A composite indicator of working conditions in the EU-15 for policy monitoring and analytical purposes

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Abstract

A composite indicator *Working conditions* for comparing European countries is constructed from data of the Third European Survey on Working Conditions. The main findings are as follows: (a) European countries differ with respect to working conditions statistically more significantly than with respect to earnings; it implies a quite accurate discrimination threshold in ranking countries with respect to working conditions, (b) working conditions and earnings positively correlate over the whole of Europe but correlate little within single countries; it indicates at the prevailing role of national determinants over professional or social specificities as contributing to the average working conditions, and (c) earnings play no essential role in subjective estimations, including job satisfaction, which mainly depends on working conditions; consequently, more attention should be paid to improving the latter.

The same approach is applied to constructing a three-dimensional indicator of *Working time*, reflecting its aspects duration, location (abnormality), and flexibility. It is found that abnormality and flexibility compensate each other, whereas the duration is not affected by two other factors.

Keywords: Composite indicators, quality of work, European Union, statistical indices, processing ordinal data.

JEL Classification:
C43 — Index Numbers and Aggregation, C51 — Model Construction and Estimation, J21 — Labor Force and Employment, Size, and Structure, J88 — Public Policy.

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Contents

1 Political background

> *In the new list an indicator* **quality of work** *has been added in response to the emphasis put on this issue by the Stockholm European Council. The particular indicator on accidents at work has been chosen ... But other indicators of quality of work, such as "life-long learning", were already included in the list of structural indicators.*
>
> European Communities
> *Structural indicators*, p. 6
> Brussels, 30.10.2001
> COM(2001) 619 final

The concept of the European welfare state includes both economical and social aspects; see Esping-Andersern (1990). Since employees spend at least 1/3 of the time at work, more than devoted to family, friends, and leisure together (Esser and Schrader 1993, 2nd cover page, Halama 1997, p. 2), working conditions play as important a role as income, consumption, or living standards in the total welfare of workers.

Working conditions permanently remain in the focus of attention of the European Commission, national governments, and trade unions. In particular, it is one of the issues of the European Employment Strategy (EES) launched in 1997 in Luxembourg. The EU Lisbon Summit 2000 called for " more and better jobs and greater social cohesion by 2010". Four years later, on March 2004, the European Council again emphasized "the urgency to take effective action in creating more and better jobs"; see European Commission (2001–2004).

At the European level, the supervision of working conditions is institutionalized in the *European Foundation for the Improvement of Living and Working Conditions*, Dublin, and the *European Agency for Safety and Health at Work*, Bilbao. The former is a European organization, one of the first to be established to work in specialized areas of EU policy. It was set up by the European Council (Council Regulation EEC No. 1365/75 of 26 May 1975) and since then carries out research and development projects, providing data and analysis for informing and supporting the formulation of EU policy. The Foundation has a network of experts throughout Europe who conduct research on its behalf including assessing the current national situations, the preparation of case studies and national reports and the conducting of surveys; see European Foundation (2004).

The European Agency closely collaborates with the European Foundation. It acts as a catalyst for developing, collecting, analyzing and disseminating information that improves the state of occupational safety and health. The Agency is a tripartite European Union organization also set up by the European Council (Council Regulation EEC No. 2062/94) to bring together representatives from three key decision-making groups in each of the EUs Member States — governments, employers and workers associations; see European Agency (2004)[2].

[2]Germany has contributed to these European initiatives as early as in the 1970s by a research program *Humanisierung des Arbeitslebens (HdA)* (= Humanization of Working Life) followed by programs *Arbeit und Technik* (= Work and Techniques), and *Innovative Arbeitsgestaltung* (= Innovative Work Structuring); see the Editorial to *Arbeit*, 2004/3. The actual program of this type, *Initiative Neue Qualität der Arbeit (INQA)* (= Initiative New Quality of Work), is complemented with the political initiative *Gute*

2 European surveys on working conditions

Both institutions use statistical data on working conditions collected by the EuroStat (2004) which are available from the *New Cronos* Internet page (section *Population and Social Conditions*). Selected data are annually summarized in the *Labour Force Surveys* and other EuroStat reports, also available on-line. These data are however not comprehensive enough for specialized studies on working conditions, and in 1990 the European Foundation initiated purpose-oriented *European Surveys on Working Conditions* which take place every five years, the third dating 2000 and the fourth being planned for 2005.

The most recent survey by the European Foundation (2000) is based on a questionnaire with over 200 questions related to

- occupation (position, industry branch, type of contract, size of enterprize, etc.),
- physical environment (vibrations, noise, painful positions, etc.),
- time (evening, weekend, and shift-work, schedule of working time, etc.),
- organizational issues (monotonicity of work, unforeseen tasks, independence and subordination, etc.),
- social climate (possibility to discuss working conditions, cases of violence, discrimination, etc.),
- health (different professional diseases, accidents, sick leaves, etc.), and
- income (basic, bonus, sharing profits, compensations for overtime, etc.)

Totally, 21703 persons from 15 European countries were interviewed by national institutes listed in p. 67 of the report. Each country was represented by ca. 1500 interviews, except for Luxembourg with 502 interviews. The interviewed persons were selected by the method of *random walk*, and the results were processed as in a microcensus. That is, the European figures were derived from the national averages accounted with weights proportional to the size of active population in the given country according to the *Labour Force Survey* of EuroStat (1997), ranging from 0.17 Mio in Luxembourg to 35.30 Mio in Germany; see pp. 1–3 and 67–68 of the report.

Thus, the interviews were aggregated in the *population* dimension (= vertical dimension of the survey data). Thereby the report provides a comprehensive outlook at single countries and the whole of Europe with respect to all the questionnaire items. For instance, one can find the percentage of employees working with computers at least 1/4 of the time or all the time (p. 8), or the percentage of fixed-termed employees or even trainees who dare to discuss their working conditions at their workplace (p. 26). It enables tracing the evolution of the corresponding European and national indicators since the first survey of 1990.

Arbeit (= Good Work) of the leading German trade union IG Metall; see Pickshaus and Urban (2004); for the current German debate on the quality of work see Peters and Schmitthenner (2003).

The surveys from the viewpoint of the EU policy goals The surveys exhaustively represent a large number of aspects of working conditions but avoid to evaluate them in 'worse–better' terms. In several cases such an evaluation follows from questions by default, like from the ones about disturbing factors (noise, vibration, etc.) but in other cases it appears to be quite ambiguous. For instance, one can learn almost everything about the variability of working hours and spontaneity of changes of the working time (pp. 23–25), but nothing is said on whether time flexibility is desirable, or evening work is voluntary, or overtime is fairly rewarded.

Neither countries, nor industrial branches are classified with respect to the quality of work in general or with respect to any partial composite factor like scheduling working time, physical environment, or social climate[3]. It stems from the lack of *inter-question* aggregation of interviews (= in the horizontal dimension of the survey data) which could integrate answers to all or selected questions. For instance, there are over 20 questions on professional diseases but no integral characterization of health at work[4]. In spite of vast information provided by the surveys it is hard to judge which countries offer better working conditions, or which social groups are privileged. If a young European asks himself "In which country would I like to work?" the surveys mentioned will be of little help. Even an expert can have difficulties in finding the countries with most favorable/most critical working conditions.

Taking into account the EU's aiming at "better jobs" and that policy making operates with aggregated data, a "worse–better" integral evaluation of working conditions is quite urgent. Therefore, developing methods for evaluating survey data can contribute to designing instruments for pursuing the EU policy.

3 Composite indicators

Idea of composite indicators A usual way to evaluate something is to measure its particular properties and to summarize them, eventually with weights which reflect their importance. For example, in education written tests are evaluated by the sum of points for single tasks, school-leavers get the (weighted) average score of their records (*Abiturnote* in Germany), etc. A similar method is widespread in multi-discipline sport competitions, in testing consumption goods, in selecting best projects, and in many other situations. This approach is implemented in composite indicators aimed at bringing different qualities to some common denominator. Thereby they allow for the evaluation of complex phenomena

[3]Such a possibility has been discussed in the report by European Foundation (1997). A heuristic approach to constructing synthetic indices has been outlined. The report, however, contains neither a mathematical model, nor specific examples.

