specific aspects (Locke, 1976; Smith et al., 1969). In the economics tradition, job satisfaction is often presented as the *utility* that workers derive from their job, which depends on job features such as wages and working hours, for which each worker has their own preferences. Also, both psychology and economics underline the *relative character* of job satisfaction: psychological research considers an individual's own attitudes and expectations as determinants of their job satisfaction, while the economic literature considers the *relative utility* that individuals obtain compared with others in their reference group or in terms of their market value (e.g. relative income). In short, job satisfaction is a concept that encompasses both preferences and evaluations based on intraand inter-personal comparisons.

The main feature of job satisfaction is that it reduces the multidimensional concept of job quality to a single indicator, which makes interpretation easier. This implies a number of advantages:

- *Simplicity.* It summarises a number of extrinsic and intrinsic aspects of jobs, reflecting individuals' preferences for these job aspects and avoiding the need to identify which aspects of jobs are most important to each respondent. Related to this, job satisfaction, as a single-item indicator encapsulating all job features as weighted by the respondent, overcomes the problem, faced by all composite measures, of having to assign weights to different work attributes in situations where no information is available to researchers on the importance of various attributes.

- *Consideration of individual preferences*. Individual preferences are embedded in job satisfaction questions due to their subjective nature. Measuring individuals' preferences (or at least taking them into account) is challenging. Rather than ignoring individual differences in preferences, job satisfaction measures take account of the views of each worker about what constitutes a good or bad working environment.
- *Low cost*. Job satisfaction is a widely available indicator, featuring in a number of surveys, which can be captured with a single survey question.[6]

Job satisfaction, however, also has drawbacks as an indicator of the working environment. There are often discrepancies between objective features of a good job (i.e. pay, contract status) and reported job satisfaction (i.e. Clark, 1996; Muñoz de Bustillo and Fernandez Macías, 2005). Job satisfaction may also reflect individuals' expectations that are based on comparisons with their previous jobs, with reference groups or with other jobs available in the labour market, all factors that complicate comparisons across individuals. Moreover, workers may adapt their expectations to poor job features, thereby reducing any gap between job quality and job satisfaction, which may explain the low variation in job satisfaction levels observed across individuals and countries. In more detail:

- *Job satisfaction captures more than just the quality of the working environment* per se. The major drawback of using job satisfaction to measure the quality of the working environment is that it captures other aspects of the job (e.g. pay) that are not related to the working environment.
- *Expectations and comparisons with reference points*. One of the puzzles in research on job satisfaction is the low correspondence between some observed characteristics of jobs and workers' job satisfaction. Studies focusing on objective job characteristics, such as the sector of employment, wages, contract type or firm size, have found that the correlation between these features and job satisfaction is very low and inconsistent across studies (Spector, 1997; Muñoz de Bustillo and Fernandez Macías, 2005). Studies measuring qualitative aspects of jobs, such as autonomy, social support or work intensity, have reported a higher correlation with workers' job satisfaction (Spector, 1997).[7] This makes it difficult to identify the job characteristics shaping job satisfaction. The early definitions of job satisfaction in psychology literature point to the importance of expectations and comparisons in the formation of satisfaction from a job. For example, dissatisfaction with a job may be the result of a discrepancy between a person's expectations and the actual job characteristics. Locke (1976) described three mechanisms that may cause dissatisfaction with a job: discrepancies between what the job offers and what the individual expects; the degree to which the job fulfils individual needs; and the degree to which individual values, desires or wants are fulfilled.[8], [9]Overall, the evidence shows that, even when expectations and reference points are taken into account, job satisfaction performs poorly as an indicator of the quality of the working environment. Job satisfaction cannot be used to compare the quality of the working environment of various population groups because it is affected by factors beyond the quality of the working environment *per se*.
- *Downward adaptation*. The average level of job satisfaction in many countries is relatively high, with low variation across individuals. For example, Muñoz de Bustillo et al. (2011) found that average job satisfaction among 32 countries and territories was 7.1 (on a scale of 10) based on 2005 ISSP data, ranging between 6.2 in Korea and 8.1 in Mexico. However, this finding implies neither that, on average, most jobs are of good quality nor that

differences between them are marginal. In fact, both patterns may result from a process of downward adaptation. When individuals work in poor work settings and cannot change easily their job, they may adjust their expectations as a coping strategy, thereby increasing the average job satisfaction (Festinger, 1957). Another possible explanation is the *survivor effect*: those workers who are not happy with their work and can neither change this reality nor adapt their expectations are more likely to quit their jobs, implying that survey respondents are relatively more satisfied people, leading to an upward shift in average job satisfaction. Both adaptation and survivor effects imply that, due to the attitudinal aspect of job satisfaction, workers stick to satisfying jobs, while they avoid (e.g. by quitting) dissatisfying jobs.

- *Lack of knowledge.* While researchers using job satisfaction data may not know which specific aspects of their job workers are satisfied about, respondents may not be fully informed about the actual job attributes that most affect their well-being. Workers exposed to a poor working environment, but who are not aware of it, may be satisfied with their jobs, whereas those who are more knowledgeable about their work setting may be less satisfied. For example, chemical risk factors that might be detrimental to workers' well-being could be unknown to most of them, who may still be satisfied with their jobs.

Even if job satisfaction is not a measure of the quality of the working environment *per se,* it still provides useful information in many settings. When other measures are unavailable, job satisfaction measures may provide a second-best option to measure the overall job quality of a country (or a specific population sub-group). The expectations shaping job satisfaction do change, but only slowly; thus, changes in job satisfaction in a given country (or among a given sub-group) over a period of time can provide important information about the overall job quality, provided that the composition of the workforce remains the same (Green, 2006).

Since job satisfaction reflects a broad range of aspects of the work performed, statisticians will generally be unable to say whether an individual's assessment of their job is dominated by satisfaction with the extrinsic aspect of their work (e.g. pay) or by satisfaction with the quality of their working environment. To allow distinguishing the two, some surveys (e.g. British Household Panel Study, British Skills and Employment Surveys) contain a battery of questions on satisfaction with specific aspects of work (e.g. pay, fringe benefits, opportunity for career progression), followed by an overall job satisfaction question. The initial set of questions help respondents to think about all those different (extrinsic and intrinsic) aspects of work when they answer the overall job satisfaction question; in other words, domain-specific satisfaction questions prime the overall job satisfaction question.

Person-job fit approach

The basic premise of the *person-job fit* approach is that the quality of the working environment can be conceptualised in terms of the match between the characteristics of the worker and those of the job. The *person-fit approach* stems from the person-environment fit theory (P-E hereafter), which postulates that well-being depends on the discrepancy between the person and the environment where he/she acts.

The P-E fit theory posits that strain arises when there is a mismatch between the person and the environment. This could be either because the environment does not

provide adequate means to meet the person's needs, or because the abilities of the person fall short of what the environment demands. Therefore, as means approach the required needs, and abilities match demands, strain declines.

Box 4.2. **The person-environment fit theory**

The person-environment fit theory proposes two main hypotheses to explain the impact of excessive supply or ability on strain (Edwards et al., 1998).

- In a situation where supply exceeds demand (and where excess supply does not influence needs), strain will monotonously decline until it reaches a matching point, remaining constant thereafter. In situations where excess supply helps to satisfy needs in another dimension, strain decreases monotonously as supply increases. For example, when one's need for control is satisfied, excess control can be used in other fields, e.g. to bring about changes at work, which in turn helps to decrease strain (Burger and Cooper, 1979). Similarly, if excessive supply can be preserved for later use, strain decreases steadily as supply increases (French, 1973; Harrison, 1978). Alternatively, excessive supply could increase strain, leading to a U-shaped relationship if excessive supply prevents fulfilment of other needs. An example for this U-shaped relationship is the fulfilment of the need of companionship with co-workers, as an excessive relationship with co-workers may run against their need for privacy (Eidelson, 1980; French et al., 1974; Harrison, 1978).
- The relationship between excessive abilities and strain can also take different forms and be mediated through access to supplies. If excessive abilities cannot be used to obtain supplies, there will be an asymptotic relationship, with strain staying constant once abilities match demands. For instance, excessive language skills will not be very useful to meet other demands. Alternatively, when excessive abilities help to meet demands in other dimensions (carryover), or can be preserved to meet future demands (conservation), strain will monotonously decline as abilities increase. Finally, excess abilities could increase strain when they hinder the fulfilment of other demands today or in the future, e.g. unused skills or abilities may become obsolete and make it difficult to fulfil future demands (Edwards, 1996).

An extensive research in management and psychology has investigated the compatibility between a person and various features of their working environment, leading to measures of person-job fit, person-organisation fit, person-group fit and person-supervisor fit (for a meta-analysis, see Kristof-Brown et al., 2005). These applications conceptualise the quality of the working environment as a match between people and their work. The approach first identifies those contents whose fit should be measured, such as pay, work-life balance, autonomy and skill use, and then asks workers, through surveys, to assess how much they value each of these attributes and how much of this attribute is available in their work environment. Both the *person* and the *environment* are hence measured in subjective terms.

The key advantages of the person-job fit approach include the following:

- *Taking into account workers' views*. The main advantage of this approach is that it takes into account workers' personal views on what constitutes a good job, hence reflecting the unobserved heterogeneity of the workforce. Personality differences may make some job attributes more important for some workers than for others. For example, people with a high propensity for using their own initiative at the workplace will prefer jobs that provide high discretion on how to work.

- *Flexibility.* Labour-market institutions and workforce characteristics differ across countries, while job and worker attributes differ across occupations and industries. The person-job fit approach can be adapted to different countries, occupations or settings by selecting job attributes that are relevant in a particular context. For instance, in blue-collar occupations, the model can focus on the match between physical aspects of the work environment, whereas, in the case of office jobs, the model may focus on aspects of the social environment.
- *Availability in national and international surveys.* Hundreds of small-scale studies have applied the person-job fit approach using sources customised to a specific work setting or occupational group (Kristof-Brown et al., 2005). Some large-scale national and international surveys also include a number of questions in line with this approach (Box 4.3), although the contents are not always measured on the same scale (Edwards et al., 1998).[10]

Box 4.3. **Applications of the person-job fit model in different surveys**

- The Work, Family and Well-being modules of the European Social Survey (ESS) contain a battery of questions that ask respondents how important it is for them, when choosing a job, to have the opportunity to use their own initiative, job security, high pay, combining work and family responsibilities and training opportunities. This survey also contains questions on whether their job fulfils these criteria, and respondents report whether, for example, their job is very secure or not at all secure (on a 4-point scale). A person who attaches high importance to job security but does not find their job secure enough is considered to be experiencing poor job quality in the security dimension.
- The Work Orientations Module of the International Social Survey Programme (ISSP) also contains questions to identify people's work orientations. The ISSP asks respondents to rate the importance in a job of security, high income, opportunities for advancement, intrinsic interest, as well as working independently, helping other people, doing something useful to society, and being able to decide their times or days of work.[11] Other survey questions ask respondents whether they agree or disagree that these same characteristics apply to their own job. The ISSP questions measuring the Person and the Environment have similar question wordings and answer scales.
- The British Skills and Employment Surveys (SESs) include a wide range of questions on job characteristics, with respondents reporting how important each characteristic is to them on a scale from 1 (essential) to 4 (not very important). These questions relate to promotion prospects, good pay, good relations with supervisors or managers, job security, being able to use one's initiative, liking what they are doing, working convenient hours of work, being able to choose working hours, having the opportunity to use their abilities, having good fringe benefits, a light work load, good training provision, good physical working conditions, variety in the type of work and friendly people to work with. At the end of the survey, respondents are asked how satisfied they are with each of the job characteristics in their current job on a scale from 1 (completely unsatisfied) to 7 (completely satisfied).

At the practical level, however, this approach also has some important limitations.

- *Self-selection to well-fitting jobs.* Since the fit between jobs and workers is essential for workers' well-being, workers may self-select themselves into jobs that better match their expectations and abilities, and then remain in those jobs (Schneider, Goldstein and

Smith, 1995). For example, individuals may select jobs providing opportunities in line with their career aspirations. This implies that, at least initially, workers tend to select into jobs that fit their preferences and abilities. The quality of the working environment, measured in terms of the person-job fit, thus tends to be high, on average, with only a small variation across workers.

- *Adaptation*. Once the job search and recruitment processes are completed, there may still be a mismatch between the worker and the job. However, since a mismatch is a source of strain and dissatisfaction, workers may reduce this gap via two mechanisms: 1) *coping* involves efforts to improve the person-job fit through either adaptation (changing the person's abilities, preferences or values) or changing the work environment; 2) *defence* entails changing the subjective person-job fit through cognitive distortion of either the person or the job (e.g. denial, projection, repression), without changing the objective characteristics of the self or the job (French et al., 1974). As a result, individuals in poorly matched jobs may maintain a good fit by adapting their abilities or preferences or the way that they perceive their jobs. This process makes it problematic to use the person-job fit as a measure of the quality of the working environment.
- *Ex-ante identification of job characteristics*. In practice, the job attributes that workers are asked to value depend on the *ex-ante* selection of a list of attributes made by the researcher. A large literature identifies which job attributes are more valued by people from various countries and population sub-groups. However, researchers still need to decide which of these attributes should be included in the survey; the retained items may miss some essential elements that some workers would have considered as important, thus failing to reflect the actual match between persons and what matters for them about their job.
- *Common method bias*. Typically, information on the person-job fit is provided by surveys where workers rate their own characteristics, abilities and preferences, as well as the characteristics of their job. Use of a common source for rating both personal and job attributes may lead to a positive correlation between them due to the common measurement method used, rather than to the constructs being measured (i.e. the person and the job). Common method bias can take various forms: workers with certain personality traits, e.g. aptitude for autonomy, may over-report the autonomy that their job provides if they are satisfied with it, and vice versa if they are not satisfied; similarly, more optimistic people may report a better job fit compared to pessimistic people. Bias may also arise from differences in the response scales through which individuals cognitively process the relevant information: some individuals avoid reporting extreme highs and extreme lows, placing their answers in the middle categories, whereas others tend to mark the lowest and top scales. These personality and response-style differences may conceal the degree and level of the fit between the job and the person.
- *Limited cross-country comparability*. Finally, the person-job fit approach is likely to provide a poor indicator when it comes to cross-country and over-time comparisons. Individuals tend to select into jobs that fit with their personalities, abilities and preferences. If a good match fails at the recruitment stage, they may either adjust their abilities and expectations according to the nature of their jobs or change their perceptions or quit their jobs. Therefore, on average, measures of the person-job fit are likely to be fairly high, with little variation across countries to indicate significant differences in their working environments.

4.5. Conclusion

This chapter has argued that the quality of the working environment is a multidimensional concept that is complex to measure, thus requiring certain principles. In particular, one needs to decide the level of measurement (focusing either on the outcomes experienced by individuals or on procedures and regulations that operate at the mesoand macro-levels), the unit of analysis (either individual workers or aggregate country scores) and the nature of the concept (defined either in purely subjective terms, i.e. people's satisfaction with their own job, or job characteristics that can be evaluated by a third party).

This chapter has discussed the advantages and drawbacks of these alternative approaches from a statistical point of view, concluding that outcome-based, individual-level measures focused on objective features of the quality of the working environment are required in order to generate robust and policy-relevant indicators of the quality of the working environment (Table 4.2). The basic argument for focusing on outcomes experienced by workers, rather than on procedures and workplace regulations, is that the former directly influence individuals' well-being. Individual-level measures are preferred since they allow both capturing the compensation and interaction effects of various job attributes and assessing the distribution of job quality across the workforce.[12] Finally, objective measures are preferred to subjective ones, as the latter may reflect a broad range of features pertaining to both jobs and workers, rather than being specific to the quality of the working environment. Measures of workers' evaluation of their jobs or of the fit between the job-holder and the job do, however, play an important role when the interest is on disentangling the impacts of the various elements of the environment on workers' well-being.

Table 4.2. **Theoretical principles for measuring the quality of the working environment**

	Advantages	Disadvantages
I. Procedures vs. Outcomes		
Procedures	Availability	Timeliness Issues of compliance
Outcomes	Accuracy Timeliness Policy relevance	Not always available
II. Individual vs. Aggregate Level		
Individual level	Compensation and interactions of various job attributes Distribution across the workforce	High cost Need for micro-level data
Aggregate level	Availability Combining various data sources	No compensation and interaction of job attributes No distribution across the workforce
III. Subjective vs. Objective		
Job satisfaction approach	Simplicity Takes account of individual preferences No weighting required Low cost	Reflects expectations and affected by reference points Downward adaptation Lack of knowledge Limited cross-country comparability
Person-job fit approach	Takes account of individual preferences Flexibility Availability	Self-selection to well-fitting jobs Adaptation Ex-ante identification of job characteristics Common method bias Limited cross-country comparability
Job characteristics approach	Reliability Validity Comparability across respondents, countries and time Policy amenability	High cost

These three principles, namely outcome-based, individual-level and objective features, are supported by a rigorous body of research and have been adopted by a number of international organisations (i.e. the European Trade Union Institute; Eurofound; the United Nations Economic Commission for Europe; and the OECD) who have been leading statistical work on the quality of the working environment. By following these principles, national statistical offices and other agencies collecting information on the quality of the working environment will contribute to enhance the coherence, credibility and accessibility of data on the quality of the working environment.

Notes

1. Thanks to these features, the capabilities approach can be applied to the assessment of job quality. Green (2006) suggests that "Using Sen's approach, the way to evaluate the quality of a job is through the capabilities that are afforded to workers in the job to achieve well-being and to achieve agency goals" (p. 14). The capability to achieve well-being at work, Green argues, depends on the set of job characteristics, including wages and prospects, and on the range of tasks to be chosen from and actually carried out on the job. Based on this conceptualisation, the quality of work life will be higher when an individual can choose a job with a specific set of tasks (i.e. a job with tasks τ within a set of tasks T) compared to an individual who has only one choice (e.g. job with tasks τ), even though both workers perform exactly the same tasks.
2. The job characteristics that the literature finds enhance the capabilities of workers to achieve well-being are discussed in detail in Chapter 4.
3. All these dimensions and their sub-components are applicable to employees, whereas those that concern organisational or management characteristics are inapplicable for most of the self-employed. Chapter 5discusses methodological and analytical issues that need to be taken into account when collecting and analysing data on the quality of the working environment of self-employed individuals.
4. The same methodology is used in the OECD Job Quality Database, which combines the two data sources and covers a majority of the OECD countries.
5. The *OECD Guidelines on Measuring Subjective Well-being* included a question on "job satisfaction" in its Module E on "domain evaluation". This question is worded as follows: "The following questions ask how satisfied you feel about a specific aspect of your life, on a scale from 0 to 10. Zero means you feel 'not at all satisfied' and 10 means 'completely satisfied'. How satisfied are you with your job?" (OECD, 2013)
6. It has also been argued that an overall job satisfaction summarises information from more detailed questions on satisfaction with various aspects of jobs. For example, Clark (1998) suggests that "the simple response to a question on overall job satisfaction does a good job of summarising this often missing information and… is closely related to other, more complicated measures that can be derived from a battery of questions concerning job quality".
7. This, however, could be a result of common method bias (i.e. the use of a common instrument to measure individuals' self-evaluations of both their job characteristics and of their job satisfaction, Muñoz de Bustillo et al., 2011).
8. The job satisfaction research has focused on identifying what these reference points are. For example, Clark (1996) argued that job satisfaction is closely related to the concepts of relative deprivation and income comparisons, showing that job satisfaction is more strongly correlated with the respondents' relative income than with their absolute income, where relative income is calculated as the wage predicted based on individuals' characteristics. Another stream of research has argued that job satisfaction is a person's post-decisional preference for his or her job relative to other options (e.g. Levy-Garboua and Montmarquette, 2004; Levy-Garboua et al., 2007). Kristensen and Johansson (2008) also find that different comparison standards exist across countries.
9. Women, older workers and people with lower salaries – groups that typically hold lower quality jobs – are generally more satisfied with their jobs, whereas union members and more educated individuals – who should have better jobs – are generally less satisfied. Clark (1997) argued that women report higher job satisfaction than men, even when they hold similar jobs, because of lower expectations. The same conclusion has been reached for lower-paid workers (Clark and Oswald, 1996). Similarly, while part-time jobs often involve occupational downgrading and lower career

prospects (Connolly and Gregory, 2007), voluntary part-time workers are typically more satisfied with their jobs than full-time workers (Booth and van Ours, 2008). Clark and Oswald (1996) have also found that better educated workers often report lower job satisfaction, either because education raises their expectations or because people with high expectations pursue their education longer. The negative relationship between union membership and job satisfaction could also result from a process of self-selection, with dissatisfied workers being more likely to join a trade union (Clark, 1996) or by a process of retention, as unions – by providing workers with a voice – encourage them to stay in jobs even when they are dissatisfied with them (Freeman, 1978).

10. Ideally, the supply or demand of a specific dimension should be measured as the desired amount, frequency or intensity of a dimension rather than the importance of a dimension. The importance of the dimension for a worker can mediate the relationship between the person-job fit and stress outcomes; however, it does not *per se* constitute a measure of the person-job fit (Edwards et al., 1998). None of the international surveys discussed here contain the ideal questions prescribed by person-environment theories, and thus provide only a proxy measure for the person-job fit.

11. Answers to these questions are reported on a 5-point scale, where 1 represents "Strongly Agree" [that it is important] and 5 represents "Strongly Disagree" [that it is important].

12. However, individual-level measurement requires micro-level data covering a large number of job aspects, which makes their collection costly.

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Chapter 5

Operationalisation and statistical validity of various components of the quality of the working environment

This chapter describes the key dimensions and detailed job characteristics encompassed by the broad concept of "quality of the working environment", explaining how and why they contribute to workers' well-being. For each dimension and characteristic, the chapter presents questions from existing international and national surveys on how these dimensions have been operationalised and describes the extent to which questions from different international surveys produce consistent results across countries.

5.1. Introduction

The conceptual approach discussed in Chapter 4rests on empirical evidence on how specific job features affect the well-being of workers. It defines the quality of the working environment as a combination of objective job characteristics having both direct and indirect effects on workers' physical and psychological well-being. These characteristics pertain to either the demands confronting workers or to the resources available to them to meet these demands. How these characteristics are combined at the level of each worker defines the working environment that they experience. An abundant literature – from sociology, occupational health, organisational psychology and human resource management – has identified the most important dimensions and sub-dimensions of the working environment that contribute to workers' well-being. In addition, various international, national, academic and commercial surveys (discussed in Chapter 2) have included questions on aspects of the quality of the working environment.

Chapter 4 introduced 17 key job characteristics, grouped into 6 broad dimensions, with each characteristic reflecting either a job demand or a job resource confronting workers. On this background, a first objective of this chapter is to provide a more detailed discussion of these dimensions and characteristics, drawing on an interdisciplinary literature; for each of the 17 characteristics, the chapter provides definitions and explains how these characteristics affect workers' well-being.

The second objective of this chapter is to illustrate *how* each of these characteristics has been operationalised in surveys. To this end, the chapter relies on the OECD Inventory of Survey Questions on the Quality of the Working Environment, which, drawing on seven international surveys conducted between 1989 and 2014, compiles information on the specific questions included for each characteristic.[1] The seven international surveys covered by the inventory are the European Working Conditions Surveys (EWCS), the European Social Surveys (ESS), the International Social Survey Programme (ISSP), a series of ad hoc modules of the European Union Labour Force Surveys (EU-LFS),[2] the European Quality of Life Surveys (EQLS), the Gallup World Poll (GWP) and the Flash Eurobarometer on working conditions.[3] A selection of questions from two national surveys, the British Skills and Employment Survey (2012) and the French *Enquête Conditions de Travail* (2013), are also used in this chapter to show how questions on job characteristics have been implemented in more detailed national surveys (Box 5.1).[4]

Third, the chapter assesses the statistical reliability of existing measures for each characteristic of the working environment drawn from various surveys. This evidence draws on four of the seven international surveys included in the OECD Inventory: EWCS 2005 and 2010, ESS 2004 and 2010, ISSP 2005, and the Gallup World Poll 2006 to 2010. These surveys are used for the empirical analysis, as they contain similar questions on the same job characteristic, which allows contrasting alternative question formulations, while covering a set of countries with different labour-market institutions and working conditions (Table 5.1 lists the countries covered by each survey). This empirical assessment

Box 5.1. **National surveys on the quality of the working environment**

The **British Skills and Employment Survey** collects data on what people do at work, what skills they use and how they work. This cross-sectional survey (conducted in 1986, 1992, 1997, 2001, 2006 and 2012) allows monitoring changes over time in job quality and skills. In 2012, 3 200 workers were surveyed, with 1 100 of them questioned two years later in a shorter follow-up survey. The questions included in the survey cover broad features of the job; more detailed aspects; computing skills and qualifications; work attitudes; work organisation; pay; features of the job held 5 years ago; recent skill changes and future perspectives; well-being at work; personal details; follow-up, and workplace details. More information on the survey is available at: *www.llakes.ac.uk/research-project/207/skills-and-employment-survey-2012* and *www.cardiff.ac.uk/research/projects/view/117804-skills-and-employment-survey-2012*.

The **French Enquête Conditions de Travail** has been administered since 1978 by the Directorate for Research, Studies and Statistics (DARES) of the Ministry of Labour, Employment, Professional Training and Social Dialogue. It has been repeated every 7 years (i.e. in 1984, 1991, 1998, 2005 and 2013). Answers refer to working conditions as perceived by respondents. In 1978 and 1984, the survey was limited to employees while, since 1991, it covered all workers. Interviews are conducted at home by INSEE investigators based on a representative sample of the employed population aged 15 or older. The survey questions cover professional activity (occupation, job tenure, work contract, employer establishment and pay); working time (hours worked, part-time status, weekly and monthly working schedule, predicted hours, daily hours, leave); physical constraints, prevention and accidents; work organisation (rhythm of work, autonomy, working ambiance, staff representation, means and use of computers); health status; family and professional background (training, professional trajectory); relations with co-workers, satisfactions and difficulties at work, daily work life). More information on the survey is available at: *http://dares.travail-emploi.gouv.fr/dares-etudes-et-statistiques/enquetes-de-a-a-z/article/conditions-de-travail-edition-2013*.

relies on cross-country correlation between pairs of surveys that were conducted around the same year (e.g. the 4th EWCS and the 3rd Work Orientations Module of the ISSP, which were both conducted in 2005) and that contain questions on the same job characteristic. The underlying assumption is that, if these surveys provide good measures of a component of job quality, then country measures should be highly correlated across sources and the survey questions can be considered to be reliable (Box 5.2). The empirical analysis relies on three criteria.

- First, correlation coefficients are calculated between pairs of surveys that include at least 10 common countries. In the analysis below, 24 countries are covered by both EWCS 2005 and ESS 2004, 19 by EWCS and ISSP 2005, 16 by ESS 2004 and ISSP 2005, and 23 by EWCS and ESS in 2010.[5]
- Second, the analyses use a threshold of 0.60 to assess the significance of these correlation coefficients (i.e. values above 0.60 are considered to indicate that the survey items provide reliable information).[6]
- Third, when calculating cross-country correlations, the chapter considers several indicators, such as countries' mean scores in each survey question and shares of respondents who report scores either below a low threshold (*bottom*) or above a high threshold (*top*)[7]; in

other words, the chapter examines whether two survey questions yield similar country values both for the average score and for the shares of people with a low or a high score on each survey question.

Evidence on these correlations for 14 job characteristics (those that are measured in broadly consistent ways by more than two surveys) is included in Annex 5.A.

Box 5.2. **Testing the statistical reliability of a measure by comparing results from various international surveys**

A reliable measure of a concept of interest allows distinguishing between differences due to a genuine change in the conditions being measured and differences due to measurement error. The reliability of a measure refers to whether a survey instrument produces the same result when carried out in the same conditions.

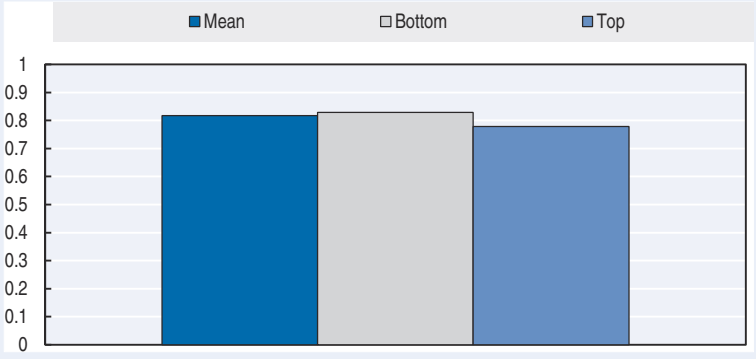
The reliability of a measure can be assessed in different ways. **Test-retest** reliability is assessed by administering the same test twice over a period of time to the same person: high correlation coefficients between scores in the two periods indicate good reliability for the measure. When multiple items are used to measure a single concept, **internal consistency** evaluates the degree to which different test items that probe the same construct produce similar results. **Parallel-forms** reliability is obtained by administering different forms of a question to the same group of individuals.

Since the methodology used in this chapter relies on international surveys carried out on separate cross-sectional samples, it does not strictly correspond to these tests of reliability. However, it does resemble parallel-forms reliability since it relies on comparisons between similar groups of people across surveys (i.e. employees aged 20 to 64, where sampling weights are applied). By restricting the analysis to the same population and using surveys carried out around the same year, the chapter aims to assess whether alternative versions of a question produce similar country results. Correlation coefficients should be interpreted with caution: while it is safe to assume that a strong correlation coefficient (e.g. $r \geq 0.60$) lends support to the reliability of a measure, low correlation coefficients ($r < 0.60$) could be the result of methodological differences between the two surveys. Thus, this chapter refrains from declaring a measure in a specific survey *unreliable* based on weak correlations.

Questions on the same item asked in different surveys differ not just in the wording but also in the response scale used. This implies that the measures of the share of respondents reporting *low* or *high* values of a specific job characteristic in two surveys will depend on the specific thresholds used. To address this problem, the analysis in this chapter relies on correlation coefficients calculated for different thresholds, with the highest correlation selected; in other words, when comparing data on workers' exposure to noise between the EWCS (which relies on a 1 to 6 response scale) and the ISSP (which uses a 1 to 4 scale), data on the share of workers deemed to be never or almost never exposed to *loud noise* are calculated for a cut-off of 1, 2 and 3 for the EWCS and a cut-off of 1 and 2 for the ISSP. The highest correlation is observed for a cut-off of 2 in the EWCS and 1 in the ISSP; in other words, across countries, the shares of people answering 1 or 2 in the EWCS correlate highly with the shares of people answering 1 in the ISSP (Figure 5.1). The same cross-country correlation is calculated for workers who are less exposed to loud noise and across all workers. These correlations are reported in Annex 5.A. For questions with a dichotomous response scale, only the average scores are reported.

Box 5.2. **Testing the statistical reliability of a measure by comparing results from various international surveys** *(cont.)*

Figure 5.1. **Correlation coefficients across all different cut-offs for exposure to noise, EWCS and ISSP**



Source: OECD calculations based on micro-level data from the EWCS and ISSP. The analyses are based on the 19 countries covered by both the EWCS and ISSP. Bottom performers are those with a score lower than 2 in the EWCS and equal to 1 in the ISSP. Top performers are defined by those with a score above 3 in the ISSP and equal to 6 in the EWCS.

StatLink http://dx.doi.org/10.1787/888933606281

5.2. Physical and social environment

One of the most important aspects of a job for workers' well-being is the physical and social environment in which work is undertaken. Whether or not a job is carried out in a hazardous environment, has extensive physical demands or is performed surrounded by hostile people clearly affects both workers' physical well-being and their psychological well-being. The physical and social environment includes three characteristics pertaining to job demands (physical risk factors, physical demand, and intimidation and discrimination at the workplace) and one to job resources (social support at work).

Physical risk factors

Physical risk factors (item A.1 in Table 4.1) refer to the degree to which a job involves risks that may impair workers' physical health. These risk factors can be either perceived or experienced, and typically differ across occupations and over time. For example, what is considered "dangerous work" has evolved historically (Jermier et al., 1989). Risk factors that are relevant in today's labour markets include working in extreme temperatures, loud noise, exposure to chemicals and the occurrence of work-place accidents, as well as workers' personal evaluations of whether their workplace is dangerous. Physical risk factors negatively affect workers' physical health and lower the quality of their working environment.

Physical risk factors are covered by all the seven international surveys examined in this chapter (Table 5.2). Among these surveys, those specifically designed to investigate labour-market outcomes (i.e. the EWCS, EU ad hoc modules of labour-force surveys and Eurobarometer Flash module) include various questions on the specific risk factors that workers are exposed to, such as noise, smoke, fumes and radioactive radiation. While the EWCS also enquires about the frequency of exposure to these risks, the EU ad hoc LFS modules ask about the occurrence of work injuries and accidents within the last 12 months

Table 5.1. **Countries covered by the surveys used in analysis of cross-country correlations**

	EWCS 2005	ISSP 2005	ESS 2004	Gallup World Poll 2005*	EWCS 2010	ESS 2010	Gallup World Poll 2010*
Australia		Yes		Yes			Yes
Austria	Yes		Yes	Yes	Yes		Yes
Belgium	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bulgaria	Yes	Yes			Yes	Yes	
Canada		Yes		Yes			Yes
Croatia	Yes				Yes	Yes	
Czech Republic	Yes	Yes	Yes	Yes	Yes	Yes	
Denmark	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dominican Republic		Yes		Yes			Yes
Estonia	Yes		Yes	Yes	Yes	Yes	Yes
Finland	Yes	Yes	Yes	Yes	Yes	Yes	Yes
France	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Germany	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Greece	Yes		Yes	Yes	Yes	Yes	
Hungary	Yes	Yes	Yes	Yes	Yes	Yes	
Ireland	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Israel		Yes		Yes		Yes	Yes
Italy	Yes		Yes	Yes	Yes		Yes
Japan		Yes		Yes			Yes
Korea		Yes		Yes			
Kosovo					Yes		Yes
Latvia	Yes	Yes		Yes	Yes		Yes
Lithuania	Yes			Yes	Yes	Yes	Yes
Luxembourg	Yes		Yes		Yes		
Mexico		Yes		Yes			Yes
Netherlands	Yes	Yes	Yes	Yes	Yes	Yes	Yes
New Zealand		Yes		Yes			Yes
Norway	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Philippines		Yes		Yes			Yes
Poland	Yes		Yes	Yes	Yes	Yes	
Portugal	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Romania	Yes			Yes	Yes		
Russian Federation		Yes		Yes		Yes	Yes
Slovak Republic	Yes		Yes	Yes	Yes	Yes	
Slovenia	Yes	Yes	Yes	Yes	Yes	Yes	
South Africa		Yes		Yes			Yes
Spain	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sweden	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Switzerland	Yes	Yes	Yes	Yes		Yes	
Turkey	Yes		Yes	Yes	Yes		Yes
Ukraine			Yes	Yes		Yes	Yes
United Kingdom	Yes	Yes	Yes	Yes	Yes	Yes	Yes
United States		Yes		Yes			Yes

Note: * The Gallup World Poll adopts a modular approach in which some questions are included only in a selection of countries. For some of the job characteristics reviewed in this chapter, the Gallup World Poll has fewer than 10 countries that are included in the other three surveys. Those questions with 9 or fewer countries are excluded from the empirical analysis.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

and about the duration of absence from work that they cause. On the other hand, surveys that have a broader focus (i.e. the ISSP, ESS, Gallup World Poll and EWCS) ask respondents to provide only their general evaluation of how dangerous or unhealthy their workplaces are.

