

E pluribus unum? A critical survey of job quality indicators

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In recent years, there has been growing concern in Europe about the lack of an established comparable measure of job quality to complement the widely accepted quantitative indicators in the formulation and evaluation of European employment policies. The aim of this paper is to offer a guided tour around the different views and existing proposals of job quality indicators, mainly from a European perspective. First, we discuss the methodological decisions that have to be made in the process of designing an indicator of job quality, from both a theoretical and methodological/technical perspective. Second, these arguments are used to discuss critically the different empirical approaches to the measurement of job quality proposed in the literature. We finish by presenting some recommendations for the construction of a job quality index for policy purposes.

Keywords: labor markets, work, employment

JEL classification: J81 working conditions, J30 wages, compensation, and labor costs

1. Introduction

In this age of statistics, what is not measured simply does not seem to exist. Despite a growing concern among researchers and international institutions about job quality, the lack of an agreed conceptualization and operationalization of this issue is preventing it from gaining the salience it merits in terms of social and employment policy. In fact, both the European Union's *more and better jobs* and the International Labour Organization's (ILO) *decent work* agendas will hardly overcome the rhetorical level at which they seem to be stalled if there continues to be no international agreement as to what job quality is and how it might be measured. The aim of this paper is to advance in the exhausting—but still

unfinished—task of sketching out the most important methodologies and indicators proposed in the literature to measure job quality, both at national and international levels. This will allow us to derive some guidelines in order to build appropriate indicators of job quality (IJQ) in the future that could hopefully bring job quality to the first page of the political agenda. While the focus is primarily European, we will also discuss some recent non-European proposals, and much of the discussion obviously takes a broader view.

The paper is divided into four sections, as follows. Section 2 argues in favour of the need for reliable indicators of job quality in an international context. In Section 3, the process of producing an indicator of job quality is outlined, in order to discuss the different alternatives available and their implications. The first part of this section discusses how to define job quality and how to identify its dimensions; we then present the methodological dilemmas that have to be faced when designing an indicator of job quality and, finally, we suggest an open model of job quality, pointing to different dimensions of work and employment that should be considered when measuring it. Against this background, Section 4 offers a systematic review of roughly 20 empirical proposals of job quality indicators found in the literature and policy practice, highlighting the main characteristics, strengths and shortcomings of such indicators. The fifth and concluding section summarizes the main implications and contributions of this paper, presenting some recommendations for the construction of a job quality index for policy purposes.

2. The importance of having a good comparable indicator of job quality

There are many reasons that justify the research on job quality and its monitoring for policy purposes. To begin with, the average European full-time worker spends almost 42 h at their job (and the average part-time worker roughly 20 h). It is obvious that whatever happens in that quarter of the weekly life of workers will have important implications for their well-being. Furthermore, there is plenty of evidence that people work not only to earn a living, but also that work is an important element of social and personal life in itself, an activity that is important for self-realization and social integration. Therefore, the quality of working life is a key element in the quality-of-life. In this respect, the meta-analysis of Dolan *et al.* (2008) shows how both having work and certain job characteristics (for instance, reduced working hours) have a clear positive impact on subjective well-being.

Second, the standard analysis of the labour market usually focuses on quantity: the number of jobs and their correlates, that is, employment and unemployment rates. But not all jobs are the same. There are ‘good’ and ‘bad’ jobs: jobs come

with different combinations of amenities and disamenities, different bundles of positive and negative attributes. In order to correctly evaluate the performance of an economy, it is important to be able to identify the quality of the jobs created and destroyed in the process of creative destruction that lies behind economic growth. Mainstream economic analysis suggests that there is no problem in placing 'good' and 'bad' jobs together in a single employment measure because the market will homogenize the job quality differences by paying higher wages to those jobs of lower quality, other things being equal. In other words, job quality should not be a matter of concern as long as the theory of compensating wage differentials applies. But the theory of compensating wage differentials is highly debatable from an empirical perspective: there is abundant evidence showing that, in general, such a theory does not hold, except in some extreme cases involving very serious health risks.¹ As long as we cannot rely on the existence of such a compensation process, the question of job quality will deserve specific treatment with specific indicators.

Third, we live in times of rapid change in the structure and regulation of labour markets, as a result of the effect of different forces, such as rapid technical change, globalization, European integration itself and more recently the transformation of the global financial crisis into a crisis of economic governance. Without good comparable indicators of job quality alongside the existing information on job quantity, we cannot even know what kind of impact these changes are having on the quality of work, much less design effective policies to respond to them.

Fourth, by measuring separately the dimensions of quantity (more jobs) and quality (better jobs), the existence of trade-offs between both dimensions of employment could be identified, potentially providing empirical support for the existence of different *employment regimes* in terms of quantity/quality trade-offs.²

Two final reasons can be presented in favour of the study of job quality. First, job quality can be considered as an example of the type of goods and services known in economics as *luxury goods*, meaning that their demand grows faster than income, even if countries at very different levels of development are being considered. If so, it is to be expected that in the process of economic growth, workers' interest in job quality will grow. This also means that what at present may be considered average or good quality jobs might, as time goes by, turn

¹The origins of the theory of compensating differentials are as early as Adam Smith's *The Wealth of Nations*. See, among others, Rosen (1986) and Purse (2004) for a comprehensive literature review and Bonhomme and Jolivet (2009) for recent empirical evidence.

²This is the aim of Gallie (2007), among others.

into ‘middling’ or even ‘bad’ jobs, leading to a process of social dissatisfaction even in a context of high employment and stable working conditions.

A simple comparison between the sheer magnitude of people in employment versus those in unemployment points to our final reason. Though unemployment might be the worst circumstance a worker can face in terms of his or her economic life and the best example of a failure in the functioning of the labour market, it should not be forgotten that even in the context of the current crisis the great majority of workers are employed and the quality of their jobs will be an obvious concern for them. Even if full employment is achieved, the task will not be over.