[4]Another survey-based dedicated report *Working Time Preferences in Sixteen European Countries* by the European Foundation (2002) also suggests no horizontal aggregation of answers. At most the answers on factual and preferable situations are compared. For instance, answers like "I work 19 hours a week but would prefer to work 21 hours" are processed to obtain conclusions like "50% employees would prefer to work fewer hours, 11% would like to work more, and the rest 38% are satisfied" (p. 43, Table 16).

The only occasional step towards horizontally aggregating interview answers is made in pp. 62–79, and 158. The desired increment/decrement in working time is explained with a regression model in variables 'managerial duties', 'blue/white collar', 'small child', etc. The regression coefficients, specifying substitution rates of the variables, allow to bind partial preferences together and thereby to horizontally aggregate interview answers. Regretfully, this possibility is not elaborated and the model is only used for finding most decisive preference factors.

which otherwise would be hardly comparable.

The summation of different issues often seems questionable. For instance, 1 in mathematics and 5 in sports is not the same as 5 in mathematics and 1 in sports, although they give equal sums. However, as follows from the next argument, there is no way to make an aggregate evaluation other than to summarize the incoming factors.

Why composite indicators are weighted sums of variables A *composite indicator* in the most general form can be imagined as a formula with n entries. In other words, a composite indicator is a function f in n variables which to each set of input values $x_1, \ldots, x_n$ puts into correspondence the indicator value $y = f(x_1, \ldots, x_n)$. Usually a composite indicator is not expected to abruptly change its *behavior*, meaning the differentiability of f. Then its Taylor expansion in a neighborhood of some reference point $(x_1^0, \ldots, x_n^0)$ gives the *first-order approximation* of f:

$$\begin{aligned} f(x_1, \ldots, x_n) &\approx \underbrace{f\left(x_1^0, \ldots, x_n^0\right)}_{\substack{\text{Function value} \\ \text{at } (x_1^0, \ldots, x_n^0)}} + \sum_{i=1}^{n} \underbrace{\frac{\partial f\left(x_1^0, \ldots, x_n^0\right)}{\partial x_i}}_{\substack{\text{Partial derivative} \\ \text{of } f \text{ at } (x_1^0, \ldots, x_n^0)}} \underbrace{\left(x_1 - x_1^0\right)}_{\substack{\text{Argument} \\ \text{increment}}} \\ &= \underbrace{f\left(x_1^0, \ldots, x_n^0\right) - \sum_{i=1}^{n} \frac{\partial f\left(x_1^0, \ldots, x_n^0\right)}{\partial x_i} x_i^0}_{\text{Constant } C} + \underbrace{\sum_{i=1}^{n} \frac{\partial f\left(x_1^0, \ldots, x_n^0\right)}{\partial x_i} x_i}_{\substack{\text{Weighted sum of variables} \\ \sum_{i=1}^{n} a_i^0 x_i}} . \end{aligned}$$

Since composite indicators are primarily designed for comparisons and tracing relative progress, the constant C is omitted. The remaining sum of variables is, consequently, the general composite indicator to within its first-order approximation. The additive form of a composite indicator is thereby justified.

Domain of application Composite indicators, or synthetic indices, are increasingly propagating during the last decade. They appear in numerous world-wide documents (United Nations 2001–, International Institute for Management Development 2000–, World Economic Forum 2002–, OECD 2002–2004). For instance, in the PISA study by the OECD (2004) the level of school education in the OECD countries was evaluated with a composite indicator. On October 2001 the European Commission recommended to develop composite indicators for certain purposes within the Structural Indicators Exercise (European Commission 2001a) which was followed by the report (European Commission 2002b). As emphasized by the OECD (2003, p. 3),

> Composite indicators are valued for their ability to integrate large amounts of information into easily understood formats for a general audience... Despite their many deficiencies, composite indicators will continue to be developed due to their usefulness...

Composite indicators are highly appreciated in international comparisons, where it is often required to surmount national particularities and to bring the consideration to the common denominator. As noted by Munda and Nardo (2003, p. 2),

> Composite indicators stem from the need to rank countries and benchmarking their performance whenever a country does not perform strictly better than another. Composite indicators are very common in fields such as economic and business statistics (e.g., the OECD Composite Leading Indicators) and are used in a variety of policy domains such as industrial competitiveness, sustainable development, quality of life assessment, globalization and innovation (see Cox and others 1992, Huggins 2003, Wilson and Jones 2002, Guerard 2001, Färe et al. 1994, Lovell et al. 1995, Griliches 1990 and Saisana and Tarantola 2002, among others)... A general objective of most of these indicators is the ranking of countries according to some aggregated dimensions (see Cherchye 2001 and Kleinknecht 2002).

Advantages of composite indicators Thus the first advantage of composite indicators is their appropriateness for policy monitoring. They appear to be operational instruments and goals of policy making.

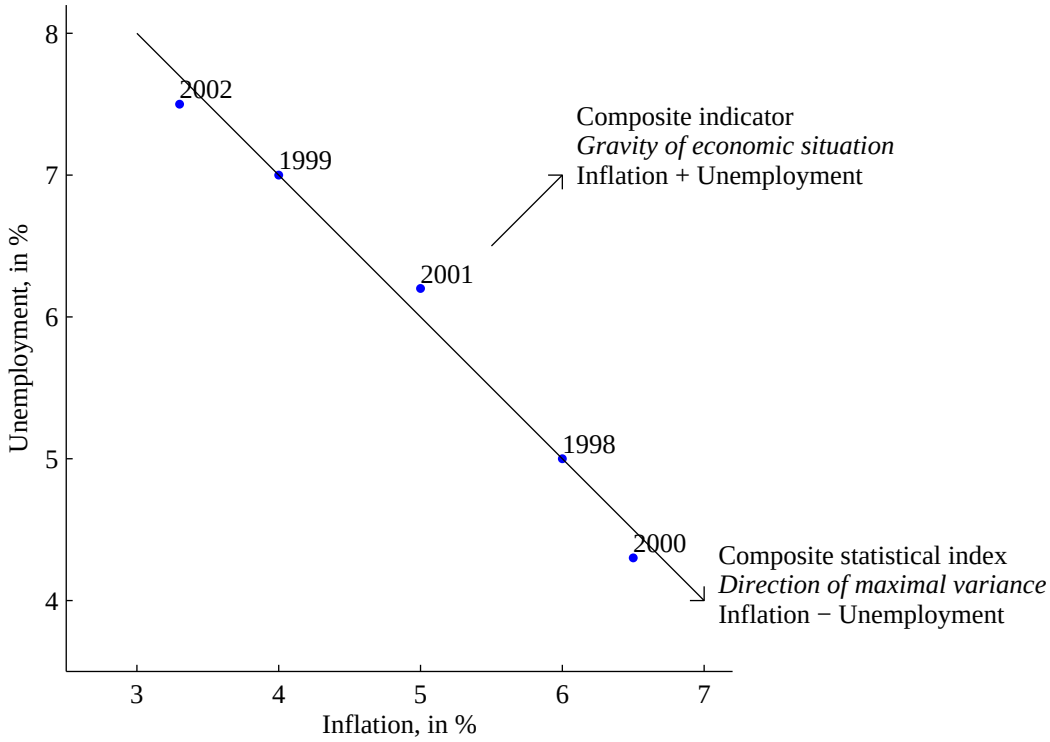
The second advantage of composite indicators is their usefulness for empirical studies. For example, the OECD (1999, 2004) developed a composite indicator for the strictness of employment protection legislation to investigate the influence of the latter on the labour market performance. Each country was attributed an indicator value which reflected the level of employment protection in the given country. It allowed to trace its influence on the unemployment rate in the OECD-countries in operational terms.