Table 5.2. **Survey questions on physical risk factors**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• Are you exposed at work to vibrations from hand tools, machinery, etc.? (2010, 2005, 2000, 1996)	1-7 (All of the time – Never)
• Are you exposed at work to noise so loud that you would have to raise your voice? (2010, 2005, 2000, 1996, 1991)	1-7 (All of the time – Never)
• Are you exposed at work to high temperatures which make you perspire even when not working? (2010, 2005, 2000, 1996)	1-7 (All of the time – Never)
• Are you exposed at work to low temperatures whether indoors or outdoors? (2010, 2005, 2000, 1996)	1-7 (All of the time – Never)
• Are you exposed at work to breathing in smoke, fumes, powder or dust, etc.?* (2010, 2005, 2000, 1996, 1991)	1-7 (All of the time – Never)
• Are you exposed at work to breathing in vapours such as solvents and thinners?* (2010, 2005, 2000, 1996)	1-7 (All of the time – Never)
• Are you exposed at work to handling or being in skin contact with chemical products or substances?* (2010, 2005, 2000, 1996, 1991)	1-7 (All of the time – Never)
• Are you exposed at work to radiation such as X rays, radioactive radiation? (2005, 2000, 1996)	1-7 (All of the time – Never)
• Are you exposed at work to tobacco smoke from other people? (2010, 2005)	1-7 (All of the time – Never)
• Are you exposed at work to handling or being in direct contact with materials which can be infectious? (2010, 2005)	1-7 (All of the time – Never)
• Do you think your health or safety is at risk because of your work? (2010, 2005, 2000, 1996)	1-2 (Yes-No)
European Social Survey	
• My health or safety is at risk because of my work (2004, 2010)	1-4 (Not at all true – Very true)
International Social Survey Programme	
• How often do you work in dangerous conditions? (2005, 1997, 1989)	1-5 (Never – Always)
• How often do you work in unhealthy conditions? (1989)	1-5 (Never – Always)
Gallup World Poll	
• Do you work in dangerous conditions that could put your life at risk, or not? (2010)	1-2 (Yes-No)
• Do you work in unhealthy conditions that could make you sick, or not? (2010, 2011, 2012, 2013)	1-2 (Yes-No)
EU-Labour Force Survey ad hoc Modules	
• Accidents at work resulting in injuries occurred in the 12 months before the reference week* (2013, 1999)	None, 1, 2 or more
• Whether or not the most recent accident at work was a road traffic accident (2013)	Road traffic, other accident]
• Number of calendar days the person was unfit to work because of the most recent accident at work resulting in injury (2013)	0-9 (Still off work – Between 9 to 12 months)
• Physical or mental health problem(s) suffered by the person in the 12 months that were caused/made worse by work (2013)	[None, 1, 2 or more]
• Whether the most serious health problem caused by work limits the ability to carry out day-to-day activities at/outside work* (2013, 2007)	[No, Yes to some extent, Yes considerably]
• Number of calendar days unfit to work because of the most serious health problem caused/made worse by work* (2013, 2007, 1999)	0-9 (Still off work – Between 9 to 12 months)
• Exposure to noise or strong vibration (2013, 2007)	[Choose one]
• Exposure to chemicals, dust, fumes, smoke or gases* (2013, 2007)	[Choose one]
• Exposure to activities involving strong visual concentration (2013)	[Choose one]
• Exposure to risk of accidents* (2013, 2007)	[Choose one]
• Accidental injury apart from illnesses during the past 12 months, at work or in the course of work (2007)	[None, One, Two or more]
• Type of the most recent accidental injury at work or in the course of work (2007)	[Road traffic accident, Other accident]
European Quality of Life Survey	
• How much do you agree or disagree: I work in dangerous or unhealthy conditions? (2007, 2003)	1-5 (Strongly agree – Strongly disagree)
Eurobarometer – Flash Module 398 (2014)	
• What are the main health and safety risks you face at workplace? Risks of accidents or serious injuries?	[Choose max three]
• What are the main health and safety risks you face at workplace? Exposure to infectious materials or substances?	[Choose max three]
• What are the main health and safety risks you face at workplace? Exposure to potentially dangerous chemicals?	[Choose max three]
• What are the main health and safety risks you face at workplace? Exposure to noise or vibrations?)	[Choose max three]
British Skills and Employment Survey (2012)	
• Do you think your health and safety is at risk because of your work?	1-2 (Yes – No)
French Enquête Conditions Travail (2013)	
• Are you exposed at work to breathing in smoke and dust?	1-2 (Yes – No)
• Are you exposed at work to contact with dangerous products?	1-2 (Yes – No)
• Are you exposed at work to risks of infection?	1-2 (Yes – No)
• At work, do you run the risk of being injured or hurt?	1-2 (Yes – No)
• Are you exposed to the risk of being involved in a road traffic accident in the course of your work?	1-2 (Yes – No)
• Is your work or workplace exposed to the following inconveniences: dirt?	1-2 (Yes – No)
• Is your work or workplace exposed to the following inconveniences: damp?	1-2 (Yes – No)
• Is your work or workplace exposed to the following inconveniences: draughts?	1-2 (Yes – No)
• Is your work or workplace exposed to the following inconveniences: bad smells?	1-2 (Yes – No)
• Is your work or workplace exposed to the following inconveniences: high temperatures?	1-2 (Yes – No)
• Is your work or workplace exposed to the following inconveniences: low temperatures?	1-2 (Yes – No)

Table 5.2. **Survey questions on physical risk factors** *(cont.)*
Selected international and national surveys

Question wording and variable name	Answer scale
• Is your work or workplace exposed to the following inconveniences: absence, or bad condition, of sanitary facilities?	1-2 (Yes – No)
• Does your employer provide personal protective equipment such as gloves, eyewear, safety footwear, a harness?	1-2 (Yes – No)
• Over the past 12 months, have you been informed of the risks that your work poses to your health and safety?	1-2 (Yes – No)
• Did the information come from your company/administration (manager, specialised service or consultant)?	1-2 (Yes – No)
• Did the information come from staff representatives (employee representative, union representative, member of employee representative committee or committee for health, safety and working conditions, etc.)?	1-2 (Yes – No)
• Did the information come from the medical officer or occupational health physician?	1-2 (Yes – No)
• Did the information come from your colleagues?	1-2 (Yes – No)
• Did the information come from another source?	1-2 (Yes – No)
• Over the past 12 months, have you received safety training provided by your company/administration?	1-2 (Yes – No)
• Over the past 12 months, have you received documentation from your management describing the work-related risks in your business (DUER or single assessment document for professional risk)?	1-2 (Yes – No)
• Were you consulted for the drafting of this document?	1-2 (Yes – No)
• Over the past 12 months, has the medical officer or occupational health physician visited your work unit?	1-2 (Yes – No)
• In order to ensure your health and safety at work, do you receive any guidelines or written instructions in addition to evacuation instructions in the event of a fire?	1-2 (Yes – No)
• Is it possible to apply them?	1-2 (Yes – No)
• Is your supervisor (or the heads of the company or organisation) aware that you are unable, or only partially able, to apply them?	1-2 (Yes – No)
• In the past 12 months, in the course of your work, have you had one or more accidents, even harmless ones, which have required you to receive treatment?	1-3 (One accident – Three accidents or more)
• Did the accident occur in your current job?	[Date]
• On what date, approximately, did this accident take place?	1-2 (Yes – No)
• Did you have to take a leave of absence from work as a result of the accident?	1-2 (Yes – No)
• How many days were you absent from work?	1-2 (Yes – No)
• Did you inform your employer of the accident?	1-2 (Yes – No)
• Since the accident, has your employer taken measures to reduce the risks involved?	1-2 (Yes – No)

Note: * Slight change in the question format between years. Refer to original questionnaires for details.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

The two national surveys reviewed here use different approaches for measuring physical health risk factors at work (Table 5.2). The British Skills and Employment Survey includes a single question on this aspect, asking respondents whether they think their health and safety are at risk at work. Conversely, the French *Enquête Conditions de Travail* devotes an entire section of its questionnaire to gather detailed information on specific risk factors (e.g. exposure to infectious products, accidents), physical working conditions (e.g. exposure to dirt, humidity, low and high temperatures), health and safety measures taken by the firm (e.g. provision of safety equipment, health and safety information, and medical checks) and the occurrence and nature of workplace accidents (e.g. if and how many accidents happened, number of working days lost due to the accident, whether the employer took precautions since the accident).

Cross-country coefficients between survey items on specific physical risk factors and overall assessments of general safety at the workplace correlate strongly with each other (Table 5.A.1 in the Annex). For example, the ISSP 2005 question "How often do you work in dangerous conditions?" shows a positive and strong (above r = 0.60) correlation with the EWCS 2005 items measuring the frequency of exposure to vibrations from hand tools and machinery, loud noise, breathing in smoke, fumes, powder or dust, handling or being in skin contact with chemical products or substances, or breathing in vapours such as solvents and thinners. This is true for the average score, but also for the population shares of low and high scores (high and low achievers).

Similarly, most of the detailed EWCS questions on the frequency and exposure to various physical risk factors correlate positively with the ESS 2004 question "My health or

safety is at risk because of my work" (Table 5.A.1). However, the correlation coefficients are weaker with the ISSP question, and are above or close to r = 0.60 only for the EWCS item measuring the frequency of exposure to loud noise. The same pattern emerges from the analysis of the 2010 wave of both surveys: most EWCS 2010 items have a high positive correlation with the ESS 2010 question; the two specific aspects of exposure covered in EWCS 2010 also have coefficients that are close to or above 0.60 (Table 5.A.1).

However, the overall evaluations of workplace safety across surveys are not strongly correlated with each other. Country-average scores from the EWCS question asking whether employees think their health or safety is at risk because of their work are only moderately correlated with the similarly worded question from the ISSP (r = 0.45, Table 5.A.1) and from ESS 2004 (r = 0.55); in particular, the correlation coefficient between the EWCS and ESS surveys in 2010 are much weaker and negative (r = -0.07), while the overall safety assessments from ISSP 2005 and ESS 2004 have a correlation coefficient of 0.47.

This analysis implies that country scores based on questions on specific risk factors are more consistent across surveys than those based on an overall safety assessment provided by the respondents. This suggests that surveys should ideally measure specific physical risk factors with more specific questions. If questionnaire space does not allow this, the question on overall safety assessment needs to be carefully worded and, where possible, applied after cognitive testing.

Physical demands

Physical demands (item A.2 in Table 4.1) refer to work that requires hard physical effort such as standing and walking for long periods, working in tiring positions, or lifting and carrying heavy objects. Even though these demands may not constitute an immediate risk factor, they have a damaging effect on workers' well-being in the medium and the long run, especially when combined with low levels of autonomy and social support at work.

The existence and extent of physical demands are assessed in four of the seven surveys reviewed here (Table 5.3). Among these four surveys, those specifically designed to evaluate the labour conditions of European workers (i.e. EWCS, EU-LFS ad hoc modules and the Flash Eurobarometer on working conditions) asked workers whether their jobs involved specific physical demands such as lifting or moving heavy objects, doing repetitive hand and arm movements, or working in tiring positions. Additionally, the EWCS asked about the frequency of such physical demands. The ISSP, which has a more diverse geographical coverage and wider thematic focus, asks about physical demands in a more general manner, i.e. how often the job involved hard physical work and how often respondents return home from work exhausted, which is an indirect proxy of physical demands of work.

The two national surveys reviewed here both cover physical demands with multiple questions. The British survey has one general question on whether respondents return home from work exhausted, and two on whether physical stamina and physical strength are important in one's job. The French survey contains a larger and more detailed batch of questions, asking whether the job involves specific physically-demanding tasks such as standing, walking long distances or standing in tiring positions.

The correlation coefficients of country scores between the EWCS 2005 questions on specific physical work demands and the general ISSP 2005 questions show that, in general, these items are positively correlated with each other (Table 5.A.2). However, correlation coefficients between country values based on EWCS questions on working in tiring and

Table 5.3. **Survey questions on physical demands**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• Does your main paid job involve tiring or painful positions? (2010, 2005, 2000, 1996, 1991)	1-7 (All of the time – Never)
• Does your main paid job involve lifting or moving people? (2010, 2005)	1-7 (All of the time – Never)
• Does your main paid job involve carrying or moving heavy loads? (2010, 2005, 2000, 1996, 1991)	1-7 (All of the time – Never)
• Does your main paid job involve standing or walking? (2010, 2005)	1-7 (All of the time – Never)
• Does your main paid job involve repetitive hand or arm movements? (2010, 2005, 2000, 1996)	1-7 (All of the time – Never)
International Social Survey Programme	
• How often applies: do hard physical work? (2005, 1997, 1989)	1-5 (Never – Always)
• How often: come home from work exhausted? (2005, 1997, 1989)	1-5 (Never – Always)
EU-Labour Force Surveys ad hoc Modules	
• Exposure to difficult work postures or work movements (2013)	[Choose one]
• Exposure to handling of heavy loads (2013)	[Choose one]
• Exposure to difficult work postures or work movements or handling of heavy loads (2007)	[Choose one]
Eurobarometer – Flash Module 398 (2014)	
• What are the main health and safety risks you face at workplace? Lifting, carrying or moving loads on a daily basis	[Choose max three]
• What are the main health and safety risks you face at workplace? Repetitive movements or tiring or painful positions	[Choose max three]
British Skills and Employment Survey (2012)	
• How often do you come home from work exhausted?	1-5 (Always – Never)
• In your job, how important is physical strength (for example, to carry, push or pull heavy objects)?	1-5 (Essential – Not important at all/Doesn't apply)
• In your job, how important is physical stamina (to work for long periods on physical activities)?	1-5 (Essential – Not important at all/Doesn't apply)
French Enquête Conditions Travail (2013)	
• In order to do your work, are you required to stand for long periods of time?	1-2 (Yes – No)
• In order to do your work, are you required to remain in another position which is painful or tiring after a while?	1-2 (Yes – No)
• In order to do your work, are you required to walk long distances or travel frequently on foot?	1-2 (Yes – No)
• In order to do your work, are you required to make painful or tiring movements?	1-2 (Yes – No)
• In order to do your work, are you required to keep your eyes permanently focused on your work?	1-2 (Yes – No)
• In order to do your work, are you required to read letters and numbers in small print, or which have been badly printed or badly written?	1-2 (Yes – No)
• In order to do your work, are you required to examine very small objects and distinguish fine details?	1-2 (Yes – No)

Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

painful positions, lifting or moving people, and repetitive hand movements with the corresponding values based on ISSP items on physical demands and coming home exhausted are weak, and in some cases negative. Focusing on the average score, only the EWCS item on carrying and moving heavy loads displays a correlation coefficient with the ISSP item above 0.60. The EWCS heavy loads question also correlates strongly for low achievers based on the ISSP question on coming home exhausted.

Intimidation and discrimination at the workplace

Workplace intimidation (item A.3. in Table 4.1) refers to being exposed to intentional and malicious behaviour from co-workers or supervisors that make the individual feel inadequate or afraid. Conversely, discrimination refers to situations when workers feel that they are treated less favourably than another person because of their race, gender, religion, disability or nationality. Intimidation and discrimination at the workplace are closely linked to distress, depression and absenteeism, especially in the absence of social support at work. While fewer workers report having experienced intimidation and discrimination at work compared to physical health risk factors or physical demands, those who do experience it typically incur a large decline in their well-being (OECD, 2013 and 2014).

Despite its importance for workers' well-being, only three of the international surveys analysed here include questions on this aspect of the working environment (Table 5.4). Since 1996, the EWCS has included a number of questions about whether respondents have been

Table 5.4. **Survey questions on intimidation and discrimination at the workplace**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
● And over the past 12 months, during the course of your work have you been subjected to:	
❖ Physical violence?* (2010, 2000, 1996)	1-2 (Yes – No)
❖ Bullying /harassment? (2010, 2005)	1-2 (Yes – No)
❖ Sexual harassment? (2010)	1-2 (Yes – No)
● Over the past 12 months, have you or have you not been subjected at work to:	
❖ Sexual discrimination/discrimination linked to gender?* (2010, 2005, 2000, 1996)	1-2 (Yes – No)
❖ Age discrimination? (2010, 2005, 2000, 1996)	1-2 (Yes – No)
❖ Discrimination linked to nationality? (2010, 2005, 2000)	1-2 (Yes – No)
❖ Discrimination linked to ethnic background/race?* (2010, 2005, 2000, 1996)	1-2 (Yes – No)
❖ Discrimination linked to religion? (2010, 2005)	1-2 (Yes – No)
❖ Discrimination linked to disability? (2010, 2005, 2000, 1996)	1-2 (Yes – No)
❖ Discrimination linked to sexual orientation? (2010, 2005, 2000, 1996)	1-2 (Yes – No)
● Over the past 12 months, have you or have you not been subjected at work to intimidation? (2000, 1996)	1-2 (Yes – No)
● Over the past 12 months, have you or have you not been subjected at work to unwanted sexual attention? (2005, 2000, 1996)	1-2 (Yes – No)
EU-Labour Force Survey ad hoc Modules	
● Exposure to harassment or bullying (2013, 2007)	[Choose one]
● Exposure to violence or threat of violence (2013, 2007)	[Choose one]
Eurobarometer – Flash Module 398 (2014)	
● What are the main health and safety risks you face at the workplace? Exposure to violence and harassment (list of items)	[Choose max three]
British Skills and Employment Survey (2012)	
● How anxious are you about being unfairly treated through discrimination?	1-4 (Very anxious – Not anxious at all)
● How anxious are you about victimisation by management?	1-4 (Very anxious – Not anxious at all)
French Enquête Conditions Travail (2013)	
● In the last 12 months, have you experienced the following difficult situations at work:	
❖ Being ignored, treated as if you do not exist	1-2 (Yes – No)
❖ Being prevented from expressing your opinion	1-2 (Yes – No)
❖ Being exposed to public ridicule	1-2 (Yes – No)
❖ Having your work unfairly criticised	1-2 (Yes – No)
❖ Being given useless or degrading tasks to do	1-2 (Yes – No)
❖ Having your work undermined, being prevented from working properly	1-2 (Yes – No)
❖ Hearing it suggested that you are mentally ill	1-2 (Yes – No)
❖ Being the target of obscene or degrading language	1-2 (Yes – No)
❖ Being the object of repeated sexual advances	1-2 (Yes – No)
❖ Being the object of hurtful or tasteless jokes, being teased	1-2 (Yes – No)
● Is/are the perpetrator(s):	
❖ One or more people in your company or your organisation	1-2 (Yes – No)
❖ One or more of your clients, users, patients	1-2 (Yes – No)
● Do you think this behaviour is determined by:	
❖ Your gender (the fact of being either a man or a woman)	1-2 (Yes – No)
❖ Your state of health or a disability	1-2 (Yes – No)
❖ The colour of your skin	1-2 (Yes – No)
❖ Your origins or your nationality	1-2 (Yes – No)
❖ The way you dress	1-2 (Yes – No)
❖ Your age	1-2 (Yes – No)
❖ Your sexual orientation	1-2 (Yes – No)
❖ Your profession	1-2 (Yes – No)
● In the past 12 months, in the course of your work, have you been the victim of:	
❖ Verbal abuse from your colleagues or your managers	1-2 (Yes – No)
❖ Physical or sexual abuse from your colleagues or your managers	1-2 (Yes – No)

Note: * Slight change in the question format between years. Refer to original questionnaires for details.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

subjected during the last 12 months to various forms of intimidation, harassment or discrimination at work, such as bullying, sexual or gender-related discrimination, unwanted sexual attention, or discrimination linked to age, nationality, religion or disability. The EU-LFS ad hoc modules and Eurobarometer Flash module inquire about intimidation and

discrimination at work as a health risk factor, providing respondents with a list of factors to choose from, some of them relating to intimidation and discrimination.

In contrast to international surveys, both the British and French surveys include questions on intimidation and discrimination at the workplace (Table 5.4). The British Skills and Employment Survey contains two questions asking respondents how anxious they feel about being unfairly treated through discrimination, and about victimisation by management. The French *Enquête Conditions de Travail* has a whole section on intimidation and discrimination, with questions on different experiences of workplace intimidation (e.g. being ignored, being given degrading tasks, being insulted) and the source of these acts (whether from someone in the firm or from clients/customers). The *Enquête* also asks respondents if they think these acts of intimidation were related to their age, gender, skin colour, religion, disability, the way they look, sexual orientation or profession, as well as whether respondents experienced verbal, physical or sexual assault by colleagues or managers/supervisors in the past 12 months.[8]

Social support at work

Social support (item A.4. in Table 4.1) includes support received from supervisors and co-workers when needed, having a friendly atmosphere among the staff and management, and being able to discuss work problems with management and workers representatives. Social support at work affects employee well-being by providing buffers against the negative consequences both of extensive work demands (Johnson and Hall, 1988; Johnson et. al., 1989) and of intimidation and discrimination at the workplace.

At least one of these types of social support at work is covered in five of the seven international surveys under study (Table 5.5). Among these, the EWCS (since 1991) has included questions on these various components; until 2010, these related to the extent and nature of discussion of work-related problems with management, colleagues and representatives, whereas more recent surveys also include questions on the presence of a friendly and supportive environment. The 2010 EWCS has a particular focus on whether respondents feel at home at work and are surrounded by friends. The ESS covers this aspect of the working environment with a single question on whether the respondent can get support from co-workers when needed, whereas the ISSP focuses on the nature of the relationship between management and employees, and between co-workers. The Gallup World Poll includes a single-item question on the presence of a co-worker or a supervisor who encourages one's development at work. Finally, Flash Eurobarometer enquires whether the respondent has discussed work-related problems with colleagues in the past 12 months.

Social support also features in the French *Enquête Conditions de Travail,* which asks respondents if they can get support from supervisors or colleagues when they face difficult and delicate work tasks, if they have colleagues who help them out to get the work done, and whether colleagues are friendly. All these four items are measured with a "Yes/No" response scale (Table 5.5).

All four international surveys analysed include data for at least 10 countries on social support at work, which allows a comprehensive analysis of cross-country correlations (Table 5.A.3 in the Annex). Country averages and frequencies from the EWCS 2005 questions on assistance from colleagues/supervisors/external sources and the friendliness of the social atmosphere at the workplace are correlated with those from the two ISSP 2005 questions on relations between management and employees, and between co-workers (Table 5.A.3).

Table 5.5. **Survey questions on social support at work**
Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• You can get assistance from colleagues if you ask for it (2005, 2000, 1996)	1-5 (Almost always – Almost never)
• Your colleagues help and support you (2010)	1-5 (Almost always – Almost never)
• Your manager helps and supports you (2010)	1-5 (Almost always – Almost never)
• You can get assistance from your superiors/boss if you ask for it (2005)	1-5 (Almost always – Almost never)
• You can get external assistance if you ask for it (2005)	1-5 (Almost always – Almost never)
• I feel myself "at home" in this organisation (2010, 2005)	1-5 (Strongly agree – Strongly disagree)
• I have very good friends at work (2010, 2005)	1-5 (Strongly agree – Strongly disagree)
• In order to carry out your work do you have sufficient support from superiors or colleagues? (1991)	1-2 (Yes-No)
European Social Survey	
• I can get support and help from my co-workers when needed (2004, 2010)	1-4 (Not at all true – Very true)
International Social Survey Programme	
• How would you describe relations at your workplace – between management and employees? (2005, 1997, 1989)	1-5 (Very good – Very bad)
• How would you describe relations at your workplace – between workmates/colleagues? (2005, 1997, 1989)	1-5 (Very good – Very bad)
Gallup World Poll	
• Is there someone at work who encourages your development, or not? (2006, 2007, 2008)	1-2 (Yes – No)
Eurobarometer – Flash Module 398 (2014)	
• Over the past 12 months, have you or not… discussed work related problems with your colleagues?	[Choose max three]
French Enquête Conditions Travail (2013)	
• If you are having problems with painstaking or complicated work, do you receive support from your line managers?	1-2 (Yes – No)
• If you are having problems with painstaking or complicated work, do you receive support from the other people with whom you work regularly?	1-2 (Yes – No)
• The colleagues with whom I work help me successfully complete my work	1-4 (Strongly disagree – Strongly agree)
• The colleagues with whom I work are friendly	1-4 (Strongly disagree – Strongly agree)

Note: * Slight change in the question format between years. Refer to original questionnaires for details.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

The single-item ESS 2004 question, on the other hand, is strongly correlated (r>0.60) with most of the EWCS 2005 questions on various components of social support (Table 5.A.3). Country scores based on the ESS question "I can get support and help from my co-workers when needed" have correlations of around 0.60 with respect to those based on the EWCS item "You can get assistance from colleagues if you ask for it", the EWCS item "You can get assistance from your superiors/boss if you ask for it", and the EWCS item "You can get external assistance if you ask for it", when considering the mean score and the shares of low or high achievers. For the other EWCS 2005 items, the correlation coefficients are weak (below 0.60). The two ISSP 2005 questions on social support at work and the single-item ESS 2004 question are also only weakly correlated across the 24 countries covered by both surveys.

Country data from the single-item question in the Gallup World Poll ("Is there someone at work who encourages your development, or not") are positively correlated (in the expected dimension) with the ESS 2004 single item on support from co-workers when needed (r = 0.65), but weakly with other questions. Finally, the 2010 questions on social support at work from the EWCS and ESS produce a mixed pattern.

This analysis suggests that social support at work is in itself a multidimensional concept, some aspects of which are more subjective than others. Nevertheless, the question items that focus on the same sub-dimension (e.g. getting support from colleagues or supervisors when needed) display sufficiently strong correlation coefficients to lend support to their reliability.

5.3. Job tasks

One crucial dimension of the working environment is the way in which job tasks are carried out by workers. While jobs are defined by the specific tasks that need to be undertaken, the conditions under which they are carried out vary hugely from one workplace to another as well as within workplaces. The intensity of these tasks and the emotional burden that they impose on workers constitute job demands that may significantly reduce workers' well-being. Conversely, the discretion that an employee is given to carry out job tasks represents a resource that will generally improve workers' working environment.

Work intensity

Work intensity (item B.1 in Table 4.1) is high when jobs involve working for long hours, with high effort, for tight deadlines and at high speed. Intensive work can bring higher pay, enhanced promotion opportunities and higher economic output; however, it can also lead to work accidents (some fatal) and absenteeism and sickness leave, and interfere with family life. These costs tend to be stronger in settings where health and safety measures are inadequate. Work intensity also causes work-related distress, especially when work arrangements do not allow workers much autonomy. Therefore, work intensity can have negative consequences for both the physical and psychological well-being of workers and implies a low-quality working environment.

Work intensity is a component of the quality of the working environment that is well covered by all the surveys reviewed here (Table 5.6). All of the seven surveys contain questions on the length of working hours, and, among these, six also have questions on the intensity at which work is performed. The first aspect – length of the working time – refers to the *experienced*, rather than *contractual*, hours of work, and all seven surveys provide information on this concept of hours worked. For example, both the EWCS and the ESS ask how many hours respondents usually work per week in their main job,[9] whereas the EQLS further specifies that working hours should include both paid and unpaid overtime, with a similarly worded question. Both the Gallup World Poll and the ISSP ask about the number of hours worked in a typical week, while the EU-LFS ad hoc modules do not include a question on hours worked, as this is covered in the core EU-LFS. Finally, the Flash Eurobarometer, rather than asking about the number of weekly hours worked, asks respondents whether, in practice, their working day does not exceed a total of 13 hours, and whether respondents can get at least one day off every week. Even though these questions are informative about the length of the work week, they do not provide as precise information on working hours as the Labour Force Surveys do.

Work intensity encompasses the speed of work, the tightness of deadlines, and the time pressure and effort required to accomplish work tasks. The EWCS includes detailed questions on how intensely work is carried out, with items on the frequency of working at very high speed and of working to tight deadlines. Even though speed and tight deadlines are highly correlated with each other (e.g. in EWCS 2010, the correlation coefficient is 0.64), they measure two distinct aspects of intensity, which may be experienced to different extents by different workers; while non-manual workers (e.g. senior officers, managers and professionals) are more likely to work to tight deadlines than at very high speed, the reverse applies to manual workers (e.g. service workers, craft workers, plant and machine operators). Therefore, information on both dimensions of work intensity should generally be collected to assess work intensity.

The EQLS also includes questions on whether work involves tight deadlines. The "effort" aspect is also captured by the ESS (with the question "My job requires that I work very hard"), ISSP and EQLS (with an item on the frequency of coming home from work exhausted). Finally, the time pressure aspect is also covered by the international surveys reviewed here: by the EWCS, with a statement "You have enough time to get the job done"; by the ESS, with "I never seem to have enough time to get everything done in my job"; and by the EU-LFS ad hoc modules, through questions about exposure to severe time pressure or being overloaded at work.

Work intensity features in both of the national surveys reviewed in this chapter (Table 5.6). The British Skills and Employment Survey uses an approach similar to the EWCS; in addition to asking about the duration of working hours, it has questions about how frequently respondents work at very high speed and to tight deadlines, as well as questions on the amount of effort and extra time that need to be put to complete tasks. The questions included in the French *Enquête Conditions de Travail* cover both the length of working time (e.g. weekly working hours, overtime work, and whether workers have 48 consecutive hours of rest per week) and intensity of the work performed (whether workers are asked to perform an excessive amount of work, work under pressure, or have to think about too many things at the same time).

An analysis of the cross-country correlation of questionnaire items on work intensity indicates that those questions that address hours worked weekly are well correlated across all surveys and all waves (Table 5.A.4). This is, however, not the case for items covering other aspects of work intensity, such as the ESS and ISSP questions on coming home exhausted or the EWCS and ESS question on time pressure.

Emotional demands

Emotional demands (item B.2 in Table 4.1) refer to having to deal with feelings of frustration, anger, sorrow and desperation while at work. These conditions may arise due to stressful interactions with colleagues, clients or customers. Emotional demands and the stress arising from them are likely to cause psychological distress, anxiety, depression, lower productivity and absenteeism.

The EWCS is the only survey that directly measures the emotional demands that jobs involve, with the 2010 wave of this survey asking about the frequency of tasks and demands that are emotionally draining, such as dealing with angry clients, hiding one's feelings and doing things that are in conflict with one's personal values or where one has to become emotionally engaged (Table 5.7).

Emotional demands can be assumed to bear a psychological cost that is reflected in employee stress and worry. Five international surveys contain questions on worry and stress that can be considered as a proxy of a job's emotional demands: the EWCS, ESS and ISSP ask how often respondents find their work stressful or keep worrying about work problems outside of work hours; the Gallup World Poll focuses on the consequences of stress, asking respondents whether, in the past 30 days, they experienced work stress that caused them to behave poorly with friends or family; the EQLS asks whether individuals agree with the statement that work is too demanding and stressful; while the Eurobarometer lists exposure to stress as a health and safety risk factor.

The gold standard in this field is the EWCS questions, which directly ask about tasks that are emotionally demanding. No other survey includes similar questions that would

Table 5.6. **Survey questions on work intensity**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• Does your job involve working at very high speed? (2010, 2005, 2000, 1996, 1991)	1-7 (All of the time – Never)
• Does your job involve working to tight deadlines? (2010, 2005, 2000, 1996, 1991)	1-7 (All of the time – Never)
• How many hours do you usually work per week in your main paid job? (2010, 2005, 2000, 1996, 1991)	[Numeric]
• You have enough time to get the job done* (2010, 2005, 2000, 1996)	1-5 (Almost always – Almost never)
• And how many times a month do you work more than 10 hours a day? (2005)	[Numeric]
European Social Survey	
• Regardless of your basic or contracted hours, how many hours do/did you normally work a week (in your main job), including any paid or unpaid overtime? (2004, 2010)	[Numeric]
• My job requires that I work very hard (2004, 2010)	1-5 (Strongly agree – Strongly disagree)
• I never seem to have enough time to get everything done in my job (2004, 2010)	1-5 (Strongly agree – Strongly disagree)
• How often do you feel too tired after work to enjoy the things you would like to do at home? (2004, 2010)	1-5 (Never – Always)
International Social Survey Programme	
• How many hours, on average, do you usually work for pay in a normal week? (1989, 1997, 2005)	[Numeric]
• How often do you come home from work exhausted? (2005, 1997, 1989)	1-5 (Always – Never)
• Agree or not: my job leaves a lot of leisure time (1989)	1-5 (Strongly agree – Strongly disagree)
Gallup World Poll	
• What is the minimum number of hours you are required to work per week in order to keep your job? (2010)	[Numeric]
• In a typical week, how many hours do you work? (2011, 2012, 2013, 2014)	[Numeric]
• On an average day, roughly how much time do you spend on the following activities: Working to earn money? (2008, 2011)	Spend no time; Less than 1 hour; 1-2 hours; 3-5 hours; 6-8 hours; 9 hours or more
EU-Labour Force Surveys ad hoc Modules	
• Exposure to severe time pressure or overload of work (2013, 2007)	[Choose one]
• Overtime hours in reference week (2004, 2001)	[Numeric]
• Weekly hours of work – core LFS	
European Quality of Life Survey	
• How many hours do you normally work per week in your main job, including any paid or unpaid overtime? (2012, 2007, 2003)	[Numeric]
• How much do you agree or disagree: I constantly work to tight deadlines (2007, 2003)	1-5 (Strongly agree – Strongly disagree)
• How often I have come home from work too tired to do some of the household jobs which need to be done? (2012, 2007, 2003)	1-5 (Several times a week – Never)
Eurobarometer – Flash Module 398 (2014)	
• In practice, at work do you generally benefit from… at least one break after six hours?	1-2 (Yes – No)
• In practice, at work do you generally benefit from… working days that do not exceed a total of 13 hours?	1-2 (Yes – No)
• In practice, at work do you generally benefit from… at least one day off every week?	1-2 (Yes – No)
• In practice, at work do you generally benefit from… at least four weeks of paid holidays every year?	1-2 (Yes – No)
British Skills and Employment Survey (2012)	
• How many hours per week do you usually work?	[Numeric]
• My job requires that I work very hard	1-5 (Strongly Agree – Strongly Disagree)
• I work under a great deal of tension	1-5 (Strongly Agree – Strongly Disagree)
• How often does your work involve working at very high speed?	1-7 (All the time – Never)
• How often does your work involve working to tight deadlines?	1-7 (All the time – Never)
• I often have to work extra time, over and above the formal hours of my job, to get through the work or to help out	1-4 (Very true – Not true at all)
French Enquête Conditions Travail (2013)	
• Do you generally have enough time to carry out your work properly?	1-2 (Yes – No)
• I am often given an excessive workload	1-4 (Strongly disagree – Strongly agree)
• How often do you find yourself in the following situations at work?	
❖ I work under pressure	1-4 (Always – Never)
❖ I have too many things to think about at the same time	1-4 (Always – Never)
• How many hours do you normally work per week in your main job?	[Numeric]
• Do you benefit from at least 48 consecutive hours of rest in a week?	1-2 (Yes – No)
• Do you find yourself working overtime?	1-2 (Yes – No)

Note: * Slight change in the question format between years. Refer to original questionnaires for details.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

allow analysis of cross-country correlations. The empirical analysis thus compares the EWCS items on emotionally demanding tasks with stress/worry items, as well as comparing stress/worry items across surveys (Table 5.A.5). The stress and worry items in ESS 2004 and ISSP 2005 are positively correlated, with r = 0.57. However, the EWCS questions on specific

emotional demands are not correlated strongly, or even consistently (in terms of direction), with the stress and worry items from the ESS and ISSP.

Both the British and French questionnaires include questions capturing the emotional demands of jobs (Table 5.7). The British Skills and Employment Survey asks whether the job requires dealing with people and managing one's own feelings, whether employees find that the values of their organisation match their own values, and whether the firm's values cause them a serious emotional burden. The French *Enquête Conditions de Travail* (2013) includes a large number of questions on emotional demands, i.e. whether the job involves dealing with clients or people in distress or calming down people. The survey also asks whether individuals have to do things that they disagree with or hide their emotions and restrain themselves from giving their opinions, all of which are likely to imply an emotional burden for workers.[10]

Table 5.7. **Survey questions on emotional demands**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• Does your main paid job involve handling angry clients? (2010)	1-7 (All of the time – Never)
• You find your job emotionally demanding (2010, 2005)	1-5 (Almost always – Almost never)
• Your job involves tasks that are in conflict with your personal values (2010)	1-5 (Almost always – Almost never)
• You get emotionally involved in your work (2010)	1-5 (Almost always – Almost never)
• You experience stress in your work (2010)	1-5 (Almost always – Almost never)
• Your job requires that you hide your feelings (2010)	1-5 (Almost always – Almost never)
European Social Survey	
• How often do you keep worrying about work problems when you are not working? (2004, 2010)	1-5 (Never – Always)
International Social Survey Programme	
• How often do you find your work stressful? (2005, 1997, 1989)	1-5 (Never – Always)
Gallup World Poll	
• In the past 30 days, have you had three or more days where the stress of work caused you to behave poorly with your family or friends? (2006, 2007, 2008)	1-2 (Yes-No)
• In the past month, have there been days when the stress of work caused you to behave poorly with family or friends, or not? (2010, 2011, 2012, 2013)	1-2 (Yes-No)
European Quality of Life Survey	
• How much do you agree or disagree: My work is too demanding and stressful (2007, 2003)	1-5 (Strongly agree – Strongly disagree)
Eurobarometer – Flash Module 398 (2014)	
• What are the main health and safety risks you face at workplace? Exposure to stress (list of items)	[Choose max three]
British Skills and Employment Survey (2012)	
• In your job, how important is dealing with people?	1-5 (Essential – Not important at all/Doesn't apply)
• In your job, how important is managing your own feelings?	1-5 (Essential – Not important at all/Doesn't apply)
• I find that my values and the organisation's values are very similar	1-4 (Strongly agree – Strongly disagree)
French Enquête Conditions Travail (2013)	
• Do you experience tension in your dealings with the public (users, patients, pupils, travellers, clients, suppliers, etc.)?	1-2 (Yes-No)
• In the course of your work, do you come into contact with people in distress?	1-2 (Yes-No)
• In the course of your work, do you have to calm people down?	1-2 (Yes-No)
• How often do you find yourself in the following situations at work?	
❖ I have to do things of which I disapprove	1-4 (Always – Never)
❖ I have to hide my feelings or pretend to be in a good mood	1-4 (Always – Never)
❖ I have to refrain from giving my opinion	1-4 (Always – Never)

Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

Task discretion and autonomy

Task discretion (item B.3 in Table 4.1) refers to the ability of employees to influence the way that they carry out their immediate work activities, including their working method, effort, pace and quality standards. Empirical research indicates that task discretion is closely

associated with workers' job satisfaction, has a positive impact on physical and psychological well-being and provides a buffer against the damaging effect of high work intensity (Karasek, 1979; Karasek and Theorell, 1990). In addition to its positive impact on individuals' well-being, task discretion leads to learning at work and skills acquisition (Inanc et al., 2015), increases creativity at the workplace and has a positive impact on workers' discretionary effort, i.e. the work effort workers make beyond what is strictly required of them, thereby increasing organisational performance.

Four of the seven surveys reviewed in this chapter contain questions on task discretion and autonomy (Table 5.6). Since 1991, the EWCS has included three questions on task discretion, namely on the ability to choose or change work orders, methods of work, and the speed or rate of work, and, since 2010, a question on autonomy in choosing working partners; all these task discretion questions are answered with a "Yes/No" binary answer scale. The ESS Family, Work and Well-being modules asked in 2004 and 2010 the same two questions on task discretion used by the EWCS, i.e. whether management can decide how daily work organised, and concerning workers' ability to choose or change the pace of their work. The ISSP includes one question on autonomy (i.e. agreement with the statement "I can work independently") and another question on how daily work tasks are organised, which focuses on the level of choice that employees have. The EQLS also included an item on task discretion in 2003 and 2007, asking whether respondents have a great deal of influence in deciding how to do their work.

Questions on task discretion and autonomy have also featured in the British Skills and Employment Survey and the French *Enquête Conditions de Travail* (Table 5.6). The first survey includes four questions on task discretion, asking how much influence individual respondents personally have on how hard they work, what tasks needs to be done, how these tasks are to be performed and the quality standards to which workers work, in addition to a general question on the degree of choice that workers have on how they do their job. The French *Enquête Conditions de Travail* adopts a more indirect approach, asking workers about the features that determine the pace of their work, such as pace being determined by automated processes, by co-workers or by production standards. While these questions capture whether workers have discretion over their work pace, another question asks whether workers can pause their work when they want. The *Enquête* also contains questions on the degree to which workers have to follow instructions and/or directions given by supervisors or whether they can decide themselves how to do the job, exercising discretion on how to perform tasks.

The cross-country correlations for task discretion and autonomy are generally strong and in the expected direction across surveys, and this holds for both average scores and the population shares with high and low scores. Both of the ISSP items correlate strongly with the EWCS items on choice on the order of tasks (r = 0.67 and 0.75, Table 5.A.6) and the method of work (r = 0.69 and 0.76). The cross-country correlations for the choice of speed/rate of work and choice of work partners are somewhat weaker.