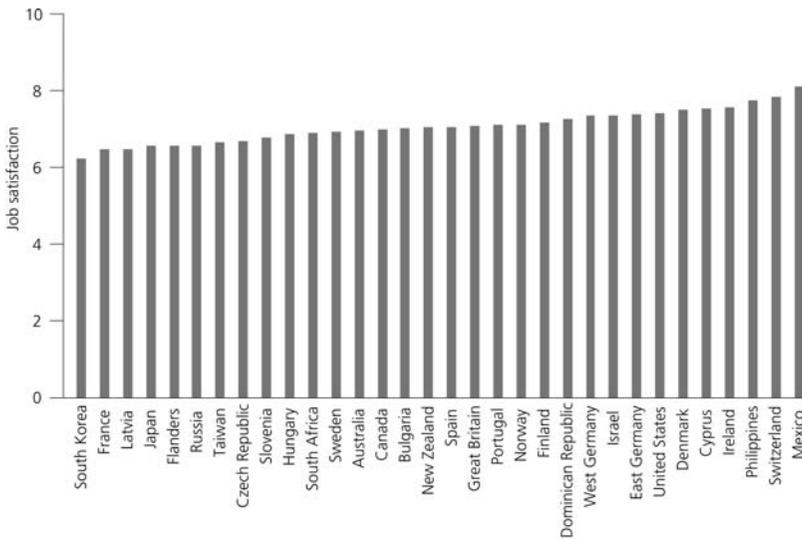
3. Modelling job quality

Constructing an indicator of job quality involves many methodological decisions with non-negligible implications for the final outcome, from defining clearly what job quality is and what dimensions shape it to the selection of variables and data sources. As will be shown in the survey of indicators presented in Section 4, these choices are too often made without a solid justification, which has negative implications for the credibility and scientific validity of the indicators. This section briefly outlines the main choices required for the construction of a model of job quality and its operationalization as an indicator (or system of indicators). This discussion provides the necessary background for the review of existing indicators carried out in the next section.

3.1 *What makes a good job? Defining job quality and identifying its dimensions*

Job quality is a multidimensional and elusive concept. It is multidimensional because it refers to many different attributes of jobs, all of which have an impact on the well-being of workers. It is elusive, too, because it is one of those concepts used in the social sciences (such as quality-of-life or happiness) which everyone understands yet is very difficult to define precisely. Still, the first necessary step in constructing a useful indicator is to define clearly what it is trying to measure, delimiting the scope of attributes to be taken into account and specifying a normative framework that justifies the structure of the model and the weighting of the different attributes. There are three broad possible approaches for doing this.

3.1.1 The shortcut: job satisfaction as an overall indicator of job quality The first option is not really a strategy for developing a model of job quality, but a way of eliminating the need for such a model. The argument supporting this approach is the following one: we are interested in measuring job quality because we want to measure the impact that job characteristics have on the well-being of workers; thus, instead on focusing on the input (job characteristics), we can concentrate



Source: Authors' calculations based on *International Social Survey Program 2005* ('Work Orientations III') micro-data; available at <http://www.gesis.org/en/services/data/survey-data/issp/modules-study-overview/work-orientations/2005/>.

Figure 1 Job satisfaction across countries 2005.

our efforts on measuring the output, that is, the well-being of workers at their jobs. Unfortunately, as there is no method for directly measuring well-being, we have to turn to an indirect indicator. An obvious and common choice is to use the declared level of satisfaction of the worker with his/her job. This is the perspective adopted, among others, by Spector (1997), Souza-Poza and Souza-Poza (2000), Clark (2005) and, partially, Green (2006).

Using job satisfaction as an overall indicator of job quality has obvious advantages, the most important one being that it enormously simplifies the definition, modelling, measurement and analysis of the variable of interest. But it has very important shortcomings as well, which, in our view, make it unsuitable as an indicator of job quality for policy purposes. First, as shown in Figure 1, the empirical distribution of job satisfaction across countries does not seem congruent with anything we know about the conditions of work and employment across the world.³ The range of variation is extremely small, despite the fact that we are comparing countries as different in terms of economic and social development as the Philippines, Mexico, Denmark, Taiwan or the USA. However, what is even more surprising is the positioning of the different countries in Figure 1:

³The score is constructed by assigning different points, from 0 to 6 to the answer to the question 'how satisfied are you in your (main) job?' Answers range from completely unsatisfied (0) to completely satisfied (6), and then the result is rescaled to the standard 0–10 scale to make interpretation easier.

Mexico, Switzerland and the Philippines are the countries with the highest level of overall job satisfaction; whereas, the lowest levels can be found in South Korea, France and Latvia. A quick comparison between this ranking of countries and any figures from the ILO's Key Indicators of the Labour Market or Eurofound's Working Conditions Survey makes it very clear that whatever this variable is capturing it is certainly not (or not only) differences in job quality across countries.

Second, as shown by Muñoz de Bustillo and Fernández-Macías (2005) for the case of Spain, very important differences in terms of work and employment conditions do not exert a socio-economically significant effect on reported job satisfaction (even if the difference, especially when large samples are used, may be statistically significant). For instance, the difference between the stated satisfaction of temporary and permanent workers in Spain is less than 0.5 on a scale of 1–10 (6.7 versus 7.2), despite the well-known gap in the conditions of work and employment of both categories of workers (Spain is often considered one of the most extreme cases of labour market dualism).

Third, although job satisfaction might be related to job quality, there are many other unrelated and endogenous variables affecting the level of job satisfaction, undermining the potential role of this variable as an overall indicator of job quality. For example, the literature on subjective well-being emphasizes the impact of the differential ability of people to cope and adapt to happiness (Diener *et al.*, 1999; Oswald and Powdthavee, 2008). Particularly in the case of labour market studies, there is a body of evidence suggesting that reported job satisfaction is affected by colleagues' payoffs (Clark and Oswald, 1996; Zizzo and Oswald, 2001; Brown *et al.*, 2008). This would definitely be interesting if the focus were on subjective well-being but might be problematic if we were doing research on the measurement (and not the distribution) of job quality.

Finally, using a simple question on job satisfaction to measure the quality of jobs, even if it approximates the results of a more complex approach reasonably well, is extremely limited for policy and scientific purposes. One of the main advantages of using a multidimensional composite index is that it can be decomposed so that we can understand what attributes of work are responsible for the overall scores. This would be impossible when using an overall measure of job satisfaction, which is a black box whose interpretation is always difficult. Transparency and decomposability are very desirable characteristics of any useful job quality index.