The third advantage of composite indicators is the possibility to use them as objective functions in optimization models. In this case the composite indicator value is maximized or minimized within some feasible domain. For example, the composite indicator of the German regional policy in three targets, GDP growth, decrease in the national unemployment, and equalization or regional unemployment rates was expressed in governmental subsidies to regional labour markets (Tangian 2003). The maximization of the composite indicator allowed to optimize the budget allocation among 271 German labour market regions.

Composite indicators versus objective functions As already mentioned, a composite indicator is defined to be a weighted sum of several first-level indicators which weights reflect their relative importance (= substitution rates); see European Commission (2002c, p. 79), OECD (2003, p. 5), and Munda and Nardo (2003, p. 2). In other words, composite indicators are simple objective functions considered by economists as utility functions as far back as in the 19th century (Jevons 1871, Menger 1871, Walras 1874); for a modern account see Keeney and Raiffa (1976), or Winterfeldt and Edwards (1986). Specific issues on the typology of composite indicators, requirements for input data, principles of weight assignments, and others are reviewed by Bossel (1999), Huggins (2002), and Saisana and Tarantola (2002). Practical aspects of composite indicators are outlined in brief guides by the OECD (2002, 2003), Pastille (2002), and Sendzimir (2004).

The difference between composite indicators and objective functions is rather methodological. In economics, objective functions represent individual or social preferences. Composite indicators reflect development but still with a better/worse inclination regarding the given objective. However, in the context of policy monitoring the word 'indicator' is more appropriate than 'objective function'.

Figure 1: Difference between composite statistical indices and composite indicators



Another point is that several aspects of a phenomenon are likely associated with composite indicators than with objective functions. For instance, within the framework of working conditions, it is more natural to speak of composite indicators for health and for social climate than of objective sub-functions.

A minor distinction of composite indicators is the use of standardized variables to the end of making comparable scales of the variables. For this purpose, variables x_i are transformed to $\frac{x_i-\mu_i}{\sigma_i}$, where μ_i and σ_i are the mean and standard deviation, respectively. The same is sometimes made for objective functions but not that systematically.

Composite indicators versus composite statistical indices Composite indicators are often criticized for their one-dimensionality which means a loss of information. This critics is made from the viewpoint of statistical indices which are as numerous as necessary to adequately describe the data. In this case composite indicators are misunderstood as the first statistical index from the given set. Although composite indicators are based on statistical data they differ from composite statistical indices which emerge in multidimensional scaling. To be specific, consider an example.

Identify a country's yearly inflation and unemployment rates with points in the 2D-plane "inflation–unemployment" shown in Figure 1 and construct a statistical index for these points. Multidimensional scaling is aimed at visualizing distances between n-dimensional observations by locating them in a specially arranged low-dimensional (1D–3D) space. For this purpose few greatest diameters of the cloud of observations found by factor analysis are used as new axes. Being linear combinations of the original coordinates, the new coordinates with respect to the new axes are called composite statistical indices.

In our example, the observations are extended along the "South–Eastern" diagonal which becomes the axis of the statistical index. The index of a point is its coordinate with respect to this axis which is "inflation rate minus unemployment rate". The statistical index provides a high discrimination of the years, and the index axis can be a posteriori interpreted as certain dependence, in the given case as the Philips curve. However, there may be no interpretation other than the direction of the best discrimination of the observations.

If the objective is to reflect "the gravity of economic situation" then the statistical index is inadequate. Define the corresponding composite indicator to be "inflation rate plus unemployment rate". Since the observations lie along the "South–Eastern" diagonal, all the years have close indicator values, meaning no great changes in the economic situation in general. Thus, the composite indicator has a clear interpretation of fulfillment of the objective given. On the other hand, it guarantees no high discrimination of observations.

Note that a statistical index is data-driven, so that all data are equally taken into account to make the index most variable over the data. It is 'data-neutral' and reveals unknown dependencies, being most appropriate for analytical purposes. A composite indicator is, on the contrary, objective-driven but can little vary over the data given. It evaluates observations from the viewpoint of the given objective, being most appropriate for purpose-oriented policy making.

As one can see, the policy goal is unique. Therefore, the composite indicator is one-dimensional. It reflects one objective as an objective function and *evaluates* the data. The growth of the composite indicator is directed by the policy objective and is not influenced by the data to be evaluated.

Statistical indices, on the contrary, can be numerous because they *describe* the data which can extend in several directions. Unlike composite indicators, the direction of statistical indices is determined by the space location of data.

Recent advances in constructing composite indicators Due to some fundamental difficulties of preference aggregation (Arrow and Raynaud 1986), no universal constructing method exists either for objective (utility) functions, or for composite indicators. In each case their construction is much determined by the particular application, including both formal and heuristic elements, and incorporates some expert knowledge on the phenomenon. All of these much complicated theoretical studies. As noticed by Wansbeek and Kapteyn (1983):

> Utility seems to be to economists what the Lord is to theologians. Economists talk about utility all the time, but do not seem to have hope of ever observing it this side of heaven. In micro-economic theory, almost every model is built on utility functions of some kind. In empirical work little attempt is made to measure this all-pervasive concept. The concept is considered to be so esoteric as to defy direct measurement by mortals.

Only recently, under the pressure of necessity, some advances in the field were obtained; see proceedings of dedicated conferences on constructing objective functions (Tangian and Gruber 1997; 2002) and on composite indicators organized by the Joint Research Center of European Communities and the OECD (Saltelli 2003a–b and Hoffmann 2004). As it sometimes happens, the progress has been achieved rather due to practitioners who little care of formal rigor. Theoreticians attempted to construct composite indicators

as composite statistical indices which analytically *explained* data rather than *evaluated* them. The practitioners of decision making surmounted such a neutral analytical attitude to data and approached the problem from the standpoint of policy objectives.

Taking into account both political claims for "better jobs" and recent achievements in constructing composite indicators, the problem of evaluating working conditions in the EU countries can be solved by constructing dedicated composite indicators. This need is explicitly expressed in some EU documents, like in the one cited in the epigraph. Such indicators are most urgent in view of integrating new country members which development should be adequately monitored.

4 Composite indicator of *Working conditions*

The given study attempts to derive a composite indicator of *Working conditions* for 15 European countries from the data of the Third European Survey. Roughly speaking, a formula is proposed to aggregate individual answers to the interview questions into a single value which summarizes *Working conditions* of the given person. The national average of these values is regarded as the country's index. The main task here is bringing different answer formats (yes/no, multiple cases, successive grades, numbers) to a unifying scale which would allow a meaningful summation of the answers. The scaling and other related mathematical issues are described in some detail in Annex 1. According to the objective, the indicator is based on a selection of questions which allow a 'better–worse' interpretation. The questions irrelevant to this objective are not considered.

Composition of the indicator *Working conditions* Table 1 briefly outlines the data for constructing the indicator (for a detailed version see Annex 2). Every row contains coded answers to interview questions of one of 21703 individuals. All codes are proportionally reduced to the standard range 0–1 with 0 corresponding to the worst and 1 to the best grade. Every column contains answers to one interview question. Columns (questions) are grouped into sections.

The first section, *Classifiers*, consists of the questions which are not used in the index but are necessary to classify individuals by country, by industrial branch, by gender, etc.