The cross-country correlations between the ESS and EWCS items are even stronger, both in 2004/2005 and in 2010. The ESS item on workers' influence over how daily work is organised is highly correlated with the EWCS item on being able to choose/change the order of tasks, with r = 0.85 in 2004 (Table 5.A.6) and 0.82 in 2010; with the EWCS item on being able to choose/change the methods of work, with r = 0.74 in 2004 and r = 0.84 in 2010; and with the EWCS item on having an influence over the choice of working partners, with

r = 0.69 in 2004 and r = 0.54 in 2010. Data based on the second ESS question on workers' amount of influence on the pace of work is also strongly and positively correlated with the similar EWCS items.[11] The cross-country correlations for this second ESS item with the EWCS item on choice over the speed/rate of work is weaker, whereas that between the ESS item about influence over the speed of work and the EWCS similar item is very strong, with a correlation coefficient of 0.91 in 2010.

All in all, these correlations indicate that questions on task discretion produce similar cross-country scores, especially those that focus on the same aspect of discretion, which suggests that the available international questions are fairly reliable.

Table 5.8. **Survey questions on task discretion and autonomy**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
● Are you able to choose or change your order of tasks? (2010, 2005, 2000, 1996, 1991)	1-2 (Yes – No)
● Are you able to choose or change your methods of work? (2010, 2005, 2000, 1996)	1-2 (Yes – No)
● Are you able to choose or change your speed or rate of work? (2010, 2005, 2000, 1996, 1991)	1-2 (Yes – No)
● You have influence over the choice of your working partners (2010, 2005)	1-5 (Almost always – Almost never)
European Social Survey	
● How much the management at your work allows you to decide how daily work is organised? (2004, 2010)	0-10 (No influence – Complete influence)
● How much the management at your work allows you to choose/change pace of work? (2004, 2010)	0-10 (No influence – Complete influence)
International Social Survey Programme	
● Agree or not: I can work independently (2005, 1997, 1989)	1-5 (Strongly agree – Strongly disagree)
● Which of the following statements best describes how your daily work is organised?*	[Choose one]
(1) I am free to decide how my daily work is organised	
(2) I can decide how my daily work is organised, within certain limits	
(3) I am not free to decide how my daily work is organised (2005, 1989)	
European Quality of Life Survey	
● How much do you agree or disagree: I have a great deal of influence in deciding how to do my work (2007, 2003)	1-5 (Strongly agree – Strongly disagree)
British Skills and Employment Survey (2012)	
● How much choice do you have over the way in which you do your job?	1-4 (A great deal of choice – No choice at all)
● How much influence do you personally have on how hard you work?	1-4 (Very true – Not at all true)
● How much influence do you personally have on deciding what tasks you are to do?	1-4 (A great deal – Not at all)
● How much influence do you personally have on deciding how you are to do the task?	1-4 (A great deal – Not at all)
● How much influence do you personally have on deciding the quality standards to which you work?	1-4 (A great deal – Not at all)
French Enquête Conditions Travail (2013)	
● Is your work rate imposed by:	
❖ The automatic movement of a product or part?	1-2 (Yes – No)
❖ The automatic speed of a machine?	1-2 (Yes – No)
❖ Other technical constraints	1-2 (Yes – No)
❖ Immediate dependency on the work of one or more colleagues?	1-2 (Yes – No)
❖ Production targets or deadlines to be met within one hour or longer?	1-2 (Yes – No)
❖ Production targets or deadlines to be met within one day or longer?	1-2 (Yes – No)
❖ External demands (clients, public) requiring an immediate response?	1-2 (Yes – No)
● Do you have to fully comply with stringent control procedures (ISO certification, accreditation, EAQF, etc.)?	1-2 (Yes – No)
● You receive commands, guidance, instruction manuals. In order to do your job properly, do you:	
❖ Strictly follow the guidelines?	1-2 (Yes – No)
❖ Do things differently in some situations?	1-2 (Yes – No)
❖ Do things differently most of the time?	1-2 (Yes – No)
● Can you take a short break from your work whenever you choose?	1-2 (Yes – No)
● Your managers tell you what to do. As a rule, do they:	1-2 (Yes – No)
❖ Also tell you how to do it?	1-2 (Yes – No)
❖ Explain the end purpose of the task and leave you to choose how to accomplish it?	1-2 (Yes – No)
● I can organise my work as I see fit to best suit me	1-4 (Strongly agree – Strongly disagree)

Note: * Slight change in the question format between years. Refer to original questionnaires for details.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

5.4. Organisational characteristics

The organisational characteristics of firms provide some critical resources to workers. Three types of resources are described below: organisational participation and workers voice; good managerial practices; and task clarity and performance feedback.

Organisational participation and workplace voice

Organisational participation and workplace voice (item C.1 in Table 4.1) refer to the possibility for employees to influence decisions at the workplace through direct consultation rather than through their representatives. This enables workers to communicate matters affecting their work and well-being to management, enhancing employers' awareness of workers' needs and helping employers to make a more efficient use of their resources. Workers' engagement in workplace decisions also facilitates organisational change: more engaged workers have a better understanding of the consequences of management decisions for how work is performed, are less likely to oppose these changes and may better anticipate risks.

Four of the seven international surveys included in the OECD inventory have questions on various forms in which employees are consulted and can voice their opinion to influence management decisions (Table 5.9). Since 1996, the EWCS has included questions on whether respondents can discuss work problems with different actors, while more recently it has introduced a question on workers' influence on work-related decisions. The ESS includes questions on employees' influence on decisions at work in general, and on their own working conditions and practices in particular, as well as a question on whether meetings with staff representatives are routinely organised. The Eurobarometer Flash Survey also contains questions on whether workers are consulted, informed or discuss work-related issues in their firm. Finally, the Gallup World Poll asks respondents whether they think that their opinions at work count.

Organisational participation and workplace voice feature in both of the national surveys reviewed in this chapter (Table 5.9). The British Skills and Employment Survey devotes several questions to organisational characteristics, organisational participation and voice, with a number of questions about the existence of informative meetings (e.g. whether management organises meetings where employees are informed about what is going on in the firm) and consultative meetings (e.g. whether at these meetings employees can express their opinions and if so in which areas, ranging from strategic decisions influencing the company's financial position and investment plans to practical issues such as training and health and safety regulations). The British survey also includes questions on the amount of influence that respondents think they have on decision-making processes relating directly to their work or on broader organisational decisions. The French *Enquête Conditions de Travail* captures organisational participation through a single question on whether, over the past 12 months, respondents have participated in discussions with an employee representative on issues related to their work.

An analysis of cross-country correlations shows that, across surveys, items measuring similar aspects of organisational participation and workplace voice, namely those on perceived influence on management decisions on work organisation, and those on whether management holds meetings to discuss work-related issues, are positively and strongly correlated across surveys (Table 5.A.7). For example, the mean country scores on levels of influence on work and policy decisions at the workplace have a correlation

Table 5.9. **Survey questions on organisational participation and workplace voice**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• You have influence over the choice of your working partners (2010)	1-5 (Almost always – Almost never)
• You are consulted before targets for your work are set (2010)	1-5 (Almost always – Almost never)
• You are involved in improving the work organisation or work processes of your department or organisation (2010)	1-5 (Almost always – Almost never)
• You can influence decisions that are important for your work (2010)	1-5 (Almost always – Almost never)
• Within your workplace, are you able to discuss your working conditions in general? (2000)	1-2 (Yes – No)
• Within your workplace, are you able to discuss the organisation of your work when changes take place? (2000)	1-2 (Yes – No)
• Do these exchanges of views take place with your colleagues? (2000)	1-2 (Yes – No)
• Do these exchanges of views take place with your superiors? (2000)	1-2 (Yes – No)
• Do these exchanges of views take place with staff representatives? (2000)	1-2 (Yes – No)
• Do these exchanges of views take place with outside experts? (2000)	1-2 (Yes – No)
• Do these exchanges of views take place on a regular basis? (2000)	1-2 (Yes – No)
• Do these exchanges of views take place on a formal basis? (2000)	1-2 (Yes – No)
• Within your workplace, are you able to discuss the organisation of your work when changes take place? (2000)	1-2 (Yes – No)
• Over the last 12 months have you been consulted about changes in the organisation of work and/or your working conditions? (2005, 1996)	1-2 (Yes – No)
• Over the last 12 months have you discussed work-related problems with an employee representative? (2005, 1996)	1-2 (Yes – No)
• At your workplace, does management hold meetings in which you can express your views about what is happening in the organisation? (2010)	1-2 (Yes – No)
European Social Survey	
• How much the management at your work allows you to influence policy decisions about activities of organisation? (2004, 2010)	0-10 (No influence – Complete influence)
• At your workplace are there regular meetings between representatives of the employer and employees, in which working conditions and practices can be discussed? (2010)	1-2 (Yes – No)
• How much influence would you say these discussions generally have on decisions that affect your working conditions and practices? (2010)	1-4 (Not much or no influence – A great deal of influence)
Gallup World Poll	
• At work, do your opinions seem to count, or not? (2005, 2006, 2007, 2008)	1-2 (Yes-No)
Eurobarometer – Flash Module 398 (2014)	
• Over the past 12 months, have you or not… discussed work-related problems with your manager?	1-2 (Yes – No)
• Over the past 12 months, have you or not… been consulted about changes in the organisation of work and/or working conditions?	1-2 (Yes – No)
• Over the past 12 months, have you or not… discussed work-related problems with employee representatives?	1-2 (Yes – No)
• Over the past 12 months, have you or not… been informed about the situation of your company or organisation regarding its financial situation and its future, including possible restructuring?	1-2 (Yes – No)
• Over the past 12 months, have you or not… been consulted on health and safety issues at work by your employer or a health and safety representative?	1-2 (Yes – No)
British Skills and Employment Survey (2012)	
• My job allows me to take part in making decisions that affect my work	1-4 (Very true – Not true at all)
• At your workplace, does management organise meetings where you are informed about what is happening in the organisation?	1-2 (Yes – No)
• At your workplace, does management hold meetings in which you can express your views about what is happening in the organisation?	1-2 (Yes – No)
• At these meetings can you express your views about… the financial position of the organisation?	1-2 (Yes – No)
• At these meetings can you express your views about… the investment plans of the organisation?	1-2 (Yes – No)
• At these meetings can you express your views about… planned changes in working practices?	1-2 (Yes – No)
• At these meetings can you express your views about… planned changes in products or services?	1-2 (Yes – No)
• At these meetings can you express your views about… health and safety issues?	1-2 (Yes – No)
• At these meetings can you express your views about… training plans?	1-2 (Yes – No)
• Suppose there was going to be some decision made at your place of work that changed the way you do your job. Do you think that you personally would have any say in the decision about the change or not?	1-2 (Yes – No)
• How much say or chance to influence the decision do you think that you personally would have?	1-3 (A great deal – Just a little)
French Enquête Conditions Travail (2013)	
• In the past 12 months, have you discussed work-related problems with a staff representative (employee representative, union representative, member of employee representative committee or committee for health, safety and working conditions, etc.)?	1-2 (Yes – No)

Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

coefficient of 0.58 between ESS 2004 and EWCS 2005; of 0.68 between ESS 2010 and EWCS 2010; and of 0.59 between the Gallup World Poll and EWCS 2005. Similarly, questions on whether management holds regular meetings that allow employees to voice their views have a correlation coefficient of 0.77 between ESS 2010 and EWCS 2010.

Good managerial practices

For workers who work under a supervisor, managerial skills affect their job quality to a significant extent. Good management practices include taking (good) actions to organise work, resolve conflict, treat workers with respect, and encourage them to take part in organisational decisions. Good managerial practices (item C.2 in Table 4.1) increase employee motivation, engagement and productivity, provide workers with a social support mechanism, and help them to lower their work-related stress.

Only two of the seven international surveys reviewed in this chapter focus on managerial practices (Table 5.10). The 2010 wave of the EWCS asks employees who have an immediate manager or supervisor whether their manager respects them as a person; is good at resolving conflicts, planning and organising work; and encourages them to participate in important decisions. The Gallup World Poll also has an item asking whether one's supervisor acts like a boss or a partner with them.

The French *Enquête Conditions de Travail* includes a number of items on managerial qualities (Table 5.10), asking respondents whether their supervisor pays attention to what they say, helps them to carry out their work tasks and treats people working under them with respect, as well as whether those at the workplace who are responsible for performance evaluation have a good knowledge of the work of those being evaluated.[12]

Table 5.10. **Survey questions on good managerial practices**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• In general, your immediate manager/supervisor: Respects you as a person (2010)	1-2 (Yes – No)
• In general, your immediate manager/supervisor: Is good at resolving conflicts (2010)	1-2 (Yes – No)
• In general, your immediate manager/supervisor: Is good at planning and organising the work (2010)	1-2 (Yes – No)
• In general, your immediate manager/supervisor: Encourages you to participate in important decisions (2010)	1-2 (Yes – No)
Gallup World Poll	
• Does your supervisor at work treat you more like he or she is your boss or your partner? (2005, 2006, 2007, 2008, 2011, 2012)	1-2 (Boss – Partner)
French Enquête Conditions Travail (2013)	
• My manager listens to what I have to say	1-4 (Strongly agree – Strongly disagree)
• My manager helps me to successfully complete my tasks	1-4 (Strongly agree – Strongly disagree)
• The people evaluating my work are fully aware of what it entails	1-4 (Strongly agree – Strongly disagree)
• My manager treats everyone working for him equally	1-4 (Strongly agree – Strongly disagree)

Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

Task clarity and performance feedback

This job characteristic refers to whether work tasks are well defined and well communicated to workers and whether employees receive feedback on their performance on these tasks, either from their immediate supervisors or through formal assessment tools and other human management practices. Regular feedback from managers fosters learning, increases job competence and the likelihood of being successful in achieving work goals, and improves communication between the supervisor and the supervisee; conversely, a lack of feedback may cause "role ambiguity" (i.e. being unclear or uncertain

about what is expected from oneself at the workplace) and stress. Regular feedback may also reduce workers' tendency to worry about work when at home, thereby reducing home-work interference, and buffer the negative consequences of work overload and exhaustion.

Questions on task clarity feature in two of the seven international surveys reviewed in this chapter (Table 5.11). The EWCS 2010 contains an overall evaluative question asking respondents if they know what is expected from them at work, with answer categories ranging from "Almost always" to "Almost never". The Gallup World Poll asked a similar question in 2010, with a Yes/No answer format. Performance feedback features only in the EWCS, with three binary questions on whether the immediate manager provides feedback on the respondent's work, whether the employee had a frank discussion with their boss on their work performance, and whether they regularly undergo a formal assessment of their work performance.

Table 5.11. **Survey questions on task clarity and performance feedback**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• You know what is expected of you at work (2010)	1-5 (Almost always – Almost never)
• In general, your immediate manager/supervisor: Provides you with feedback on your work (2010)	1-2 (Yes – No)
• Had a frank discussion with your boss about your work performance? (2005, 1996)	1-2 (Yes – No)
• Have been subject to regular formal assessment of your work performance? (2010, 2005)	1-2 (Yes – No)
Gallup World Poll	
• Do you know what is expected of you at work? (2010)	1-2 (Yes – No)
British Skills and Employment Survey (2012)	
• Do you have a formal appraisal system at your workplace?	1-2 (Yes – No)
• Have you been formally appraised at work in the last 12 months?	1-2 (Yes – No)
French Enquête Conditions Travail (2013)	
• Are you given conflicting or contradictory instructions?	1-2 (Yes – No)
• Do you have at least one performance evaluation a year?	1-2 (Yes – No)
• Is the evaluation based on specific and measurable criteria (objectives, results, skills development)?	1-2 (Yes – No)
• As a rule, are you given clear and sufficient information to help you successfully carry out your work?	1-2 (Yes – No)
• How often do you find yourself in the following situation at work: I know in advance what work I will have to do next month	1-4 (Always – Never)

Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

Task clarity also features in the French *Enquête Conditions de Travail*, whereas performance feedback is included in both the French and British surveys. The French survey contains three items related to task clarity: whether or not employees receive contradictory information; whether they receive clear and sufficient information to perform their job; and whether they know a month in advance what tasks they will be asked to do. Performance feedback, which is included in both national surveys, is measured through questions on the presence of a formal assessment in the British Skills and Employment Surveys (whether there is a formal appraisal system at the workplace, and whether the respondent has been assessed in the last 12 months), and in the French one through questions on the existence of a formal assessment at the workplace and on the criteria the assessment is based on (e.g. against set objectives, skills and outcomes).

While, in general, task clarity and feedback can improve the quality of the working environment, feedback that is too frequent, negative and unconstructive may also cause frustration and lower self-confidence and a sense of autonomy. Questionnaires exploring performance feedback should include items that distinguish between useful and unconstructive feedback, in addition to the receipt of feedback *per se*.[13]

5.5. Working-time arrangements

Beyond the actual length of working time, working-time arrangements bear importantly on worker's well-being, either negatively (when they imply an unsocial work schedule) or positively (when they provide workers with flexibility in setting their working hours). Working-time arrangements are also important for the work-life balance of workers and their families, and are thus one of the 11 dimensions of the well-being framework used by the OECD in its *How's Life?* publications (OECD, 2017). While the work-life balance is not considered in this report as a job characteristic *per se*, as it is also shaped by the family situation of each person and by factors relating to the place of residence, transport, etc., most of the surveys reviewed in this chapter include specific questions about it (Box 5.3).

Box 5.3. **Work-life balance**

The work-life balance denotes a state of equilibrium between people's work and their private lives. The work-life balance is enhanced by workplace arrangements that provide various types of formal leave (maternity, sickness, child-related, etc.), working hours that allow fulfilling family responsibilities, work demands that do not spill over into personal life, as well as public facilities that prevent care responsibilities from interfering with work life. Work-life conflicts, which arise due to incompatible demands between work and family roles, cause psychological distress, demotivation and lower productivity. By definition, the work-life balance is hampered by a spill-over either from work to family life or from family life to work. A work-life imbalance that arises as a result of a spill-over from work to family matters may be the result of the length, structure or inflexibility of work hours or pressure from work demands.

Five of the seven surveys reviewed include questions on the work-life balance. Some of these are general assessments of whether or not working hours interfere with family/personal life. For instance, the EWCS asks workers whether their working hours fit with their non-work commitments; the ESS asks how often work prevents employees from devoting enough time to family; the ISSP asks whether or not one's job leaves a lot of leisure time; the EU-LFS ad hoc modules ask whether shift or on-call work is convenient for family life; and the EQLS asks whether one's working hours fit with family and social life, and whether workers find it difficult to fulfil family duties because of time spent at work. The EWCS includes additional questions on the degree to which working hours interfere with non-work time, such as working outside of normal working hours, taking work back home or being contacted off-hours for work reasons. Both the EWCS and the ISSP include a question on working-time flexibility asking whether workers can take off a few hours from work to attend personal matters.

Most surveys also contain questions on the extent to which pressure and job demands interfere with family and personal life. The ESS has a question on family conflict inquiring whether family members are fed up with one's work pressure, while the ISSP assesses how frequently work demands interfere with family life. The EQLS asks how often respondents return home from work too tired to perform household chores that need to be done. In addition to these job-specific questions, in 1996 the EWCS contained a number of employer-related questions, such as whether or not the employer provided additional sick child leave, maternity/paternity leave and child day care.

The work-life balance is one of the job characteristics covered by the two national surveys reviewed in this chapter. Both the British Skills and Employment Survey and the French *Enquête Conditions de Travail* include a question on the possibility of taking a few hours

Box 5.3. **Work-life balance** *(cont.)*

off during work hours to take care of personal or family matters, i.e. similar to the questions included in the EWCS and the ISSP. The French survey also contains a general assessment item on whether working hours are well suited to the respondent's family and/or personal commitments.

The correlations for most questions on various aspects of the work-life balance are not strong, or with a consistent sign, across the three surveys for which we have a sufficient number of countries (n > 10). This is also true when looking at items that focus on the same aspect of the work-life balance. The only strong correlation is the one between the ESS 2010 item on how frequently one's job prevents devoting time to family and the EWCS 2010 item on the difficulty of taking off a few hours to take care of personal or family matters (r = 0.76). For the other cases, the correlations are low and change sign across cut-off points, which could (at least partially) reflect differences in the wording of the questions being compared. The association is especially weak between questions that prime respondents that work-family interference is undesirable (or that it exists but with varying degrees) and those that have a more neutral wording. For example, the negative-sounding ESS questions "How often does the job prevent giving time to family" and "How often is the partner or family fed up with one's work demands" have weak and/or inconsistent associations with the (more neutral) EWCS question on whether working hours fit family and social commitments.

Unsocial work schedule

An unsocial work schedule (item D.1 in Table 4.1) refers to working hours that involve working non-standard shifts, such as evenings, nights, Saturdays or Sundays. Even though some employees may choose to work unconventional schedules, research suggests that, on average, unsocial hours have a negative impact on workers' family relationships, social life and psychological well-being.

The EWCS, ESS, EU-LFS ad hoc modules and Flash Eurobarometer contain specific questions on unusual work schedules (Table 5.12). The EWCS and ESS ask about the frequency of specific unsocial work schedules (e.g. working at weekends and evenings), while the EU-LFS ad hoc modules collect information on the type of shift-work that employees do and that can be considered as unsocial work hours. The Flash Eurobarometer asks respondents a batch of questions on reasons for dissatisfaction with their work hours (where respondents can choose up to three factors from among being "constrained by shift work or other forms of irregular working time", "working exclusively or mainly at night", being "constrained by standby periods at home", and being "constrained by on-call periods at the work place"). The Flash Eurobarometer questions are possibly better formulated than the EWCS and ESS questions, since they distinguish between those respondents who choose (or do not mind) irregular and unsocial work hours and those who are negatively affected by them. However, these questions also prime respondents on the constraining aspect of unsocial work hours and may thus lead to overestimating the incidence of unsocial schedules in the workforce. Conversely, respondents who do not consider any of these factors as unsatisfactory may still be suffering from lower psychological well-being and worse family relations without realising this in the short term, leading them to underestimate the well-being impact of unsocial work hours. These considerations suggest that it is more informative to ask about unsocial schedules directly, as it is done in the EWCS and ESS.

Among the national surveys, the French *Enquête Conditions de Travail* has a set of questions on patterns of working hours, some of which measure their "unsociability" (Table 5.12). For instance, the survey asks whether respondents work on Saturdays, Sundays, and on night shifts and, if so, how many times a year. For those who work on Sundays or on night shifts, the French survey further explores whether this work is paid or compensated with rest time. The survey also contains questions on working schedules that are bad for one's social life, such as whether respondents work between 5 and 7 a.m., or between 8 p.m. and midnight.

Table 5.12. **Survey questions on unsocial work schedule**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• Normally, how many times a month do you work at night, for at least 2 hours between 10:00 p.m. and 05:00 a.m.?* (2010, 2005, 2000, 1996, 1991)	[Numeric]
• And how many times a month do you work in the evening, for at least 2 hours between 6:00 p.m. and 10:00 p.m.? (2010, 2005, 2000)	[Numeric]
• And how many times a month do you work on Sundays? (2010, 2005, 2000, 1996)	[Numeric]
• And how many times a month do you work on Saturdays? (2010, 2005, 2000, 1996)	[Numeric]
• And how many times a month do you work more than 10 hours a day? (2010, 2005, 2000)	[Numeric]
European Social Survey	
• How often work involves working evenings/nights? (2004, 2010)	1-7 (Never – Everyday)
• How often work involves having to work overtime at short notice? (2004, 2010)	1-7 (Never – Everyday)
• How often work involves working at weekends? (2004, 2010)	1-5 (Never – Every week)
EU-Labour Force Surveys ad hoc Modules	
• Semi-continuous shift work, usually three-shift system; Two-shift system, double day shift; Sometimes night, sometimes day shift; Fixed assignment to a given shift (2001)	[Choose one]
• Shift work pattern, continuous shift work, usually four-shift system; Semi-continuous shift work, usually three-shift system; Two-shift system, double day shift; Sometimes night, sometimes day shift (2004)	[Choose one]
• Shift work is convenient for personal life situation; On-call work is convenient for personal life situation; Shift work or on-call work is not convenient for personal life situation (2004)	[Choose one]
• Work in the evening, at night or during weekend is convenient for personal life situation; Work in the evening, at night or during weekend is not convenient for personal life situation (2001)	[Choose one]
Eurobarometer – Flash Module 398 (2014)	
• Which of the following are reasons for dissatisfaction with your working hours? Constrained by shift work or other forms of irregular working time	[Choose max three]
• Which of the following are reasons for dissatisfaction with your working hours? Working exclusively or mainly at night	[Choose max three]
• Which of the following are reasons for dissatisfaction with your working hours? Constrained by standby periods at home	[Choose max three]
• Which of the following are reasons for dissatisfaction with your working hours? Constrained by on-call periods at the workplace	[Choose max three]
French Enquête Conditions Travail (2013)	
• Do you work on Saturdays?	1-3 (Regularly – Never)
• How many times a year do you go to work on Saturdays?	[Numeric]
• Do you work on Sundays?	1-3 (Regularly – Never)
• How many times a year do you go to work on Sundays?	[Numeric]
• Is there specific compensation for time worked on Sundays, in the form of additional payment or time off?	1-3 (Specific compensation – Time off)
• Does your main paid job involve working between 5:00 a.m. and 7:00 a.m.?	1-3 (Regularly – Never)
• Do you work between 8:00 p.m. and midnight?	1-3 (Regularly – Never)
• Do you work nights, between midnight and 5:00 a.m.?	1-3 (Regularly – Never)
• How many nights a year do you go to work?	[Numeric]
• Is there specific compensation for nights worked, in the form of additional payment or time off?	1-3 (Specific compensation – Time off)

Note: * Slight change in the question format between years. Refer to original questionnaires for details.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

The empirical analysis of the reliability of questions on an unsocial work schedule draws upon the EWCS and the ESS (Table 5.A.8). The comparable questions in the two surveys are those inquiring about the frequency of evening/night work and the frequency of weekend work. The cross-country correlations are rather weak between the questions

on evening work and night work. However, country scores for questions on weekend work are strongly and positively correlated between the two surveys, especially in 2004/5. For example, the correlation coefficient between the ESS question "How often does your work involve working at weekends" and the EWCS item "How many times a month do you work on Sundays" is 0.74, while that with the EWCS question on working on Saturdays is 0.76.

Flexibility of working hours

The flexibility of working hours (item D.2 in Table 4.1) refers to workers' ability to choose or influence their working-hour arrangements, e.g. in terms of the start and finish of one's working day, breaks and holidays. This is a crucial aspect of employee well-being, as it allows a better fit between people's personal and working lives. Flexible working hours help to sustain the work-life balance, increase personal control over the work schedule, reduce burnout due to overload, and allow individuals to work when they can accomplish the most.

Six of the seven international surveys reviewed here contain questions on the flexibility of working hours, focusing on aspects of working-time flexibility such as autonomy over the setting of the starting/finishing time of work, opportunities for teleworking and ability to take breaks (Table 5.12). The EWCS, especially the 2010 survey, includes questions on all these aspects of worktime flexibility, with response scales that capture the frequency of most items well. The ESS includes a single question on working-time flexibility, focusing on the degree of autonomy that employees have over the start and finish hours. The ISSP, EQLS and EU-LFS ad hoc modules include questions on whether the work schedule is flexible or not and who decides the start and finish time, and possibilities for taking breaks at work, while the EU-LFS ad hoc modules ask in more detail about the types of flexiwork arrangements available to employees. Finally, the Flash Eurobarometer asks about dissatisfaction with work hours due to the respondent's inability to influence their own work schedule and lack of flexible work arrangements.

Table 5.13. **Survey questions on flexibility of working hours**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• You can take a break when you wish (2010, 2005, 2000, 1996)	1-5 (Almost always – Almost never)
• You are free to decide when to take holidays or days off (2005, 2000, 1996)	1-5 (Almost always – Almost never)
• You can influence your working hours (2000)	1-2 (Yes – No)
• Does your main paid job involve – teleworking from home with a PC?* (2005, 2000, 1996)	1-7 (All of the time – Never)
• Does your main paid job involve – working at home, excluding telework* (2005, 2000, 1996)	1-7 (All of the time – Never)
• How are your working-time arrangements set? (1) They are set by the company/ organisation with no possibility for changes (4) Your working hours are entirely determined by yourself (2010, 2005)	1-4 [Choose one]
• Do changes to your work schedule occur regularly? (IF YES) How long before are you informed about these changes? (2010, 2005)	1-5 (No – Several weeks in advance)
• Would you say that for you arranging to take an hour or two off during working hours to take care of personal or family matters is...? (2010)	1-4 (Not too difficult – Very difficult)
European Social Survey	
• I can decide the time I start and finish work (2004, 2010)	1-4 (Not at all true – Very true)
International Social Survey Programme	
• My job has flexible working hours (1989)	1-5 (Strongly agree – Strongly disagree)
• Which of the following statements best describes how your working hours are decided? (By working hours we mean here the times you start and finish work, and not the total hours you work per week or month) (1) decided by my employer and I cannot change them on my own (2) I can decide within certain limits (3) I am entirely free to decide when I start and finish work (2005, 1997)	1-3 [Choose one]
• How difficult would it be for you to take an hour or two off during working hours to take care of personal or family matters? (2005)	1-4 (Not difficult at all – Very difficult)

Table 5.13. **Survey questions on flexibility of working hours** *(cont.)*
Selected international and national surveys

Question wording and variable name	Answer scale
EU-Labour Force Surveys ad hoc Modules	
• Variable working time: (1) Fixed start and end of a working day or carrying working time decided by the employer (2) Flexitime/Working-time banking (3) Daily number of hours fixed, but some flexibility within the day (4) Determines own work schedule (no formal boundaries at all) (2010)	[Choose one]
• Variable working times: (1) Fixed start and end of a working day (2) Staggered working hours, banded start/end (3) Working-time banking with possibility to only take hours off (4) Working-time banking with possibility to take full days off (5) Start and end of working day varying by individual agreement (6) Determines own work schedule (no formal boundaries) (2004)	[Choose one]
• Variable working time: (1) Fixed start and end of a working day (2) Annualised hours contract Working-time banking (3) Working times by mutual agreement (4) Determines own work schedule (no formal boundaries) (2001)	[Choose one]
• Possible to vary start and end of working week for family reasons (at least one hour) (2010, 2005)	1-3 (Generally possible – Not possible)
• Possible to organise working time in order to take whole days off for family reasons (without using holidays) (2010, 2005)	1-3 (Generally possible – Not possible)
European Quality of Life Survey	
• In your current job: I can vary my start and finish times (2012)	1-2 (Yes – No)
• In your current job: I can accumulate hours for time off (2012q13a)	1-2 (Yes – No)
• In your current job: I can take a day off at short notice when I need to (2012)	1-2 (Yes – No)
Eurobarometer – Flash Module 398 (2014)	
• Which of the following are reasons for dissatisfaction with your working hours? • Unable to influence your work schedule	[Choose max three]
• Which of the following are reasons for dissatisfaction with your working hours? • Lack of opportunities for flexible working such as telework	[Choose max three]
British Skills and Employment Survey (2012)	
• I can decide the time I start and finish work	1-5 (Strongly Agree – Strongly Disagree)
• Would you say that for you arranging to take an hour or two off during working hours to take care of personal or family matters is….?	1-4 (Not difficult at all – Very Difficult)
French Enquête Conditions Travail (2013)	
• Can you take time off during working hours, even just a couple of hours, to take care of unforeseen personal or family matters?	1-3 (Yes, easily – No, it is impossible)
• When unforeseen events occur, can you reorganise your working time with your colleagues?	1-2 (Yes – No)
• Who decides on your working time?	1-3 (The company or administration with no possibility of modification – Yourself)

Note: * Slight change in the question format between years. Refer to original questionnaires for details.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

Both the British and the French surveys include questions on the flexibility of working hours. The British Skills and Employment Survey contains one question on whether individuals can decide the starting and finishing times of their work, and another on the possibility of taking a few hours off during working hours to take care of personal or family matters. The French *Enquête Conditions de Travail* contains a similar question on the possibility of taking off a few hours during work hours, as well as questions on whether workers can change their work schedules based on arrangements between colleagues when facing unforeseen circumstances, and about who takes decisions on work hours, including whether these matters are set entirely by the employer or whether the employee has a say on them.

Most of these aspects of worktime flexibility are inter-related, as in the case of firms that adopt flexible working-time arrangements. As a result, the cross-country correlations

between many items in the EWCS, ESS and ISSP are generally strong (Table 5.A.9). Focusing on questions on similar aspects of worktime flexibility, the empirical analysis shows that items on autonomy over working hours are highly correlated between the EWCS and ISSP 2005 (r = 0.81) and between the ISSP 2005 and ESS 2004 (r = 0.65). The correlation is even larger for top achievers. Another aspect of work-time flexibility that is assessed by several surveys is the ability to take breaks/holidays, with correlations in this field also relatively strong. The cross-country correlation between the ISSP item on the difficulty of taking a few hours off to take care of personal/family matters and the EWCS item on whether employees can take a break when they wish is 0.69, while that between this ISSP item and the EWCS item on autonomy in taking holidays is 0.60. This suggests that measures of the flexibility of working hours are robust to slight variations in question wording across surveys.

5.6. Job prospects

Job prospects shape people's working environment in different directions: negative, when workers face job insecurity; and positive, when jobs provide workers with opportunities for training, learning and career advancement.

Perceptions of job insecurity

Perceptions of job insecurity refer to workers' anticipation or fear of losing their jobs within the foreseeable future, e.g. in the next 6 or 12 months. These worries are generally well founded, as research has shown that workers' perceived job insecurity is a strong predictor of future job losses, indicating that employees have a good sense of the prospects of their workplace. The effects of perceived job insecurity on individual well-being are comparable to the effects of unemployment itself (Burchell, 2011; De Witte, 1999). For instance, workers who worry about losing their jobs are as likely as the unemployed to experience cardiovascular disease, high blood pressure and chronic depression. Additionally, job insecurity can hamper the "psychological contract" at work, undermining the effort-reward balance and lowering workers' commitment and discretionary effort.

Questions on perceptions of job insecurity feature in five of the seven international surveys considered here, and are formulated in broadly similar fashion (Table 5.14). Three of these five surveys, i.e. the EWCS, Gallup World Poll and EQLS, contain a question asking respondents about their perceived likelihood of losing their job within the next 6 or 12 months. Two of these surveys (i.e. the EWCS and EQLS), as well as the ESS's "My job is secure" item, follow up this question with an item on "perceived employment insecurity", which asks employees to assess the likelihood that they could find a similar job if they lost their current one. Earlier waves of the EWQS and ESS, as well as of the ISSP, contained only a single question asking respondents whether they think that their job is secure, without inquiring about the difficulty of finding a similar job. Both the ISSP and the Gallup World Poll also contain questions on how worried respondents are about losing their jobs.

The two national surveys reviewed here contain several questions on perceptions of job insecurity. The British Skills and Employment Survey asks respondents whether they may lose their jobs and become unemployed within the next 12 months, while follow-up questions ask about the perceived likelihood of this happening and assess the future employability of respondents through a question on the perceived difficulty of finding a job as good as the current one. The French survey has similar questions, with different wording: it asks respondents whether they fear losing their jobs within the next year, but

not about the likelihood of this happening; a supplementary question asks if respondents think that they will have to change their jobs or qualifications within the next three years.

The country scores for the perceived job insecurity items are relatively well correlated across international surveys (Table 5.A.10). The items on whether one perceives his/her job as secure have strong positive correlation coefficients between the ESS 2004 and ISSP 2005 (r = 0.55). The perceived likelihood of job loss is available only in the EWCS, but this item correlates well with the "my job is secure" question in ESS 2004 (r = -0.70). Similarly, the ISSP item on being worried about job loss is also strongly correlated with the ESS 2004 item on the job being secure (r = -0.68). Strong correlations are also observed between questions on *perceived employability*. The ESS and EWCS questions asking respondents how easy/difficult it would be to find a similar job, if they lost their current one, has a correlation coefficient of r = 0.90 in 2010, despite the fact that these questions contain opposite wording (i.e. easy vs. difficult) and different response scales (i.e. extremely difficult/easy vs. strongly disagree/strongly agree). In addition, the correlations appear to be large between average scores and shares of people with top scores. This supports the idea that perceptions of employability, as well as of job insecurity, can be measured in a robust manner using existing questions in the international social surveys.

Training and learning opportunities

Training and learning opportunities are critical elements for advancing in one's career or for moving to a better job (Table 5.15). Workplace learning can be both formal and informal: the first refers to structured training opportunities, which can be assessed in terms of incidence (i.e. whether a worker received any workplace training over a recent period), duration (i.e. the length of training received) and quality (i.e. the extent to which the training received raises earnings capacity and skills); the second refers to learning that takes place through immediate work activities and the social relations embedded in them. Training and learning opportunities are crucial for preventing skill obsolescence, reducing the risk of unemployment, and increasing job satisfaction, work motivation and chances for promotion. They are, therefore, an integral component of workers' well-being.