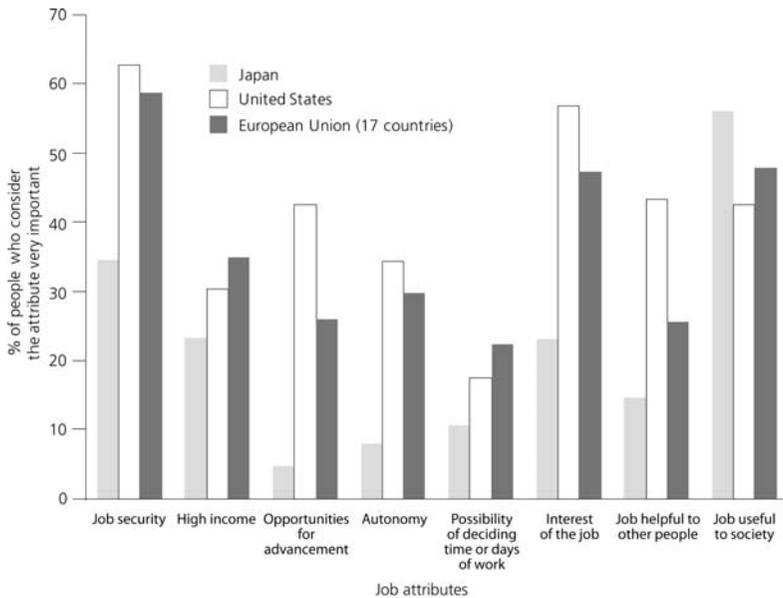
An important further point to emphasize here is that job satisfaction is not suitable either as one of the dimensions within a composite index of job quality (which is done in some of the indices discussed later). Because job satisfaction depends on the overall evaluation that the workers make of their job, including it as an element within a composite index would mean including *input* and *output* together in the same index, and therefore, counting twice the impact of the variables considered. In our view, an index of job satisfaction

can be very useful for contrasting and externally validating the results of a job quality index, but it can never substitute a model-based, multidimensional job quality index.

3.1.2 An intermediate option: asking workers what makes a good job A second alternative, not as radical as the previous one, is to ask workers what they consider most important for job quality and, then, use their answers to model job quality. This sort of strategy is followed by Jencks *et al.* (1988) for the USA, and Vinopal (2009) for the Czech Republic. For instance, the former authors develop an Index of Job Desirability (IJD) for the USA using as weight for each characteristic the importance given to them by workers themselves, drawing from an *ad hoc* survey. One advantage of this type of approach is that most surveys on the quality of working life include questions about the desirability of specific job attributes. This is the case in the 2005 *International Social Survey Program*, which provides information that enables us to compute the percentage of people in each country who consider a certain job attribute very important. Figure 2 displays the results for the EU (for the 17 EU countries covered in the survey), Japan and the USA, and there are several points to be highlighted. First of all, in all three cases high income is not the most valued attribute of a good job. Although Europeans seem to give income more importance than workers from the USA or Japan, barely a third consider this attribute important or very important (much less than job security, usefulness to society or that it is an interesting job).⁴ Second, the most valued attribute in the USA and EU (and the second most valued in Japan) is job security. Third, workers are also quite concerned about the intrinsic nature of the job, whether it is interesting and useful to society. Finally, in contrast to the growing literature on work-life balance and autonomy at work, the importance given by workers to these two aspects seems secondary to the other attributes already mentioned (29.8 and 22.3% in the EU).

This approach has some advantages. First, it gives workers a voice in the definition of what makes a good job. It seems reasonable to think that workers should have some idea about what the most important attributes of a good job are. Second, it is very flexible (as long as there is the possibility of including such questions in a survey): it facilitates adaptation of the model of job quality to national specificities (the model can vary according to the answers given in the different countries) or even to historical changes in what is considered to be a good job (the model can also vary over time). But this approach has important shortcomings as well, especially if it is used as the only basis for the development

⁴This difference, though, is explained by the greater importance attached to income in Eastern European countries.



Source: Authors' calculations based on *International Social Survey Program 2005* ('Work Orientations III') micro-data; available at <http://www.gesis.org/en/services/data/survey-data/issp/modules-study-overview/work-orientations/2005/>.

Figure 2 What makes a good job in the European Union (17 countries), Japan and the USA 2005.

of a model of job quality. First, it requires presenting workers a predefined set of options (attributes of jobs to be ranked): the identification of the elements to be included in this list can be almost as difficult as the model of job quality itself, and leaving out important elements would severely limit the modelling of job quality (for instance, the set of items listed in the ISSP 2005 questionnaire is clearly very narrow and lacks important issues such as the social environment, physical demands or skills development). Second, if the model varies across countries or moments in time, the comparability can be seriously affected, compromising the usefulness of the whole effort. Third, workers' opinions can be conditioned—in any direction—by their current jobs. And finally, just because people say something is important (without any proper contextualization or understanding of the reasons behind those answers) does not necessarily justify its inclusion in a definition of job quality. In our view, therefore, this approach is certainly very useful for informing the definition of job quality, but it cannot be the sole basis for such a definition.

3.1.3 Defining job quality from above: drawing from the social sciences literature The third alternative follows a completely different strategy. There is a long tradition of studies in the social sciences literature of how work and

employment affect the well-being of workers, built from many different perspectives and approaches. In this respect, the literature provides not only arguments, but also theoretical justifications and even empirical evidence for the attributes of jobs which have an impact on the well-being of workers. Drawing on this theoretically-founded evidence, a list of potential dimensions of job quality can be made, in order to develop an agreed-upon model of job quality to use as the basis for an indicator. Table 1 shows such a list, based on a review of the main theories with implications for job quality coming mainly from the economic and sociological traditions (an extended discussion of these theories and a complete list of references can be found in [Muñoz de Bustillo et al., 2009](#)).

These three approaches, in particular the last two, are only partially exclusive: when workers are asked about the importance of different attributes in defining what is a good job they are usually confronted with a fixed list of alternatives, and such a list is not randomly chosen from all the possible characteristics of jobs. On the contrary, researchers usually draw from the available literature on dimensions of job quality to construct such a list. Given the limitations associated with the first purely subjective approach based on job satisfaction and the interrelations between the other two approaches, it seems reasonable to conclude that the best practice for developing a sound model of job quality would draw from the latter two approaches.

3.2 *Some guidelines for modelling job quality*

The first thing to consider, from our point of view, is that any job quality indicator has to be strictly limited to those aspects of the job that have a clear and direct impact on the well-being of workers.⁵ This implies leaving out many job attributes which do not have a direct impact on the well-being of workers (such as productivity) as well as things that have an important impact on the well-being of workers but which are not attributes of their jobs (such as the availability of employment or the income distribution).