The second section, *First-level indicators*, contains 109 questions selected for constructing the index. They are grouped into 10 topics:

1. Physical environment (10 questions),
2. Health (24 questions),
3. Time factors (8 questions),
4. Stressing factors (15 questions),
5. Independence (8 questions),
6. Collectivity (3 questions),
7. Social environment (22 questions),
8. Career prospects–training (2 questions),

Table 1: Data for constructing the composite indicator of *Working conditions*; stars $*$ show the vertical aggregation of the Survey 2000; question marks ? show the aggregation for the composite indicators

	Classifiers	First-level indicators (109)				High-level indicators	
		1. Physical environment	2. Health	...	10. Subjective estimations	10 summary indicators	Composite indicator
Number of individual	Answers to 10 questions (country, branch, gender, etc.)	Answers to 10 questions (noise, vibrations, etc.)	Answers to 24 questions (headaches, allergies, etc.)	...	Answers to 7 questions (satisfaction, appreciation of hours etc.)	Physical environment, Health, etc.	Working conditions
1	0.8 0.2 ... 0.3	0.5	02	...	..... 0.8 →	? ? ... ?	?
2	0.3 0.1 ... 0	0.5	0.1	...	..... 0.2 →	? ? ... ?	?
.....							
21703	0 0.4 ... 1	0.3	0.8	...	..... 0.4 →	? ? ... ?	?
		↓	↓	...	..... ↓	↓ ↓ ... ↓	↓
		*	*	...	..... *	? ? ... ?	?

9. Work-Life balance (10 questions), and

10. Subjective estimations (7 questions).

All the questions selected have a clear 'better–worse' meaning (the objective of the indicator!), like level of noise, number of accidents, time to get to work, or cases of discrimination. The questions with no 'better–worse' inclination are not included, because they say nothing about the quality of work. For instance, several questions on the variability of working hours lack any information on its advantageousness or inconvenience for the person interviewed. The ambiguity, whether the working time variability does or does not improve the quality of work of the given individual makes these questions inappropriate for evaluating working conditions.

The third section, *High-level indicators*, displays the values to be found. They are 10 summary indicators (= partial composite indicators) for each topic *Physical environment*, *Health*, etc., and one global composite indicator of 'objective' *Working conditions* which unites all the topics, except the 10th, *Subjective evaluations*, with 7 questions.

Thus, composite indicator values of individuals are horizontally aggregated rows of the table. The countries are characterized by the national average of individual indices, meaning their vertical aggregation.

The vertical aggregation can be made for any social group specified by one or several *Classifiers*. For instance, the composite indicator of working conditions for men and women is the average of individual indices selected with the classifier *Gender*.

Weights of interview questions The horizontal aggregation of individual answers is performed with equal weights of questions. The reasons are as follows.

It should be taken into account that each individual has his/her own question ratio. For instance, a young women with a small child may pay more attention to time factors, a middle-aged man may be most interested in career prospects, and a disable worker may

be more concerned with physical factors. Therefore, assigning a higher weight to career prospects we favor the middle-aged man and discriminate both the woman and the disable worker.

Higher weights of certain questions are advantageous for those who are most interested in them and disadvantageous for those who are not. Thereby unequal question weights result in a factual inequality of individuals. Therefore, the problem of weighting questions is closely linked to the one of weighting individuals. Since individual weights are usually assumed equal (= one voter one vote), regardless of education, experience, or intelligence, the question weights should be assumed equal as well. Any deviation from equal weights is a source of debate, and to avoid it equal weights are accepted whenever possible.

In statistics it is also a tradition to accept the equal distribution (weights) by default, unless no other information is available; such an assumption satisfies the principle of maximal likelihood; see Kendall and Moran (1963). Taking into account the large number of questions (102), one can expect that even if in actuality the weights are unequal, the deviations from equal weights statistically annihilate each other so that the equally-weighted composite indicator provides a reasonable approximation.

As for topics of the interview *Physical environment, Health*, etc., equal weights of questions implies the principle 'the more questions, the more important the topic'. It corresponds to the known property of cybernetical systems to allocate resources proportionally to the amount and importance of the incoming information (Kohonen 2001). For instance, Eskimos use 10 notions for different kinds of snow, whereas Germans suffice only one. Adapting the number of cells to the size, frequency, or importance of tasks is widely used in neuronal networks. In our case, 24 interview questions on health can be regarded as reflecting the actual role of health in working conditions as understood by the authors of the questionnaire.

5 Policy monitoring: Benchmarking countries and social groups

As already mentioned, the first aim of composite indicators is to evaluate and to compare the country performance for policy monitoring and policy making.

Summary indicators Figures 2–11 show the 10 summary indicators for the EU-15, all given in conditional %. The 0% could be attained if *all* the individuals of a country responded to *all* the questions in the most negative way. Conversely, the 100% corresponds to the case when *all* the individuals of a country are extremely positive in *all* the questions. Both cases are certainly not realistic, so that 20% and 80% should be already considered quite extreme. Therefore, the low values all over EU of *Social environment* (6–14%), *Career prospects (training)* (22–48%), and *Work–Life balance* (24–38%) are noteworthy. The indicators of *Physical environment*, *Time factors*, and *Subjective estimations* are, on the contrary, quite positive. Other summary indicators are middle-ranged.

Composite indicator of *Working conditions* Figure 12 shows the evaluation of European countries with the composite indicator of objective *Working conditions*, that is, the aggregate of the first nine summary indicators. It is based on a larger number