Key aspects of training and learning opportunities have been investigated in five of the international surveys reviewed here (EWCS, ESS, ISSP, EU-LFS ad hoc module and EQLS). Questions on the incidence of training feature in all five of these surveys and are assessed with a 12-month reference period.[14] Among these surveys, the EWCS and ESS distinguish between employer-provided training and self-initiated training, whereas the EU-LFS ad hoc module asks whether training took place during working hours. Questions on the duration of the training received feature in EWCS 2005 (measured in days); ESS 2010 (days); EU-LFS 2003 ad hoc module (hours); and EQLS 2003 (in interval days). The EWCS and ESS are the only two surveys that contain questions on the quality of the training: this is done in the ESS through a single, general question on the usefulness of the training received for another employer, and in EWCS 2010 by asking whether training improved the way one works, job security or career prospects.[15]

Information is much more limited in the case of informal learning. The EWCS is the only survey that includes specific questions regarding immediate work tasks that allow learning-by-doing, whether or not the job involves complex tasks and whether it requires solving unforeseen problems on their own. General questions on learning at work are included in the EWCS, ESS and ISSP: the first two surveys ask whether the job involves/

Table 5.14. **Survey questions on perceptions of job insecurity**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• You have a secure job (1996)	1-2 (Yes – No)
• I might lose my job in the next 6 months (2010, 2005)	1-5 (Strongly agree – Strongly disagree)
• If I were to lose or quit my current job, it would be easy for me to find a job with similar salary (2010)	1-5 (Strongly agree – Strongly disagree)
European Social Survey	
• My job is secure (2004, 2010)	1-4 (Not at all true – Very true)
• I may have to move to a less interesting job in my organisation in the next 12 months (2010)	1-4 (Not at all true – Very true)
• How difficult or easy would it be for you to get a similar or better job with another employer if you had to leave your current job?* (2004, 2010)	0-10 (Extremely difficult – Extremely easy)
• How difficult or easy would it be for your employer to replace you if you left? (2004, 2010)	0-10 (Extremely difficult – Extremely easy)
International Social Survey Programme	
• Agree or not: My job is secure (2005, 1997, 1989)	1-5 (Strongly agree – Strongly disagree)
• To what extent, if at all, do you worry about the possibility of losing your job? (2005, 1997)	1-4 (I worry a great deal – I don't worry at all)
Gallup World Poll	
• Are you worried about losing your job, or not? (2010, 2011, 2012, 2013, 2014)	1-2 (Yes – No)
• Do you think you could lose your job in the next 6 months? (2007, 2008)	1-2 (Yes – No)
European Quality of Life Survey	
• How likely do you think it is that you might lose your (main) job in the next 6 months? (2012, 2007, 2003)	1-5 (Very likely – Very unlikely)
• If you were to lose or had to quit your current job, how likely or unlikely is it that you will find a job with a similar salary? (2012)	1-5 (Very likely – Very unlikely)
British Skills and Employment Survey (2012)	
• If you were looking for work today, how easy or difficult do you think it would be for you to find as good a job as your current one?	1-4 (Very easy – Very Difficult)
• Do you think there is any chance at all of you losing your job and becoming unemployed in the next 12 months?	1-2 (Yes – No)
• How would you rate the likelihood of this happening?	1-5 (Very likely – Very unlikely)
French Enquête Conditions Travail (2013)	
• Do you have any concerns about job security in the coming year?	1-2 (Yes – No)
• In the next three years, do you think that you will have to change either your professional classification or your profession?	1-2 (Yes – No)
• If you were to lose or leave your current job, would you find it easy to find another job with a similar salary or pay package?	1-2 (Yes – No)

Note: * Slight change in the question format between years. Refer to original questionnaires for details.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

Table 5.15. **Survey questions on training and learning opportunities**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• Does your main paid job involve: learning new things? (2010, 2005, 2000, 1996)	1-2 (Yes – No)
• Over the past 12 months, have you undergone any of the following types of training to improve your skills or not?*	
❖ Training paid for or provided by your employer, or by yourself if you are self-employed (2010, 2005, 2000, 1996)	[Tick if applies]
❖ Training paid for by yourself (2010, 2005, 2000, 1996)	[Tick if applies]
❖ On-the-job training (co-workers, supervisors) (2010, 2005, 2000, 1996)	[Tick if applies]
❖ Other forms of on-site training and learning (e.g. self-learning, on-line tutorials, etc.) (2005, 2000, 1996)	[Tick if applies]
❖ Other (2005, 2000, 1996)	[Tick if applies]
• The training has helped me improve the way I work (2010)	1-2 (Agree – Disagree)
• I feel that my job is more secure because of my training (2010)	1-2 (Agree – Disagree)
• I feel my prospects for future employment are better [because of training] (2010)	1-2 (Agree – Disagree)
• At work, I have opportunities to learn and grow (2005)	1-5 (Strongly agree – Strongly disagree)
• Does your main paid job involve: complex tasks? (2010, 2005, 2000, 1996)	1-2 (Yes – No)
• Does your main paid job involve: solving unforeseen problems on your own? (2010, 2005, 2000, 1996)	1-2 (Yes – No)

Table 5.15. **Survey questions on training and learning opportunities** *(cont.)*
Selected international and national surveys

Question wording and variable name	Answer scale
European Social Survey	
• During the last 12 months, have you taken any course or attended any lecture or conference to improve your knowledge or skills for work? (2004, 2010)	1-2 (Yes – No)
• About how many days in total have you spent on this training or education in the last 12 months? (2010)	[Numeric]
• How useful would what you have learnt be if you wanted to go and work for a different employer or firm? (2010)	1-4 (Very useful – Not at all useful)
• How much of this training or education was paid for by your employer or firm? (2010)	1-5 (All – None)
• My job requires that I keep learning new things (2004, 2010)	1-4 (Not at all true – Very true)
International Social Survey Programme	
• Agree or not: My job gives me a chance to improve my skills (2005)	1-5 (Never – Always)
• Over the past 12 months, have you had any training to improve your job skills, either at the workplace or somewhere else? (2005)	1-2 (Yes – No)
EU-Labour Force Surveys ad hoc Modules	
• Did you attend any courses, seminars, conferences or receive private lessons or instructions outside the regular education system within the last 12 months? (2003)	1, 2, 3 or any activities
• Duration in number of hours for taught activity (2003)	[Numeric]
• What were the main reason for participating in this taught activity?* (2003)	1-2 (Mainly job related – Mainly personal or social reasons)
• Did any part of this taught activity take place during working hours?* (2003)	1-4 (Only during work hours – Only outside paid hours)
European Quality of Life Survey	
• Have you taken an education or training course at any time within the last year? (2003)	1-2 (Yes – No)
• What kind of course is/was it? (2003)	Option 4: Training course related to your job or profession
• How long is/was this course? (2003)	[Numeric]
British Skills and Employment Survey (2012)	
• I am able to learn new skills through working with other members of my work group?	1-5 (Strongly Agree – Strongly Disagree)
• My job requires that I keep learning new things	1-5 (Strongly Agree – Strongly Disagree)
• To what extent do these new things that you learn:	
❖ Make you think harder about different ways of doing your job?	1-5 (A great deal – Not at all)
❖ Require following instructions or processes strictly?	1-5 (A great deal – Not at all)
❖ Need to be memorised by heart?	1-5 (A great deal – Not at all)
❖ Give you more independence in how you do your job?	1-5 (A great deal – Not at all)
• In the last year have you done any of these types of training or education connected with your current job?	
❖ Received instruction or training from someone which took you away from your normal job	1-2 (Yes – No)
❖ Received instruction whilst performing your normal job	1-2 (Yes – No)
❖ Done some other work-related training	1-2 (Yes – No)
• Over the last year in your current job, on how many separate days have you done each of the specified training or educations?	[Numeric]
• Does this training or education involve costs such as fees or the need to buy books or materials?	1-2 (Yes – No)
• Who pays these costs?	1-3 (Employing organisation, Self)
• Is this training or education undertaken in... ?	1-3 (Normal working time, your time, both)
• To what extent did/does that training or education:	
❖ Make you think harder about different ways of doing your job?	1-5 (A great deal – Not at all)
❖ Require following instructions or processes strictly?	1-5 (A great deal – Not at all)
❖ Need to be memorised by heart?	1-5 (A great deal – Not at all)
❖ Give you more independence in how you do your job?	1-5 (A great deal – Not at all)
• Would you say that this training or education has improved your skills…?	1-3 (A lot – Not at all)
• Are you able to make use of these skill improvements in your current job?	1-2 (Yes – No)
• How useful would these skill improvements be if you were to work for another employer in the same industry or service?	1-5 (Very useful – Not useful at all)
• Would these skill improvements be useful if you were to work for another employer in a quite different industry or service?	1-5 (Very useful – Not useful at all)
French Enquête Conditions Travail (2013)	1-2 (Yes – No)
• Can you learn new skills through your work?	

Note: * Slight change in the question format between years. Refer to original questionnaires for details.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

requires learning new things, while the ISSP has a question on whether "my job gives me a chance to improve my skills". The first type of question is more likely to cover informal learning, whereas the latter might also capture aspects related to formal learning.

Turning to the national surveys, the British Skills and Employment Survey 2012 covered training and learning opportunities extensively. Both formal and informal learning opportunities are explored comprehensively, as well as their quality and the types of learning gained (i.e. deep or more superficial learning); for instance, borrowing from the psychology of educational research, the survey asks whether learning makes respondents think harder about different ways of doing their job, requires following instructions or processes strictly, needs to be memorised by heart, and gives workers more independence in how they do their jobs – questions that measure the types of informal learning and training that facilitate work. The British survey also contains questions on the usefulness of the training received, asking workers whether the skills learnt are useful for their current job, for another job in the same industry and for another job in a different industry. The French *Enquête Conditions de Travail* contains only one general question on whether the job provides opportunities to learn new things, similar to the one used by the EWCS, ESS and British questions, but with a binary "Yes/No" answer scale.

The empirical analysis shows that country values of training incidence are strongly and positively correlated across the three surveys that include these types of questions. The ESS 2004 and EWCS 2005 questions on receipt of training have a correlation coefficient of 0.86 (Table 5.A.11). The ISSP 2005 items on receipt of training at work have correlation coefficients of 0.56, 0.69 and 0.68 when assessed with respect to the EWCS 2005 items on employer-provided training, on-the-job training and other forms of on-site training, respectively. The correlation coefficients between the ESS 2004 item on training incidence and the EWCS 2005 items on employer-provided training and on-the-job training are also positive and strong (0.86 and 0.69, respectively).

Unfortunately, it is not possible to assess the reliability of questions on the duration of the training received, as the EWCS asked about the duration of training only in 2005 while the ESS introduced a duration question in 2010. The cross-country correlations for questions on the quality of training, which are broadly similar between ESS 2010 and EWCS 2010, are only moderately strong, possibly as a result of using different criteria to assess this quality: while the ESS question asked about the usefulness of training in terms of transferrable skills, the EWCS questions focused on whether the training improved daily work and the security of the current job ($r = 0.36$). The correlation between this ESS question and the EWCS question on whether training makes one feel that employment prospects are better is stronger, with a coefficient of 0.55.

Finally, survey questions that ask about learning opportunities/requirements at work are strongly correlated across countries. Country scores based on the ISSP question on whether the job gives opportunities to improve one's skills has a correlation coefficient of 0.63 with the EWCS item on whether the job involves learning new things. These ESS and EWCS questions are also strongly and positively correlated with each other ($r = 0.67$ in 2004/5 and 0.57 in 2010). Since the specific EWCS questions on immediate work tasks enabling workplace learning have no equivalent in other surveys, no reliability check could be performed for this item.

Opportunities for career advancement

Opportunities for career advancement (item E.3 in Table 4.1) refer to whether or not the current job offers career prospects, either with the same employer (through promotions) or with a different one. This includes opportunities for promotion as well as gaining transferable job skills. So-called "dead-end" jobs, with poor prospects for career advancement, tend to cause psychological distress and lead to stress-related physiological ill-being.

Five out of the seven surveys covered in the OECD Inventory asked about career opportunities at work (Table 5.16). Four of these surveys (EWCS, ESS, ISSP and EQLS) have a direct question on whether the job held offers good prospects for career advancement, whereas the Gallup World Poll adopts an indirect approach, asking whether someone at work encourages one's professional development. The ISSP includes additional questions on the degree to which one is able to use past work experience and skills in the current job and whether the current job is helpful for a new job.

Opportunities for career advancement also feature in the two national surveys reviewed in this chapter (Table 5.16). The British Skills and Employment Survey asks respondents to evaluate their chances of getting a significant promotion in their current job within the next five years, with answers in the form of a probability between 0 and 1. The survey also contains a set of questions measuring fears of demotion at work, such as whether future changes to the job may give the respondent less of a say on how it is done, may make it more difficult to use one's skills and abilities, may reduce pay, or may imply a risk of being transferred to a less interesting job within the firm. The French *Enquête Conditions de Travail* includes two questions: the first, similar to the British one, asks respondents about their evaluations of a possible promotion in the near future, while the second enquires whether respondents have opportunities to develop their professional skills in their current jobs.

Table 5.16. **Survey questions on opportunity for career advancement**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• My job offers good prospects for career advancement (2010, 2005)	1-5 (Strongly agree – Strongly disagree)
European Social Survey	
• My opportunities for advancement are good (2004, 2010)	1-5 (Strongly agree – Strongly disagree)
International Social Survey Programme	
• My opportunities for advancement are high (2005, 1997, 1989)	1-5 (Never – Always)
• How much use of past work experience and skills (2005, 1997)	1-4 (Almost none – Almost all)
• How helpful is present work experience for new job (2005)	1-4 (Very helpful – Not helpful at all)
Gallup World Poll	
• Is there someone at work who encourages your development, or not? (2006, 2007, 2008)	1-2 (Yes – No)
European Quality of Life Survey	
• How much do you agree or disagree: My job offers good prospects for career advancement (2007, 2003)	1-5 (Strongly agree – Strongly disagree)
British Skills and Employment Survey (2012)	
• How high do you think your chances are of being given a significant promotion with your present organisation in the next five years?	1-5 (100%/ Definite – 0%/ No chance at all)
• How anxious are you about these situations affecting you at your work?	
❖ Future changes to my job that may give me less say over how it is done	1-4 (Very anxious – Not anxious at all)
❖ Future changes to my job that may make it more difficult to use my skills and abilities	1-4 (Very anxious – Not anxious at all)
❖ Future changes that may reduce my pay	1-4 (Very anxious – Not anxious at all)
❖ Being transferred to a less interesting job in the organisation	1-4 (Very anxious – Not anxious at all)
French Enquête Conditions Travail (2013)	1-4 (Strongly agree – Strongly disagree)
• In return for the efforts I make, I have satisfactory prospects for promotion	1-4 (Strongly agree – Strongly disagree)
• I have the opportunity to develop my professional expertise	

Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

The country rankings on the direct questions related to the prospects for career advancement are moderately correlated across international surveys in 2005 (with r = 0.75 between ESS 2004 and ISSP 2005, r = 0.56 between EWCS 2005 and ESS 2004, and r = 0.47 between EWCS 2005 and ISSP 2005, Table 5.A.12).

5.7. Intrinsic job aspects

The intrinsic aspects of work are aspects related to the opportunities for self-realisation that they may provide to workers, as well as the intrinsic rewards associated with the feeling of performing tasks that are useful to others or, simply, of a job well done. Jobs that provide workers with these non-pecuniary rewards are most likely to raise firms' performance and productivity and provide workers with resources that make them more resilient to stress and risks.

Opportunities for self-realisation

Opportunities for self-realisation (item F.1 in Table 4.1) refer to the extent to which workers are able to apply their own ideas at work and perform at their best. The application of one's own ideas enables people to contribute personally to work tasks and to shape the product of their work. This is an important aspect of job quality, because it enhances employees' well-being by increasing their motivation and engagement and by protecting them from psychological exhaustion and distress.

Two of the seven international surveys that are included in the OECD Inventory of Survey Questions on the Quality of the Working Environment contain questions on individuals' opportunity for self-realisation (Table 5.17). Among these, in 2005 the EWCS asked whether respondents have the opportunity to do what they do best, about how frequently they apply their own ideas at work, and whether they have the feeling of a job well done (in both 2005 and 2010). The 2010 wave also included an organisational-level question on whether the workplace motivates respondents to give their best job performance. The Gallup World Poll asks about the degree of self-realisation with three (binary) questions on whether or not respondents feel extremely productive, waste a lot of their time or have opportunities to do what they do best every day.

Table 5.17. **Survey questions on opportunities for self-realisation**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
● At work, you have the opportunity to do what you do best (2005)	1-5 (Strongly agree – Strongly disagree)
● The organisation I work for motivates me to give my best job performance (2010)	1-5 (Almost always – Almost never)
● You are able to apply your own ideas in your work (2010, 2005)	1-5 (Almost always – Almost never)
● Your job gives you the feeling of work well done (2010, 2005)	1-5 (Almost always – Almost never)
Gallup World Poll	
● In your current job, do you feel you are extremely productive, or not? (2011, 2012, 2013)	1-2 (Yes – No)
● At work, do you feel you have a lot of wasted time, or not? (2006, 2007)	1-2 (Yes – No)
● In your work, do you have an opportunity to do what you do best every day, or not? (2005, 2006, 2007, 2008)	1-2 (Yes – No)
British Skills and Employment Survey (2012)	
● In my current job, I have enough opportunity to use the knowledge and skills that I have	1-5 (Strongly agree – Strongly disagree)
French Enquête Conditions Travail (2013)	
● In the course of your work, how often do you feel the following?	
❖ The satisfaction of a job well done	1-4 (Always – Never)
❖ I have the opportunity to do things that I like	1-4 (Always – Never)

Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

Opportunities for self-realisation also feature in both of the national surveys reviewed in this chapter (Table 5.17). One question in the British Skills and Employment Survey asks respondents whether they have enough opportunities to use their knowledge and skills on their job (with a 1 to 5 agreement/ disagreement scale), while the French *Enquête Conditions de*

Travail contains two questions about how frequently respondents experience pride in a job well done and about opportunities to do the types of things that respondents value the most.

The correlations between country scores for questions measuring opportunities for self-realisation in the EWCS and Gallup World Poll are positive but weak (Table 5.A.13), suggesting that existing measures for this job characteristics are affected by the differences in question wording and survey methodology.

Intrinsic rewards

Intrinsic rewards (item F.2 in Table 4.1) refer to the extent to which workers find value and purpose in what they do, find their work useful for their clients or for society as a whole, and find it interesting irrespectively of how much they earn. Intrinsic rewards, even in the absence of monetary rewards, have a strong link with job satisfaction and employee well-being. Individuals whose jobs offer them intrinsic rewards are more likely to put in more work effort, which has a direct impact on productivity and promotes firm loyalty.

Work motivation is expected to fall with economic downturns, as people in these circumstances may attach greater important to the monetary benefits of work over its intrinsic value. As a result, workers may report a lower sense of usefulness of their work as labour-market conditions worsen. Additionally, in these cases the sense of the usefulness of work may no longer lead to greater work efforts and more loyalty to firms. Therefore, changes in this indicator should be interpreted while taking into account business cycles, and they should be measured through high-frequency statistics.

Questions on intrinsic rewards feature in four of the seven international surveys from the OECD Inventory, although with very different wording (Table 5.18). On the usefulness of the job, the EWSC asks respondents whether they feel that they are doing useful work, while the ISSP asks whether the job performed is useful to society and whether respondents can help other people in their job. The ESS uses a general question on the reasons why individuals put in effort at work, asking whether this is because work is perceived as useful for others. While the ISSP includes a question on whether one's job is interesting, the EQLS queries the same concept but with a negatively worded question: "How much do you agree/disagree with the statement: my work is dull and boring".

Both the British and French surveys reviewed in this chapter include questions on intrinsic rewards (Table 5.18). The British Skills and Employment Survey focuses on the organisational aspect, asking respondents whether they agree or disagree with the statements "This organisation really inspires the very best in me in the way of job performance" and "I am proud to be working for this organisation". The French *Enquête Conditions de Travail* uses a similar question, asking whether respondents feel proud to work in their firm. Other questions included in the survey are whether one receives the respect that they deserve considering the effort they put in, and whether respondents feel they do useful work for others.

Empirical analysis was possible only for the EWCS and ISSP in 2005 and for the EWCS and ESS in 2010. The cross-country correlations between the items on the usefulness of work are rather low (Table 5.A.13). The highest correlation is obtained when comparing the ISSP item on whether individuals feel that they help other people with the EWCS item on doing useful work ($r = 0.57$), whereas they are much lower for the "My job is useful to society" and "You have the feeling of doing useful work" questions. The mean country scores based on the ESS 2010 item on the job being useful to others also correlates weakly

Table 5.18. **Survey questions on intrinsic rewards**

Selected international and national surveys

Question wording and variable name	Answer scale
European Working Conditions Survey	
• You have the feeling of doing useful work (2010, 2005)	1-5 (Almost always – Almost never)
European Social Survey	
• The main reason I put effort into my work is: because my work is useful for other people (2010)	[Choose one]
• The second reason I put effort into my work is: because my work is useful for other people (2010)	[Choose one]
International Social Survey Programme	
• My job is interesting (2005, 1997, 1989)	1-5 (Strongly agree – Strongly disagree)
• In my job I can help other people (2005, 1997, 1989)	1-5 (Strongly agree – Strongly disagree)
• My job is useful to society (2005)	1-5 (Strongly agree – Strongly disagree)
European Quality of Life Survey	
• How much do you agree or disagree: My work is dull and boring (2007, 2003)	1-5 (Strongly agree – Strongly disagree)
British Skills and Employment Survey (2012)	
• To what extent do you agree that this organisation really inspires the very best in me in the way of job performance?	1-4 (Strongly agree – Strongly disagree)
• I am proud to be working for this organisation	1-4 (Strongly agree – Strongly disagree)
French Enquête Conditions Travail (2013)	
• In return for the efforts I make, I receive the respect and recognition that my work deserves	1-4 (Strongly agree – Strongly disagree)
• In the course of your work, how often do you feel the following?	
❖ I am proud to work for this company, organisation	1-4 (Always – Never)
❖ I feel that I am doing something which is useful for other people	1-4 (Always – Never)

Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

with the EWCS question. Intrinsic rewards seem to be affected heavily by the question wording, which is reflected in a low correlation even between survey items that measure the same intrinsic reward.

5.8. Conclusion

This chapter has reviewed evidence on the six dimensions of the quality of the working environment presented in Chapter 4and identified by the meta-review carried out for the OECD Inventory of Survey Questions on the Quality of the Working Environment. Beyond describing these key dimensions of the work environment and the job characteristics included in each of them, the chapter has pursued two main goals.

First, it has presented how each job characteristic has been measured, drawing on seven international surveys that contain questions on the work environment and two well-established national surveys specifically designed to investigate working conditions in more depth. This review has shown that while these surveys provide good coverage of some aspects of the quality of the working environment, other aspects are less well covered. For example, all seven international surveys include questions on physical risk factors and work intensity, but only two of them (EWCS and Gallup World Poll) have questions on the opportunities that a job provides for workers' self-realisation and on the quality of the management practices within firms. The chapter has also highlighted the extent to which measures of the same job characteristics are comparable across surveys, describing differences in both question wording and response scales, and stressed that comparative information on several aspects of the working environment (e.g. physical demands, task discretion and autonomy, training and learning opportunities at work, intrinsic rewards of one's job, the work-life balance, unsociable work hours and the flexibility of working hours) is currently available only for European and a few other OECD countries.

Second, the chapter has presented an empirical analysis of the extent to which country scores for different job characteristics are consistent across surveys. Key results from this empirical analysis are summarised in Table 5.19, which shows, for each job characteristic, the items that exhibit the strongest convergent validity across surveys and waves, and which therefore constitute good candidates to be included in future surveys on the quality of the working environment. This empirical analysis of cross-country correlations between different survey questions shows that:

- Most of the job characteristics discussed in the chapter have been measured in fairly reliable ways across surveys. More specifically, survey questions on (aspects of) physical risk factors, training opportunities, perceptions of job insecurity, social support at work, opportunities for career advancement and for self-realisation, task discretion and autonomy, and the flexibility of working hours produced similar values for the countries investigated in different surveys. Results for other job characteristics, such as intrinsic rewards, are more sensitive to the question wording (e.g. negative or positive wording) and the response scales used.
- There is good evidence of convergent validity for a number of items. Regarding job demands, this is the case of data on working in noisy or polluted environments, carrying heavy loads, experiencing stress and worry due to work and working during weekends as well as the hours worked per week and the perceived risk of losing one's job in the short term. Regarding job resources, this concerns data on receiving assistance from co-workers, the ability to organise the order of tasks, the involvement of staff in work organisation, the ability to decide about breaks or holidays, the availability of training, learning new things on the job, and the existence of good opportunities for career advancement.

Table 5.19. **Survey questions with strongest evidence on convergent validity**

International surveys on the quality of the working environment

Dimensions	Job characteristics	
	Job demands	Job resources
A. Physical and social environment	• **A.1:** Physical risk factors: noise, air pollution • **A.2:** Physical demands: carrying heavy loads • **A.3:** Intimidation and discrimination at the workplace: inconclusive	• **A.4:** Social support at work: assistance from co-workers
B. Job Tasks	• **B.1:** Work intensity: hours worked per week • **B.2:** Emotional demands: stress and worry	• **B.3:** Task discretion and autonomy: independence, ability to choose tasks order
C. Organisational characteristics		• **C.1:** Organisation participation and workplace voice: involvement of staff in work organisation during meetings • **C.2:** Good managerial practices: inconclusive • **C.3:** Task clarity and performance feedback: inconclusive
D. Worktime arrangements	• **D.1** Unsocial working schedule: working at weekends	• **D.2** Flexibility of working hours: deciding about breaks or holidays
E. Job prospects	• **E.1:** Perceptions of job insecurity: prospect of losing job, job-to-job mobility	• **E.2:** Training and learning opportunities: availability or take-up of training, learning new things • **E.3:** Opportunity for career advancement: good opportunities
F. Intrinsic aspects		• **F.1:** Opportunities for self-realisation: inconclusive • **F.2:** Intrinsic rewards: inconclusive

Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

However, this empirical analysis is limited by the fact that differences in question wording may lower comparability across surveys, implying that some important aspects may

be absent from Table 5.19 because of low comparability across survey questions. In other words, the absence of evidence about convergent validity for some items of the quality of the working environment does not imply evidence against their convergent validity. Rather, it underlines existing data gaps and the need for future research.

Notes

1. The OECD Inventory of Survey Questions on the Quality of the Working Environment can be accessed via *https://stats.oecd.org/Index.aspx?DataSetCode=JOBQ_I*.
2. The EU-Labour Force Surveys ad hoc modules reviewed in the inventory include the 2013 module on "Accidents at work and other work-related health problems", the 2010 module on "Reconciliation between work and family life", the 2007 module on "Work-related accidents, health problems and hazardous exposure", the 2005 module on "Reconciliation between work and family life", the 2004 module on "Work organisation and working-time arrangements", the 2001 module on "Lifelong learning", the 2001 module on "Length and patterns of working time" and the 1999 module on "Accidents at work and occupational diseases". These ad hoc modules are based on household samples of persons aged 15 and over.
3. Questionnaire booklets for each of these seven surveys are reviewed in the Inventory, with questions classified according to the job characteristic that they measure.
4. More concrete recommendations are presented in Chapter 6, alongside model questionnaires.
5. The number of countries common to the Gallup World Poll and the other surveys depends on the job characteristic considered, due to the modular aspect of the Gallup World Poll, which asks some questions only in some countries.
6. A fixed value of 0.60, rather than a statistical significance level, is used in the analysis as a threshold, as it allows comparing correlations across items. Because of the sample size of various surveys, correlation coefficients above 0.60 are also statistically significant at least at the $p < 0.01$ level.
7. For both survey questions, the cut-offs used to define the bottom and the top groups are chosen so as to maximise the cross-country correlation.
8. An analysis of cross-country correlations is not possible for this aspect of the working environment, as it is not covered by the surveys reviewed in this chapter (i.e. the ISSP, ESS and Gallup World Poll).
9. The ESS question is as follows: "Regardless of your basic or contracted hours, how many hours do/did you normally work a week (in your main job), including any paid or unpaid overtime?"
10. The Gallup World Poll asks questions on emotional demands in less than 10 countries, hence is not included in the correlation analysis.
11. The correlation with respect to the EWCS item "Able to choose/change your order of tasks" is 0.79 in 2004, and 0.65 in 2010; that with the EWCS item "Able to choose/change your methods of work" is 0.63 in 2004 and 0.85 in 2010; that with EWCS item "You have influence over the choice of your working partners" is 0.63 in 2004 and 0.78 in 2010.
12. Note that, since there are not a sufficient number of common countries between these surveys (i.e. more than 10), a correlation analysis was not performed.
13. Since there are not a sufficient number of common countries between these surveys (i.e. more than 10), a correlation analysis was not performed.
14. EU-LFS core surveys contain a question on training received in the previous 4 weeks, asked yearly.
15. Note that the ISSP question asks about both training receipt and training quality, with the wording "have you had any training to improve your skills".

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ANNEX 5.A

Correlations of country scores on various job characteristics between different non-offical surveys

Table 5.A.1. **Cross-country correlations regarding physical risks at work between non-official surveys**

	Question	Correlations		
		Mean	Bottom	Top
Physical risk factors				
ISSP 2005	EWCS 2005			
How often do you work in dangerous conditions?	A. Do you think your health or safety is at risk because of your work?	0.45	..	..
	B. Are you exposed at work to vibrations from hand tools, machinery, etc.?	**0.64**	**0.78**	0.55
	C. Are you exposed at work to noise so loud that you would have to raise your voice?	**0.82**	**0.83**	**0.78**
	D. Are you exposed at work to handling or being in direct contact with materials which can be infectious?	0.16	0.26	0.29
	E. Are you exposed at work to high temperatures which make you perspire even when not working?	0.28	0.36	0.32
	F. Are you exposed at work to tobacco smoke from other people?	0.36	0.53	0.27
	G. Are you exposed at work to low temperatures whether indoors or outdoors?	0.31	0.30	0.43
	H. Are you exposed at work to breathing in smoke, fumes, powder or dust etc?	**0.62**	**0.81**	**0.63**
	I. Are you exposed at work to radiation such as X rays, radioactive radiation?	0.23	0.46	0.26
	J. Are you exposed at work to breathing in vapours such as solvents and thinners?	0.58	**0.65**	**0.60**
	K. Are you exposed at work to handling or being in skin contact with chemical products or substances?	**0.61**	**0.70**	0.58
ESS 2004				
My health or safety is at risk because of my work	A. Do you think your health or safety is at risk because of your work?	0.55	..	..
	B. Are you exposed at work to vibrations from hand tools, machinery, etc.?	0.35	0.33	0.36
	C. Are you exposed at work to noise so loud that you would have to raise your voice?	**0.61**	**0.64**	0.47
	D. Are you exposed at work to handling or being in direct contact with materials which can be infectious?	-0.23	0.08	-0.15
	E. Are you exposed at work to high temperatures which make you perspire even when not working?	0.33	0.51	0.15
	F. Are you exposed at work to tobacco smoke from other people?	0.09	0.39	0.00
	G. Are you exposed at work to low temperatures whether indoors or outdoors?	0.27	0.42	0.16
	H. Are you exposed at work to breathing in smoke, fumes, powder or dust etc?	0.55	0.56	0.51
	I. Are you exposed at work to radiation such as X rays, radioactive radiation?	0.06	0.13	0.10
	J. Are you exposed at work to breathing in vapours such as solvents and thinners?	0.42	0.38	0.39
	K. Are you exposed at work to handling or being in skin contact with chemical products or substances?	0.35	0.32	0.42
ESS 2004	ISSP 2005			
My health or safety is at risk because of my work	How often do you work in dangerous conditions?	0.47	-0.05	0.54
ESS 2010	EWCS 2010			
My health or safety is at risk because of my work	A. Are you exposed at work to low temperatures whether indoors or outdoors?	0.24	0.30	0.30
	B. Are you exposed at work to breathing in smoke, fumes, powder or dust etc?	**0.68**	0.56	0.81
	C. Are you exposed at work to breathing in vapours such as solvents and thinners?	0.50	0.50	0.54
	D. Are you exposed at work to handling or being in skin contact with chemical products or substances?	0.35	0.40	0.33
	E. Do you think your health or safety is at risk because of your work?	-0.07	..	..
	F. Are you exposed at work to vibrations from hand tools, machinery, etc.?	0.33	0.48	0.35
	G. Are you exposed at work to handling or being in direct contact with materials which can be infectious?	-0.03	0.09	0.07
	H. Are you exposed at work to noise so loud that you would have to raise your voice?	0.57	**0.78**	0.58
	I. Are you exposed at work to high temperatures which make you perspire even when not working?	-0.01	0.30	-0.08
	J. Are you exposed at work to tobacco smoke from other people?	0.42	0.42	0.45

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

StatLink http://dx.doi.org/10.1787/888933606357

Table 5.A.2. **Cross-country correlations regarding physical demands at work between different non-official surveys**

	Question	Correlations		
		Mean	Bottom	Top
Physical demands				
ISSP 2005	EWCS 2005			
How often applies: do hard physical work?	A. Does your main paid job involve tiring or painful positions?	0.28	0.27	0.32
	B. Does your main paid job involve lifting or moving people?	-0.04	0.03	0.20
	C. Does your main paid job involve standing or walking?	0.55	0.56	0.45
	D. Does your main paid job involve carrying or moving heavy loads?	**0.71**	**0.65**	**0.77**
	E. Does your main paid job involve repetitive hand or arm movements?	0.33	0.24	0.45
How often: come home from work exhausted?	A. Does your main paid job involve tiring or painful positions?	0.39	0.50	0.37
	B. Does your main paid job involve lifting or moving people?	-0.42	-0.16	0.02
	C. Does your main paid job involve standing or walking?	0.47	**0.62**	0.23
	D. Does your main paid job involve carrying or moving heavy loads?	0.44	**0.67**	0.44
	E. Does your main paid job involve repetitive hand or arm movements?	0.35	0.43	0.50

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

StatLink http://dx.doi.org/10.1787/888933606376

Table 5.A.3. **Cross-country correlations regarding social support at work between different non-official surveys**

	Question	Correlations		
		Mean	Bottom	Top
Social support at work				
ISSP 2005	EWCS 2005			
Relations at your workplace between management and employees	A. You can get assistance from colleagues if you ask for it.	0.06	0.20	-0.07
	B. You can get assistance from your superiors/boss if you ask for it.	0.21	0.31	0.15
	C. You can get external assistance if you ask for it.	-0.08	0.10	-0.02
	D. I feel myself 'at home' in this organisation.	-0.36	-0.35	0.15
	E. I have very good friends at work.	-0.30	-0.24	0.18
	F. Discussed work-related problems with your boss.	0.07	..	..
	G. Discussed work-related problems with an employee representative.	0.11	..	..
Relations at your workplace between workmates/ colleague	A. You can get assistance from colleagues if you ask for it.	0.34	0.37	0.00
	B. You can get assistance from your superiors/boss if you ask for it.	0.32	0.37	0.09
	C. You can get external assistance if you ask for it.	0.25	0.41	0.20
	D. I feel myself 'at home' in this organisation.	-0.51	-0.42	0.10
	E. I have very good friends at work.	-0.43	-0.21	0.12
	F. Discussed work-related problems with your boss.	0.15	..	..
	G. Discussed work-related problems with an employee representative.	0.15	..	..
ESS 2004	EWCS 2005			
I can get support and help from my co-workers when needed	**A. You can get assistance from colleagues if you ask for it.**	**0.64**	**0.62**	0.59
	B. You can get assistance from your superiors/boss if you ask for it.	**0.61**	0.53	**0.62**
	C. You can get external assistance if you ask for it.	0.57	0.56	0.55
	D. I feel myself 'at home' in this organisation.	-0.75	-0.47	-0.65
	E. I have very good friends at work.	-0.47	-0.26	-0.25
	F. Discussed work-related problems with your boss.	0.50	..	..
	G. Discussed work-related problems with an employee representative.	0.37	..	..
Gallup WP				
Is there someone at work who encourages your development, or not?	A. You can get assistance from colleagues if you ask for it.	0.46	..	..
	B. You can get assistance from your superiors/boss if you ask for it.	0.32	..	..
	C. You can get external assistance if you ask for it.	0.43	..	..
	D. I feel myself 'at home' in this organisation.	-0.72	..	..
	E. I have very good friends at work.	-0.25	..	..
	F. Discussed work-related problems with your boss.	0.02	..	..
	G. Discussed work-related problems with an employee representative.	0.35	..	..
ESS 2004	ISSP 2005			
I can get support and help from my co-workers when needed	A. Relations at your workplace between management and employees.	0.23	0.42	0.40
	B. Relations at your workplace between workmates/colleagues.	0.55	0.57	0.33
Gallup WP	ISSP 2005			
Is there someone at work who encourages your development, or not?	A. Relations at your workplace between management and employees.	0.06	..	..
	B. Relations at your workplace between workmates/colleagues.	0.37	..	..
Gallup WP	ESS 2004			
Is there someone at work who encourages your development, or not?	**I can get support and help from my co-workers when needed**	**0.65**	..	..
ESS 2010	EWCS 2010			
I can get support and help from my co-workers when needed	A. Your colleagues help and support you.	0.29	0.34	**0.61**
	B. Your manager helps and supports you.	0.00	0.05	0.39
	C. I feel myself 'at home' in this organisation.	-0.52	-0.40	-0.39
	D. I have very good friends at work.	-0.16	0.06	-0.14

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

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Table 5.A.4. **Cross-country correlations regarding work intensity between different non-official surveys**

	Questions	Correlations		
		Mean	Bottom	Top
Work intensity				
ISSP 2005	EWCS 2005			
How many hours, on average, do you usually work for pay in a normal week?	**A. How many hours do you usually work per week in your main paid job?**	**0.87**	..	..
	B. And how many times a month do you work more than 10 hours a day?	0.57	..	..
	C. Do you have enough time to get the job done?	-0.49	..	..
	D. Does your job involve working at very high speed?	0.04	..	..
	E. Does your job involve working to tight deadlines?	0.18	..	..
How often do you come home from work exhausted?	A. How many hours do you usually work per week in your main paid job?	0.58	..	..
	B. And how many times a month do you work more than 10 hours a day?	0.48	..	..
	C. Do you have enough time to get the job done?	-0.70	-0.51	0.13
	D. Does your job involve working to tight deadlines?	-0.10	-0.20	0.16
	E. Does your job involve working at very high speed?	-0.29	-0.09	0.26
ESS 2004				
Regardless of your basic or contracted hours, how many hours do/did you normally work a week (in your main job), including any paid or unpaid overtime?	**A. How many hours do you usually work per week in your main paid job?**	**0.93**	..	..
	B. And how many times a month do you work more than 10 hours a day?	**0.73**	..	..
	C. Do you have enough time to get the job done?	0.34	..	..
	D. Does your job involve working to tight deadlines?	0.53	..	..
	E. Does your job involve working at very high speed?	0.33	..	..
My job requires that I work very hard	A. How many hours do you usually work per week in your main paid job?	0.33	..	..
	B. And how many times a month do you work more than 10 hours a day?	0.38	..	..
	C. Do you have enough time to get the job done?	-0.08	0.06	0.15
	D. Does your job involve working to tight deadlines?	-0.04	0.21	0.20
	E. Does your job involve working at very high speed?	0.09	0.38	0.35
I never seem to have enough time to get everything done in my job	A. How many hours do you usually work per week in your main paid job?	-0.46	..	..
	B. And how many times a month do you work more than 10 hours a day?	-0.33	..	..
	C. Do you have enough time to get the job done?	0.01	0.18	0.21
	D. Does your job involve working to tight deadlines?	-0.08	-0.05	0.16
	E. Does your job involve working at very high speed?	-0.22	0.01	0.29
How often do you feel too tired after work to enjoy the things you would like to do at home?	A. How many hours do you usually work per week in your main paid job?	0.38	..	..
	B. And how many times a month do you work more than 10 hours a day?	0.41	..	..
	C. Do you have enough time to get the job done?	0.16	0.32	0.44
	D. Does your job involve working to tight deadlines?	0.04	0.09	0.35
	E. Does your job involve working at very high speed?	0.02	0.26	0.43
ESS 2010	EWCS 2010			
Regardless of your basic or contracted hours, how many hours do/did you normally work a week (in your main job), including any paid or unpaid overtime?	**A. How many hours do you usually work per week in your main paid job?**	**0.87**	..	..
	B. And how many times a month do you work more than 10 hours a day?	0.18	..	..
	C. Do you have enough time to get the job done?	-0.09	..	..
	D. Does your job involve working to tight deadlines?	-0.37	..	..
	E. Does your job involve working at very high speed?	-0.32	..	..
My job requires that I work very hard	A. How many hours do you usually work per week in your main paid job?	0.36	..	..
	B. And how many times a month do you work more than 10 hours a day?	0.29	..	..
	C. Do you have enough time to get the job done?	-0.24	0.26	-0.21
	D. Does your job involve working to tight deadlines?	-0.35	-0.08	-0.08
	E. Does your job involve working at very high speed?	-0.10	0.34	-0.13
I never seem to have enough time to get everything done in my job	A. How many hours do you usually work per week in your main paid job?	-0.05	..	..
	B. And how many times a month do you work more than 10 hours a day?	0.15	..	..
	C. Do you have enough time to get the job done?	0.39	**0.62**	0.36
	D. Does your job involve working to tight deadlines?	0.20	0.07	0.27
	E. Does your job involve working at very high speed?	0.21	0.31	0.17