Second, it is advisable to decompose job quality into two broad areas: *employment quality* and *work quality*. Employment quality refers to those aspects of the *employment relation* that have a potential impact on the well-being of workers: these are all the aspects related to the employment contract, remuneration and working hours and career development. Work quality refers to how the activity

⁵The concept of workers' well-being is as multidimensional and elusive as that of job quality itself. In the context of our current investigation, and drawing from the research summarized in Table 2, we could define workers' well-being as a state of being healthy, self-fulfilled, secure, with enough resources so as to enjoy a decent life, and time to have a satisfactory private life. For a comprehensive analysis of the concept see [McGillivray \(2006\)](#).

Table 1 Dimensions of job quality suggested by the different social sciences traditions

The orthodox economic approach: compensating differentials	The radical economic approach	Behavioural economic approaches	The traditional sociological approach: alienation and intrinsic quality of work	The institutional approach: segmentation and employment quality	Occupational medicine and health and safety literature: risks and impact of work on health	Work-life balance studies
Labour compensation: (1) wages	Power relations: (2) Industrial democracy as a compensating power	(3) Participation	Objective strand: (4) Skills (5) Autonomy Subjective strand: (6) Powerlessness (7) Meaninglessness (8) Social isolation (9) Self-estrangement	(10) Contractual status and stability of employment (11) Opportunities for skills development and career progression	Conditions: (12) Physical risks (13) Psychosocial risks Outcomes: (14) Perceived impact of work on health (15) Absenteeism	Working time: (16) Duration (17) Scheduling (18) Flexibility (19) Regularity (20) Clear boundaries Intensity: (21) Pace of work and workload

Source: Muñoz de Bustillo et al. (2009).

of work itself and the conditions under which it takes place can affect the well-being of workers: autonomy, intensity, social environment, physical environment etc.⁶ This preliminary distinction is suitable for defining the set of variables to be included in an indicator of job quality.

An important issue to bear in mind when designing an indicator of job quality is the interaction of job attributes with social institutions, particularly welfare programmes and family structures. Jobs do not exist in a vacuum, but in a social context in which there are public and private institutions like the welfare state and the family. Therefore, the impact of a given job characteristic on workers' well-being depends on the interplay of that characteristic with the existing welfare arrangements and the supporting role played by the family. For example, a given working schedule might conflict or not with the employee's work-life balance depending on the existence of a sufficient and affordable supply of nursing homes and kindergartens to whom the worker can entrust the care of the dependent members of the family while at work. If there is a wide-ranging programme of public kindergartens, or a helping retired grandmother or grandfather willing to watch over the younger ones while their parents are working, the lack of family-friendly provisions at work might not interfere with the work-life balance of workers. Something similar can be said about wages. A low wage might have different implications if there is public housing or a system of income tax credit directly or indirectly complementing one's take-home pay, or if there are no such social programmes (see Figure 3).

This does not mean, however, that variables related to the institutional context or family structure should be part of the job quality indicator. That would undermine one of the most important criteria defended so far in the construction of an indicator of job quality: to limit the attributes considered to those directly related to the job. What this means is that the institutional context should always be considered in the *interpretation* of results, before drawing any implications from the crude comparisons of the scores of the indicator. The interrelations between job quality and social institutions shown in Figure 3 must always be explicitly considered when making international comparisons of job quality, especially when (as for instance, in the case of social benefits in the USA and EU) there are important differences in the social systems of the countries involved in the comparison.

3.3 Methodological options and dilemmas

Even if we depart from a very well-structured and well-justified model of job quality, operationalizing it into a job quality indicator involves confronting

⁶This differentiation is closely related to the traditional distinction between *extrinsic* and *intrinsic* dimensions of work.

implications and consequences of a certain employment status—for instance, temporary work—might vary if such a state persists over time—for example, becoming a sort of trap of non-stable employment. However, as the researcher's interest lies in quality of work, the focus should be on the jobs, not on the people hired to perform them. If a worker moves from a low-quality to a high-quality job, but both jobs were already in the economy, nothing changes from the point of view of the quality of the existing jobs. Based on this reasoning, an index of job quality does not require considering any dynamic dimension as such.

There are two precautions to be taken regarding this issue. First, it can be argued that the implications of working in a 'bad' job are different if individuals work in those jobs for life, or if those types of jobs are just a temporary stage in their career. In this case, it might be interesting to include the degree of transition as a separate indicator, complementing the information on job quality in a given country. Second, from a subjective perspective, having a job with good prospects of advancement, even if the present quality of the job is not so good, can be considered an important asset of the job. Nevertheless, the researcher can capture this dimension through a question about the opportunities of advancement in the current job position.

3.3.3 Constructed at individual or aggregate level? As job quality refers to the impact of the attributes of existing jobs on the well-being of workers, all measures of job quality will necessarily be based on information collected at the level of individual workers in one way or another.⁷ However, because of its multidimensional nature, any holistic account of job quality requires making some form of aggregation of information about the different attributes collected at the individual level.⁸ Depending on the intended use of the job quality indicator (or system of indicators), it is possible to carry out the aggregation of the different dimensions at a higher level than the individual. In fact, if our only aim is to compare overall job quality across countries, regions or sectors, there is no difference between doing the aggregation at the higher level (based on averages or other summary functions) and doing it at the individual level and then comparing the country averages.

Individually and aggregately constructed indicators have both advantages and disadvantages. On the one hand, constructing the indicator at the aggregate level

⁷The only potential alternative would be to try to measure the attributes of the jobs themselves, understanding jobs as positions within productive organizations which correspond to coherent sets of tasks and responsibilities (for an example of such an approach, see Fernández-Macias and Hurley, 2008). However, in fact, even in this case, information is collected at the level of individual workers (or jobholders) rather than at the job itself. Without jobholders, there are no jobs.

⁸By aggregation here we only mean putting together different pieces of information within a coherent and structured model of job quality.

has the advantage of allowing more flexibility for drawing information from different sources (different surveys or registers, for instance), while indices constructed at the individual level require having measures of the different attributes for the same individual, which is only possible in practice by drawing from a single source.

In our view, however, there are strong arguments for preferring indicators built from individuals' information. First, the measures constructed from aggregate data cannot be used to study distributional or dispersion issues. Though this might not be a serious problem in other types of cross-country comparisons, it can be very negative for job quality, which is very likely to vary more *within* than *between* countries.⁹ There is a way to partially account for the distribution even within an indicator constructed at the aggregate level, which consists of including distributional measures within the indicator. However, this only marginally reduces the problem: once the indicator is constructed, the distributional element is completely fixed, and there is no way to explore any distributional issue beyond the particular indicator considered.¹⁰ A second limitation of constructing the indicator at the aggregate level is the impossibility of studying interactions between the different dimensions comprising the indicator or system of indicators. For example, one cannot analyse the intersection between the different dimensions of job quality or the existence of compensation mechanisms between them. This aim is only reachable using indicators constructed at the individual level.