Figure 2: Summary indicator of Physical environment based on 21703 interviews

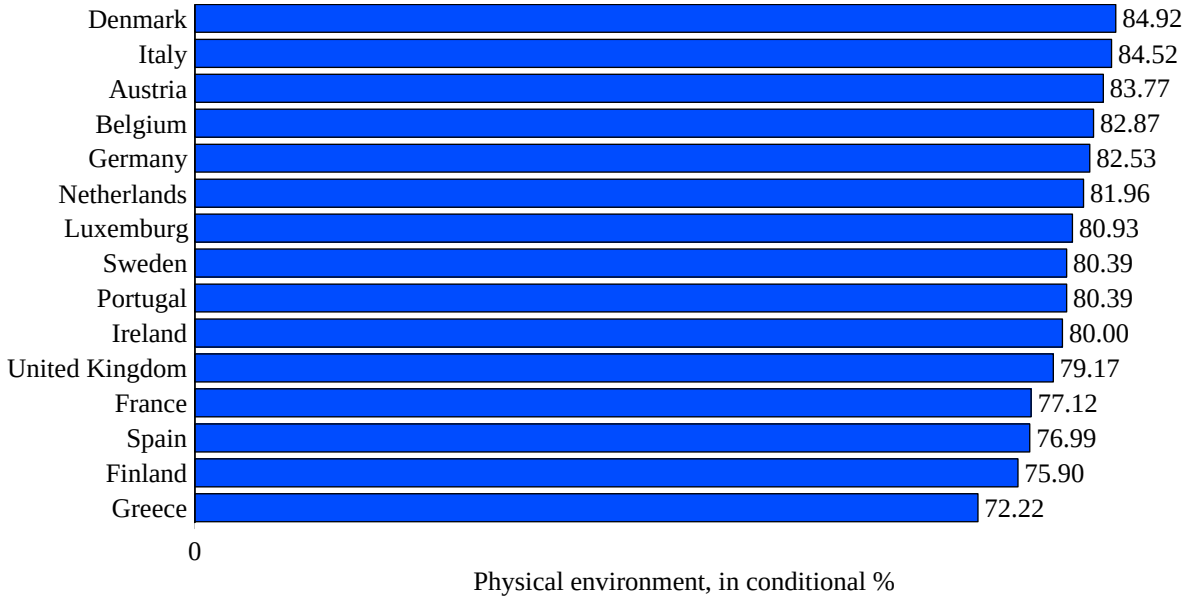


Figure 3: Summary indicator of Health based on 21703 interviews

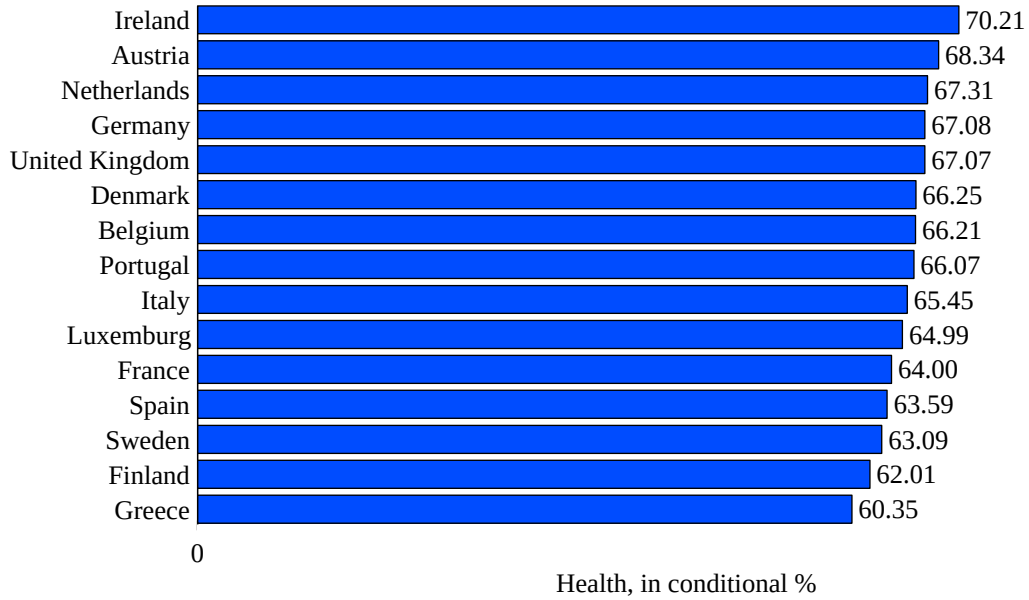


Figure 4: Summary indicator of Time factors based on 21703 interviews

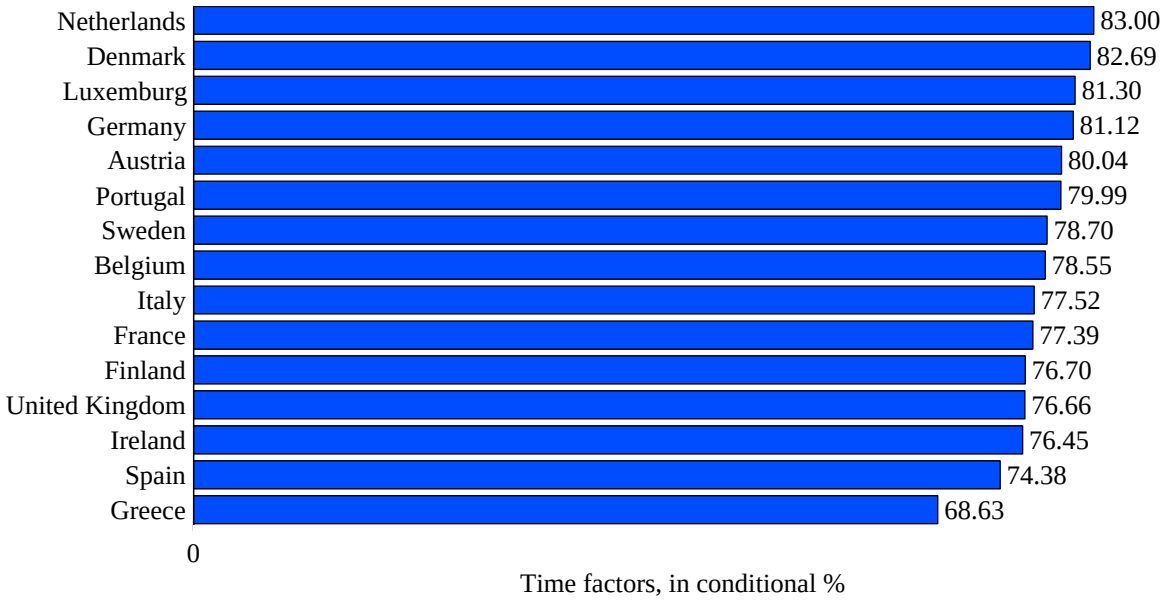


Figure 5: Summary indicator of Stressing factors based on 21703 interviews

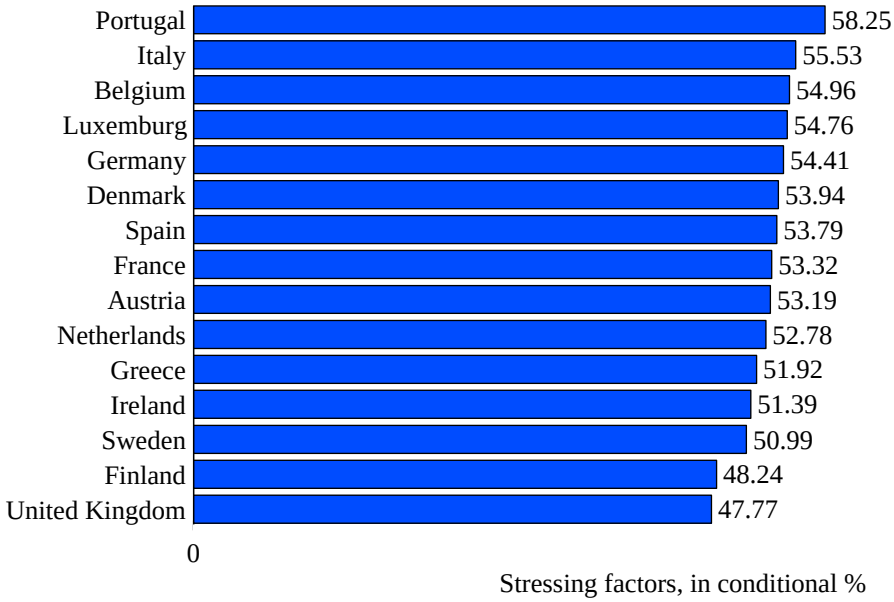


Figure 6: Summary indicator of Independence based on 21703 interviews

