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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