3.3.4 One size fits all? At a very high level of generality, we can more or less agree that job quality refers to the characteristics of work and employment that affect the well-being of the worker. But when we try to operationalize this very broad definition in order to be able to apply it internationally, considerable difficulties arise because there are structural and cultural differences that make those 'characteristics that affect the well-being of the worker' likely to differ between countries. In terms of structural differences, probably the main issue is the large diversity that exists in the design of social systems across member states. Employment is embedded within an institutional and economic context: the characteristics of employment interact with the characteristics of social systems in ways that can make similar employment characteristics have very different implications for

⁹For most of the EU, this is certainly the case, though maybe not for all countries. For some examples, see Parent-Thirion *et al.* (2007).

¹⁰This inflexibility can be quite important for an EU job quality indicator because the distributional aspects of job quality can vary across countries (in some countries, gender might be the key determinant of wage inequality, whereas in others it might be ethnicity) and over time (for instance, a surge of immigration such as the one experienced by Spain in recent years has completely changed the distribution of good and bad jobs across the population).

the well-being of the worker in different countries. Cultural differences across countries are equally problematic because they imply systematic differences in how people evaluate their own situation and, therefore, in how their working environment will affect their (subjective) well-being.

In fact, what we have to face here is the familiar problem in comparative research of how to maintain sufficient sensitivity to the national context without compromising comparability. Since the realities being studied are embedded in structural and cultural contexts, the ways of operationalizing them into indicators have to vary across countries, ensuring functional equivalence through context-sensitive variability of measurement. However, the more sensitive the construction of the indicator is to the national specificities, the more compromised the comparability of its results. The correct balance between the degree of harmonization and the degree of national sensitivity depends, as always, on the objectives behind the comparison. If the comparison has a policy purpose behind it (for instance, for EU policy making), harmonization can be more important than national sensitivity, to give more political force to the comparison (and to make the drawing of policy conclusions a bit easier). If the comparison has a scientific purpose, there can be much more flexibility with respect to the strict comparability of methods and indicators, as long as they remain functional equivalents and are founded on a clear internationally-agreed-upon concept and model of job quality.

3.3.5 A composite index or a system of indicators? Comparing job quality internationally for policy purposes can be done using a system of indicators (that is, a coherent and interrelated set of measures of the different attributes of jobs that have an impact on the well-being of workers) or a composite index (a single aggregate measure synthesizing the information of all the different attributes of job quality). Both approaches can share the object of analysis (job quality), the modelling of dimensions to be measured (ideally derived from theoretical models) and the identification of variables appropriate to evaluate such dimensions. However, while a system of indicators stops there, once we have scores for each of the dimensions of our model, a composite index goes one step further and aggregates the measures of selected dimensions within a single number. This implies a single, univocal and unidirectional understanding of what job quality is (no matter how many components it is based upon), which will unambiguously position the different countries (or whatever social group we are interested in studying) within a one-dimensional axis going from bad to good (a ranking).

The advantages and disadvantages of the composite index mirror those of the system of indicators. The former implies a radical simplification of a reality which is by nature complex and multidimensional. If not well constructed, it can easily

lead to wrong conclusions, which can have a very bad impact on the credibility and the usefulness of the whole effort. Even though composite indices tend to be reported together with the detailed systems of indicators on which they are based, the numeric results, rankings etc. derived from the index are so attractive that they tend to draw all the attention. On the other hand, composite indices can be very useful for policy evaluation and design, and they can certainly have a bigger impact (and more political force) than a system of indicators because of their lack of ambiguity. In our view, both approaches can be combined in practice: constructing an aggregate index is necessary for reasons of policy and simplicity, but it should always be reported together with the system of indicators on which it is based, and what should be emphasized is the latter rather than the former.

3.3.6 Technical issues involved in aggregating indicators Aggregation of different pieces of information within composite indices involves a two-step process: first, the different elements (variables, indicators or dimensions) have to be standardized¹¹ so that their scales become equivalent and they can be added together; second, each of the standardized elements must receive a weight (a multiplication factor proportional to the importance that we wish to assign to each element). Once the components of the index have been standardized and weighted, they can be added together.¹²

There are two main ways to decide which weights to assign to the different elements of a composite index: data-driven and theory/policy-driven. The former approach involves analysing the structure of the correlations between the different variables measuring the dimensions and letting a statistical procedure assign the weights in proportion to how they correlate with each other. This method implies assuming that all the variables included in the analysis are measures of the same latent (unobservable) phenomenon: the structure of

¹¹By standardization we simply mean transforming the different dimensions so that their scales are equivalent and can be aggregated. The most frequent standardization is conversion to zeta units (subtracting the average and dividing by the standard deviation), but this is neither the only nor the best method in all situations (because it transforms the differences into relativities, it can obscure differences in the distribution which can be quite important), so in some cases it is better to use other standardization methods, as described in *Nardo et al. (2005)*.

¹²Even the adding of the standardized weighted elements can be done in different ways. The most frequent way is simply arithmetic addition (or averaging, which is the same but divided by the number of elements or the sum of weights), which is adequate when we consider that the different elements of job quality can be functional equivalents and compensate each other, and that they add to job quality in a linear way. They can also be multiplied, which assumes that the more good (or bad) elements present, the bigger their impact on overall job quality. Or there can be threshold values so that without a specific element there is no increase in job quality even if the others are present.

correlations between them can be used to infer the latent variable from the observed variables. The main problem with this method is that it is a black box, the logic linking the elements and the composite index being mathematical (and often difficult to grasp) rather than human or theory based. The resulting composite index may be the best possible summary of the individual elements included in the analysis, but not necessarily a good measure of, say, job quality. For this reason, especially for indices constructed for policy purposes, it is in our opinion much better to base the weights of the index on a sound theoretical/policy model of the concept to be measured, providing a sound justification for the choices made in this matter.

In principle, the issue of weighting seems to be problematic only in composite indices, as the main result in this case is a weighted aggregate of different pieces of information (the dimensions of job quality). However, it would be an error to think that by using systems of indicators we avoid the problem of weighting. On the one hand, the different indicators that comprise the system are often themselves the result of a process of aggregation of individual variables very similar to the process of producing a composite index. On the other hand, a system of indicators is a set of different pieces of information put together: if we have a system of indicators with five dimensions all given the same importance in the presentation of results, is that not very similar to producing a composite index with equal weights for each of the five dimensions? After all, it is impossible to prevent the users of the system of indicators from producing *in their own mind* an overall impression of the level of job quality in the different countries after looking at the different dimensions of the system of indicators (aggregating the sub-dimensions mentally and drawing their own conclusions).