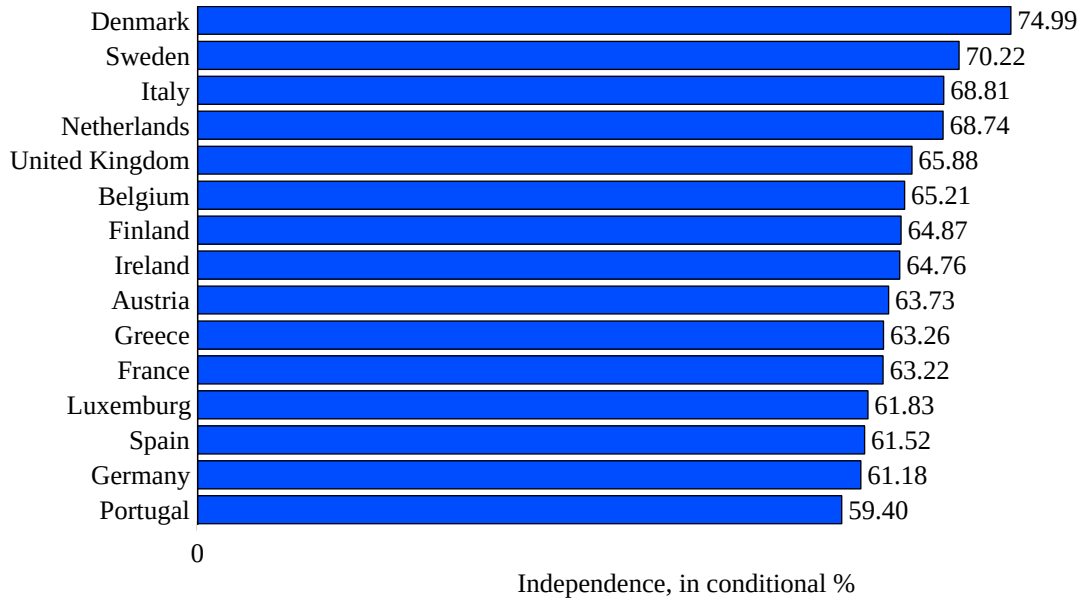


Figure 7: Summary indicator of Collectivity based on 21703 interviews

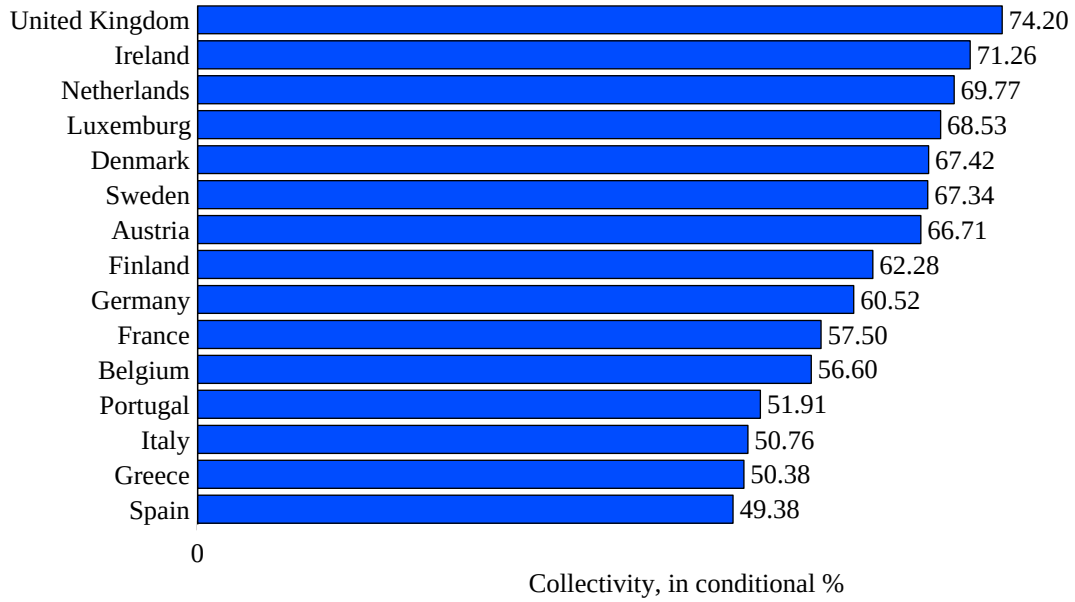


Figure 8: Summary indicator of Social environment based on 21703 interviews

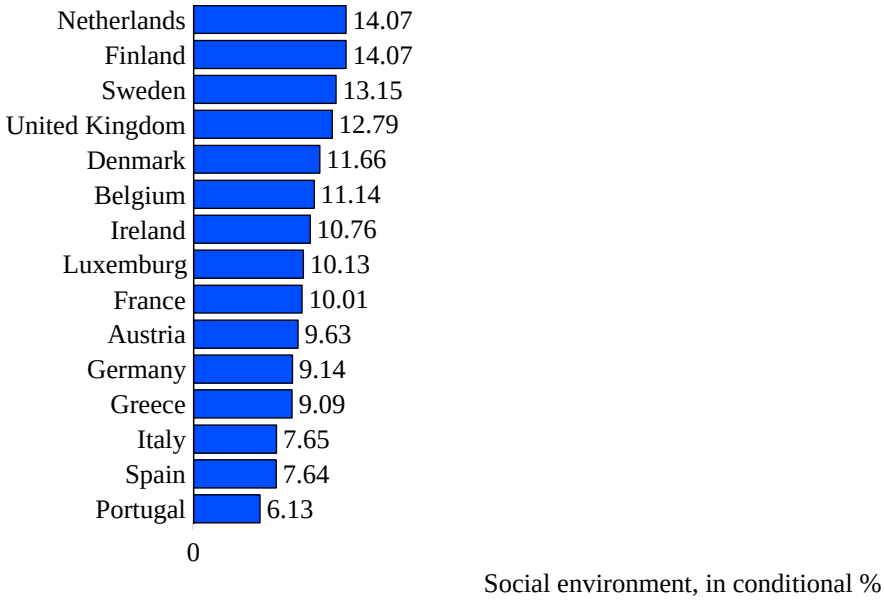


Figure 9: Summary indicator of Carrier (training) based on 21703 interviews

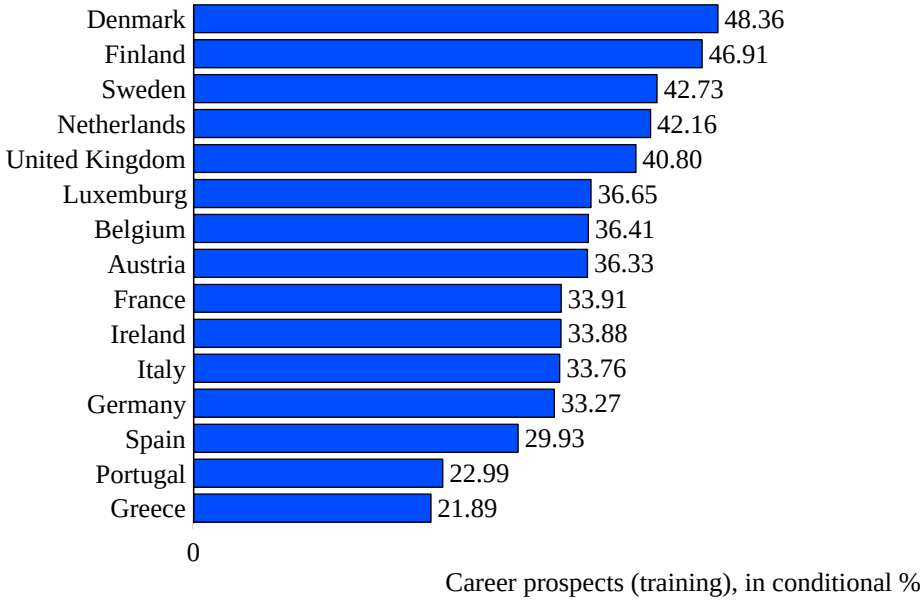


Figure 10: Summary indicator of Work–Life balance based on 21703 interviews

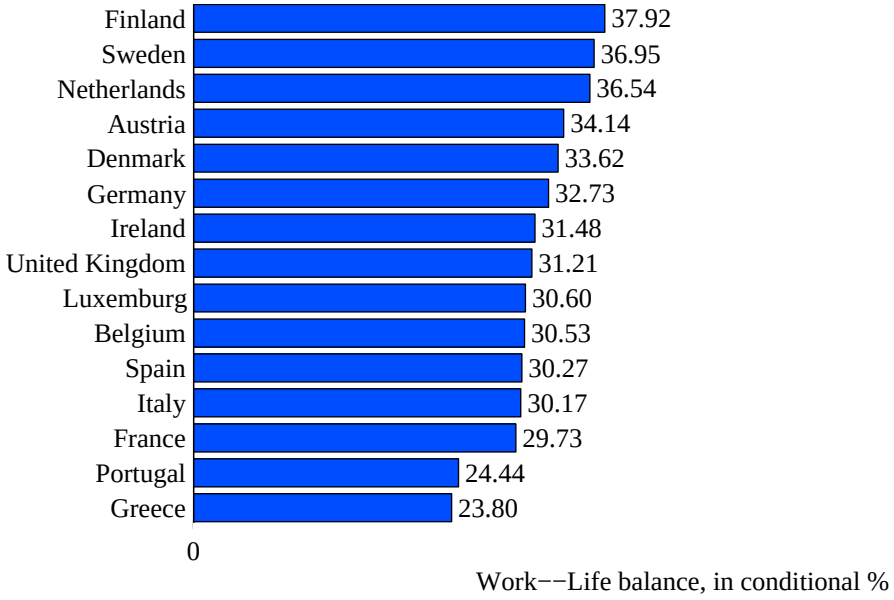
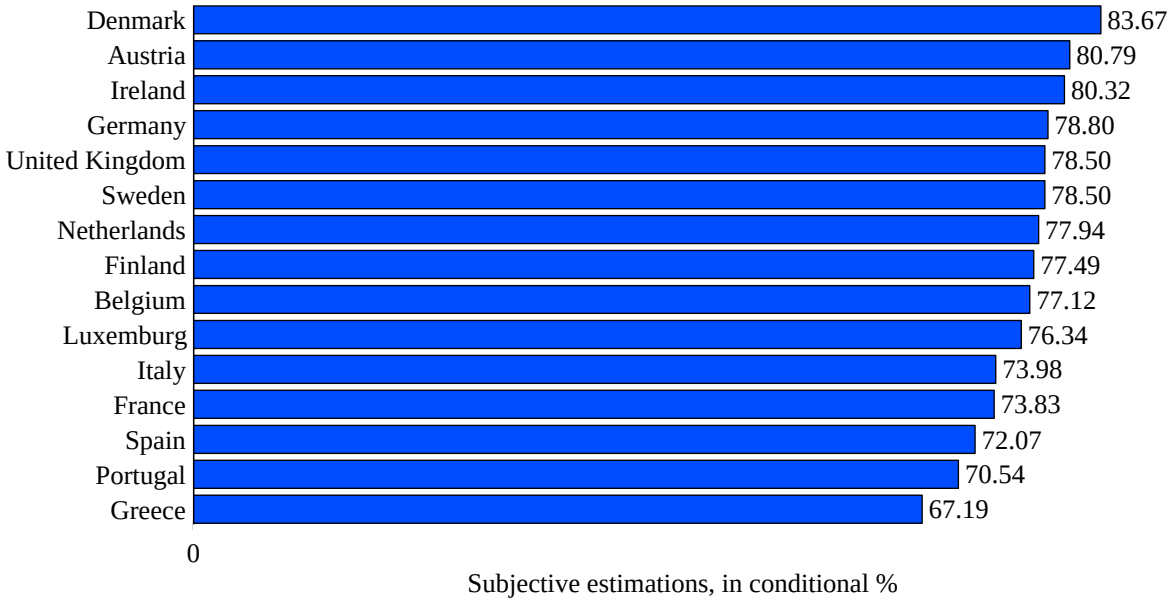