Table 5.A.4. **Cross-country correlations regarding work intensity between different non-official surveys** *(cont.)*

Questions		Correlations		
		Mean	Bottom	Top
How often do you feel too tired after work to enjoy the things you would like to do at home?	A. How many hours do you usually work per week in your main paid job?	0.47	..	..
	B. And how many times a month do you work more than 10 hours a day?	0.33	..	..
	C. Do you have enough time to get the job done?	0.05	0.14	0.12
	D. Does your job involve working to tight deadlines?	-0.13	0.31	-0.09
	E. Does your job involve working at very high speed?	-0.20	0.26	-0.09
ISSP 2005	ESS 2004			
How many hours, on average, do you usually work for pay in a normal week?	**A. Regardless of your basic or contracted hours, how many hours do/did you normally work a week (in your main job), including any paid or unpaid overtime?**	**0.85**	..	..
	B. My job requires that I work very hard	0.30	..	..
	C. I never seem to have enough time to get everything done in my job	-0.35	..	..
	D. How often do you feel too tired after work to enjoy the things you would like to do at home?	0.22	..	..
How often do you come home from work exhausted?	A. Regardless of your basic or contracted hours, how many hours do/did you normally work a week (in your main job), including any paid or unpaid overtime?	0.52	..	..
	B. My job requires that I work very hard	0.50	**0.73**	0.24
	C. I never seem to have enough time to get everything done in my job	-0.11	0.00	0.06
	D. How often do you feel too tired after work to enjoy the things you would like to do at home?	-0.14	0.17	0.49

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

StatLink http://dx.doi.org/10.1787/888933606414

Table 5.A.5. **Cross-country correlations regarding emotional demands at work between different non-official surveys**

Questions		Correlations		
		Mean	Bottom	Top
Emotional Demands				
EWCS 2005	ISSP 2005			
You find your job emotionally demanding?	How often do you find your work stressful?	0.07	0.05	0.30
ISSP 2005	ESS 2004			
How often do you find your work stressful?	How often do you keep worrying about work problems when you are not working?	0.57	0.47	0.73
EWCS 2005				
You find your job emotionally demanding?	How often do you keep worrying about work problems when you are not working?	0.07	0.01	0.44
ESS 2010	EWCS 2010			
How often do you keep worrying about work problems when you are not working?	A. Does your main paid job involve handling angry clients?	-0.01	0.45	0.05
	B. Your job involves tasks that are in conflict with your personal values.	0.12	0.34	0.28
	C. You get emotionally involved in your work.	0.32	0.36	0.47
	D. Your job requires that you hide your feelings.	0.14	0.42	0.25
	E. You experience stress in your work.	-0.19	0.21	0.28

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

StatLink http://dx.doi.org/10.1787/888933606433

Table 5.A.6. **Cross-country correlations regarding task discretion and autonomy at work between different non-official surveys**

	Question	Correlations		
		Mean	Bottom	Top
Task discretion and autonomy				
ISSP 2005	EWCS 2005			
I can work independently	**A. Are you able, or not, to choose or change your order of tasks?**	**0.67**	..	..
	B. Are you able, or not, to choose or change your methods of work?	**0.69**	..	..
	C. Are you able, or not, to choose or change your speed or rate of work?	0.45	..	..
	D. You have influence over the choice of your working partners.	0.37	0.33	0.48
I am free/not free to decide how my daily work is organised	**A. Are you able, or not, to choose or change your order of tasks?**	**0.75**	..	..
	B. Are you able, or not, to choose or change your methods of work?	**0.76**	..	..
	C. Are you able, or not, to choose or change your speed or rate of work?	0.38	..	..
	D. You have influence over the choice of your working partners.	0.41	0.27	0.52
ESS 2004	EWCS 2005			
How much the management at your work allows you to decide how your own daily work is organised?	**A. Are you able, or not, to choose or change your order of tasks?**	**0.85**	..	..
	B. Are you able, or not, to choose or change your methods of work?	**0.74**	..	..
	C. Are you able, or not, to choose or change your speed or rate of work?	0.34	..	..
	D. You have influence over the choice of your working partners.	**0.69**	**0.72**	**0.66**
How much the management at your work allows you to choose or change your pace of work?	**A. Are you able, or not, to choose or change your order of tasks?**	**0.74**	..	..
	B. Are you able, or not, to choose or change your methods of work?	0.59	..	..
	C. Are you able, or not, to choose/change your speed/rate of work?	0.38	..	..
	D. You have influence over the choice of your working partners.	0.56	**0.62**	0.54
ESS 2010	EWCS 2010			
How much the management at your work allows you to decide how your own daily work is organised?	**A. Are you able, or not, to choose or change your order of tasks?**	**0.82**	..	..
	B. Are you able, or not, to choose or change your methods of work?	**0.84**	..	..
	C. Are you able, or not, to choose or change your speed or rate of work?	0.39	..	..
	D. You have influence over the choice of your working partners.	0.54	0.46	**0.65**
How much the management at your work allows you to choose or change your pace of work?	**A. Are you able, or not, to choose or change your order of tasks?**	**0.61**	..	..
	B. Are you able, or not, to choose or change your methods of work?	**0.84**	..	..
	C. Are you able, or not, to choose or change your speed or rate of work?	**0.91**	..	..
	D. You have influence over the choice of your working partners.	0.55	0.50	**0.78**
ESS 2004	ISSP 2005			
How much the management at your work allows you to decide how your own daily work is organised?	A. I can work independently	0.58	**0.68**	0.53
	B. I am free/not free to decide how my daily work is organised.	**0.71**	0.39	**0.69**
How much the management at your work allows/allowed you to choose or change your pace of work?	**A. I can work independently**	**0.68**	**0.79**	**0.60**
	B. I am free/not free to decide how my daily work is organised.	**0.67**	0.33	**0.71**

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

StatLink http://dx.doi.org/10.1787/888933606452

Table 5.A.7. **Cross-country correlations regarding organisational participation and workplace voice between different non-official surveys**

	Questions	Correlations		
		Mean	Bottom	Top
Organisational participation and workplace voice				
ESS 2004	EWCS 2005			
Management at your work allows you to influence policy decisions about activities of organisation	A. You have influence over the choice of your working partners.	0.58	0.51	**0.61**
	B. Over the past 12 months, have you been consulted about changes in the organisation of work and/or your working conditions?	0.27	..	..
	C. Over the past 12 months, have you discussed work-related problems with an employee representative?	0.33	..	..
Gallup WP				
At work, do your opinions seem to count, or not?	A. You have influence over the choice of your working partners.	0.59	..	..
	B. Over the past 12 months, have you been consulted about changes in the organisation of work and/or your working conditions?	0.15	..	..
	C. Over the past 12 months, have you discussed work-related problems with an employee representative?	0.25	..	..
ESS 2004	Gallup WP			
Management at your work allows you to influence policy decisions about activities of organisation	At work, do your opinions seem to count, or not?	0.5	..	..
ESS 2010	EWCS 2010			
At your workplace are there regular meetings between representatives of the employer and employees, in which working conditions and practices can be discussed?	A. You have a say in the choice of your working partners.	0.27	..	..
	B. You are consulted before targets for your work are set.	0.52	..	..
	C. You can influence decisions that are important for your work.	**0.62**	..	..
	D. You are involved in improving the work organisation or work processes of your department or organisation.	**0.68**	..	..
	E. Does management hold meetings in which you can express your views about what is happening in the organisation?	**0.77**	..	..
Management at your work allows you to influence policy decisions about activities of organisation	A. You have a say in the choice of your working partners.	0.53	0.37	**0.65**
	B. You are consulted before targets for your work are set.	0.24	0.28	0.23
	C. You are involved in improving the work organisation or work processes of your department or organisation.	**0.69**	**0.64**	**0.75**
	D. You can influence decisions that are important for your work.	**0.69**	**0.69**	**0.70**
	E. At your workplace, does management hold meetings in which you can express your views about what is happening in the organisation?	**0.62**	..	..
How much influence would you say these discussions generally have on decisions that affect your working conditions and practices?	A. You have a say in the choice of your working partners.	0.08	0.04	0.27
	B. You are consulted before targets for your work are set.	0.25	0.34	0.56
	C. You can influence decisions that are important for your work.	0.34	0.52	0.47
	D. You are involved in improving the work organisation or work processes of your department or organisation.	0.05	0.16	0.34
	E. Does management hold meetings in which you can express your views about what is happening in the organisation?	0.48	..	..

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

StatLink http://dx.doi.org/10.1787/888933606471

Table 5.A.8. **Cross-country correlations regarding unsocial work schedule between different non-official surveys**

	Questions	Correlations		
		Mean	Bottom	Top
Unsocial working schedule				
ESS 2004	EWCS 2005			
How often does your work involve working evenings or nights?	A. How many times a month do you work at night, for at least 2 hours between 10.00 pm and 05.00 am?	0.24	..	..
	B. How many times a month do you work in the evening for at least 2 hours between 6 pm – 10 pm?	0.33	..	..
	C. How many times a month do you work on Sundays?	0.46	..	..
	D. How many times a month do you work on Saturdays?	0.22	..	..
	E. How many times a month do you work more than 10 hours a day?	0.25	..	..
How often does your work involve having to work overtime at short notice?	A. How many times a month do you work at night, for at least 2 hours between 10.00 pm and 05.00 am?	0.04	..	..
	B. How many times a month do you work in the evening for at least 2 hours between 6 pm – 10 pm?	-0.01	..	..
	C. How many times a month do you work on Sundays?	-0.27	..	..
	D. How many times a month do you work on Saturdays?	0.14	..	..
	E. How many times a month do you work more than 10 hours a day?	-0.24	..	..
How often does your work involve working at weekends?	**A. How many times a month do you work at night, for at least 2 hours between 10.00 pm and 05.00 am?**	**0.67**	..	..
	B. How many times a month do you work in the evening for at least 2 hours between 6 pm – 10 pm?	**0.60**	..	..
	C. How many times a month do you work on Sundays?	**0.74**	..	..
	D. How many times a month do you work on Saturdays?	**0.76**	..	..
	E. How many times a month do you work more than 10 hours a day?	**0.78**	..	..
ESS 2010	EWCS 2010			
How often does your work involve working evenings or nights?	A. How many times a month do you work at night, for at least 2 hours between 10.00 pm and 05.00 am?	0.33	..	..
	B. How many times a month do you work in the evening for at least 2 hours between 6 pm – 10 pm?	0.20	..	..
	C. How many times a month do you work on Sundays?	0.33	..	..
	D. How many times a month do you work on Saturdays?	0.46	..	..
	E. How many times a month do you work more than 10 hours a day?	0.33	..	..
How often does your work involve having to work overtime at short notice?	A. How many times a month do you work at night, for at least 2 hours between 10.00 pm and 05.00 am?	-0.16	..	..
	B. How many times a month do you work in the evening for at least 2 hours between 6 pm – 10 pm?	-0.09	..	..
	C. How many times a month do you work on Sundays?	0.2	..	..
	D. How many times a month do you work on Saturdays?	0.31	..	..
	E. How many times a month do you work more than 10 hours a day?	0.46	..	..
How often does your work involve working at weekends?	A. How many times a month do you work at night, for at least 2 hours between 10.00 pm and 05.00 am?	0.34	..	..
	B. How many times a month do you work in the evening for at least 2 hours between 6 pm – 10 pm?	0.40	..	..
	C. How many times a month do you work on Sundays?	0.51	..	..
	D. How many times a month do you work on Saturdays?	**0.77**	..	..
	E. How many times a month do you work more than 10 hours a day?	0.48	..	..

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

StatLink http://dx.doi.org/10.1787/888933606490

Table 5.A.9. **Cross-country correlations regarding flexibility of working hours between different non-official surveys**

	Questions	Correlations		
		Mean	Bottom	Top
Flexibility of working hours				
ISSP 2005	EWCS 2005			
Starting/finishing times are decided by my employer/ I am entirely free to decide when I start/finish work	**A. You can take your break when you wish.**	**0.68**	0.32	**0.62**
	B. You are free to decide when to take holidays or days off.	**0.68**	0.44	**0.66**
	C. Does your main paid job involve Teleworking from home with a PC?	0.40	0.00	**0.63**
	D. Does your main job include working at home?	0.54	-0.04	**0.71**
	E. Your working time arrangements set entirely by employer/entirely by self.	**0.81**	0.35	**0.95**
	F. Do changes to your work schedule occur regularly? (IF YES) How long before are you informed about these changes?	**0.68**	0.39	0.67
How difficult would it be for you to take an hour or two off during working hours, to take care of personal or family matters?	**A. You can take your break when you wish.**	**0.69**	**0.63**	**0.74**
	B. You are free to decide when to take holidays or days off.	**0.60**	**0.63**	0.48
	C. Does your main paid job involve Teleworking from home with a PC?	0.07	-0.12	0.21
	D. Does your main job include working at home?	0.21	-0.08	0.30
	E. Your working time arrangements set entirely by employer/entirely by self.	**0.60**	**0.72**	**0.60**
	F. Do changes to your work schedule occur regularly? (IF YES) How long before are you informed about these changes?	0.46	0.42	0.36
ESS 2004				
I can decide the time I start and finish work	A. You can take your break when you wish.	0.57	**0.61**	0.45
	B. You are free to decide when to take holidays or days off.	0.49	0.53	0.47
	C. Does your main paid job involve Teleworking from home with a PC?	0.25	0.02	0.25
	D. Does your main job include working at home?	0.47	0.24	0.44
	E. Your working time arrangements set entirely by employer/entirely by self.	0.52	**0.62**	**0.64**
	F. Do changes to your work schedule occur regularly? (IF YES) How long before are you informed about these changes?	0.23	0.44	0.20
	ISSP 2005			
I can decide the time I start and finish work	**A. Starting and finishing times are decided by my employer/ I am entirely free to decide when I start and finish work**	**0.65**	0.31	0.64
	B. How difficult would it be for you to take an hour or two off during working hours, to take care of personal or family matters?	0.17	0.13	0.01
ESS 2010	EWCS 2010			
I can decide the time I start and finish work	A. You can take your break when you wish.	0.54	0.59	0.32
	B. Your working time arrangements set entirely by employer/entirely by self.	**0.71**	**0.75**	**0.87**
	C. Do changes to your work schedule occur regularly? (IF YES) How long before are you informed about these changes?	**0.71**	**0.75**	**0.67**

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

StatLink http://dx.doi.org/10.1787/888933606509

Table 5.A.10. **Cross-country correlations regarding job insecurity between different non-official surveys**

	Questions	Correlations		
		Mean	Bottom	Top
Job insecurity				
EWCS 2005	ISSP 2005			
I might lose my job in the next 6 months	A. My job is secure.	-0.43	-0.24	-0.51
	B. To what extent, if at all, do you worry about the possibility of losing your job?	**0.68**	0.43	**0.82**
ESS 2004				
I might lose my job in the next 6 months	**A. My job is secure.**	**-0.70**	-0.35	-0.70
	B. How difficult or easy would it be for you to get a similar or better job with another employer if you wanted?	**0.67**	**0.61**	**0.74**
	C. How difficult or easy would it be for your employer to replace you if you left?	-0.40	0.05	-0.25
ISSP 2005				
My job is secure	A. My job is secure.	0.55	**0.65**	0.47
	B. How difficult or easy would it be for you to get a similar or better job with another employer if you wanted?	0.45	0.19	0.53
	C. How difficult or easy would it be for your employer to replace you if you left?	-0.31	0.16	-0.07
To what extent, if at all, do you worry about the possibility of losing your job?	**A. My job is secure.**	**-0.68**	-0.36	-0.81
	B. How difficult or easy would it be for you to get a similar or better job with another employer if you wanted?	**0.65**	0.35	**0.79**
	C. How difficult or easy would it be for your employer to replace you if you left?	-0.36	0.18	-0.3
EWCS 2010	ESS 2010			
I might lose my job in the next 6 months	A. My job is secure.	-0.39	0.00	-0.49
	B. I may have to move to a less interesting job in my organisation in the next 12 months.	-0.47	-0.28	-0.18
	C. How difficult or easy would it be for your employer to replace you if you left?	0.59	0.48	**0.70**
	D. How difficult or easy would it be for you to get a similar or better job with another employer if you wanted?	-0.35	-0.05	-0.18
How difficult or easy would it be for you to get a similar or better job with another employer if you had to leave your current job?	A. My job is secure.	0.59	0.47	0.53
	B. I may have to move to a less interesting job in my organisation in the next 12 months.	-0.36	-0.32	-0.07
	C. How difficult or easy would it be for your employer to replace you if you left?	**0.87**	**0.84**	**0.88**
	D. How difficult or easy would it be for you to get a similar or better job with another employer if you wanted?	-0.48	0.00	-0.24

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

StatLink http://dx.doi.org/10.1787/888933606528

Table 5.A.11. **Cross-country correlations regarding training and learning opportunities at work between different non-official surveys**

	Questions	Correlations		
		Mean	Bottom	Top
Training and learning opportunities				
ISSP 2005	EWCS 2005			
My job gives me a chance to improve my skills	A. Training paid for or provided by your employer, or by yourself if you are self-employed. (Yes/No)	0.56	..	..
	B. Training paid for or provided by your employer, or by yourself if you are self-employed (Duration in days)	**0.04**	..	..
	C. On-the-job training. (Yes/No)	**0.69**	..	..
	D. Other forms of on-site training and learning. (Yes/No)	**0.68**	..	..
	E. Other forms of training. (Yes/No)	0.37	..	..
	F. Does your main paid job involve, or not, learning new things?	**0.63**	..	..
	G. At work, I have opportunities to learn and grow.	0.47	0.54	0.51
	H. Does your main paid job involve, or not, solving unforeseen problems on your own.	0.51	..	..
	I. Does your main paid job involve, or not, complex tasks.	0.41	..	..
Over the past 12 months, have you had any training to improve your job skills, either at the workplace or somewhere else?	**A. Training paid for or provided by your employer, or by yourself if you are self-employed. (Yes/No)**	**0.88**	..	..
	B. Training paid for or provided by your employer, or by yourself if you are self-employed (Duration in days)	-0.55	..	..
	C. On-the-job training. (Yes/No)	**0.75**	..	..
	D. Other forms of on-site training and learning. (Yes/No)	**0.62**	..	..
	E. Other forms of training. (Yes/No)	0.54	..	..
	F. Does your main paid job involve, or not, learning new things?	**0.81**	..	..
	G. At work, I have opportunities to learn and grow.	**0.63**	..	..
	H. Does your main paid job involve, or not, solving unforeseen problems on your own.	**0.66**	..	..
	I. Does your main paid job involve, or not, complex tasks.	0.33	..	..
ESS 2004				
During the last twelve months, have you taken any course or attended any lecture or conference to improve your knowledge or skills for work?	**A. Training paid for or provided by your employer, or by yourself if you are self-employed. (Yes/No)**	**0.86**	..	..
	B. Training paid for or provided by your employer, or by yourself if you are self-employed (Duration in days)	-0.38	..	..
	C. On-the-job training. (Yes/No)	**0.69**	..	..
	D. Other forms of on-site training and learning. (Yes/No)	0.59	..	..
	E. Other forms of training. (Yes/No)	0.56	..	..
	F. Does your main paid job involve, or not, learning new things?	**0.79**	..	..
	G. At work, I have opportunities to learn and grow.	**0.67**	..	..
	H. Does your main paid job involve, or not, solving unforeseen problems on your own.	**0.76**	..	..
	I. Does your main paid job involve, or not, complex tasks.	0.58	..	..
My job requires that I keep learning new things	**A. Training paid for or provided by your employer, or by yourself if you are self-employed. (Yes/No)**	**0.70**	..	..
	B. Training paid for or provided by your employer, or by yourself if you are self-employed (Duration in days)	-0.49	..	..
	C. On-the-job training. (Yes/No)	0.58	..	..
	D. Other forms of on-site training and learning. (Yes/No)	0.55	..	..
	E. Other forms of training. (Yes/No)	0.50	..	..
	F. Does your main paid job involve, or not, learning new things?	**0.67**	..	..
	G. At work, I have opportunities to learn and grow.	0.50	**0.61**	0.35
	H. Does your main paid job involve, or not, solving unforeseen problems on your own.	0.54	..	..
	I. Does your main paid job involve, or not, complex tasks.	**0.64**	..	..
ISSP 2005	ESS 2004			
My job gives me a chance to improve my skills	**A. During the last twelve months, have you taken any course or attended any lecture or conference to improve your knowledge or skills for work?**	**0.63**	..	..
	B. My job requires that I keep learning new things.	0.44	0.46	0.57
Over the past 12 months, have you had any training to improve your job skills, either at the workplace or somewhere else?	**A. During the last twelve months, have you taken any course or attended any lecture or conference to improve your knowledge or skills for work?**	**0.83**	..	..
	B. My job requires that I keep learning new things.	**0.68**	..	..

Table 5.A.11. **Cross-country correlations regarding training and learning opportunities at work between different non-official surveys** *(cont.)*

Questions		Correlations		
		Mean	Bottom	Top
ESS 2010	EWCS 2010			
During the last twelve months, have you taken any course or attended any lecture or conference to improve your knowledge or skills for work?	**A. Training paid for or provided by your employer in the last 12 months. (Yes/No)**	**0.72**	..	..
	B. On-the-job-training in the last 12 months. (Yes/No)	**0.72**	..	..
	C. Generally, does your main paid job involve learning new things?	**0.85**	..	..
	D. Generally, does your main paid job involve solving unforeseen problems on your own?	**0.74**	..	..
	E. Generally, does your main paid job involve complex tasks?	0.39	..	..
	F. The training has helped me improve the way I work.	-0.52	..	..
	G. I feel that my job is more secure because of my training.	-0.68	..	..
	H. I feel my prospects for future employment are better.	-0.41	..	..
My job requires that I keep learning new things	A. Training paid for or provided by your employer in the last 12 months. (Yes/No)	0.59	..	..
	B. On-the-job-training in the last 12 months. (Yes/No)	**0.70**	..	..
	C. Generally, does your main paid job involve learning new things?	0.57	..	..
	D. Generally, does your main paid job involve solving unforeseen problems on your own?	0.36	..	..
	E. Generally, does your main paid job involve complex tasks?	0.19	..	..
	F. The training has helped me improve the way I work.	-0.20	..	..
	G. I feel that my job is more secure because of my training.	-0.10	..	..
	H. I feel my prospects for future employment are better.	0.01	..	..
About how many days in total have you spent on this training or education in the last 12 months?	A. Training paid for or provided by your employer in the last 12 months. (Yes/No)	-0.40	..	..
	B. On-the-job-training in the last 12 months. (Yes/No)	0.41	..	..
	C. Generally, does your main paid job involve learning new things?	-0.36	..	..
	D. Generally, does your main paid job involve solving unforeseen problems on your own?	-0.29	..	..
	E. Generally, does your main paid job involve complex tasks?	-0.40	..	..
	F. The training has helped me improve the way I work.	0.53	..	..
	G. I feel that my job is more secure because of my training.	0.38	..	..
	H. I feel my prospects for future employment are better.	0.41	..	..
How useful would what you have learnt be if you wanted to go and work for a different employer or firm?	A. Training paid for or provided by your employer in the last 12 months. (Yes/No)	-0.11	..	..
	B. On-the-job-training in the last 12 months. (Yes/No)	-0.06	..	..
	C. Generally, does your main paid job involve learning new things?	-0.20	..	..
	D. Generally, does your main paid job involve solving unforeseen problems on your own?	-0.18	..	..
	E. Generally, does your main paid job involve complex tasks?	-0.07	..	..
	F. The training has helped me improve the way I work.	0.44	..	..
	G. I feel that my job is more secure because of my training.	0.36	..	..
	H. I feel my prospects for future employment are better.	0.55	..	..
How much of this training or education was paid for by your employer or firm?	A. Training paid for or provided by your employer in the last 12 months. (Yes/No)	0.57	..	..
	B. On-the-job-training in the last 12 months. (Yes/No)	0.57	..	..
	C. Generally, does your main paid job involve learning new things?	**0.66**	..	..
	D. Generally, does your main paid job involve solving unforeseen problems on your own?	**0.70**	..	..
	E. Generally, does your main paid job involve complex tasks?	0.57	..	..
	F. The training has helped me improve the way I work.	-0.65	..	..
	G. I feel that my job is more secure because of my training.	-0.63	..	..
	H. I feel my prospects for future employment are better.	-0.62	..	..

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

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Table 5.A.12. **Cross-country correlations regarding opportunities for career advancement between different non-official surveys**

Questions		Correlations		
		Mean	Bottom	Top
Opportunities for career advancement				
EWCS 2005	ISSP 2005			
My opportunities for advancement are good	A. My opportunities for advancement are high.	0.47	**0.60**	0.48
	B. How much of your past work experience and/or job skills can you make use of in your present job?	-0.14	-0.18	-0.21
	C. If you were to look for a new job, how helpful would your present work experience and/or job skills be?	0.45	-0.32	0.59
Gallup WP				
Is there someone at work who encourages your development, or not?	A. My opportunities for advancement are high.	0.35	..	..
	B. How much of your past work experience and/or job skills can you make use of in your present job?	-0.46	..	..
	C. If you were to look for a new job, how helpful would your present work experience and/or job skills be?	0.29	..	..
ESS 2004				
My opportunities for advancement are good	**A. My opportunities for advancement are high.**	**0.75**	**0.60**	**0.86**
	B. How much of your past work experience and/or job skills can you make use of in your present job?	-0.09	0.19	-0.24
	C. If you were to look for a new job, how helpful would your present work experience and/or job skills be?	0.44	0.31	0.56
ISSP 2005				
My job offers good prospects for career advancement?	A. ESS: My opportunities for advancement are good.	0.56	**0.69**	0.49
	B. Gallup WP: Is there someone at work who encourages your development, or not?	0.48	..	..
ESS 2004	Gallup WP			
My opportunities for advancement are good	Is there someone at work who encourages your development, or not?	0.38	..	..
	My job offers good prospects for career advancement	0.28	0.44	0.36

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.
Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

StatLink http://dx.doi.org/10.1787/888933606566

Table 5.A.13. **Cross-country correlations regarding opportunities for self-realisation at work between different non-official surveys**

	Questions	Correlations		
		Mean	Bottom	Top
Opportunity for self-realisation and intrinsic rewards				
Gallup WP	EWCS 2005			
In your work, do you have an opportunity to do what you do best every day?	A. At work you have opportunity to do what you do best.	-0.33	..	..
	B.You are able to apply your own ideas in your work.	-0.18	..	..
	C. Your job gives you the feeling of work well done.	-0.29	..	..
At work, do you feel you have a lot of wasted time, or not?	A. At work you have opportunity to do what you do best.	0.24	..	..
	B.You are able to apply your own ideas in your work.	0.40	..	..
	C. Your job gives you the feeling of work well done.	0.42	..	..
	EWCS 2010			
In your work, do you have an opportunity to do what you do best every day?	A. You are able to apply your own ideas in your work.	0.49	..	..
	B. Your job gives you the feeling of work well done.	0.56	..	..
EWCS 2005	ISSP 2005			
You have the feeling of doing useful work	A. My job is interesting.	0.48	0.53	**0.64**
	B. In my job I can help other people.	0.57	0.42	0.33
	C. My job is useful to society.	0.32	0.32	0.02
ESS 2010	EWCS 2010			
The main reason I put effort into my work is because my work is useful for other people	A. Your job gives you the feeling of work well done.	0.47	..	..
	B. You have the feeling of doing useful work.	0.38	..	..

Note: Questions shown in bold are those exhibiting mean correlation coefficients above 0.60. For correlations at the top and bottom of the distribution, the cut-off points used are those that generate the highest correlations between the two surveys considered.

Source: OECD Inventory of Survey Questions on the Quality of the Working Environment.

StatLink http://dx.doi.org/10.1787/888933606585

Chapter 6

Methodological issues

This chapter discusses how information on the quality of the working environment should be collected. It reviews the role of data sourced from surveys and administrative records as well as from surveys of workers and employers. It notes the importance of collecting data that cover the characteristics of both jobs and workers and that are relevant to employees and self-employed workers. The chapter also reviews evidence on the impact of survey modes and the interview sites on the quality of data on the working environment collected through surveys. The chapter draws on state-of-the-art methodologies adopted by national and international initiatives such as the European Working Conditions Survey, the British Skills and Employment Surveys and the French Enquête Conditions de Travail *to discuss the various issues that should be considered when designing a questionnaire to assess the quality of the working environment.*

6.1. Introduction

This chapter discusses a range of methodological issues that need to be addressed when measuring the working environment. In other words, after having reviewed the range of concepts to be measured in Chapter 5, this chapter turns to the best approaches to measuring them, i.e. the modes of data collection and choices of the unit of analysis, survey methodology and questionnaire design.

The chapter has three main sections. Section 6.2 discusses issues related to data collection, arguing that, where individual-level detail can be achieved, primary data sources have clear advantages over secondary sources. Among different forms of primary data, sample surveys with a large number of observations are the most appropriate vehicle to measure the quality of the working environment, compared to qualitative interviews or direct observations of the daily routines of individual workers. Section 6.3 discusses the choice of the unit of analysis, comparing the benefits and drawbacks of measuring the quality of the working environment at the country, firm and individual level. Section 6.4 reviews in detail issues related to the survey methodology, providing recommendations drawn from best practice on the survey mode and questionnaire design, with a focus on the survey length, target population, sampling, use of proxy respondents, place of interview, question order and response scales. Finally, Section 6.5 summarises the key points made in the chapter.

The methodological discussion in this chapter underpins the recommendations detailed in Annex 6.A for implementing a set of modules on the quality of the working environment that could be included in various survey vehicles. These include: 1) an extended module on the quality of the working environment that could be attached to a broad working conditions survey; 2) a more condensed working environment module that could be run as an ad hoc module of a labour-force survey; and 3) a few core questions that could be implemented in the context of an annual general social survey. The general features of these modules are described in Box 6.1, while Annex 6.A provides specific questions and guidance.

Box 6.1. **Prototype survey modules on the quality of the working environment**

These *Guidelines* include a set of prototype survey modules for measuring the quality of the work environment that could be used as a reference point for data producers (e.g. national statistical offices and others). Three sets of prototype modules are described in Annex 6.A, with items phrased as statements that can be answered using a 1 to 5 agreement-disagreement scale to reduce the cognitive burden on respondents:

- An extended survey module containing 25 items selected from existing national and international surveys and covering the 17 characteristics of the quality of the working environment discussed in Chapter 3. If used in its entirety, this module would provide

Box 6.1. **Prototype survey modules on the quality of the working environment** *(cont.)*

the data needed to compile a dashboard of indicators assessing various dimensions of the working environment in a comprehensive way. The module is designed for use in surveys with a specific focus on employment, such as working conditions surveys, and could be implemented every four to six years. The items in this module help to identify the dimensions of the quality of the working environment that require policy action, whereas the recommended periodicity would allow the monitoring of changes in those dimensions over time.

- A condensed module includes a subset of the extended module, i.e. 13 questions for which evidence on statistical reliability is strongest. This module could be used in cases where, despite limited questionnaire space, there is a need for measuring all the dimensions of the quality of the environment in a less detailed way.
- A core set provides a minimal set of measures on the working environment that could be included in general social surveys and implemented on a yearly basis. The core items included here do not cover all dimensions of the working environment, but rather aim to anchor this concept in policy discussions, alongside traditional measures of labour quantity. These questions are also suitable for international comparison and apply to a wide array of labour-market situations (e.g. employees and self-employed, workers in both the formal and informal sectors).

6.2. Mode of data collection

The mode of data collection refers to the methods that researchers and NSOs use when collecting information. The methods to be used depend on the nature of the variables examined, the detail required and the resources available. The main distinction made in this chapter is between *primary* and *secondary* data. While primary data consist of data gathered through surveys or from observations designed and implemented by researchers or NSOs, there are different types of secondary data, including administrative records, census data, data from private and public agencies, and official government data.

Primary data have the advantage of addressing the specific research questions that the researchers have in mind, capturing complex and multidimensional concepts, providing information relevant for analysing the drivers and consequences of the phenomenon under review, and revealing individual differences and inequalities across population groups. However, collecting primary data requires not only resources but also experience: it is costly and time-consuming and has to rely on a solid methodology.

Secondary data, on the contrary, can be readily available. Researchers and policy analysts can access them directly via official sources, most of the time without a fee, or with a fee that is much less than the costs of collecting primary data. These types of data enable international comparisons when they are sourced from data produced following international guidelines. Researchers can compile a set of data sources to generate a more comprehensive dataset, as secondary data tends to be at the macro (e.g. country) or meso level (e.g. occupation, industry or region). However, these data are usually not sufficiently detailed and often not as timely as required, and the information provided may not reflect the outcomes of interest, but rather the procedures that are designed to achieve those outcomes.

Primary data

These *Guidelines* have defined the quality of the working environment as a multidimensional concept, arguing that it should be conceptualised at the individual level, measured by focusing on outcomes experienced by individual workers, and focused on those attributes of jobs that can be evaluated by a third party (even when they are measured through individuals' self-reports, Chapter 4). Primary data are therefore the most convenient method to collect information on the quality of the working environment.

The main strength of primary data is the ability to address the multidimensional aspect of the working environment through a set of well-designed questions (as described in Chapter 4). A good working environment is one that not only lacks job stressors such as physical health risk factors or high work intensity, but that also provides resources that help workers to carry out their work tasks and flourish throughout their careers. Only primary data allow the assessment of interactions among various dimensions of the work environment, such as buffering effects and trade-offs.

Another reason why primary data are preferable to secondary data is that they provide individual-level observations. There are large differences in working conditions across population groups; individual-level data allow the identification of vulnerable groups and the design of policies to improve their conditions. Finally, primary data on working conditions allow a focus on outcomes rather than procedures: as argued in Chapter 4, even though labour-market institutions or firm-level management practices shape the general layout of working conditions, work is carried out by individual workers, and each worker's experience of his or her working environment is unique. Also, focusing on, for instance, the regulations applying to working time or health and safety would capture only de jure working conditions rather than de facto ones. Moreover, due to the lag between implementing regulations and their impact on working conditions, the information provided by secondary data could only be out of date.

Primary data are appropriate for focusing on the objective job characteristics that research has identified as essential for the well-being of workers. As discussed in Chapter 4, there is an extensive body of research that shows which job characteristics matter the most from a well-being perspective, and these characteristics can be measured in a reliable manner by collecting primary data.

The *Guidelines*, in short, argue that primary data sources such as surveys, qualitative interviews and observations are more appropriate for measuring the quality of the working environment than secondary data sources such as administrative records.

Sample surveys

Among various primary data sources, surveys conducted by interviewing individual workers are recommended over qualitative observations. Special working conditions surveys are the most comprehensive method for measuring the quality of the working environment. These surveys aim at providing a detailed picture of the actual work carried out by individuals who are currently in paid work. Rather than looking at the prescribed tasks of a particular job title as described by the employer or clients, working conditions surveys ask workers to assess the degree to which a large set of conditions apply to their work setting. These conditions, such as the risks and constraints of work tasks as well as the resources available to carry them out, are assessed in terms of their presence, intensity or frequency. Typically, working conditions surveys cover issues such as working time, work organisation,

learning and training, physical and psychosocial risks, health and safety, the work-life balance and worker participation. Questions on the quality of the working environment are often supplemented by questions on earnings, fringe benefits, employment security, health and well-being, and sometimes on previous jobs and unemployment experience. Working conditions surveys allow the identification of policy reforms and management practices needed to improve the lives of working people.

Working conditions surveys have major strengths in terms of measuring the quality of the working environment. First, since the entire questionnaire is dedicated to working conditions, these surveys contain detailed information on non-pay aspects of the job, which are usually omitted in more general surveys. As working conditions surveys contain a large number of questions on all three broad dimensions of job quality (i.e. earnings quality, labour-market security and the quality of the working environment), the complex and multidimensional aspect of job quality can be comprehensively captured, and the relationship between the working environment and other aspects of employment can be investigated. These surveys also allow researchers and policy analysts to examine whether there are trade-offs or synergies among earnings, labour-market security and the working environment, which is not usually possible with other types of data. For example, labour-force surveys contain detailed information on earnings, but lack a set of questions to capture the multidimensional aspect of the working environment.

Another advantage of working conditions surveys is that the sampling frame is usually defined in terms of the individuals in the workforce, which allows a large sample size. One problem with general population surveys or other household surveys for measuring the quality of the working environment is that (with the exception of labour-force surveys or censuses) the sample size tends to be reduced almost by half for questions about the characteristics of the current job, which apply only to respondents with paid work. For example, general social surveys that target the entire adult population with a sample size of 1 000 people may capture only around 500 employed individuals whose working conditions could be analysed, which makes disaggregation into population groups quite difficult. Special working conditions surveys, on the contrary, tend to have an adequate sample size of employed people, which can be used for analysing the quality of the working environment in more detail and for disaggregating results across groups of workers with different characteristics.