4. Critical survey of existing indicators of job quality

Previous sections have shown that measuring job quality is a far from straightforward task. However, this does not mean that there has been no attempt to do so. In fact, the concern about the distribution and evolution of job quality has led to the development of a good number of indicators and systems of indicators for measuring it. These proposals vary widely in terms of their ambition and scope, and have been proposed not only by academia and international organizations, but also by trade unions or employers' organizations. Tables 2 and 3 summarize the most important characteristics of the nineteen job quality indicators or systems of indicators reviewed here.

Before dealing with this task, it seems advisable to make two general reflections about the scope of area coverage of the different proposals. The first one relates to the suitability of using the same indicator for countries with different levels of economic development. In principle, as occurs in other areas of socio-economic

Table 2 List of acronyms, complete names, sources and databases of the indices of job quality reviewed

Acronym	Complete name	Scope	Source	Databases
Laeken	Laeken indicators of job quality	European Union	European Commission (2008)	ECHP, ELFS, SILC
EJQI	The European Job Quality Index	European Union	Leschke <i>et al.</i> (2008)	ELFS, EWCS, SILC, AMECO, ICTWSS
EWCS	European Working Conditions Survey	European Union	Parent-Thirion <i>et al.</i> (2007)	Itself a data source
GJI	Good Jobs Index	Middle-income and developing countries	Avirgan <i>et al.</i> (2005)	ILO databases
DWI-1	Decent Work Index-1	Developed and developing countries	Ghai (2003)	ILO databases
DWI-2	Decent Work Index-2	Developed and developing countries	Bonnet <i>et al.</i> (2003)	ILO databases
DWI-3	Decent Work Index-3	Developed and developing countries	Anker <i>et al.</i> (2003)	ILO databases
DWI-4	Decent Work Index-4	Developed and developing countries	Bescond <i>et al.</i> (2003)	ILO databases
QEI	Quality of Employment Indicators	Canada, USA and Europe	Brisbois (2003)	EWCS, ERNAIS
IJQ	Indicators of Job Quality	Canada	Jackson and Kumar (1998)	GSS, SWA
SQWLI	Subjective Quality of Working Life Index	Czech Republic	Vinopal (2009)	<i>Ad hoc</i> survey
DGBI	DGB Good Work Index	Germany	Mußmann (2009)	<i>Ad hoc</i> survey
WCI	Austrian Work Climate Index	Austria	Preinfalk <i>et al.</i> (2006), Michenthaler (2006)	IFES omnibus survey (dedicated module)
IQL	Indicators of Quality of the Labour Market	Spain	Caprile and Potrony (2006), Toharia <i>et al.</i> (2008)	NSI, MLI
QWF	Quality of Work in Flanders	Flanders (Belgium)	Flanders Social and Economic Council (2009)	<i>Ad hoc</i> survey

Continued

Table 2 Continued

Acronym	Complete name	Scope	Source	Databases
Tangian	Tangian's proposal	European Union	Tangian (2007)	EWCS
GBJI	Good and Bad Jobs Index	Middle-income countries	Ritter and Anker (2002)	IPSS
ICQE	Index of the Characteristics Related to the Quality of Employment	Chile	Sehnbruch (2004)	<i>Ad hoc</i> survey
IJD	Index of Job Desirability	USA	Jencks <i>et al.</i> (1988)	<i>Ad hoc</i> survey

Notes: ECHP, European Community Household Panel; ELFS, European Labour Force Survey; SILC, Statistics on Income and Living Conditions; EWCS, European Working Conditions Survey; AMECO, Annual Macroeconomic Database of the European Commission; ERNAIS, Ekos Rethinking North American Integration Survey; GSS, General Social Survey; SWA, Survey of Work Arrangements; IFES, Institut für empirische Sozialforschung; NSI, National Statistics Institute; MLI, Ministry of Labour and Immigration; IPSS, ILO People's Security Surveys. Source: Authors' analysis.

analysis (for example, the measurement of material deprivation), one could argue that if we are deriving an absolute measure of job quality, such universal values should be able to lead to an index that is valid across different countries and different times. Nevertheless, from a practical perspective there are at least two concerns that should be taken into account. First, some basic attributes of work that might not be present in an important number of jobs in developing countries (for example, freedom of association in trade unions) are taken for granted in most of the developed world and can be considered redundant as indicators of job quality in the latter group of countries. In the second place, the availability of statistical information on job quality is much more limited in the developing world, so many of the most complex proposals are in practice only applicable to the most developed nations. For such reasons, the indices proposed for worldwide use (such as some of the operationalizations based on the ILO's decent work agenda) are considerably more parsimonious than the indices intended for application to developed nations. Nevertheless, we have included both types of proposals in our review to make it more comprehensive.

The second consideration is related to the underrepresentation of indices specifically developed for (or in) the USA. Considering the high sophistication of social and economic statistics in the USA, it is very surprising that there is not, to our knowledge, a general and periodical survey of job quality in that country [such as the European Working Conditions Survey (EWCS) and many other similar national surveys]. In this respect, Table 3 only includes one

Table 3 Summary of the main indicators of job quality

Index	Type of indicator				No. of ...		Type of variables						Individual data	Periodicity
	Multi-purpose	Worker oriented	System	Aggregate	Dimensions	Variables	Subjective	Objective	Results	Procedures	Static	Dynamic		
Laeken	X		X		10	25		X	X	X	X	X	NO	Annual
EJQI		X	X	X	6	17	X	X	X	X	X		NO	Annual
EWCS		X	X		4	Many	X	X	X	X	X		YES	Every 5 years
GJI	X		X	X	5	16		X	X	X	X		NO	Single exercise
DWI-1	X		X	X	4	9		X	X	X	X		NO	Single exercise
DWI-2	X		X	X	7	67		X	X	X	X		NO	Single exercise
DWI-3	X		X		11	37		X	X	X	X		NO	Single exercise
DWI-4	X		X	X		8		X	X	X	X		NO	Single exercise
QEI		X	X		5	11	X	X	X	X	X		NO	Single exercise, with occasional updates
IJQ	X			X	7	27	X	X	X	X	X	X	NO	Single exercise
SQWLI		X	X	X	6	18	X		X	X	X		YES	Single exercise
DGBI		X	X	X	3	31	X		X	X	X		YES	Annual
WCI		X		X	4 (16)	25	X	X	X	X	X		YES	Bi-annual
IQL	X		X	X	8	38		X	X	X	X	X	NO	Annual
QWF		X	X	X	2	10	X		X	X	X		YES	Every 3 years
Tangian		X		X	10	109	X	X	X	X	X		YES	Single exercise
GBJI		X	X	X	1	6	X		X		X	X	YES	Single exercise
ICQE		X	X	X	5	15		X	X	X	X		YES	Single exercise
IJD		X	X	X	11	48	X	X	X	X	X		YES	Single exercise