Figure 11: Summary indicator of Subjective estimations based on 21703 interviews



of questions (102) and respondents (ca. 1500 in each country), and owing to statistical stability of large sums little deviates from the mean value. As one can see, the best working conditions are inherent in the Netherlands and Denmark (55%), and the worst in Greece (47%).

Similarly to aggregating individual indicators by country, one can do it with respect to other classifiers. Figures 13–18 show the evaluation of working conditions in the EU-15 by NACE-sector, occupation, company status, gender, size of local unit, or employment status. Besides some plausible features these figures exhibit a few particularities. For instance, better working conditions of women are explained by their prevailing occupation in services. It also relates to part-timers who are often women.

Significance of pairwise disparities among countries As seen from Figure 12, the indicator of working conditions in the EU-15 lies within 47–55%, that is, within 1/12 of its range. Therefore, the question emerges: Do such close indicator values really imply disparities among working conditions in European countries, or the differences are insignificant?

Table 2 shows the levels of statistical significance of the null-hypotheses, that pairs of countries cannot be discriminated with respect to the index *Working conditions*. The headline contains the number of respondents from each country. The table is computed for the Behrens-Fischer t-test with possibly unequal variances which uses the Satterthweite's approximation for the effective degrees of freedom (Milliken and Johnson 1992).

The significance levels in Table 2 are given in %. As traditional in social sciences (Kühnel and Krebs 2001, p. 404), a null hypotheses with significance $< 5\%$ (meaning statistical unlikelihood), is rejected and its opposite is accepted. For instance, the element 1-2 of Table 2 is equal to 0. That is, the national means of Belgium and Denmark are highly unlikely to coincide, consequently, their (average) working conditions differ significantly. It is not the case of Belgium and Germany. The null hypothesis that they have the same working conditions is quite probable, having the significance 87%, and cannot be rejected. Consequently, working conditions in Belgium and Germany do not differ significantly, at least for the given number of questions and persons interviewed.

Significance of joint disparities among countries Testing hypotheses on pairs of countries is only the first step. When there are several countries, there are also several pairs to compare. If one applies a statistical test in this situation, the significance value is determined for each comparison disjointly. Then the risk that one hypothesis of many is wrong grows as the number of pairs increases. To resolve this problem, multiple comparison procedures are designed. They provide an upper bound on the significance of the joint discrimination hypothesis for the totality of pairs (Hochber and Tanhane 1987).

The results of the multiple comparison procedure for the joint significance level 5% are depicted in Figure 19.

For instance, Germany is shown by a blue segment centered at the German national average. Countries do not significantly differ from Germany *jointly* if their segments are shaded by the German segment, ever if partially; these countries are shown by grey color. Otherwise, the difference is jointly significant; these countries are distinguished by red. Thus, Germany significantly differs *jointly* from Denmark, Greece, Spain, France, Netherlands, Portugal, Finland, and Austria. This list does not include Italy and United