There have been a number of different types of working conditions surveys, each with their distinctive benefits and drawbacks. Special working conditions surveys have been carried out in a large number of countries, some of which have been running for over three decades. In addition to the British Skills and Employment Surveys series, with six waves conducted since 1986, and the French *Enquête de Conditions de Travail*, with five waves since 1984 (Chapter 2), a large number of countries have been conducting surveys on work and employment relations, some of which have elements for measuring the quality of the working environment: these countries include Austria, Bulgaria, Canada, Chile, China, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Italy, Japan, Korea, Mexico, Norway, the Slovak Republic, Spain, Sweden and the United States.

Beyond these national initiatives, European Working Conditions Surveys have been running since 1991, providing comparable measures for 36 countries, with the most recent wave conducted in 2015. The EWCS, as discussed in Chapters 2 and 5, is among the instruments providing the most detailed information on all aspects of the quality of the

working environment, and allows the examination of changes in job quality across many European countries. The EWCS sample size of at least 1 000 respondents per country[1] allows some basic population breakdowns but no detailed disaggregation.

National labour-force surveys are large-scale household surveys of working and non-working individuals designed to produce statistics concerning employment and unemployment. These surveys, which are often conducted every quarter or month, cover demographic characteristics, labour-force status, the demographic characteristics of each adult household member (those in the eligible age bracket), employment status, contract type, working hours, sector of employment, participation in training, formal/informal work and occupation; for respondents who are absent from work, questions on the duration and reasons of absence are asked; for those with no jobs, questions on job search activities, availability to start work, and reasons for inactivity are also asked.

Regular labour-force surveys are often supplemented with ad hoc modules (AHMs) that collect information on selected topics such as work accidents, the labour-market conditions of specific population groups (e.g. migrants, youth, disabled or retired people), the reconciliation of work and family, and lifelong learning. Some of these ad hoc modules have addressed one or another aspect of the quality of the working environment. For example, several ad hoc modules of the European Union Labour Force Surveys probe respondents about various topics, one at a time, with around 13 variables included in each module. Since 1999, the EU-LFS has collected supplementary information on a number of topics, including some through repeated modules that address some dimensions of the working environment (Table 6.1). Thanks to their large size, these AHMs are a useful resource for measuring these dimensions of the quality of the working environment. However, since only one topic is covered in each module, the existing AHMs do not allow the measurement of the multidimensionality of the working environment at the individual level.[2]

Table 6.1. **Specific topics covered in EU-LFS ad hoc modules**

Year	Topic
1999	Accidents at work and occupational diseases
2000	Transition from school to working life
2001	Length and patterns of working time
2002	Employment of disabled people
2003	Lifelong learning
2004	Work organisation and working-time arrangements
2005	Reconciliation between work and family life
2006	Transition from work into retirement
2007	Work related accidents, health problems and hazardous exposure
2008	Labour-market situation of migrants
2009	Entry of young people into the labour market
2010	Reconciliation between work and family life
2011	Employment of disabled people
2012	Transition from work into retirement
2013	Accidents at work and other work-related health problems
2014	Labour-market situation of migrants and their immediate descendants
2016	Young people on the labour market
2017	Self-employment

Bringing together many of the questions on the quality of the working environment that are already included in AHMs into a single module would provide important advantages.

- First, labour-force surveys have remarkably large sample sizes compared to other types of surveys that contain information on working conditions. This large sample size would allow the investigation of differences in the quality of the working environment across occupational categories or industries, which is not always possible with working conditions surveys. One disadvantage of AHMs is that, even though labour-force surveys generally have a large sample size, a significant share of responses is provided by *proxy* respondents (i.e. other household members present at the time of the interview), while questions on job quality can be answered only by respondents in person. Proxy respondents often account for almost half of all respondents to the EU-LFS, and the composition of proxy respondents is typically non-random (i.e. those who have the most demanding jobs are more likely to be absent when contacted for an interview, and thus *proxied*). Therefore, for the AHMs to become a good data source on the quality of the working environment, a possible module on this issue should be answered only by workers in the LFS sample, thus not allowing proxy respondents. (This is further discussed in Section 6.4.)
- Second, having a specific AHM module focused on the quality of the working environment should ensure cross-country comparability. Currently, EU countries implement the European Labour Force Survey and its AHMs following the recommendations provided by Eurostat, who then harmonises country datasets into a common comparable dataset. While these recommendations refer to question wording, response scales and question order, individual NSOs have some autonomy over the extent to which these recommendations are followed. A topic like the quality of the working environment is likely to be susceptible to questionnaire design, thus cross-country comparability could be compromised if a common methodology is not followed by all the participating countries. For example, data for countries where the survey asks questions relating to exposure to risk factors just after questions on health status may not be comparable to those pertaining to other countries that follow the opposite order; this is because thinking about health status first may prime respondents to overstate risk factors at work.
- Third, labour-force surveys have been widely used to measure labour-market performance and to inform labour policies, in particular for assessing employment and unemployment, wages and working hours. An ad hoc module on the quality of the working environment would enable an assessment of working conditions alongside employment counts and earnings, as well as an identification of possible trade-offs between the quantity and quality of jobs, thereby bringing the quality of the working environment to the core of labour-market policies.

While labour-force surveys rely on international standards laid down by the International Conference of Labour Statisticians, no international guidance currently exists for general social surveys (GSSs) covering a broad range of life dimensions. GSSs originated in the United States in the 1970s in order to monitor societal change and people's behaviours, attitudes and attributes. GSSs of this type are now being carried out by a large number of countries on a regular basis (Fleischer et al., 2016), in the form of either national surveys or cross-national surveys like the International Social Survey Programme (ISSP) and the European Social Survey (ESS). National GSSs tend to have a large and representative sample and cover a wide range of topics such as socio-economic conditions, health status, social mobility, social control, family relations, civil liberties, values and attitudes. Most GSSs also contain special modules on work that are carried out on an irregular basis. Examples of these special modules include the Education, Work and Retirement annex of the 1994 Canadian

GSS, the Work Orientations module of the ISSP (1989, 1998, 2005, 2015) and the Work, Family and Well-being modules of the ESS (2004 and 2010).

While special work modules of GSSs contain a number of questions on job characteristics that are relevant for assessing the quality of the working environment, these aspects do not always appear in the annual (or bi-annual) surveys, and these special modules are conducted only irregularly. This implies that it is not always possible to monitor short-term changes in working conditions through these surveys or to investigate the drivers and outcomes of job quality in relation to a large set of social factors. However, due to their large samples and their coverage of an extensive range of social issues, GSSs are a good vehicle to monitor changes and understand drivers and impacts of the quality of the working environment. A selection of core questions that could be introduced in surveys to monitor the quality of the working environment on a regular basis is presented in Annex 6.A.

Qualitative interviews

Qualitative interviews are small-scale surveys of specific groups of the population dealing with a specific issue. These interviews could be especially useful to assess what aspects of the working environment are more relevant for workers in a specific occupation and, if necessary, how survey questions could be formulated in a way suitable for inclusion in a general-population survey.

Shadow worker

Another approach to measuring job characteristics is the so called "shadow worker" method, where the interviewer spends a typical work-day (or work-week) with the respondent (a worker with a given set of characteristics) and records the work activities and the conditions under which work is carried out, instead of asking the individual worker about these conditions. The general idea of "shadowing" is to follow workers wherever they are and whatever they do. This instrument has been predominantly used for enabling learning in apprenticeship programs, but also for collecting material in research projects, particularly for organisational management studies. This method can also be used to measure the quality of the working environment. The specific advantage of this instrument is that it eliminates any possible element of subjectivity that can be introduced by workers' self-reports, although it may introduce other problems of subjectivity with respect to the "shadow" observer.

In a shadow worker study, the observer needs to have a precise understanding of what to look for in the daily activities of workers and in the physical and social environment where work takes place, so that he or she can transcribe their observations into objective job characteristics. A well-structured questionnaire, or set of questions, is of critical importance when undertaking this type of study. Since it is the observer who completes the questionnaire, based on their daily observations, evidence from this type of study may be free from the potential biases introduced by question order and question wording, such as priming, that affects surveys. Another strength of shadowing is that it enables the observer to capture a slice of a worker's working environment in detail, which can be useful when investigating the many aspects of people's work. Through these studies, the observer can gain a detailed overview of a worker's daily work tasks, the environment surrounding workers, and of how work is organised.

However, shadowing is a costly method with potential drawbacks. For a given research budget, shadow worker studies would typically provide a much smaller number of

observations than those allowed by sample surveys. As compared to the 30/50 minutes that an interviewer may spend with a respondent, shadowing requires that a highly trained observer spends a significant amount of time with the worker (i.e. at least half a day).

In situations where the observer does not code their findings immediately, shadowing also requires a substantial amount of time for data coding. Also, the work day that is selected for shadowing, even the work week chosen, may not be representative of a worker's typical day. Shadowing a worker on an extremely busy day, with tight deadlines and production pressures, will overestimate work demands and underestimate job resources, whereas a quiet work day could underestimate physical and social risks. Moreover, some job characteristics cannot be captured in a one-off study referring to an average day: some aspects of the job that have crucial implications for workers' well-being take place only irregularly, but are still fundamental for understanding the quality of the working environment. For example, the shadow observer is likely to miss formal training opportunities provided by the current job, unless a training activity takes place on the day of the observation. Similarly, while discrimination and intimidation have a large negative impact on workers' well-being, and hence on the quality of the working environment, they typically take place subtly or rarely, and may be unobservable to the researcher. Finally, the behaviours of colleagues and supervisors may be modified by the presence of the shadow worker.

Secondary data

Other data sources, such as administrative records from work inspections or health and safety regulations, are a potentially important source of secondary information on the quality of the working environment. One strength of secondary data is that they refer almost always to objective aspects (e.g. a work accident) observable by a third party, rather than to subjective ones (i.e. satisfaction of workers with a particular aspect of their jobs). As discussed in Chapter 4, subjective measures of workers' satisfaction with their working conditions may conceal the actual characteristics of the work environment, as they may be influenced by workers' expectations. For example, in the case of physical risk factors, a worker who had previously worked in mines could be totally satisfied with the safety at their current job at a construction site, since this site is much safer than the former job, despite the fact that construction sites can be much more dangerous than working at an automobile plant. Data from special agencies, such as Occupational Health and Safety Administrations (OHSA), provide accurate information on the incidence of fatal and non-fatal work accidents in different occupations. This offers a more reliable measure of the more extreme physical risk factors, while providing little light on other types of physical risks such as exposure to dangerous chemical substances.[3]

Box 6.2. **Secondary data sources on the quality of the working environment**

Several databases provide aggregate-level data on working conditions and employment relations that can be helpful when individual-level data on the quality of the working environment are not available. These databases are easy to access and are harmonised to different degree, thus allowing cross-country comparisons.

- The **OECD Job Quality Database** contains three headline indicators: earnings quality, labour-market security, and a composite measure of the quality of the working environment. Data on the quality of the working environment are available for most OECD countries from 2005, 2010 and 2015, and allow the construction of a Job Strain Index – a composite index showing the share of workers experiencing more

Box 6.2. **Secondary data sources on the quality of the working environment** *(cont.)*

job demands than the number of job resources available to them. The OECD Job Strain index is composed of various sub-indicators, data on which are also available in the OECD database: these refer to the share of workers experiencing time pressures, facing physical health risk factors, and having learning and training opportunities and social support at work. These individual-level measures are aggregated to identify the share of workers with high job demands or low job resources. The index is disaggregated by gender, education and age (*https://stats.oecd.org/Index.aspx?DataSetCode=JOBQ*).

- The **ETUI Job Quality Index** (JQI), a quantitative indicator that captures job quality in Europe, is based on a database derived from on a range of sources. The JQI is based on sub-indices (on wages, non-standard employment, working conditions, working time and work-life balance, training and interest representation) that capture different aspects of job quality. The JQI allows comparisons in a given year between the EU-27 countries, and comparisons over time for 15 countries (*www.etui.org/Topics/Labour-market-employment-social-policy/Job-quality-index-JQI*).
- The **ILO Database on Labour Statistics** contains comparable data on a number of labour-market indicators, some of which relate to the quality of the working environment. Relevant indicators include: 1) working time (weekly hours actually worked per employed person by gender, economic activity and occupation); and 2) health and safety at work (time lost due to occupational injuries, fatal occupational injuries, non-fatal occupational injuries, labour inspections) (*www.ilo.org/ilostat*).
- The **Eurostat Database** includes time-series of indicators on the quality of employment available for the EU-28 countries. Among the themes covered, two directly relate to the quality of the working environment: 1) safety and ethics of employment (with data on the number of fatal and non-fatal accidents and exposure to risk factors that can adversely affect physical health); and 2) working hours and work-life balance (including indicators of average weekly hours usually worked, long working hours, share of employed persons working at night, during evenings, weekends, and from home, by gender, professional status, full-time/part-time work, and economic activity) (*http://ec.europa.eu/eurostat/data/database*).
- The **EWCS data visualisation tool** provides access to country-level data from the 5th and 6th EWCS through the Eurofound webpage. The visualisation tool displays the distribution of responses for each question by country, as well as by gender, age group, employment status, occupation and sector (*www.eurofound.europa.eu/surveys/data-visualisation*).
- The **European Survey of Enterprises on New and Emerging Risks (ESENER)** interactive dashboard provides access to data from the EU enterprise survey with health and safety representatives of 50 000 enterprises in 36 European countries. This survey includes questions on the presence of physical and psychological risk factors within the company. Data related to the quality of the working environment refer to workers' exposure to tiring positions, lifting or moving heavy loads, loud noise, repetitive hand or arm movements, heat, cold or draught, risk of accidents with machines or tools, risk of accidents with vehicles, chemical or biological substances, risk of slips, trips or falls, time pressure, poor communication or co-operation within the organisation, employees' lack of influence over their work pace or work processes, job insecurity, having to deal with difficult customers, patients, pupils, etc., long or irregular working hours, and discrimination due to gender, age or ethnicity. Information is provided at the country level, with breakdowns by establishment size and sector of activity (*https://osha.europa.eu/en/surveys-and-statistics-osh/esener/2014*).

6.3. Unit of analysis: Aggregate versus individual-level data

Individual-level data

As discussed in Chapter 4 and earlier in this chapter, the quality of the working environment should be measured at the individual level. These data can then be aggregated at higher levels such as sectors of employment or occupations, depending on the issue of

interest. However, there are different approaches to individual-level measurement. Should information on job characteristics be obtained from the employers, who potentially plan and design the work and working conditions, or from the employees who experience the work? Should the unit of analysis be the individual worker or the various jobs (e.g. primary and secondary) that they may perform? Should employees and self-employed workers be analysed in the same way, or does the distinct nature of each group require its own measurement tool? Can proxy respondents be used to collect information on job characteristics? After weighing the strengths and weaknesses of these alternative approaches, this section argues that the working environment is measured best when the information is collected directly from workers, and where the unit of analysis is the job. This section also argues that the working environment can be measured following the same principles for both employees and the self-employed, with a few differences with respect to the scope of questions, and that proxy respondents should be avoided, as other family members are not well placed to provide information about the characteristics of a relative's job.

Employer and employee surveys

Firms' policies and practices have a large influence on the conditions under which work is carried out. As these policies and practices are decided and implemented by a firm's management and human relations (HR) unit, interviewing them directly about the firm's policies could provide a direct assessment of the quality of the working environment. This is the case, for example, of firms that adopt formal processes and procedures, so-called "High Performance Work Organisations", which imply a flatter and less hierarchical structure, and where autonomous teams tend to enjoy greater task discretion and social support at work (OECD, 1999; Dex et al., 2002; Inanc et al., 2015). Similarly, the existence of family-friendly HR practices, such as flexitime arrangements that allow individual workers to maintain a better work-life balance, or of formal appraisal procedures, which may benefit workers through greater task clarity and performance feedback, could be reported directly by firms' management. Collecting information from employers on these practices could potentially be a viable method of measuring the quality of the working environment, especially when managers and HR officers are more knowledgeable about firm practices than employees.

There are indeed a number of national surveys that have been running for over a quarter of a century and that have successfully explored employment relations from the perspective of managers and employers. Examples of such surveys include the UK Workplace and Employment Relation Survey (WERS), Canada's Workplace and Employee Survey, Australia's Workplace Industrial Relations Survey, and the US National Organisational Survey. Some of these surveys match information from managers, workers' representatives and employees, illustrating employment relations from different angles. For example, the 2004 WERS survey interviews managers about a range of topics that directly relate to a number of job characteristics to determine the quality of the working environment (Department of Trade and Industry et al., 2014). These characteristics include:

- the degree to which workers are informed and consulted about a range of workplace decisions
- training opportunities provided to the largest occupational group within the firm during the previous 12 months, measured in terms of incidence, duration and usefulness
- number and types of workplace injuries and illnesses recorded within the last 12 months
- equal treatment and anti-discrimination practices

- level of task discretion and amount of autonomy on work pace enjoyed by employees
- official working hours of the firm and the share of employees who work overtime
- tele-working, maternal and paternal leave policies.

The quality of the workplace and the work environment can potentially be measured directly by using information obtained from managers and/or HR officers in firms. However, there are obvious drawbacks to relying solely on *employers' views* when measuring the quality of the working environment. The most serious of these drawbacks is that there is often a large heterogeneity within the firm in terms of the conditions under which work is carried out by individual workers, which can get lost in the managers' or HR's account. The information obtained from employers could apply to a majority of workers in certain areas, such as participation in workplace decisions, but not in others. For example, two workers at the same firm can have very different exposures to risk factors, emotional demands or work intensity, depending on their role within the company. Relying solely on firm characteristics and practices would conceal this heterogeneity of the working environment within the firm. This approach also makes it difficult to break down working conditions by population sub-groups, reducing the policy relevance of these data for vulnerable groups.

A second drawback is the possible discrepancy between employees' awareness of firm policies and what is offered by the employer. This discrepancy could result from a number of factors, including ineffective communication strategies by management, differences among workers' characteristics that affect take-up (Dex et al. 2002), or employees' reluctance to take up tasks and opportunities unless the supervisor or the organisation is perceived to be supportive (Eaton, 2003; Hayman, 2009). Another issue is that the accounts from higher management of the company's work environment could suffer from "desirability bias". How well a firm fares in terms of the quality of the working environment significantly reflects the skills and capabilities of the managers, who may intentionally or unintentionally draw a rosier picture of the working conditions in their firm than what would be drawn by the employees.

A third issue is that not all paid work in a society is carried out in firms. Own-account workers and the self-employed represent a significant portion of the workforce. This implies that relying on firm-level data on job characteristics would provide only a partial picture. This *non-representation problem* is a special concern for countries where a sizable share of the workforce is self-employed or in the informal sector. Another problem is that most employers' surveys rely on a threshold in terms of size for selecting eligible businesses (e.g. those with 5 workers or more), thus missing working conditions in smaller firms. Statistics that rely on firm-level data collected from managers and supervisors may thus be unrepresentative of the quality of the working environment of the overall work force.

Last but not least, individual workers are the best informants about their jobs and working conditions. Even if the information obtained from managers were detailed enough and matched employees' experiences, the interactions and trade-offs between various job characteristics as experienced by workers would be lost. This implies that employers could only be a secondary or supplementary source when measuring the quality of the working environment.

Even though collecting statistics on the quality of the working environment from workers has most advantages, it is important to stress that businesses play an important role in monitoring working conditions. Business, should, if it does not do so already, assess the quality of the working conditions regularly through surveys of their employees, both

within their enterprises and (ideally) throughout their supply chain. These regular performance assessments are crucial for taking actions towards improving working conditions throughout society.

Workers and jobs

The quality of the working environment should focus on job characteristics such as the work intensity, physical conditions and opportunities that the job provides for advancement, rather than worker characteristics such as skills levels or dispositions. Each job has its stressors and resources, which can offset each other, whereas worker characteristics apply to the multiple jobs held by a worker. While this distinction, and the preference for focusing on specific jobs, is sensible in theory, in practice only a minority of workers hold multiple jobs.[4] For these workers, it may happen that they enjoy a high-quality working environment in their first job and poor-quality working environments in their second or third jobs. Another possibility is that each job, taken on its own, is *good*, but that the accumulation of multiple jobs in itself is a source of stress and poor working conditions for the workers involved.

Ideally, the quality of the working environment should account for all the jobs held by a worker, with questions pertaining to each of these separately. However, due to questionnaire space, surveys often focus on the main job (i.e. the job where the person works the largest number of hours, or most regularly), for example, by asking about the number of hours the worker usually works in their main job, and missing out those secondary or tertiary jobs that can potentially be of poor quality.

In contexts where multiple jobs are not very common, focusing on the main job is a reasonable approach, since the main job is likely to affect workers' well-being the most. However, when working in multiple jobs is more common, the survey should address this issue in order to provide a more comprehensive picture of working conditions. This could be done by asking first the number of jobs people work at, followed by questions about whether or not workers experience a specific job characteristic in any of their jobs. While this approach does not allow the analysis of the cumulative nature and trade-offs between characteristics at the job level, it has the advantage of retaining a *worker's perspective*. Alternatively, if questionnaire space allows, a selection of questions on job characteristics could be asked for each job.

Employees and the self-employed

Much of the research on the quality of the working environment considers self-employment as an important driver of job quality. Self-employment can be a marker either of good-quality jobs, since it provides workers with greater opportunities for autonomy and intrinsic rewards, or of poor quality, when it implies lower social security among marginalised workers. Because of this potential ambivalence, the OECD Job Quality Framework argued that self-employment should not be considered as an *aspect* of job quality *per se* but rather that most of the job characteristics that define the quality of the working environment should be relevant to both employees and the self-employed.

The principles that underpin these *Guidelines* are applicable to both employees and the self-employed. The quality of the working environment for both groups of workers should be measured by looking at objective outcomes experienced by individual workers. If worded carefully, most of the job characteristics discussed in Chapters 4 and 5 are relevant for both groups of workers, with the exception of organisational characteristics,

which are not always applicable to the self-employed. Therefore, a single questionnaire, or a battery of questions, can be used when measuring the quality of the working environment of all workers.

However, the survey instrument that is used to measure the quality of the working environment should clearly distinguish between employees and the self-employed, for two main reasons.

- First, what constitutes a good working environment may vary between the two groups of workers. The self-employed are often self-selected into working as their own boss, implying that certain aspects of their job will affect their well-being less or more than in the case of employees. For example, the self-employed often enjoy higher autonomy and task discretion and more flexible working hours compared to employees; if the sample contains a disproportionately high number of self-employed workers, the quality of the working environment for these job characteristics will mechanically be higher than the population average. Identification of the self-employed in a survey thus helps to correct sample selection bias on employment status by introducing sampling weights. It allows more accurate comparison across populations that vary in terms of the prevalence of self-employment (e.g. across occupation groups, economic activities or countries) by breaking down the sample by employment status.
- Second, identifying the self-employed is important as, if questionnaire space allows, the survey can include separate questions asked of employees and the self-employed, which would help explore the working environment of the two groups in greater detail.

Questions directed to both employees and the self-employed should be worded in such a way that they refer to the job, rather than to a specific employer or supervisor. For example, survey questions measuring task discretion and autonomy that are asked to both employees and the self-employed should be phrased as "Are you able to choose or change your order of tasks" (as the EWCS does), instead of "How much does the management at your work allow you to decide how your own daily work is organised?" (as in the ESS), which (by referring to managers) applies only to employees. Similarly, questions on the flexibility of working hours should not ask "whether the employer or manager allows you to take a few hours off to take care of personal matters" but rather whether it would be difficult for the worker to take an hour or two off during working hours to take care of personal or family matters, as is done in the EWCS, ESS, ISSP and the British Skills and Employment Survey. Wording these questions with references to *management* will prevent the self-employed from answering, whereas using general wording that refers to the job will enable both employees and the self-employed to relate to the issues at hand.

Firm-level data

Even though individual-level information is the ideal level of measurement for the quality of the working environment, firm-level data might provide a useful source of information either as a complement to individual-level information or as a substitute when micro-level data are unavailable. How the work is organised in a firm, the nature of human resources (HR) policies, and the extent to which employees are given an opportunity to participate in decision making contribute to both company performance and employee well-being. Since representatives of management have extensive knowledge of workplace policies and practices in the firm, their accounts can provide valuable information on the quality of the working environment. This could include areas where employees lack information

because they do not have relevant experience (e.g. training) but could potentially benefit in the future. In order to get a more fine-grained picture of the working environment with firm-level data, these surveys should include information on the distribution of employees by age, gender, education and job tenure. A good example of this type of survey is provided by Eurofound's European Establishment Survey (Box 6.3).

Box 6.3. **Measuring the quality of the working environment from the managers' point of view: Questions from the European Establishment Survey (2013)**

The European Company Survey (ECS) is a telephone survey of establishments in Europe carried out by Eurofound, based on interviews with a management representative (the most senior person in charge of personnel) and – where available – an employee representative responsible for the establishment. The employee representative respondent is identified through a series of questions in the management questionnaire. These questions are adapted to match the institutional structure of each country. The unit of analysis for the survey, as in previous waves, is the establishment, with the target population made up of all establishments with 10 or more employees in all economic sectors except *agriculture, forestry and fishing* (i.e. NACE Rev. 2 category A), *activities of the household* (category T) and *activities of extraterritorial organisation and bodies* (Category U). The ECS covers all 28 EU Member States, as well as Iceland, the former Yugoslav Republic of Macedonia, Montenegro and Turkey. The total number of interviews conducted for the ECS in 2013 was 30 113 management interviews and 9 094 employee representative interviews. The survey covers three main areas:

- work organisation (collaboration and outsourcing, internal organisation and information management, decision making on daily tasks)
- human resource management (recruitment and career development, training, working-time flexibility, variable pay schemes)
- employee participation and social dialogue (direct employee participation, workplace social dialogue).

A number of questions from the management survey contain information on the quality of the working environment that are important for workers' well-being and firms' productivity, namely:

- "How would you rate the current general work climate in this establishment? Is it very good, good, neither good nor bad, bad, or very bad?"
- "Who normally decides on the planning and execution of the daily work tasks of the employees at this establishment?" (with response categories: 1) the employee undertaking the tasks; 2) managers/supervisors, and 3) both employees and managers/supervisors).
- "In the past 12 months, what percentage of employees received paid time-off from their normal duties to undertake training, either off or on your premises?"
- "Approximately what percentage of employees have the possibility to adapt – within certain limits – the time when they begin or finish their daily work according to their personal needs or wishes?"
- "In this establishment, which of the following practices are used to involve employees in how work is organised?" (with response categories: regular meetings between employees and immediate manager, regular staff meetings open to all employees at the establishment, meetings of a temporary group or committee or ad hoc group, dissemination of information through newsletters, website, notice boards, email, etc., discussions with employees through social media or in online discussion boards, suggestion schemes, employee surveys among employees).

Source: Eurofound (2015), *Third European Company Survey – Overview report: Workplace practices – Patterns, performance and well-being*, Publications Office of the European Union, Luxembourg.

However, one should be aware of some of the previously mentioned caveats of using firm-level data to measure job quality. First, the quality of the working environment is distributed unevenly within firms, and even in firms with employee-oriented HR practices

there will be workers whose working conditions are much worse than others. Second, since representatives of management who are often interviewed in firm surveys are the "public face" of their organisation, their responses to company surveys may be positively biased. Third, the quality of the working environment of the self-employed and employees working in smaller firms (company surveys often select workplaces with more than 5 or 10 employees) will be missed.

Country-level data

The working environment, by definition, is the combination of work characteristics that are experienced by workers; thus, it can be measured only at the individual level. It is not possible to measure, for example, the level of autonomy that workers enjoy in a country without collecting this information at the micro level. In the absence of individual-level data, information collected at the firm level can be used as a proxy for the working environment of a share of workers. But without data at the worker level, it will not be possible to measure the quality of the working environment directly at the country level. Aggregating the individual-level data and reporting them at the country level has a number of benefits, such as facilitating communication, monitoring progress, and helping the quality of the working environment become a policy concern. At the same time, country-level measure on the quality of the working environment should ideally be based on sample sizes that are large enough to guarantee the robustness of estimates at the occupation (ISCO) and industry level (NACE); when these breakdowns are not taken into account, country differences in the quality of the working environment may reflect differences in the structure of employment across countries rather than to differences in the working environment at the level of specific occupations and industries.

6.4. Survey methodology

Mode effects

The ways in which interviews in a survey are conducted (i.e. mode effects) may affect the comparability of estimates across surveys. The quality of the data on the working environment may differ if responses are collected via, for example, face-to-face interviews or online surveys. A large body of research on survey methodology shows that differences in survey mode (Table 6.2) can affect respondents' answers even when the question asked is exactly the same.

Table 6.2. **Modes of surveys commonly used in research on work and employment**

	Survey Mode
CAPI	Computer-assisted personal interviewing
CASI	Computer-assisted self-interviewing
CATI	Computer-assisted telephone interviewing
PAPI	Pen and paper interviewing
TAWI	Tablet-assisted web interviewing

A mode effect can occur due to a number of mechanisms. Human interaction can affect the answers provided by people interviewed in so far as there is need and opportunity to clarify questions. Depending on the survey mode, privacy and audience effects can also occur; for example, having other people (e.g. managers or co-workers) present at the time of

the survey may influence how workers answer a question on their working environment. Another mode effect may arise due to differences in the pace of the survey, which may influence responses, depending on whether the pace is determined by the interviewer or by the respondent. Finally, the audio and visual presentation of questions may affect the burden imposed on respondents in terms of memory and information processing.

Mode effects can affect data comparability in three main ways. First, mode effects can result in coverage error. This occurs when not all members of the target population have an equal chance of being selected in the survey sample. Usually, face-to-face interviews that follow a random sampling do not suffer much from coverage error; however, bias could arise in telephone or online surveys as, for example, owners of land lines versus mobile phones can differ systematically in their socio-demographic characteristics, as could those whose telephone numbers are listed versus those who are not. Similarly, the "technology divide" among internet users and non-users can influence the probability of individuals from certain socio-demographic groups being covered as part of a sampling frame.

A second form of bias is non-response due to mode effect. Non-response bias refers to some respondents' being less likely (or refusing) to participate in a survey simply because of the mode in which it is carried out. For example, a study in the US found that respondents prefer mail surveys over telephone surveys, telephone surveys over internet surveys, and internet surveys over in-person surveys (Olson et al., 2012). In mixed-mode surveys that combine two or more types of interviews, these individual preferences can affect the probability of participating in the survey and lead to results that differ systematically across socio-demographic groups. The survey mode can also affect item non-response, i.e. some respondents may skip certain questions depending on the mode of the survey. Usually, face-to-face interviews have the lowest level of item non-response, whereas survey modes that involve self-administration tend to have a higher item non-response rate.

The third form of bias that is introduced by the survey mode is the measurement error that can occur because of social desirability or privacy concerns due to the presence of other people when the interview takes place. While a lack of anonymity and/or confidentiality can lead respondents to report higher level of socially desirable attributes, in both face-to-face interviews and (to a lesser degree) telephone interviews, respondents may suppress their attitudes in the presence of others at the time of the interview. These forms of bias are particularly prevalent in questions with a subjective element. For example, respondents are more likely to report that wages are an important determinant of their job satisfaction in self-administered surveys compared to those where the answer is directly given to an interviewer (Conti and Pudney, 2011). Similarly, anxiety levels appear higher in survey modes where there is no interaction with an interviewer compared to face-to-face interviews. The presence of others during the interview affects responses as well. For example, a longitudinal study using the British Household Panel Study showed that women express a lower level of satisfaction with their job when their partner is in the room, compared to when they are interviewed alone (Conti and Pudney, 2011); according to the authors of this study, this could be related to within-couple bargaining behaviour, i.e. each partner may have an incentive to overstate their personal sacrifice and understate their job satisfaction in order to maintain a strong bargaining position. Women may also be more reluctant to report to the interviewer something that could conflict with the gender roles prevalent in society (Booth and van Ours, 2008), which could be a concern particularly for mothers in full-time jobs. Measurement bias can also occur in survey questions measuring the objective job characteristics that were

discussed in Chapter 4, although these types of questions are generally more robust to measurement error. Box 6.4 describes differences in response rates and styles in the case of face-to-face and internet-based surveys of working conditions in France.

Box 6.4. **Mode effects: Experimental survey of working life quality in France**

In recent years, tighter budget constraints have led many NSOs to rely increasingly on internet surveys. To investigate the extent to which an internet survey mode lowers statistical quality, the French statistical office (INSEE) recently launched a set of multi-mode experimental surveys. The first of these surveys was the Experimental Survey of Housing (Internet/Paper), in summer 2010, followed by the Thefts, Violence and Safety survey (Internet/Paper), run in parallel to the 2013 survey of Living, Environment and Safety (CVS). As part of this programme, in 2013 the INSEE conducted the Experimental Survey of Working Life Quality (QVT), which was run in parallel to the *Enquête Conditions Travail* (CT) in order to explore mode effects on response rates and styles. The sample of 40 000 individuals who declared having received labour income were divided into two groups: half of them were only given the option of using an internet questionnaire, whereas the other half had the possibility to choose between an internet and paper questionnaire. The main purpose of the study was to compare estimates from the QVT with those obtained in the *Conditions Travail* (CT) survey. The study highlighted some important differences arising from survey mode:

- The face-to-face CT survey had a higher response rate (72%) than the self-administrated QVT (41%).
- Allowing QVT participants to choose between web or paper interviews led to a higher response rate (55%) than in the case where participants could conduct only a web interview (45%).
- After controlling for a number of observable characteristics, the response styles differed significantly in the case of subjective questions, with respondents replying more negatively in the self-administered QVT survey than in the face-to-face CT survey; conversely, the responses were broadly comparable between the two surveys in the case of more factual questions.
- Item non-response rates were higher in the self-administered QVT survey (31%) than in the face-to-face CT survey (17%).
- There is also evidence of self-selection effects in the self-administered QVT survey; people whose work involves a lot of physical activity are less likely to take a self-administered survey.

Source: Razafindranovona, T. (2017), "Exploitation de l'Enquête Expérimentale Qualité de vie au Travail", *INSEE Working Paper, www.insee.fr/fr/statistiques/2584965*.

Questionnaire design

Focus and content of the survey

The quality of the working environment can be measured through a variety of survey instruments, with the number of question items and the wording used for each question depending on the survey vehicle chosen. The questionnaire modules in Annex 6.A provide sets of recommended questions that could be incorporated in the different survey vehicles.

While the survey instrument can take various forms depending on the budget and other considerations, the selected survey vehicle always needs to include a number of covariates for analytical purposes. These covariates can be grouped into the following five dimensions:

- ***Eligibility***, including items such as:
  - *Paid work*: Questions on the quality of the working environment should refer to the current job, implying that it is very important to identify the population with a paid job. Surveys of specialised working conditions use this identifier to determine whether an individual selected in random sampling is eligible to participate in the survey, whereas labour-force surveys or general social surveys that rely on a broader sampling frame can use the identifier to determine who is asked these questions, and who is not.
  - *Multiple jobs*: Since some workers hold multiple jobs, while questionnaire space allows asking about only the main job, a question on the number of jobs should be included.
  - *Employment status*: Surveys that measure the quality of the working environment should include questions on the employment status of respondents, as some aspects of the working environment are applicable only to employees but not to the self-employed.
- ***Demographic characteristics***, such as:
  - *Age* of the respondent, in single years if possible. Age bands, while allowing for some cross-classification, are less desirable both because they allow less flexibility with respect to the groups examined and because they do not facilitate analysis of age as a continuous variable.
  - *Gender* of the respondent.
  - *Marital status:* This should include both the respondent's legal marital status, including whether the respondent is widowed, divorced or separated, and the social marital status, including whether the respondent is living with a partner even if not legally married.
  - *Children***:** The number and age of children in the respondent's household unit, along with their relationship to the respondent.
  - *Household size:* The number of people living in the respondent's household. Household size is a distinct concept from family size, as more than one family unit can live in a dwelling.
  - *Migration status/Country of birth/Year of arrival:* The respondent's migration status, such as permanent residence, citizenship, etc., and/or country of birth.
- ***Employment characteristics*** such as:
  - *Contract type:* The quality of the working environment typically differs between temporary and permanent contract holders. Additionally, various types of temporary employees may differ in the quality of their jobs. The survey should allow distinguishing between contracts of unlimited duration, fixed-term contracts, contracts through temporary employment agencies, and apprenticeships.
  - *Occupation and industry of employment:* The quality of the working environment will also vary depending on workers' occupations and sectors of employment. Survey modules on the working environment should hence include questions on these two aspects of the employment relation (based on existing international classifications), both to highlight systemic differences across workers belonging to different categories and to allow assessing the importance of structural differences in the occupation and

industry composition of employment for country-level measures of the quality of the working environment.

- *Weekly working hours:* This question should ideally refer to the usual weekly hours someone works, rather than to the contractual hours, since some individuals may often have to work longer hours than contracted in order to meet job demands. The recommendation is to measure the usual hours worked both in the main job and in all jobs separately.

In addition to demographic and work-contract characteristics, which can be used to analyse differences across population groups and types of workers, surveys on the quality of the working environment should also include questions on the impacts that the working environment might have on workers' well-being and on firms' productivity; while these impacts are not aspects of the working environment *per se*, gathering information about them would allow the assessment of the pay-offs of any changes in policies and management practices to workers and firms. Where space allows, it would hence also be beneficial to include questions on:

- ***Work-related well-being***, encompassing aspects such as:
  - *Job satisfaction:* A question on workers' satisfaction with their job or with their working conditions can capture the overall evaluation by workers of their job. While, on average, people with a better working environment report higher job satisfaction, the relationship between the two can vary across population groups and over time.
  - *Work related feelings:* The quality of the working environment is an important driver of work-related feelings such as being calm, tense, content, relaxed, worried, cheerful, depressed, gloomy, miserable or optimistic. Various job characteristics are closely related to experiencing positive and negative affect. Affect can be asked using questions on whether in the recent past the job has caused workers to experience a number of these feelings, for example using the questions proposed by the OECD *Guidelines on Measuring Subjective Well-Being* (OECD, 2013).
  - *Work-life balance:* The extent to which some aspects of the working environment affect individuals' well-being also depends on their non-work commitments and responsibilities; this implies that the working environment should be assessed in conjunction with an individual's work-life balance. This can be measured through workers' self-assessment on whether their working hours fit their personal commitments.
  - *Commuting time:* A long commute to work is one of the main drivers of general well-being. While not a characteristic of one's job, it depends on where the job is undertaken in relation to where the worker lives. This could be measured through a question on the number of minutes per day spent in commuting to and from work.
- ***Workers' productivity and organisational commitment,*** encompassing questions on:
  - *Discretionary effort,* i.e. the amount of effort that workers put into their work beyond what is required by their job. Workers in high-quality working environments may go the extra mile and put in more work effort at their discretion, whereas those working in poorer conditions are likely to put in only as much work as is needed. Discretionary effort is a proxy of worker productivity and a driver of a firm's efficiency.
  - *Commitment***:** Workers who enjoy a better working environment are likely to feel more committed to their firms, thus increasing the retention rate and firm productivity.