Source: Authors' analysis.

genuinely American indicator, the one proposed by Jencks *et al.* (1988). Apart from this one, we can mention Tilly's work (1996), which proposes a list of dimensions to be monitored in order to assess the evolution of job quality in the USA. However, although this proposal is useful and valid, it does not attempt any type of aggregation into an index and only relies on secondary data, so we have not included it in our review. In any case, most of the discussion of the previous and following pages also concerns the USA, at least potentially.¹³

It is not easy to summarize the information included in the nineteen indicators covered here, but some relevant conclusions can be drawn from this review. The main one is that, despite the current availability of several indices of job quality, there is still a need for a worker-oriented, individually-constructed and theoretically-grounded job quality indicator in order to measure, compare and monitor the evolution of this variable in different countries. Some of the existing indicators present excellent features, whereas some others are not so good, but all of them have certain limitations that still make it necessary to devote more effort to the development of a better measure, especially if this is to be used for serious policy purposes. In the following pages, we discuss the main lessons derived from the review of indicators summarized in Table 3.

First, eight of the indicators reviewed are not really (or not strictly) measures of job quality, since they include issues as unrelated to job quality as labour market access, the distribution of disposable income, the illiteracy rate or standard macroeconomic indicators. This problem is especially evident in the case of the International Labour Organization Decent Work indices and the Laeken indicators. The European Job Quality Index (EJQI), the EWCS, the Subjective Quality of Working Life Index (SQWLI), the Quality of Employment Indicators (QEI), the DGB Good Work Index (DGBI), the Austrian Work Climate Index (WCI) and the individual academic proposals avoid this shortcoming. In addition, most of the indicators include some measures of social security comprehensiveness, which is problematic when making cross-country comparisons because of the existence of very different welfare regimes with substantially different roles for the private and public sector.

Second, some dimensions highlighted as important by the social sciences literature (described in Section 2) are absent from most indicators. This particularly applies to work intensity, an omission largely conditioned by the practical absence of surveys covering this issue (the main exception is the EWCS, but this survey is limited to the EU, and its periodicity is not annual, so only multi-

¹³Probably the biggest difference in terms of the attributes of job quality on either side of the Atlantic is the importance of fringe benefits in the USA (pension and employer-provided health insurance), which is largely irrelevant in most European countries because such benefits are mostly provided by the state.

annual European indices cover this important job attribute). Furthermore, there are some important indicators—the Laeken indicators, the Decent Work Index (DWI-1), the QEI and the Quality of Work in Flanders (QWF)—that make no reference to earnings, which is definitely an important flaw.

Third, there are five indices that include no aggregate measure of job quality and only offer a system of indicators. By proceeding in this way, they avoid setting—and justifying—weights for the different dimensions. However, this cannot be seen as a positive feature of an indicator because it makes the overall evaluation of the results quite ambiguous (the different dimensions can yield contradictory results), and, as previously mentioned, each observer will use their own value judgments anyway to ‘weight’ the results obtained for the different dimensions.

Fourth, the number of dimensions and measurement variables varies considerably across the indicators, from six variables [the Good and Bad Jobs Index (GBJI)] to more than a hundred (the EWCS and Tangian’s proposal). In most of the cases, the aggregation is carried out on the basis of equal weights (although the individual variables are normally grouped within dimensions), often without any theoretically sound explanation.

Fifth, bearing in mind the problems of using job satisfaction as a component of job quality (discussed in Section 3.2), it should be mentioned that only two of the indices reviewed—the QWF and the SQWLI—are based solely on these kinds of subjective variables. Another one, the DGBI, relies on subjective dimensions and workers’ subjective evaluations of ‘objective’ job attributes (noise, working time etc.). Including job satisfaction together with other components of job quality has the problem of using input and output indicators simultaneously, thus counting certain attributes twice. This problem is present in the QWF and the SQWLI, but not in the case of the DGBI.

Sixth, most indicators include both procedure and results variables, with only the GBJI, the WCI and the IJD making reference solely to results. Another relevant aspect has to do with the static or dynamic nature of the variables considered. Though there are many indicators including variables that refer to opportunities for advancement in the current job, few indices—the Laeken indicators, the IJQ, the Indicators of Quality of the Labour Market (IQL) and the GBJI—are truly dynamic in the strict sense; that is, they use longitudinal measures of job or income mobility. As seen in Section 3.2, it is not clear, however, that such dynamic variables should be included in a job quality indicator.

Seventh, many of the measures reviewed include as components of job quality distributional measures, such as gender or age gaps, for particular variables. As argued above, a more fitting approach is to design indicators that can be anonymously computed at the individual level and then compare the scores (or the

gaps) of job quality for the different groups of interest. Eight of the indices reviewed in the previous section—the ECWS, the SQWLI, the DGBI, the WCI, the QWF, Tangian’s proposal, the GBJI and the Index of the characteristics related to the quality of employment (ICQE)—have this desirable characteristic.

Eighth, periodicity, authorship and data sources are usually interrelated. Those indicators backed by institutions tend to be periodically updated, whereas the opposite tends to be the case for indicators coming from academic research. In addition, while institutional indices are often based on aggregate (national) data derived from surveys, in the case of academic proposals it is common to find indicators computed using micro-data, which allow the calculation of indices by population subgroups. In all cases, the periodicity of indicators is strongly conditioned by the periodicity of the data sources used. This tends to limit the range of issues covered considerably because most proposals restrict themselves to data sources which are updated regularly enough.

As can be seen in Table 3, most of the proposals originated in Europe and were designed mainly for European use. The recent recognition of the importance of job quality for European policy at the highest level has clearly given impetus to the task of measuring job quality in this area of the world. Europe is also better equipped than most other regions in terms of the statistical information available on this matter: not only do many countries have excellent surveys on the quality of working life, but there is also a very good source at the EU level: the EWCS (which is only limited by its small sample size at the national level and by its relatively sparse periodicity). So although there is as yet no established standard on job quality measurement, if it eventually happens, it would be most likely to come from the EU.

In contrast, we have to say that the only attempt made so far by EU institutions themselves to measure job quality (the Laeken indicators of job quality) has been very poor. In many ways, the Laeken indicators exemplify many of the problems highlighted in this paper. They do not cover attributes that are as crucial for job quality as wages or work intensity, while including obviously unrelated variables such as long-term employment rate, productivity or labour market transitions. They include job satisfaction as one of the key components of job quality, which, as argued earlier, involves confusing inputs and outputs. They include distributional variables (such as gender or age gaps) as components of job quality but allow no distributional analysis because they are constructed only at the country level (despite the capacity of EU institutions for using and improving existing data sources, such as the EWCS, as mentioned earlier). So, in practice, the Laeken indicators have little value for the purpose of measuring and comparing job quality across Europe: at most, they can be considered as a starting point.

5. Conclusions

This work has aimed to contribute to the development of a job quality measure to be used in an international context, both by reviewing the methodological foundations of the measurement of job quality and the specific proposals for accomplishing this task that can be found in the literature. This paper is an attempt to map the terrain, an unavoidable preliminary task if one is interested in developing any measure comparable across both countries and time.

Despite the existence of powerful reasons to take seriously the development of a good internationally comparable job quality indicator, there is no established standard of what job quality is and how to measure it. In fact, although there are a large variety of proposals available, they often contradict each other in their underlying assumptions, concepts, measures and results. The main reason behind this lack of an agreed-upon standard at an international level is probably that this is still a relatively young area of policy monitoring, but it also betrays a certain lack of interest in (and resource allocation for) this issue on the part of international institutions.

We have discussed some of the key steps to be taken when constructing a job quality indicator. The obvious first step is clearly defining what job quality is. We propose a relatively open operational definition, which restricts job quality to those attributes of work and employment that have a direct impact on workers' well-being. Drawing from such a definition of the core concept to be measured, a model specifying the relevant job attributes, their interrelations and their relative importance must be devised. In our opinion, the best way to develop such a model is to draw from the rich existing literature on this issue in the social sciences, as we have illustrated in this paper by briefly reviewing the main traditions. Once the underlying concept and analytical model have been properly developed, there are several important methodological choices to be made for measuring and aggregating information in the indicator. In our view, the ideal job quality indicator for policy purposes should be based on variables measuring results (that is, the good or bad attributes themselves) rather than procedures (whether there are adequate participation structures or resources available for ensuring good conditions of work and employment). It should be sensitive to the dynamic dimension (such as the possibilities for development), but it should be restricted to the attributes of jobs (and therefore, data on labour market transitions are of little interest here). It should be measured at the individual level so that it is possible to study the distribution of job quality for population subgroups and the interaction between the different dimensions and components. Although it should be sensitive to cultural and structural differences, it should also have a very high level of harmonization if it is going to be used for comparative policy purposes. It should be aggregated into a single

index, but always reported together with its dimensions and components. And finally, it is preferable to aggregate the variables, indicators and components using weights which have been derived from the theoretical model or the policy purposes behind the index, rather than using a data-driven weighting strategy, which tends to produce an obscure and therefore less useful aggregation.

In the last section of this paper, we have also carried out an extensive review of the main IJQ that can be found in recent social sciences literature and policy papers. Although some indices are clearly better than others, none of the existing proposals is totally satisfactory, as most indicators miss some key dimensions or are based on debatable methodological decisions. However, there has been rapid progress in recent years in this matter especially in the European context (most proposals originated in Europe), so there may soon be a proposal that eventually becomes an international standard of job quality measurement. We hope that this paper has contributed to such an aim.

In this sense, we would like to conclude this paper by trying to answer a simple but important question: would it be possible, with the presently available data, to construct an international indicator of job quality akin to UNDP's Human Development Index—one with a relatively small number of components that could now or in the not-too-distant future be measured in most countries of the world? At a global scale, or even if limiting the coverage to more or less developed economies, the answer is most certainly not. If we compare the areas that, according to our review of the social sciences literature, a job quality indicator should cover with the fields of information included in the ILO's global labour statistics, we can see that the available comparable information only partially covers four of the 22 areas identified in Table 1 (wages, participation, contractual status and working time)—and this only at the aggregate level: at the individual level there is no information available at all at a global scale. These difficulties are illustrated by the three proposals of operationalization of the Decent Work agenda reviewed in Table 3: the vast majority of areas covered in such proposals have nothing to do with job quality, from the perspective adopted in this paper. So at a global scale, the first task to be accomplished in order to advance the possibility of a comparable job quality indicator would be to generate the necessary information. In our view, this can only happen if the ILO uses its capacity to establish (or recommend) global standards on labour statistics to expand the coverage of issues specifically related to job quality.

Nevertheless, as mentioned earlier, the situation is quite different in the EU, where it is in fact possible to construct a job quality indicator at present, with all or most of the desirable properties discussed in this paper. In fact, some of the European proposals reviewed in Table 3 come very close to this idea. The best example is ETUI's European Job Quality Index, which covers most of the areas listed in Table 1 and is transparent and well documented in its construction.

The main problem with this index is that it is calculated only at the aggregate level, which limits its possibilities considerably: it can mostly be used to compare job quality across countries, but not to evaluate the quality of jobs for specific groups of workers or occupations, a crucial requirement for an index if it is to be used for policy purposes. But in the EU, there is a statistical source that is almost tailor-made for the purposes of constructing a job quality index: the European Working Conditions Survey, which covers nearly all the areas shown in Table 1, has been in use for the last 20 years and is available at the individual level. This database allows addressing issues like the dispersion of job quality or the differences between broad groups of workers. Although there are plans to expand the survey in future editions, the main problem with this source is its small sample size (around 1000 observations per country in the last wave), which considerably limits the depth of the analysis for specific sub-groups of the working population at the country level. But this database is readily available for the construction of a workable job quality index that can be used as a starting point for a proper future measure. Such an index could be, at least, used as a tool for pressing international organizations such as the EU (which could expand the EWCS to make it a really adequate source for the construction of a European Job Quality Index) or the ILO (which could use its capacities for settling statistical standards at a global scale to expand the information currently available) so that they finally take this idea seriously. We hope that this paper has contributed to such aims.

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