Question wording

In order to measure the quality of the working environment at the *individual level*, focusing on experienced *outcomes* at work as *objectively* as possible, questions need to be formulated carefully. Each question (or set of questions) should focus on a specific job characteristic that is being measured and ask about the presence of the job characteristic in the respondent's job as factually as possible. In order to achieve this, the question wording can include phrases such as "does your job involve/require…" or "how often in your job do you…", or statements for agreement or disagreement such as "I might lose my job in the next 6 months" rather than "I am worried about losing my job".

Double-barrelled formulations that combine a number of characteristics in a single question should be avoided, e.g. the extent to which one's main job involves repetitive hand movements *and* lifting heavy objects – the job may feature the first characteristic only occasionally whereas it may require the latter almost all the time, making it difficult for respondents to answer in a unique way. However, due to space limitations, it may sometimes be necessary to measure more than one job characteristic in a single question. For example, work intensity can take two distinct forms – working at very high speed or working to tight deadlines. Since these two types of intensity are traditionally experienced by different occupational categories (blue-collar workers tend to work at high speed, whereas white-collar ones often work to tight deadlines), both aspects of intensity can be captured in the same question as the "job involves working at very high speed *or* to tight deadlines" where questionnaire space is limited.

Other considerations regarding question wording include the following:

- Questions measuring the quality of the working environment should follow an initial instruction indicating that the focus is on the *main* and *current* job (not on all jobs that one holds or past jobs that one has held).
- Questions can be asked in question format (e.g. "Do you learn new things in your job?") or as statements that respondents can agree/disagree with (e.g. "You learn new things in your job"), following an introductory statement such as "To what extent do you agree or disagree with the following statements about your main job?" For factual questions, like those recommended by these *Guidelines*, both question and statement formats work well, provided that they are presented with the appropriate response format.
- Finally, some of the job characteristics that matter the most for the quality of the working environment are experienced infrequently, such as intimidation and discrimination, or training. Questions measuring these kinds of job characteristics should include an appropriate time frame, such as "within the last 12 months".

Response format

The format and the number of response options are equally crucial for measuring a concept successfully. A well-designed question is both clearly worded and contains a response scale that has discriminatory power. Having too few response options may prevent respondents from fully expressing the quality of their working environment, whereas too many options may increase the cognitive burden on respondents, who may not be able to make finer distinctions between the response categories, thereby lowering the quality of the data. Decisions on response format also include how these options should be labelled, whether the construct should be measured on a unipolar scale (e.g. "not

at all/completely") or bipolar scale (e.g. "agree/disagree"), and whether they should include the intensity or frequency of the job characteristic experienced.

The choices on response format depend on the survey mode, the length of the survey and the type of concept being measured. For example, lengthy response categories or a large number of response options are more appropriate for self-completion questionnaires with verbal clues (e.g. pen-and-paper or internet-based surveys) compared to interviewer-led surveys (e.g. face-to-face or telephone surveys). Offering different response formats for different questions in lengthy surveys adds to the already long survey completion time, potentially reducing the quality of the responses and increasing the (item or complete) non-response rate. A detailed discussion of response formats based on existing evidence is available in the OECD *Guidelines for Measuring Subjective Well-Being*, which is published as part of this series (OECD, 2013). While evidence on the impact of the response format on survey quality is limited in the case of more factual questions such as those on job characteristics, a number of recommendations from the general survey design as well as from the *Subjective Well-being Guidelines* apply here.

- *Response options should be mutually exclusive and exhaustive*. Respondents should be able to place themselves in the response scale with ease, with options that do not overlap with each other. Since job characteristics are measured mostly on an ordinal (i.e. "agree/disagree") or numerical scale, rather than through a nominal scale (e.g. types of physical risk factors that the job involves), the mutual exclusiveness and exhaustiveness of the response scale means that the options should include "Don't Know" and "Refusal" categories as well. In most specialised working conditions surveys that are carried out by an interviewer, these additional options are not read out initially, but recorded by the interviewer if the respondent fails or refuses to provide an answer. This ensures that the respondent puts in the cognitive effort to find the response that best suits his situation, rather than using the "Don't Know" and "Refusal" categories as default options.[5]
- *Number of response options*. General research on survey design indicates that the appropriate number of response categories offered depends on the nature of these categories (e.g. verbal, numeric or based on sliding scales), the survey length and the survey mode (interviewer-led, presence of visual clues). Bradborn et al. (2004) suggest that, in a verbal setting (with no visual clues), up to five categories should be offered if all the response labels are verbal. Moreover, if all the response categories are qualitatively different (e.g. nominal categories such as types of physical risk factors at work), then the maximum number of responses should be four. For sliding scales (frequency, agreement/disagreement, level of intensity) and with verbal clues such as show cards in interviewer-led questions, or self-administered surveys, up to seven categories can be used. Indeed, the specialised working conditions surveys examined in this chapter offer up to 7 response categories.
- *Dichotomous scales*. Surveys on the working environment sometimes use dichotomous response scales (with "Yes/No" answers), as in the case of some of the questions in the European Working Conditions Surveys (e.g. questions on autonomy and task discretion) and the French *Enquête Conditions de Travail*. While in these types of long surveys the use of dichotomous scales can reduce the cognitive burden and survey duration, and thus the survey cost, job characteristics that are measured as part of the quality of the working environment are experienced in varying degrees. For both the quality assurance of statistics on the working environment and for capturing the variation across individuals it

is important to design questions with finer differentiated response scales. Therefore, these *Guidelines* recommend avoiding dichotomous response scales as much as possible.

- *Labelling scale options.* Response scales can be labelled in various ways, based on whether scale anchors are provided only at the two ends of the scale (and, if so, whether to label these end points) or verbal labels are offered to all response options. While research shows that how the scales are labelled affects the distribution of responses (e.g. Conti and Pudney, 2011, on the job satisfaction question in the British Household Panel Study), it is not clear which strategy produces the highest quality data. Some authors have argued that verbally labelling all response options helps to clarify their meaning and leads to more stable responding (Alwin and Krosnick, 1991), while others suggested that verbally labelled scales, compared to numerical scales with end-points anchored by labels, pose translation challenges because of the cultural and linguistic differences that affect how verbal scales are interpreted in different countries (Veenhoven, 2008). Due to the factual nature of the questions recommended in these *Guidelines,* these concerns apply to a lesser degree, depending on the survey mode. The most common practice in the surveys examined in Chapter 2and in the OECD inventory is to provide response labels for all options when the number of response categories is seven or below and when show cards are available. Whatever the choice made, what matters the most is the consistency of the format for scale-labelling throughout the survey (as much as possible), across years, across countries, and in mixed-method surveys across survey modes.

Length of survey

Surveys that are used to collect information on the working environment are often very lengthy, with their length depending on the survey mode(s), type of questions and respondent characteristics. Face-to-face interviews often take a longer time to complete, whereas surveys with a self-completion component are typically shorter. For instance, the average duration of the 6th European Working Conditions Survey (Eurofound, 2016), which is conducted face-to-face at respondents' homes, is 45 minutes, ranging between 38 minutes in Albania and 56 minutes in Denmark. The Finnish Working Life Barometer, which is conducted via Computer-Assisted Telephone Interviewing, takes 22 minutes on average.

While there is no concrete information available on the duration of questions directly measuring the quality of the working environment, it is possible to provide an estimate for the questionnaire modules proposed in Annex 6.A of these *Guidelines*. The extended module, which includes 25 questions, is expected to take about 6½ minutes to answer; the condensed module of 13 questions about 3½ minutes; and the core module containing 4 questions about 60 seconds.

Target sample and sampling

Measures of the quality of the working environment are compiled more easily if they refer to the current job, rather than to previous jobs. This implies that, when measuring the quality of the working environment, the target population should be the working-age population engaged in paid work. This also implies that the survey vehicle used for measuring the working environment should ask questions on the age of respondents, as well as their sector of economic activity, to select those who do paid work for interviewing, or to filter the working environment questions for those who currently do paid work.

The definition of the working-age population varies across countries depending on the education system and statutory retirement age. For example, European Working

Table 6.3. **Average length of surveys covering the quality of the working environment**

Country	Name of the Survey	Average duration or length
Austria	Work Climate Index	..
	Reconciliation of work and family: Module of the Microcensus 2010	22 questions.
	Occupational accidents and work-related health problems: Module of the Microcensus 2007	17 questions.
Bulgaria	National Working Conditions Survey in Bulgaria	Between 30 and 60 minutes.
	Work Climate Index	Between 55-60 minutes.
Czech Republic	Quality of working life	32 questions in 2005, 60 in 2006.
	Value of health	129 questions.
	Our society 2008	70 questions in total, of which 4 plus 2 multi-item questions related to working conditions.
Denmark	Danish Work Environment Cohort Study (DWECS)	55-62 questions.
	Working Environment and Health in Denmark 2012-2020 (WEHD)	55 questions.
Estonia	Estonian Working Life Survey	30 minutes, most between 20 and 40 minutes.
	Employment Contract Act Survey	45 to 60 minutes.
Finland	Finnish Quality of Work Life Survey	60 minutes.
	Working Life Barometer (WLB)	22 minutes.
	National Finnish Work and Health Survey	31 minutes.
	MEADOW	22 minutes for the employer survey and 24 minutes for the employee survey.
France	Working conditions surveys	1 hour 45 minutes.
	Medical Monitoring Survey of Professional Risks	70 questions for patients, 153 questions for medical officers.
Germany	BIBB/BAuA – Employee Survey	40 minutes.
	German Socioeconomic Panel Study	30 to 40 minutes for individuals, or 80 to 90 minutes for two people or a household.
Greece	Survey on Reconciliation between Work and Family Life (2010 AHM)	Not available.
	Survey on Employment of Disabled People (2011 AHM)	Not available.
Italy	Quality of work survey	25 minutes.
	Survey of changes in work	65 questions.
	PLUS – Participation, labour, unemployment survey	22 minutes.
Slovak Republic	Information System on Working Conditions (ISWC)	1 hour 20 minutes.
Spain	National Survey on Working Conditions	27 minutes.
	National Survey on Quality of Life in the Workplace	101 questions.
Sweden	The work environment	105 questions.
	Work-related disorders	5-10 minutes.
United Kingdom	Skills and Employment Survey (2012)	59 minutes.
	Workplace Employment Relations Survey (WERS)	90 minutes with senior management.

Source: Adapted from Cabrita and Peycheva (2014), *National working conditions surveys in Europe: A compilation*. Luxembourg: European Foundation for the Improvement of Living and Working Conditions.

Conditions Surveys cover a broad age range, starting with those who are 15 and older;[6] conversely, the definition of working age is limited to those aged 20 to 65 in the 2012 British Skills and Employment Survey,[7] while the Danish Work Environment Cohort Study samples those who are between 18 and 59. Table 6.4provides details on how the target population is identified in different national working-conditions surveys.

While surveys have different definitions for what counts as paid work, specialised surveys on working conditions use the self-reported job status, in which the individual works a certain number of hours per week. For example, both the European Working Conditions Surveys and the British Skills and Employment Surveys use the criterion of having worked at least one hour in the reference week of the survey, whereas the Finnish Quality of Work Life Survey selects individuals if they work 10 hours or more per week. Therefore, people are selected in the sample if they worked at least the specified number of hours within the past

week, and reply to the questionnaire based on the main job that they did in the last week. (See Box 6.5 for instructions on how to identify eligible respondents in the British Skills and Employment Survey.) Once the eligibility criterion is established, the sampled households are screened to identify eligible respondents. Where more than one household member is in the specified age band and in paid work, one of them is selected to participate randomly, for example using the Kish grid selection process.[8] In such cases, selecting one eligible household member, rather than interviewing all eligible members, will ensure that individuals clustered in the same household do not bias the sample so that it remains representative of the working population.

The issue of proxy respondents

A proxy respondent is someone who reports on the properties or activities of another person in a survey. Proxy respondents are frequently used in household surveys such as labour-force surveys, as well as in population censuses, as an alternative to interviewing all household members when individual interviews are either impractical (e.g. children aged 14 or less) or impossible (e.g. the eligible member not being present at the time of the interview). At least for the adult population, it is clearly preferable to collect the information directly from the selected individual, yet proxy responses are not necessarily inferior if the self/proxy discrepancy in answers is negligible. This depends on the nature of the relationship between the proxy and the individual, the type of information needed and the cognitive effort required to answer the question. For example, the accuracy of information collected from spouses on household expenditures tend to be high; however, it will not be as good on topics that involve knowledge of the targeted individual's practices and activities outside of the household.

Proxy respondents are problematic for collecting information on job characteristics for a number of reasons: 1) the information may not be available to the proxy; 2) the proxy's answers could be primed by their own work life; 3) the proxy may not have the cognitive capacity to answer work-related questions; 4) the proxy may face the double burden of answering about both their own work life and that of the target person; and 5) proxy respondents are distributed non-randomly across households.

First, in most cases, paid work takes place outside of the household where the target individual spends a substantial part of the day. Even though household members, especially spouses, tend to talk about their workday when returning home from work and are fairly knowledgeable about the daily routines, colleagues, deadlines or important meetings of other members of the same household, they do not have a full account of the job that they perform. Household members, or spouses, are also likely to avoid talking about work at home in order to establish a work-life boundary. This is not only true for negative aspects of their work, since a negative mood can be contagious, but also for positive aspects. People may avoid drawing a too rosy picture of their work activity to other household members, especially to their partners, in order to prevent looking too happy outside the home. Household members can have not only an incomplete picture of other members' work life but also an inaccurate picture of it.

Second, even if hypothetically the proxy has full knowledge about the job characteristics of the target person, answers by the proxy can be primed by his/her own work experience. When this is the case, the proxy takes their own work as the reference point and reports on the target person's job in relation to their own. This could hamper the quality of responses, particularly for items with ordinal scales with degrees of agreement or

Table 6.4. **Target population in selected national working conditions surveys**

Country	Name of the Survey	Target Population
Austria	Work Climate Index	All gainfully employed people, self-employed people were exempt.
	Reconciliation of Work and Family: Module of the Microcensus 2010	Residential population in private households aged between 15 and 64.
	Occupational accidents and work-related health problems: Module of the Microcensus 2007	Residential population in private households aged 15 and over who were either in employment at the time of interview or have ever been in employment.
Bulgaria	National Working Conditions Survey	Employees working in companies with 6 or more employees.
	Work Climate Index	The working population aged 15 and over, employed including working students and pensioners.
Czech Republic	Quality of Working Life	Economically active inhabitants over age 15.
	Value of Health	Economically active inhabitants aged 17 and over, including employees, self-employed and entrepreneurs.
	Our Society 2008	Population over the age of 15.
Denmark	Danish Work Environment Cohort Study (DWECS)	Population aged 18 to 59.
	Working Environment and Health in Denmark 2012–2020 (WEHD)	Active population aged 18–64 employed or self-employed.
Estonia	Estonian Working Life Survey	1. Organisations with at least 5 employees 2. Employees working at an organisation with at least 5 employees.
	Employment Contract Act Survey	1 Employers: Organisations with at least 5 employees. 2. Employed and unemployed people.
Finland	Finnish Quality of Work Life Survey	15–64-year-old employees who normally work 10 or more hours per week.
	Working Life Barometer (WLB)	Employees aged 18 to 64 who normally work 10 or more hours a week.
	National Finnish Work and Health Survey	20–68-year-old employees and self-employed people working at the time of the study.
	MEADOW	Private and public-sector organisations that employ 10 or more employees and 1 or 2 randomly selected workers in these organisations.
France	Working Conditions Survey	1. *In employment*: Everyone who has a job. 2. *Employers*: Employers of those employees if the establishment employs 10 or more people, plus sample of public and private establishments having 1 or more employee.
	Medical Monitoring Survey of Professional Risks	All employees.
Germany	BIBB/BAuA – Employee Survey	Employees aged 15 and over, working in a paid job for 10 or more hours a week People of migrant background are covered if they have the language skills to answer the questions. Apprentices in vocational training, students or interns are excluded.
	German Socioeconomic Panel Study (SOEP)	All household members, including nationals with a migrant background and foreigners.
Greece	Survey on Reconciliation between Work and Family Life (2010 AHM)	People aged 15 to 64 living in private households, and non-residents staying in the country for at least one year.
	Survey on Employment of Disabled People (2011 AHM)	People aged 15 to 64 living in private households, and non-residents staying in the country at least one year.
Italy	Quality of Work Survey	The employed population above the age of 16.
	Survey of Changes in Work	All employed people.
	Participation, Labour, Unemployment Survey	Population aged 18 to 75.
Slovak Republic	Information System on Working Conditions (ISWC)	Employers in all sectors and regions.
Spain	National Survey on Working Conditions	Employees and self-employed population aged 15 or more.
	National Survey on Quality of Life in the Workplace	All of the working population (aged 15+), both employees and self-employed.
Sweden	The Work Environment	Employed population aged 16 to 64 years.
	Work-related Disorders	Employed population aged 16 to 64 years.
United Kingdom	Skills and Employment Survey	People aged 20-65 living in private households; currently in a paid job working for 1 or more hours a week, including self-employed.
	Workplace Employment Relations Survey (WERS)	Employers and employees in workplaces with 5 employees or more.

Note: The sampling frame and strategy differ if the measures of the quality of the working environment are collected via household surveys such as the labour-force surveys. Sampling frames in household surveys tend to be broader – such as all individuals within a certain age range (e.g. 18-74) living in private dwellings. Individuals in selected households are then all interviewed, either directly or using proxy respondents, when the household member selected is not present at the time of the interview.
Source: Adapted from Cabrita and Peycheva (2014), *National working conditions surveys in Europe: A compilation*. Luxembourg: European Foundation for the Improvement of Living and Working Conditions.

Box 6.5. **Instructions to interviewers for determining eligibility to participate in the British Skills and Employment Survey**

"Our target population is people aged 20-65 who are in paid work. It doesn't matter if they are employed or self-employed, full-time or part-time, as long as they are paid for their work and do at least one hour a week. In most cases, the distinction between eligible and ineligible should be easy to determine, since the criteria for selection are relatively simple (i.e. in paid work at least one hour a week). To follow are some examples of cases in which the situation would be less clear-cut and tips on how to handle each:

- *Someone claiming an unemployment benefit*. This person might say to you "I'm on the dole, so it's not relevant to me". Please remember that (a) many people who claim benefit also do work, often legally, and (b) benefit status is not an issue for this study – we are only interested in the paid work that people are doing. So it is perfectly possible that someone in this situation would be eligible (although you should obviously be tactful when probing further – we don't want people to think we are checking up on them).
- *Someone doing voluntary work*. Unless (s)he is also doing paid work, this person would be ineligible. Some voluntary workers do get their expenses reimbursed, but if that is the extent of *payment*, (s)he would still be ineligible.
- *Someone who is on holiday/maternity leave/sick leave*. As long as the job has not come to an end as a result of the period of absence, (s)he would be eligible. Please note: long-term sick leave is defined as 6 months or more for this survey; if a person has been off sick for less than 6 months, they are eligible; for longer periods of sick leave please check with head office.
- *Someone on a period of unpaid leave or a sabbatical*. If the respondent feels that (s)he still has a job to go back to at the end of the period of unpaid leave, (s)he is eligible.
- *Someone who has an irregular job* (i.e. doesn't work a regular number of hours, or doesn't work every week). If the job is ongoing, this person is eligible, even if (s)he hasn't worked in the seven days prior to interview. So, for example, an oil rig worker who works one week on, one week off would be eligible. (For the purposes of the survey, you can treat the week they do not work as holiday.) However, the minimum eligibility requirement for someone who works irregularly is that they must have worked at least once in every two weeks. So, for example, a self-employed gardener who works for 7 hours one Saturday every month would be ineligible.
- *Someone who has a domestic arrangement whereby (s)he is "paid" to keep house*. Some couples have an arrangement whereby one partner has an earned income, and the other takes a share of that income as "payment" for keeping the home running. In most cases, the "housekeeping" partner would be ineligible, unless the arrangement is so formal as to have some kind of contract.
- *Someone who is paid but does not work* (e.g. a non-executive Director of a company who gets a wage but only has to, say, sit in on a Board meeting once a year). Assuming this person has no other paid work, (s)he would be ineligible… they are not satisfying the *at least one hour paid work a week* rule.
- *Someone who works in a family business but does not draw a wage*. In this instance, you would have to leave it up to the respondent to decide whether or not (s)he gets any pay or financial profit from the work (s)he does in the business. If so, (s)he is eligible, if not, (s)he is ineligible.
- *Someone who is almost 20 or only just turned 66, and in work*. You must take the date that eligibility is established as the cut-off point for eligibility. If the person is not within the required age range on that date, (s)he is ineligible.
- *Someone who says they were made redundant last week*. You should check whether they did any paid work for at least one hour last week. If they did so, they are eligible. Another rare situation would be if someone was eligible (i.e. in paid work) on the date that eligibility is established, but when you came to do the interview, his/her job had come to an end. In that situation, you should do your best to persuade her/him to do the interview on the basis of the job (s)he was doing at the time of selection. We appreciate that this might not be easy, particularly if the loss of job was a traumatic experience, but do your best and withdraw tactfully if necessary.

Box 6.5. **Instructions to interviewers for determining eligibility to participate in the British Skills and Employment Survey** *(cont.)*

- Someone who has been made redundant but has been "paid off" rather than work their notice (sometimes known as "on gardening leave"). It depends on how recently they were paid off; check whether they did any paid work for that employer for at least one hour last week in the last week – if they did so, they are eligible, if not, they are ineligible.
- Someone who has been suspended from work pending a decision. If they expect to return to their job (for at least one hour per week) and the duration of their suspension is less than 6 months at the time you talk to them, they are eligible. For all other cases, please check with head office".

Source: Skills and Employment Survey 2012 – Technical Report, pages: 129-131.

disagreement. For instance, in the case of questions on the difficulty of taking a few hours off to take care of personal matters, when the proxy has (or used to have) a very strict line manager and cannot easily take time off herself or himself, they could report that the target has no difficulty in taking a few hours off, even when in reality the target person may find it difficult. Another example is work intensity: when the proxy works with little work intensity, it may appear to him/her that the target individual works with a very high intensity when, in reality, the target's job only occasionally involves tight deadlines or time pressure. In other words, people's own assessment may sometimes reflect the comparisons they make between their own work conditions and those of other household members.

Third, if the proxy has never been in paid employment or in an office space, some of the questions on job characteristics may not resonate well in their cognitive processing. This does not necessarily reflect a lack of knowledge of the target individual's work, but rather the difficulty for proxies to relate to the situations addressed by the questionnaire. An example of this could be questions on organisational structure or management practices, where the proxy respondent is asked to quantify, for instance, the latitude the target individual has in decisions regarding the company's future. Even if the proxy has extensive information on the daily work of the target respondent, some aspects of work cannot be understood by those outside the labour market.

Fourth, using proxy respondents may increase the response burden to the proxy, if they are interviewed in the survey as well. Questionnaires specially designed to measure working conditions, as well as broader surveys that can be used to measure the quality of the working environment, tend to be lengthy. If the same respondent is interviewed both on behalf of themselves and on behalf of non-present household members, the quality of the responses can be heavily compromised.

Finally, beside the issues related to the ability of the proxy to respond to the questions properly, the probability of relying on a proxy respondent for the targeted individuals is not distributed randomly. Proxy respondents are distributed non-randomly across the type of jobs held by the target population. In other words, certain target individuals are more likely to be absent at the time of the interview, and thus to be *proxied*. People who work fewer hours, or who work from home at least certain days of the week, are less likely to be absent, whereas those who work long hours or have demanding jobs are more likely to be absent when contacted for a survey. For this reason, when measuring the quality of the working environment, the inclusion of proxy respondents in the survey generates a non-random sample and estimates that are not representative of working individuals.

Because of these considerations, information on the quality of the working environment should be collected through surveys with a sampling strategy that involves selecting and interviewing *only* those individuals who are in paid work, while avoiding proxy respondents when the target individual is not available for interview. However, many surveys, including labour-force surveys and some social surveys, collect the information at the household level and rely on proxy respondents when targeted household members are not present at the time of the interview. When these types of surveys are used as a vehicle to collect information on the quality of the working environment, questions on the working environment should not be directed to proxy respondents, and should be collected only from the sampled individuals who are present. When the quality of the working environment is measured using household surveys, the implications of non-random selection due to some household members not being present at the time of interview should be further investigated.

Place of interview

Even though the focus of questions on the working environment is the workplace, surveys that measure this phenomenon should be administered outside of workplaces, as any association with someone's workplace and/or employer may bias responses. Also, not all types of work are carried out in environments that are conducive to completing an interview. For example, the quality of an interview at the workplace would differ significantly between truck drivers, who spend a large proportion of their time behind the wheel, and clerks, whose work takes place behind the desk. Interviewing all respondents at their homes will eliminate this heterogeneity arising from differences in the interview location.

In the case of face-to-face interviews, it is recommended that the interview take place at the respondent's home and is administered by independent interviewers. If the survey is delivered by mail, it should be addressed to the individual's home address, whereas in the case of e-surveys, the questionnaire should be sent to personal e-mails, rather than to corporate e-mail addresses.

Existing survey vehicles that collect information on the quality of the working environment – namely the European and national working conditions surveys, labour force surveys and general social surveys – follow this practice and interview respondents at their residence (Table 6.5).

Frequency of enumeration

The quality of the working environment is affected by social and economic changes, implying that data on it should be collected on a regular basis. Business cycles affect both the quantity and quality of jobs, by changing the power relations between employer and employees, the composition of workers in terms of age, gender and skills, the number of jobs in different industries, the type of contracts for the jobs being created or destroyed, the hours of work that individuals need to perform to meet demands for their product – all factors that could lead to changes in the working environment. Similarly, technological change affects how work is organised, with implications for the intensity of the tasks that are carried out. Changes in policies also impact on the working conditions; for example, policies that erode the strength of trade unions can affect fringe benefits, maximum work hour regulations and workers' participation in organisational decision making. Therefore, the quality of the working environment should ideally be measured on a regular basis so as to allow monitoring changes in working conditions over time (see Box 6.6 for evidence on changes in work intensity since the crisis).

Table 6.5. **Place of interview in selected national working conditions surveys**

	Name of the Survey	Location of the interview
Austria	Work Climate Index	The interviews are conducted face to face at home.
	Reconciliation of work and family: Module of the Microcensus 2010	Face-to-face CAPI interviews carried out at home.
	Occupational accidents and work-related health problems: Module of the Microcensus 2007	Face-to-face CAPI interviews at home. In cases where household members were not present, the interviews were conducted via CATI telephone interviews.
Bulgaria	National Working Conditions Survey in Bulgaria	Various tools and data sources were used during the fieldwork, which took place at the enterprise at which employees, employers and health officers were based.
	Work Climate Index	Standardised face-to-face interviews using show cards in private households.
Czech Republic	Quality of Working Life	Face-to-face interview at home.
	Value of Health	Face-to-face interview at home.
	Our Society 2008	Face-to-face interview at home.
Denmark	Danish Work Environment Cohort Study (DWECS)	Respondents were contacted at their home, either by mail or telephone, to fill in telephone or online questionnaires.
	Working Environment and Health in Denmark 2012–2020 (WEHD)	Online Survey, and postal questionnaire.
Estonia	Estonian Working Life Survey	In most cases, the interview took place in the employee's home or other (public) location preferred by the interviewee (interviewing in the workplace was avoided).
	Employment Contract Act Survey	In most cases, the interview took place in the interviewee's home or other (public) location preferred by the interviewee (workplaces are avoided). Most of the interviews lasted around 60 minutes.
Finland	Finnish Quality of Work Life Survey	Face-to-face interviews at home or elsewhere.
	Working Life Barometer (WLB)	CATI.
	National Work and Health Survey	CATI.
	MEADOW	CATI.
France	Working Conditions Survey	*In employment* section completed through CAPI interviews with 1 or 2 household members, conducted by INSEE researchers equipped with a computer visiting the homes of survey participants. The last part of the interview comprises a section for self-completion with headphones.
	Medical Monitoring Survey of Professional Risks	At physicians' offices.
Germany	Employee Survey (BIBB/BAuA)	Telephone interview, at home.
	German Socioeconomic Panel Study	PAPI and CAPI interviews conducted at the interviewee's home.
Greece	Survey on Reconciliation between Work and Family Life (2010 AHM)	Face-to-face interviews, at private households with paper questionnaire or by telephone.
	Survey on Employment of Disabled People (2011 AHM)	Face-to-face interviews, at private households with paper questionnaire or by telephone.
Italy	Quality of Work Survey	CATI interviews, at home.
	Survey of Changes in Work	About 5 000 interviews were collected using a CATI methodology, while about 500 were collected online.
	Participation, Labour, Unemployment Survey	CATI, at home.
Slovak Republic	Information System on Working Conditions	By telephone, online and post. Questionnaires filled in at the workplace.
Spain	National Survey on Working Conditions	Face-to-face interviews at the interviewee's home using a tablet PC, and PAPI or a paper questionnaire.
	National Survey on Quality of Life in the Workplace	The interviews are carried out by phone, using the CATI system. The interviews are carried out in person through the CAPI system only when it is not possible to get in touch with the contacts on the phone.
Sweden	The Work Environment	Structured CATI interviews followed by a postal or web questionnaire.
	Work-related Disorders	CATI interviews conducted as an addition to the LFS.
United Kingdom	Skills and Employment Survey	CAPI and CASI, at individuals' homes.
	Workplace Employment Relations Survey	The employee questionnaire was completed online or on paper by up to 25 employees in participating workplaces.

Source: Adapted from Cabrita and Peycheva (2014), *National working conditions surveys in Europe: A compilation*. Luxembourg: European Foundation for the Improvement of Living and Working Conditions.

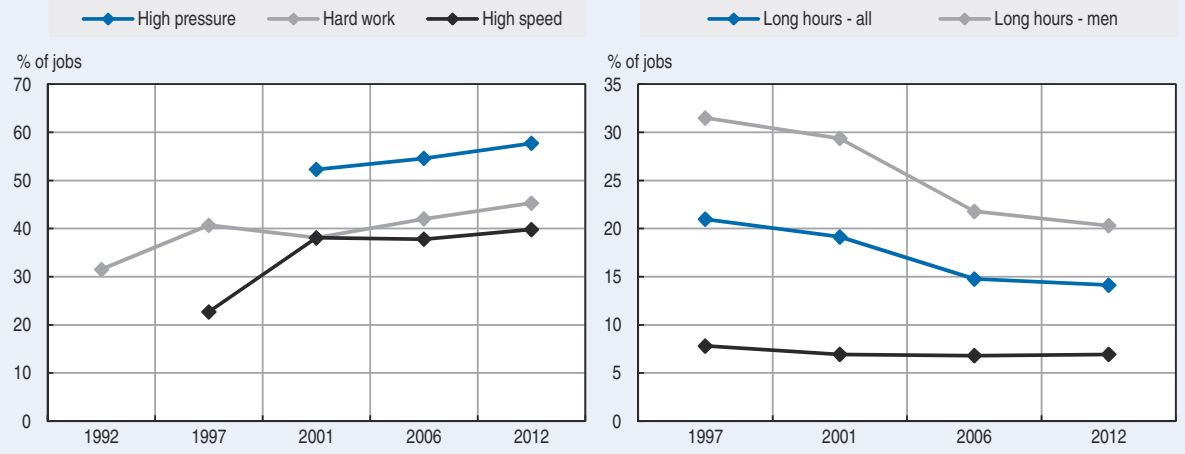
Well-established specialised working conditions surveys such as the European Working Conditions Survey, the French *Enquête Conditions de Travail* and the British Skills and Employment Surveys have been carried out on a regular basis since 1991, 1978 and 1986, respectively. The EWCS is repeated every 5 years, the French survey every 7 years and the British survey every 4 to 6 years.

The frequency of these surveys allows the monitoring of changes in the quality of the working environment. However, since they require advance planning, preparatory work and funding, there is no flexibility in their scheduled timing. In the presence of unexpected changes in the business cycle or in government policies, it is not possible to schedule a specialised working conditions survey to capture the consequences of these changes. Some of the immediate changes in working conditions, which may materialise after a few years, can be completely missed, depending on the scheduled intervals of the large-scale working conditions surveys. Therefore, the quality of the working environment should also be monitored with a core set of questions on a more regular basis. These core questions (see Annex 6.A for question recommendations) should be incorporated in labour force surveys or general social surveys and ideally collected on an annual or quarterly basis.

Box 6.6. **Trends in work intensity in the United Kingdom and the United States**

The prevalence of jobs requiring hard work increased in the United Kingdom by over 9 percentage points between 1992 and 1997, remained constant from 2001 to 2006, and increased again by around 3 points from 2006 to 2012. Both periods of increases in work intensity followed recessions, providing some circumstantial support to the view that employers use recessions to ratchet up effort levels. The increase in work intensity recorded in 1992-97 is highlighted by workers' self-reports of working at very high speeds. In 1997, 23% of respondents reported that they worked at very high speeds three-quarters or more of the time; by 2001, this share had risen to 38%, and by 2012 to 40%. Similarly, the increase in work intensity is reflected in the higher share of respondents who reported that they worked under tight deadlines, whose share increased from 52% in 2001 to 55% in 2006 and 58% in 2012 (Felstead et al., 2013).

Figure 6.1. **Trends in work intensity, United Kingdom**



Source: British Skills and Employment Surveys series.

StatLink http://dx.doi.org/10.1787/888933606300

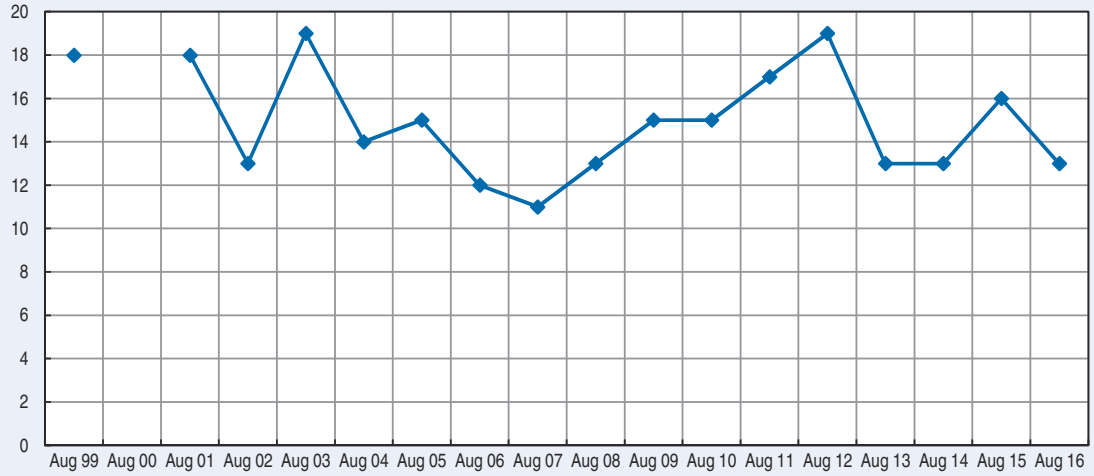
"Hard" annual data on workers' experience of work intensity are rare. The Gallup Poll's yearly satisfaction questions on work and the workplace in the United States highlight changes in workers' satisfaction with

Box 6.6. **Trends in work intensity in the United Kingdom and the United States** *(cont.)*

the amount of work that is required of them. When comparing workers' dissatisfaction with their workload before the 2007/08 financial crisis and in the 5 years after it, the share of those who are dissatisfied with the amount of work required of them increased from 11% in 2007 to 19% in 2012. The data also show a reduction in subjective work intensity between 2003 and 2007, implying that some of the post-crisis increase in work intensity could simply reflect a rebound from the previous decline.

Figure 6.2. **Trends in work intensity, United States**

Percentage dissatisfied with the amount of work that is required of them



Source: Gallup Inc. (2017), Adults employed full time or part time.

StatLink http://dx.doi.org/10.1787/888933606319

6.5. Conclusion

The working environment should be measured following three principles: at the individual level, with a focus on outcomes, as well as on objective aspects that are observable by a third party. To achieve these objectives, the key methodological considerations discussed in this chapter are as follows:

- Where possible, primary sources of data should be preferred over secondary ones. The most appropriate data sources are sample surveys that represent people with jobs. Qualitative interviews, as well as direct observations of a worker's routine, should be used when the focus is exploratory or on a particular group of the population, such as workers in a specific occupation.
- The preferred unit of analysis should be the individual, rather than the firm or the country. Firm-level data provide a shortcut to measuring the quality of the working environment to the extent that management and HR practices influence working conditions; however, each worker experiences his/her job in a unique way, implying that firm-level information may conceal differences across workers. Similarly, country-level information can be useful to analyse changes over time, and to compare countries, yet it is not detailed enough to reflect the multidimensionality of the working environment. Measuring the quality of the working environment at the individual level enables individual differences in the experienced quality of work to be reflected and captures the cumulative effects and trade-offs between various job characteristics. Implementing

such measures requires conducting representative surveys of all workers as well as surveys of workers within individual firms.

- The quality of the working environment is as relevant to the self-employed as it is to employees; thus, self-employed individuals should not be excluded from surveys designed to measure the quality of the working environment. Carefully worded questions that refer to the job rather than to firm-specific practices allow the same questions to be asked of both employees and self-employed workers. However, surveys should also contain questions to identify the self-employed, who are often self-selected into jobs with specific job characteristics, such as autonomy. An analysis of the data on the quality of the working environment should take into account the employment status of workers.
- The questions specifically measuring the quality of the working environment should be complemented with a set of contextual questions. These questions should cover eligibility (e.g. paid work, main job and employment status), demographic characteristics (e.g. age, gender and ethnicity), as well as employment (e.g. job tenure, occupation and industry) and contract characteristics (e.g. temporary or permanent contracts, work hours). Additionally, for analytical purposes, it is recommended that the questionnaire include items on workers' well-being outcomes and their at-work productivity.
- Survey questions on the quality of the working environment do not lend themselves to being answered by proxy respondents. Surveys that are used for measuring working conditions should hence not rely on proxy respondents. If the survey vehicle that contains questions on the working environment allows proxy responses in its design, skip patterns should be used to prevent proxy respondents from providing answers to these questions.
- The survey mode can affect the quality of statistics on the working environment. Self-administered surveys (telephone or internet surveys) produce lower response rates and higher non-completion rates than interviewer-led surveys. Additionally, individuals respond more negatively to questions of a subjective nature in self-administered surveys. Factual questions – as recommended in these *Guidelines* – are less likely to be affected by survey mode effects.
- The sample for surveys measuring the quality of the working environment should be representative of the working population. The most appropriate sampling frame is represented by all individuals (within an age band) who have done paid work in the reference week of the survey. However, household surveys or general social surveys with a sampling frame that covers all people living in private households can also be used for measuring the quality of the working environment. In these cases, sample weights should be applied in order to correct for over-representation of the members of the same household.
- The quality of the working environment responds to business cycles and to social and technological change. This implies that statistics on the quality of the working environment should be collected on a regular basis. If collected approximately every five years, specialised working conditions will capture major changes in the quality of the working environment. More frequent (i.e. annual or quarterly) collection of core questions on the working environment in general surveys, on the other hand, would allow working conditions to be closely monitored for policy action.

Notes

1. Except for Greece, Ireland, and Luxembourg and the Netherlands in 1991; Luxembourg in 1996; Malta and Romania in 2001; and Estonia, Luxembourg, Malta and Slovenia in 2005.
2. In the near future, the EU-LFS will be re-organised with rotating modules repeated every eight years. A number of questions from various AHMs could be brought together to form a special module on the quality of the working environment; a possible condensed set of these questions is provided in Annex 6.A of this chapter.
3. The cross-country comparability of OHSA data on non-fatal work accidents is, however, limited due to differences across countries in the length of the period of absence from work reported to OSHA, the definition of accidents (as compared to absences from work due to working conditions affecting workers' health), the financial compensation provided (which will influence a worker's propensity to report the absence as accident-related), etc.
4. According to labour-force survey data, the share of workers holding multiple jobs in Europe and the United States ranged in 2012 from 8.5% in the Netherlands to 1.4% in Italy, with an average value (across 26 OECD countries) of 4.5%. A higher prevalence of multi-job holders is recorded in the OECD Adult Skills Surveys, with the share of workers holding multiple jobs ranging from 17.2% in Chile to 3.2% in Italy, and an average value (across 30 OECD countries) of 7.8%.
5. A similar mechanism of encouragement does not exist in web surveys, and whether or not the "Don't Know/Refusal" category is offered may significantly affect item non-response patterns. If the option for no response is not provided, respondents may randomly pick a response category, or even leave the questionnaire completely. If it is offered, especially for sensitive or cognitively burdensome questions, respondents are more likely to simply select the "Don't Know/Refusal" category. The quality of the working environment questions is not necessarily sensitive, and since they are about a respondent's daily work, they are not burdensome either – especially if they are well-designed. Therefore, it is not necessary to present a "Don't Know/Refusal" category in web surveys on the quality of the working environment. However, a "Doesn't apply" category should be presented to the respondents.
6. People 16 and over in Bulgaria, Norway, Spain and the United Kingdom.
7. The age coverage of the British Skills and Employment Survey was 20 to 60 in the 1986, 1992, 1997 and 2001 waves of the survey; this was raised to 20-65 in 2006 in order to reflect changes in the retirement age.
8. Kish (selection) grid is a method used for randomly selecting members within a household for interview, with each member having an equal probability to be selected (Kish, 1965).

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ANNEX 6.A

Questions modules on the quality of the working environment

A. Extended module

The extended module presented in Table A.1 contains 25 questions selected from existing national and international surveys on the six dimensions and 17 characteristics of the working environment used in these *Guidelines*. If used in its entirety, this module would provide the basis for a dashboard of indicators to assess comprehensively all key characteristics shaping the quality of the working environment; alternatively, a subset of questions could be used for measuring particular aspects of it. The module is designed for surveys with a specific focus on employment, such as working conditions surveys. This module could be implemented around every four to six years to get an in-depth appreciation of how the working environment has been changing. The several items included should help to identify the aspects of the quality of the working environment that require policy action, whereas periodicity would help to monitor changes in those dimensions over time.

The module probes respondents on 25 items, which can be answered on a 5-point scale worded as either *agree/disagree* or *always/never*, depending on whether the item aims to capture the occurrence or frequency of various conditions. The use of this response scale is meant to reduce respondents' cognitive burden and survey time. For each item, Table A.1 below indicates the job characteristics to which the item refers, as well as whether this characteristic pertains to either *job demands* or *job resources*.

The selected items are adapted from questions sourced from: 1) the European Working Conditions Survey; 2) the Effort-Reward Imbalance Questionnaire; 3) the British Skills and Employment Survey; 4) the French *Enquête Conditions de Travail;* 5) the European Social Survey; 6) the European Quality of Life Survey; and 7) the French *Enquête Santé et Itinéraire Professionnel*. Those items that were selected are deemed to be the most statistically reliable in existing surveys; however, for some characteristics, the questions are proposed as "place holders" until better ones are produced, in recognition of the need for more research and experimentation on the properties of alternative formulations.

The order of the items reflects a compromise between the need to cluster themes that relate to similar aspects of workers' experience and the need to avoid frequent switches between positive (i.e. resources) and negative (i.e. demands) items. Data producers should consider field testing and randomising items pertaining to different job characteristics to assess how the question order impacts on responses.

Some of the items have been slightly modified from the original instrument so as to better capture the underlying aspect of the quality of the working environment; modifications are also introduced in the response scales to ensure that they capture as much variation in workers' conditions as possible and to maximise consistency across questions. In case of modifications from the original source, the original question wording and response scale are presented in Table A.1 below each of the items proposed. Users are recommended to follow the suggested wording so as to measure properly all the dimensions of the quality of the working environment; however, when comparability with existing data is the goal, the original question wording and response scale should be used. The module specifies the target sample for each question and provides necessary filters when the item applies to a subset of workers.

Individual questions are expected to take around 15 seconds each to complete; the extended module is hence expected to take 6½ minutes to complete in total.

Questions on the quality of the working environment included in this module (as well as in the condensed module in Table A.2 that follows) should be asked **after** having asked a few contextual questions to assess eligibility and demographic and socio-economic characteristics (e.g. employment status, contract types, main and secondary jobs, total working hours). Where space allows, additional questions should be included on job satisfaction, feelings at work and work commitment. These contextual and additional questions are described in Part D of this Annex.

Table 6.A.1. **An extended survey module to measure the quality of the working environment**

ALL THE QUESTIONS BELOW REFER TO THE MAIN PAID JOB

To what extent do you agree or disagree with the following statements about your main job?

All statements should be answered based on the following response scales:

Scale A	Scale B
(1) Completely disagree	(1) Never
(2) Disagree	(2) Rarely
(3) Neither disagree nor agree	(3) Sometimes
(4) Agree	(4) Often
(5) Completely agree	(5) Always
(6) Not applicable	
(7) Don't know	
(8) Refused to answer	

SURVEY ITEM	***JOB CHARACTERISTIC***
[ASK ALL IN PAID WORK] 1. AT WORK I AM EXPOSED TO NOISE SO LOUD THAT I HAVE TO RAISE MY VOICE TO TALK TO PEOPLE. RESPONSE SCALE B	*A1. PHYSICAL RISK FACTORS (JD)*

Source: European Working Conditions Surveys 2015 (Q29B), 2010 (Q23B), 2005 (Q10B), 2000 (Q11_2), 1996 (Q14b), 1991 (Q1).

Original question: "Are you exposed at work to noise so loud that you would have to raise your voice to talk to people?" ***Original response scale:*** *(1) All of the time, (2) Almost all the time, (3) Around 3/4 of the time, (4) Around half of the time, (5) Around 1/4 of the time, (6) Almost never, (7) Never.*

Table 6.A.1. **An extended survey module to measure the quality of the working environment** *(cont.)*

[ASK ALL IN PAID WORK] 2. AT WORK I AM EXPOSED TO HANDLING OR BEING IN SKIN CONTACT WITH CHEMICAL PRODUCTS OR SUBSTANCES. RESPONSE SCALE B	*A1. PHYSICAL RISK FACTORS (JD)*

Source: European Working Conditions Surveys 2015 (Q29G), 2010 (Q23G), 2005 (Q10G).

Original question: "Are you exposed at work to handling or being in skin contact with chemical products or substances?" ***Original response scale:*** *(1) All of the time, (2) Almost all the time, (3) Around 3/4 of the time, (4) Around half of the time, (5) Around 1/4 of the time, (6) Almost never, (7) Never.*

[ASK ALL IN PAID WORK] 3. MY MAIN JOB INVOLVES CARRYING OR MOVING HEAVY LOADS. RESPONSE SCALE B	*A2. PHYSICAL DEMANDS (JD)*

Source: EWCS 2015 (Q30E), 2010 (Q24E), 2005 (q11e), 2000 (q12_3), 1996 (q15d).

Original question: "Does your main paid job involve carrying or moving heavy loads?" ***Original response scale:*** *(1) All of the time, (2) Almost all the time, (3) Around 3/4 of the time, (4) Around half of the time, (5) Around 1/4 of the time, (6) Almost never, (7) Never.*

[ASK ALL IN PAID WORK] 4. MY MAIN JOB INVOLVES WORKING IN TIRING OR PAINFUL POSITIONS. RESPONSE SCALE B	*A2. PHYSICAL DEMANDS (JD)*

Source: European Working Conditions Surveys 2015 (Q30A), 2010 (Q24A), 2005 (q11a), 2000 (q12_1), 1996 (q15a), 1991 (q6).

Original question: "Does your main job involve tiring or painful positions?" ***Original response scale:*** *(1) All of the time, (2) Almost all the time, (3) Around 3/4 of the time, (4) Around half of the time, (5) Around 1/4 of the time, (6) Almost never, (7) Never.* This item is included here, despite displaying correlations falling below the threshold used in Chapter 5, due to its capacity to capture physical demands applying to both blue-collar and white-collar jobs.

[ASK ALL IN PAID WORK] 5. I WORK AT NIGHT FOR AT LEAST 2 HOURS BETWEEN 10.00 PM AND 05.00 AM. RESPONSE SCALE B	*D2. UNSOCIAL WORK SCHEDULE (JD)*

Source: European Working Conditions Surveys 2015 (Q37A), 2010 (Q32), 2005 (q14a), 2000 (q16_a), 1996 (q18a), 1991 (q12).

Original question: "Normally, how many times do you work at night, for at least 2 hours between 10.00 p.m. and 5.00 a.m.?" ***Original response scale:*** *Numeric.*

[ASK ALL IN PAID WORK] 6. I WORK IN MY FREE TIME TO MEET WORK DEMANDS. RESPONSE SCALE B	*B1. WORK INTENSITY (JD)*

Source: European Working Conditions Surveys 2015 (Q46), 2010 (Q42).

Original question: "Over the last 12 months, how often have you worked in your free time to meet work demands?" or: "Since you started your main paid job, how often have you worked in your free time to meet work demands?" ***Original response scale:*** *(1) Daily, (2) Several times a week, (3) Several times a month, (4) Less often, (5) Never.*

[ASK ALL IN PAID WORK] 7. FOR ME, ARRANGING TO TAKE AN HOUR OR TWO OFF DURING WORKING HOURS TO TAKE CARE OF PERSONAL MATTERS IS DIFFICULT. RESPONSE SCALE B	*D3. FLEXIBILITY OF WORKING HOURS (JR)*

Source: European Working Conditions Surveys 2015 (Q47), 2010 (Q43).

Original question: "Would you say that for you arranging to take an hour or two off during working hours to take care of personal or family matters is ... ?" ***Original response scale:*** *(1) Very easy, (2) Fairly easy, (3) Fairly difficult, (4) Very difficult.*

Table 6.A.1. **An extended survey module to measure the quality of the working environment** *(cont.)*

[ASK ALL IN PAID WORK] 8. MY JOB INVOLVES WORKING AT VERY HIGH SPEED. RESPONSE SCALE B	*B2. WORK INTENSITY (JD)*

Source: European Working Conditions Surveys 2015 (Q49A), 2010 (Q45A), 2005 (Q20_A), 2000 (q21_1), 1996 (q15g), 1991 (q8). Other applications: British Skills and Employment Surveys 2012, 2006, 2001 (bspeed).

Original question: "Does your job involve working at very high speed?" ***Original response scale:*** *(1) All of the time, (2) Almost all the time, (3) Around 3/4 of the time, (4) Around half of the time, (5) Around 1/4 of the time, (6) Almost never, (7) Never.*

[ASK ALL IN PAID WORK] 9. MY JOB INVOLVES WORKING TO TIGHT DEADLINES. RESPONSE SCALE B	*B2. WORK INTENSITY (JD)*

Source: European Working Conditions Surveys 2015 (Q49B), 2010 (Q45B), 2005 (q20_b), 2000 (q21_2), 1996 (q15h), 1991 (q9). Other applications: British Skills and Employment Surveys 2012, 2006, 2001 (bdeadl).

Original question: "Does your job involve working to tight deadlines?" ***Original response scale:*** *(1) All of the time, (2) Almost all the time, (3) Around 3/4 of the time, (4) Around half of the time, (5) Around 1/4 of the time, (6) Almost never, (7) Never.*

[ASK ALL IN PAID WORK] 10. I LEARN NEW THINGS IN MY JOB. RESPONSE SCALE A	*E1. TRAINING AND LEARNING OPPORTUNITIES (JR)*

Source: French Enquête Conditions de Travail (2013).

Original question: "Your job provides opportunities to learn new things" (Votre travail vous permet-il d'apprendre des choses nouvelles?" ***Original response scale:*** *(1) Yes (2) No.*

[ASK ALL IN PAID WORK] 11. I AM ABLE TO CHOOSE OR CHANGE MY METHODS OF WORK. RESPONSE SCALE A	*B1. TASK DISCRETION AND AUTONOMY (JR)*

Source: European Working Conditions Surveys 2015 (Q54B), 2010 (Q50B), 2005 (q24b), 2000 (q25_2), 1996 (q22B).

Original question: "Are you able to choose or change your method of work?" ***Original response scale:*** *(1) Yes (2) No.*

[ASK ALL IN PAID WORK] 12. I HAVE ENOUGH OPPORTUNITIES TO USE MY KNOWLEDGE AND SKILLS IN MY CURRENT JOB.* RESPONSE SCALE A	*F1. OPPORTUNITIES FOR SELF-REALISATION (JR)*

Source: British Skills and Employment Surveys 2012, 2006, 2001 (buseskil).

Original question: "How much do you agree or disagree with the following statement: In my current job I have enough opportunity to use the knowledge and skills that I have" ***Original response scale:*** *(1) Strongly agree (2) Agree (3) Disagree (4) Strongly disagree.*

* This wording captures Opportunities for Self-Realisation in a more concise way than that used in the international surveys assessed in Chapter 5; this question has been used in many empirical studies, lending support to its reliability.

[ASK ALL IN PAID WORK] 13. MY WORK GIVES ME THE FEELING OF A JOB WELL DONE. RESPONSE SCALE A	*F2. INTRINSIC REWARDS (JR)*

Source: European Working Conditions Surveys 2015 (Q61H), 2010 (Q51H), 2005 (q25i).

Original question: "For each of the following statements, please select the response which best describes your work situation." "Your job gives you the feeling of work well done." ***Original response scale:*** *(1) Always (2) Most of the time (3) Sometimes (4) Rarely (5) Never.*

[ASK ALL IN PAID WORK] 14. I CAN GET SUPPORT AND HELP FROM MY CO-WORKERS WHEN NEEDED. RESPONSE SCALE A	*A4. SOCIAL SUPPORT (JR)*

Table 6.A.1. **An extended survey module to measure the quality of the working environment** *(cont.)*

Source: European Social Survey 2004 and 2010 (HLPCOW).

Original question: "I can get support and help from my co-workers when needed." ***Original response scale:*** *(1) Not at all true, (2) A little true, (3) Quite true, (4) Very true.*

[ASK ALL IN PAID WORK] 15. I AM INVOLVED IN IMPROVING THE WORK ORGANISATION OR THE WORK PROCESSES OF MY DEPARTMENT OR ORGANISATION. RESPONSE SCALE A	*C1. ORGANISATIONAL PARTICIPATION AND WORKPLACE VOICE (JR)*

Source: European Working Conditions Surveys 2015 (Q61D), 2010 (Q51D).

Original question: "For each of the following statements, please select the response which best describes your work situation." "You are involved in improving the work organisation or work processes of your department or organisation". ***Original response scale:*** *(1) Always (2) Most of the time (3) Sometimes (4) Rarely (5) Never.*

[ASK ALL IN PAID WORK] 16. I CAN INFLUENCE DECISIONS THAT ARE IMPORTANT FOR MY WORK. RESPONSE SCALE A	*C1. ORGANISATIONAL PARTICIPATION AND WORKPLACE VOICE (JR)*

Source: European Working Conditions Surveys 2015 (Q61N), 2010 (Q51O).

Original question: "For each of the following statements, please select the response which best describes your work situation." "You can influence decisions that are important for your work". ***Original response scale:*** *(1) Always (2) Most of the time (3) Sometimes (4) Rarely (5) Never.*

[ASK ALL IN PAID WORK] 17. MY JOB IS EMOTIONALLY DEMANDING.* RESPONSE SCALE A	*B3. EMOTIONAL DEMANDS (JD)*

Source: European Quality of Life Survey (2003, 2007).

Original question: "My work is too demanding and stressful". ***Original response scale:*** 1-5 *(Strongly agree – Strongly disagree.*

* This item differs from the original question included in the European Quality of Life Survey by avoiding references to stress, and by the addition of "emotionally" to the notion of a demanding job (as jobs can be demanding for other reasons than the emotions they impose on workers). Gathering more evidence on the statistical reliability of questions for this job characteristic is a priority for future research.

[ASK EMPLOYEES ONLY] 18. IN GENERAL MY IMMEDIATE MANAGER / SUPERVISOR RESPECTS ME AS A PERSON. RESPONSE SCALE A	*A4. SOCIAL SUPPORT (JR)*

Source: European Working Conditions Surveys 2015 (Q63A), 2010(Q58B) based on Effort-Reward Balance Questionnaire (ERI 7).

Original question: "To what extent do you agree or disagree with the following statements? Your immediate boss…" "Respects you as a person". ***Original response scale:*** *(1) Strongly agree, (2) Tend to agree, (3) Neither agree nor disagree, (4) Tend to disagree, (5) Strongly disagree.*

[ASK EMPLOYEES ONLY] 19. THE VALUE OF MY WORK IS PROPERLY RECOGNISED. RESPONSE SCALE A	*C3. GOOD MANAGERIAL PRACTICES (JR)*

Source: Enquête Sante et Itinéraire Professionnel SIP 2006 and 2012.

Original question wording: "My work is properly recognised (Mon travail est(était) reconnu à sa juste valeur)". ***Original response scale:*** *(1) Always (toujours) (2) Often (souvent) (3) Sometimes (parfois) (4) Never (jamais) (5) Not applicable (sans objet).*

* Good Managerial Practices is covered only by the EWCS among the international surveys included in Chapter 5. The wording recommended here is deemed to better reflect good managerial practices than the EWCS alternatives (e.g. Q58B, Q58C, Q58D and Q58E in 2010).

Table 6.A.1. **An extended survey module to measure the quality of the working environment** *(cont.)*

[ASK ALL IN PAID WORK] 20. I AM EXPECTING TO LOSE MY JOB IN THE NEXT 6 MONTHS. RESPONSE SCALE A	*E3. PERCEPTIONS OF JOB INSECURITY (JD)*

Source: European Working Conditions Surveys 2015 (Q89G), 2010 (Q77A), 2005 (q37a).

Original question: "To what extent do you agree or disagree with the following statements about your job?" "I might lose my job in the next 6 months". ***Original response scale:*** *(1) Strongly agree, (2) Tend to agree, (3) Neither agree nor disagree, (4) Tend to disagree, (5) Strongly disagree.*

[ASK ALL IN PAID WORK] 21. I AM EXPECTING AN UNDESIRABLE CHANGE IN MY WORK SITUATION.* RESPONSE SCALE A	*E1. PERCEPTIONS OF JOB INSECURITY (JD)*

Source: Effort-Reward Imbalance Questionnaire (ERI 11).

Original question: "I have experienced or expect to experience an undesirable change in my work situation". ***Original response scale:*** *(1) Strongly agree, (2) Agree (3), Disagree, (4) Strongly disagree.*

* Although the statistical reliability of this item was not assessed in Chapter 5 due to the absence of broadly similar questions in surveys having broad country coverage, it is recommended for inclusion due to good evidence from analysis of the ERI data that it provides relevant information on workers' perceptions of job insecurity. Gathering more evidence on the statistical reliability of questions for this job characteristic is a priority for future research.

[ASK ALL IN PAID WORK] 22. CONSIDERING ALL MY EFFORTS AND ACHIEVEMENTS, I RECEIVE THE PRAISE AND RESPECT THAT MY WORK DESERVES. RESPONSE SCALE A	*F2. INTRINSIC REWARDS (JR)*

Source: Effort-Reward Imbalance questionnaire (ERI 14).

Original question: "Considering all my efforts and achievements, I receive the prestige and respect I deserve at work". ***Original response scale:*** *(1) Strongly agree, (2) Agree, (3) Disagree, (4) Strongly disagree.*

* Although the statistical reliability of this item was not assessed in Chapter 5 due to the absence of broadly similar questions in surveys having broad country coverage, it is recommended for inclusion due to good evidence from analysis of the ERI data that it provides relevant information on workers' intrinsic rewards. Gathering more evidence on the statistical reliability of questions for this job characteristic is a priority for future research.

[ASK ALL IN PAID WORK] 23. MY JOB OFFERS GOOD PROSPECTS FOR CAREER ADVANCEMENT. RESPONSE SCALE A	*F1. OPPORTUNITIES FOR SELF-REALISATION (JR)*

Source: European Working Conditions Surveys 2015 (Q89B), 2010 (Q77C), 2005 (q37c).

Original question: "To what extent do you agree or disagree with the following statements about your job? My job offers good prospects for career advancement". ***Original response scale:*** *(1) Strongly agree, (2) Tend to agree, (3) Neither agree nor disagree, (4) Tend to disagree, (5) Strongly disagree.*

[ASK ONLY EMPLOYEES WHO RECEIVED TRAINING FROM THE EMPLOYER] FILTER: OVER THE LAST 12 MONTHS [OR SINCE I HAVE STARTED MY JOB] I HAVE UNDERGONE TRAINING PAID FOR OR PROVIDED BY MY EMPLOYER: (1) YES (2) NO ----------	

Source: European Working Conditions Surveys 2015 (Q65A), 2010 (Q61A).

Original question: "Over the past 12 months, have you undergone any of the following types of training to improve your skills?" or: "Since you started your main paid job, have you undergone any of the following types of training to improve your skills?" "Training paid for or provided by your employer". ***Original response scale:*** *(1) Yes (2) No.*

Table 6.A.1. **An extended survey module to measure the quality of the working environment** *(cont.)*

24. [IF YES]: I THINK THAT MY PROSPECTS FOR FUTURE EMPLOYMENT ARE BETTER BECAUSE OF THE TRAINING THAT I RECEIVED. RESPONSE SCALE A	*E1. TRAINING AND LEARNING OPPORTUNITIES (JR)*

Source: European Working Conditions Surveys 2015 (Q67C), 2010 (Q61_1C).

Original question: "Do you agree or disagree with the following statements on the training received over the last 12 months paid for and provided by your employer? I feel my prospects for future employment are better". ***Original response scale:*** *(1) Strongly agree, (2) Tend to agree, (3) Neither agree nor disagree, (4) Tend to disagree, (5) Strongly disagree.*

[ASK ALL IN PAID WORK] 25. I FEEL UNFAIRLY TREATED THROUGH DISCRIMINATION AT WORK. RESPONSE SCALE A	*A3. INTIMIDATION AND DISCRIMINATION AT WORK (JD)*

Source: British Skills and Employment Surveys 2012 (idiscrim) and Work in Britain Survey 2000.

Original question: "How anxious are you about these situations affecting you at your work? Being unfairly treated through discrimination". ***Original response scale:*** *(1) Very anxious, (2) Fairly anxious, (3) Not very anxious, (4) Not anxious at all.*

*This item differs from the original question included in the British Skills and Employment Survey by avoiding references to anxiety; it is recommended for inclusion as it seems able to capture the different forms of workplace intimidation and discrimination. Gathering more evidence on the statistical reliability of questions for this job characteristic is a priority for future research.

These items and modules are provided to NSOs and other data producers as a resource for their own field work. The adaptation to different national circumstances may require changes in question wording, although this would come at the cost of reducing cross-country comparability.

B. Condensed module

This module includes a subset of the items included in the extended module. The items included are those with the highest ***relevance*** to workers' well-being and with the strongest evidence on their statistical reliability. These measures should be used in circumstances where there is a need for measuring all six dimensions of the quality of the environment but questionnaire space is limited.

As in the case of the extended module, respondents are provided with 13 statements that can be answered on a 1 to 5 response scale. The order of some items has been changed relative to that used in the extended questionnaire so that respondents are first faced with items implying a negative job characteristic and then with those implying a positive characteristic, so as to reduce the cognitive burden on respondents and the survey time. Where the survey allows it, the order for questions should be randomised to remove the possible bias that may be associated with asking all negative questions first, then all positive questions. The condensed model could be included in surveys based on samples large enough to guarantee the robustness of the estimates at the level of both occupations and industries.

The module includes 13 statements pertaining to 11 job characteristics: two items on Work intensity (B.1); and one each on Physical risk factors (A.1), Physical demands (A.2), Unsocial work schedules (D.1), Flexibility of working hours (D.2), Training and learning opportunities (E.2), Task discretion and autonomy (B.3), Social support at work (A.4), Organisational participation and workplace voice (C.1), Perceptions of job insecurity (E.1) and

Intrinsic rewards (F.2). No items are included in this condensed questionnaire for six job characteristics: Intimidation and discrimination at the workplace (A.3), Emotional demands (B.2), Good managerial practices (C.2), Task clarity and performance feedback (C.3), Opportunity for career advancement (E.3) and Opportunities for self-realisation (F.1). Further evidence and field testing will be needed to identify robust questions for these characteristics.

Table 6.A.2. **Condensed survey module to measure the quality of the working environment**

FROM NOW ONWARDS ALL THE QUESTIONS REFER TO THE MAIN PAID JOB

"To what extent do you agree or disagree with the following statements about your main job?"

All statements should be answered with the following response scales:

Scale A	Scale B
(1) Completely disagree	(1) Never
(2) Disagree	(2) Rarely
(3) Neither disagree nor agree	(3) Sometimes
(4) Agree	(4) Often
(5) Completely agree	(5) Always
(6) Not applicable	
(7) Don't know	
(8) Refused to answer	

Survey question	Response scale	Job characteristics
1. I AM EXPOSED AT WORK TO HANDLING OR BEING IN SKIN CONTACT WITH CHEMICAL PRODUCTS OR SUBSTANCES.	Scale B	A.1. Physical risk factors
2. MY JOB INVOLVES CARRYING OR MOVING HEAVY LOADS	Scale B	A.2. Physical demands
3. I AM ASKED TO WORK IN MY FREE TIME TO MEET WORK DEMANDS.	Scale B	D.1. Unsocial work schedule
4. FOR ME ARRANGING TO TAKE AN HOUR OR TWO OFF DURING WORKING HOURS TO TAKE CARE OF PERSONAL MATTERS IS DIFFICULT.	Scale A	D.2. Flexibility of working hours
5. MY JOB INVOLVES WORKING AT VERY HIGH SPEED.	Scale B	B.1. Work intensity
6. MY JOB INVOLVES WORKING TO TIGHT DEADLINES.	Scale B	B.1. Work intensity
7. I AM EXPECTING TO LOSE MY JOB IN THE NEXT 6 MONTHS.	Scale A	E.1. Perceptions of job insecurity
8. I LEARN NEW THINGS IN MY JOB.	Scale A	E.2. Training and learning opportunities
9. I AM ABLE TO CHOOSE OR CHANGE MY METHODS OF WORK.	Scale A	B.3. Task discretion and autonomy
10. MY WORK GIVES ME THE FEELING OF A JOB WELL DONE.	Scale A	F.2. Intrinsic rewards
11. I GET ADEQUATE SUPPORT FROM MY COLLEAGUES IN DIFFICULT SITUATIONS.	Scale A	A.4. Social support at work
12. I CAN INFLUENCE DECISIONS THAT ARE IMPORTANT FOR MY WORK.	Scale A	C.1. Organisational participation and workplace voice
13. CONSIDERING ALL MY EFFORTS AND ACHIEVEMENTS, I RECEIVE THE PRAISE AND RESPECT THAT MY WORK DESERVES. (R.)	Scale A	F.2. Intrinsic rewards

Note: Items denoted with an **R** should be coded in reverse.

Individual questions are expected to take around 15 seconds each to complete. The condensed module is expected to take 3½ minutes to complete in total.

C. Core module

This module is intended to provide a minimal set of measures of the quality of the working environment that could be included in general social surveys and implemented on a yearly basis. The core items included are not meant to cover all aspects of the working environment, but rather to anchor this concept in policy discussions alongside traditional measures of labour quantity. These questions are suitable for international comparisons and apply to a wide array of labour-market situations, i.e. both to employees and the self-employed, and to workers in both the formal and the informal economy.

The module includes, among the several items encompassed in the extended and condensed modules, 2 items on job demands, and 2 on job resources: 2 of them describe current conditions and 2 refer to future prospects. The 2 pertaining to job demands refer to work intensity (B.1, i.e. working to tight deadlines or at high speed) and perceptions of job insecurity (E.1, i.e. risk of losing one's job). The 2 pertaining to job resources refer to task discretion and autonomy (B.3, i.e. ability to choose or change methods of work) and training and learning opportunities (E.2, i.e. learning new things on the job). Taken together, data on these 4 items would allow the construction of an individual-level composite measure of the quality of the working environment, based on counting the number of workers facing more jobs demands than the job resources available to them, in line with the type used by the OECD to construct its "job strain" index.

Relative to the questions included in the extended and condensed questionnaire, the items on working at high speed and working to tight deadlines are combined here into a single item, as these two aspects capture types of work intensity experienced by different groups of workers: working at very high speed is strongly associated with manual jobs, whereas working to tight deadlines is strongly associated with professional occupations. As it is important to capture both types of intensity, they are combined into one item in this core module to reduce the number of questions to a minimum.

Box 6.A.3. **A core module of items to measure the quality of the working environment**

FROM NOW ONWARDS ALL THE QUESTIONS REFER TO THE MAIN PAID JOB

"To what extent do you agree or disagree with the following statements about your main job?"

All statements should be answered with the following response scales:

Scale A	Scale B
(1) Completely disagree	(1) Never
(2) Disagree	(2) Rarely
(3) Neither disagree nor agree	(3) Sometimes
(4) Agree	(4) Often
(5) Completely agree	(5) Always
(6) Not applicable	
(7) Don't know	
(8) Refused to answer	

Box 6.A.3. **A core module of items to measure the quality of the working environment** *(cont.)*

Job demands

1. "My job involves working at very high speed or to tight deadlines" (Scale B)
2. "I am expecting to lose my job in the next 6 months" (Scale A)

Job resources

3. "I am able to choose or change my methods of work" (Scale A)
4. "I learn new things in my job" (Scale A)

Individual questions are expected to take around 15 seconds each to complete. The core module is expected to take 60 seconds to complete in total.

D. Contextual Questions

Beyond probing respondents on various characteristics of their main job, surveys on the quality of the working environment should also include questions that would allow the assessment of eligibility for interview (i.e. whether respondents had any paid job) and describe outcomes for groups with similar demographic and labour-market characteristics (e.g. employment status, occupation and type of contract); questions on these items should be asked in ways that ideally conform to international standards and norms.

In addition to these contextual features, questions on the number of jobs held by each respondent, on their total (i.e. in all jobs) hours of work and commuting, and on the extent to which work interferes with family life are important. Finally, questions of respondents' job satisfaction and feelings at work, and on their commitment to the firm they work for are important to assess how various job characteristics impact on workers' well-being and firms' productivity, and should be asked where space allows.

Eligibility, identification of main job, employment and contract status

- **Eligibility**

  Unless the core survey has another employment status question):

  ❖ Can I just check, did you do any paid work in the last seven days?

INTERVIEWER: IF ON HOLIDAY IN LAST 7 DAYS RECORD STATUS IN THE 7 DAYS IMMEDIATELY BEFORE GOING ON HOLIDAY. IF TEMPORARILY SICK IN LAST 7 DAYS, RECORD STATUS IN THE 7 DAYS IMMEDIATELY BEFORE GOING OFF SICK. IF ON GOVERNMENT SCHEME ONLY, CODE NOT EMPLOYED.

- **Socio-demographic characteristics**

  Age

  Gender

  Highest education completed

  Marital Status

  Parenthood status

Number of children

Household size

Country of birth

- **Main job**

  Filter question: Could I check, do you have one job or more than one?

  (1) One

  (2) More than one

- **Occupation and industry of employment**

  What is the title of your main paid job? By main paid job, we mean the one where you spend most hours.

> INTERVIEWER: ASK AND WRITE IN FULL DETAILS – PROBE FOR AS MUCH INFORMATION AS POSSIBLE WITH VIEW TO OBTAINING ACCURATE 4-DIGIT ISCO CLASSIFICATION
>
> IF RESPONDENT HAS TWO JOBS WITH IDENTICAL HOURS, ASK THEM TO SELECT THE JOB THEY PERSONALLY FIND MORE IMPORTANT

(Open ended).....

Which of the following best describes your current occupation in your main job?

1. Manager
2. Professional
3. Technician and associate professional
4. Clerical support worker
5. Service and sales worker
6. Skilled agricultural, forestry and fishery worker
7. Craft and related trades worker
8. Plant and machine operator, assembler
9. Elementary occupation
10. Armed forces occupation

What is the main activity of the company or organisation where you work in your main job?

1. Agriculture, hunting, forestry and fishery
2. Industry
3. Services (excluding public administration)
4. Public administration and defence
5. Other services
6. Don't know

- **Self-employment**

Are you working as an employee or are you self-employed?

1. An employee
2. Self-employed

INTERVIEWER ADD IF NECESSARY: By "employee" we mean someone who gets a salary from an employer or a temporary employment agency. "Self-employed" includes people who have their own business or are partners in a business as well as freelancers. A self-employed person may or may not have employees.

INTERVIEWER NOTE: Respondents who work as an employee for their own business should be coded as self-employed. Members of producers' cooperatives should also be coded as self-employed. Family workers should determine which alternative matches their situation best.

- **Contract type and job tenure**

  What kind of employment contract do you have in your main job?

  (1) Contract of unlimited duration

  (2) Contract of limited duration

  (3) A temporary employment agency contract

  (4) An apprenticeship or other training scheme

  (5) No contract

  How many years have you been in your company or organisation?

  (1) Number of years: …..

  (2) Less than 1 year

  (3) Don't know, refusal, not applicable

- **Working time**

  How many hours do you usually work per week?

  ❖ In your main job?

  ❖ In all your paid jobs?

  [Numerical value]

- **Commuting time**

  In total, how many minutes per day do you usually spend travelling from home to work and back?

  [Numerical value]

  Based on European Working Condition Surveys

Work-life balance, job satisfaction, feelings at work, productivity and organisational commitment

- **Work-life balance**

  In general, do your working hours fit in with your family or social commitments outside work?

  (1) Completely disagree

  (2) Disagree

  (3) Neither disagree nor agree

  (4) Agree

  (5) Completely agree

  Based on European Working Condition Surveys

- **Job satisfaction**

  The following question asks how satisfied you feel about your main job.

  On the whole, how satisfied are you with your job on a scale from 0 to 10 ?" [Zero means you feel "not at all satisfied" and 10 means "completely satisfied". (For respondents who are employed only)]

  Based on OECD Guidelines on Measuring Subjective Well-Being

- **Moods at work**

  The following questions ask about how you felt yesterday [or on the most recent day you worked] on your main job on a scale from 0 to 10. Zero means you did not experience the feeling "at all" yesterday while 10 means you experienced the feeling "all of the time" yesterday. I will now read out a list of ways you might have felt yesterday.

  ❖ How about happy? [0-10]

  ❖ How about worried? [0-10]

  ❖ How about depressed? [0-10]

  Based on OECD Guidelines on Measuring Subjective Well-Being

- **Productivity and organizational commitment**

  How much do you agree or disagree with the following statements:

  I am willing to work harder than I have to in order to help this organisation succeed.

  I would turn down another job with more pay in order to stay with this organization.

  (1) Completely disagree

  (2) Disagree

  (3) Neither disagree nor agree

  (4) Agree

  (5) Completely agree

  Adapted from the British Skills and Employment Survey

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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OECD Guidelines on Measuring the Quality of the Working Environment

This publication presents an internationally agreed set of guidelines for producing more comparable statistics on the quality of the working environment, a concept that encompasses all the non-pecuniary aspects of one's job, and is one of the three dimensions of the OECD Job Quality framework. These Guidelines take stock of current data availability in this field, review the analytic and policy uses of these measures, proposes a conceptual framework based on 6 dimensions and 17 characteristics (ranging from physical risk factors and work intensity, through to task discretion, autonomy and opportunities for self-realisation), assesses the statistical quality of measures in this field, and provides guidance to data producers and users on methodological challenges in this field. These Guidelines also include a number of prototype surveys modules that national and international agencies could use in their surveys.

These Guidelines have been produced as part of the OECD Better Life Initiative, a pioneering project launched in 2011 with the objective of measuring society's conditions across 11 dimensions of people's well-being. They follow on from similar measurement guidelines on subjective well-being, micro statistics on household wealth, integrated analysis of the distribution on household income, consumption and wealth, as well as trust.

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