Figure 12: Working conditions by country based on 21703 interviews

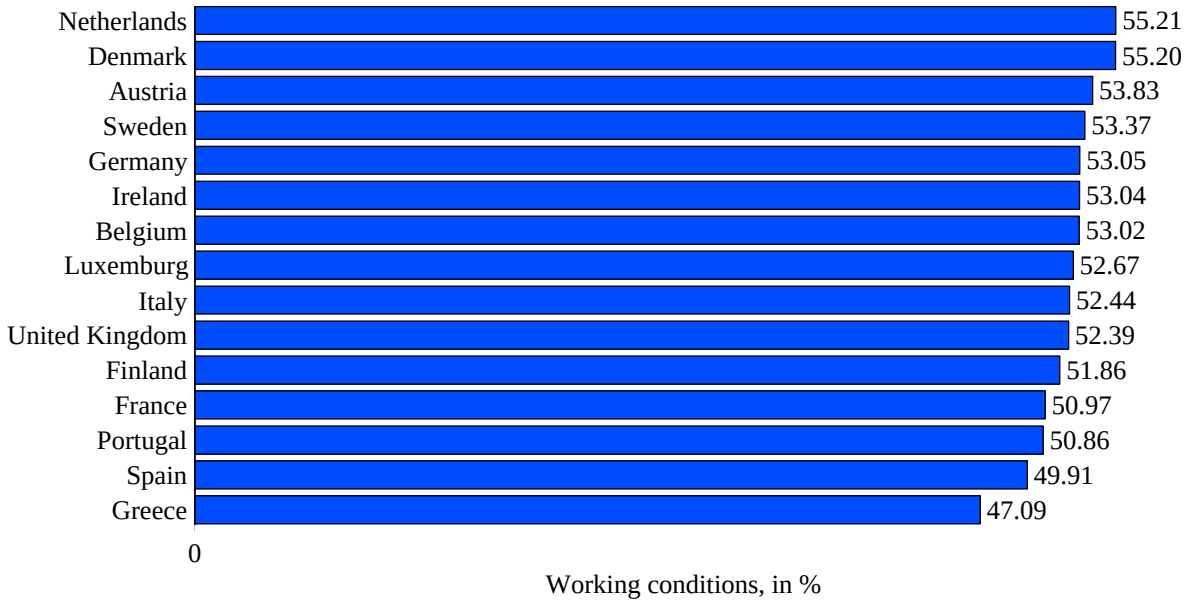


Figure 13: Working conditions by sector (NACE) based on 21703 interviews

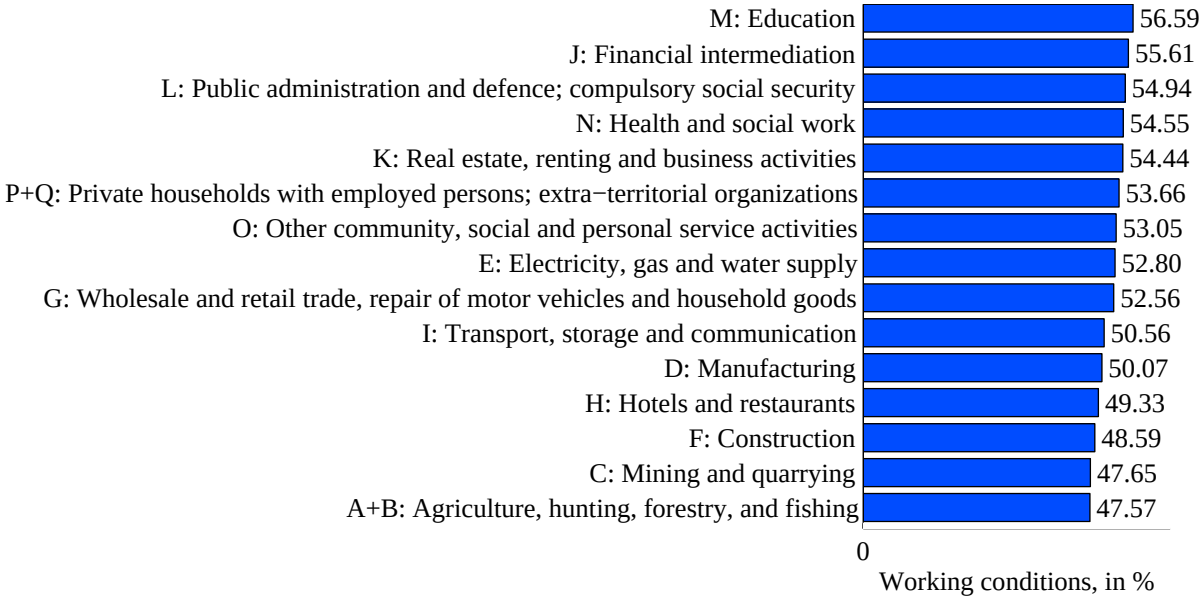


Figure 14: Working conditions by company status based on 21703 interviews

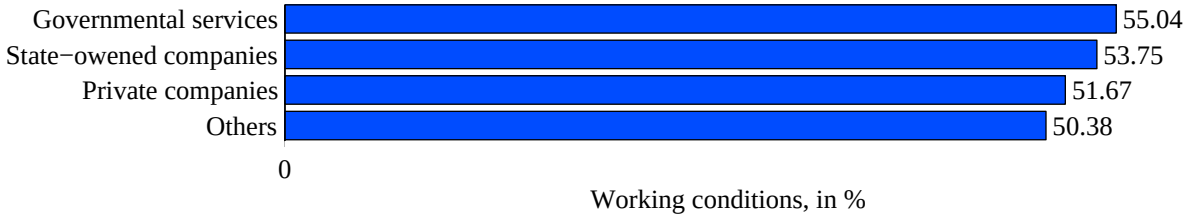


Figure 15: Working conditions by occupation (ISCO) based on 21703 interviews

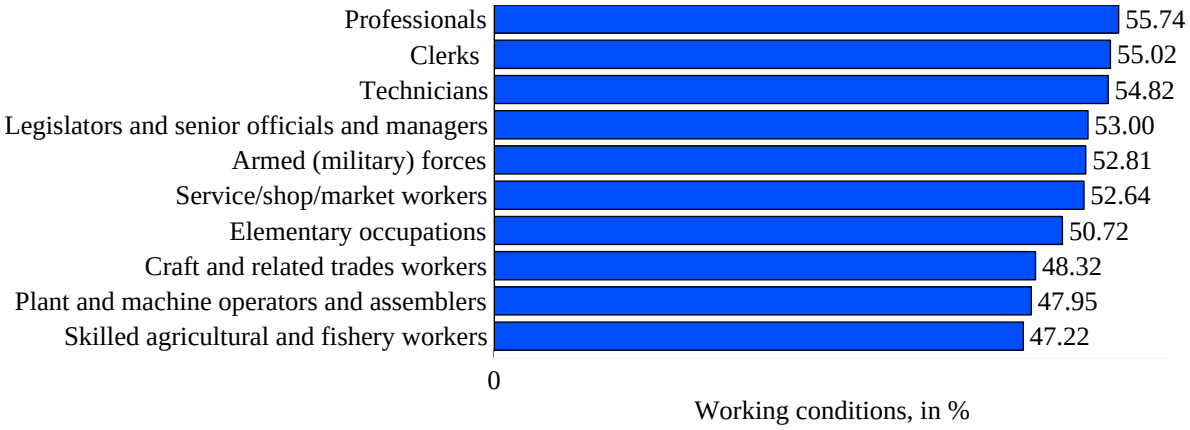


Figure 16: Working conditions by gender based on 21703 interviews

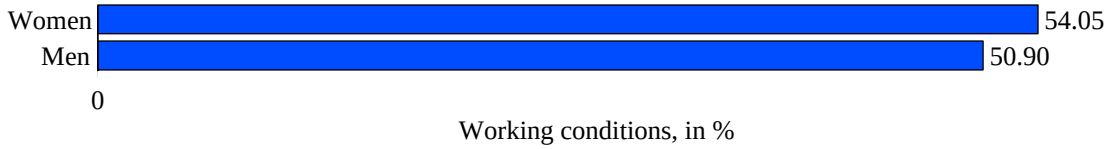


Figure 17: Working conditions by size of local unit based on 21703 interviews

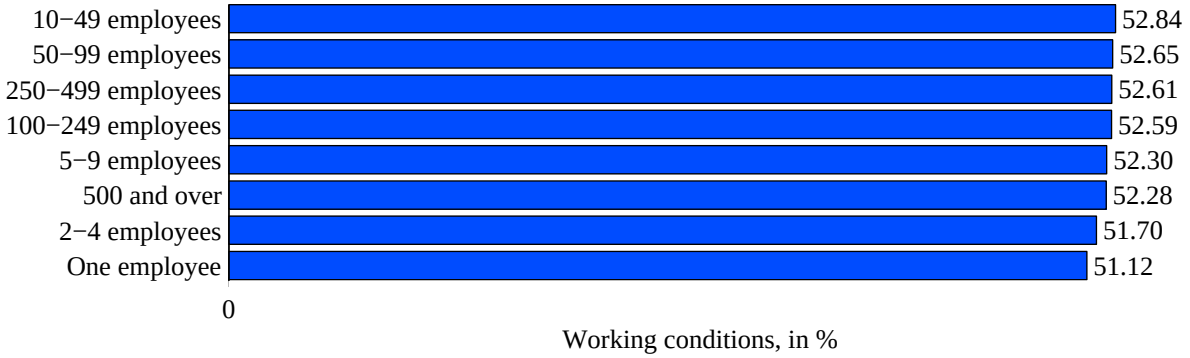


Figure 18: Working conditions by employment status based on 21703 interviews

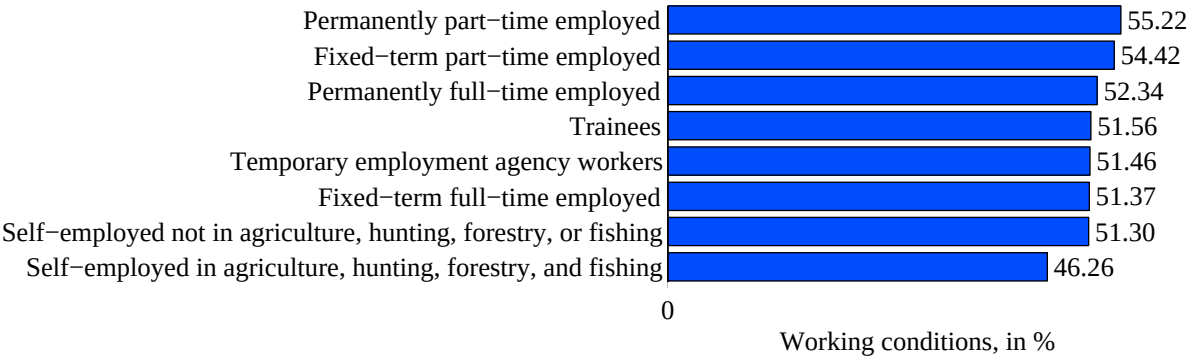
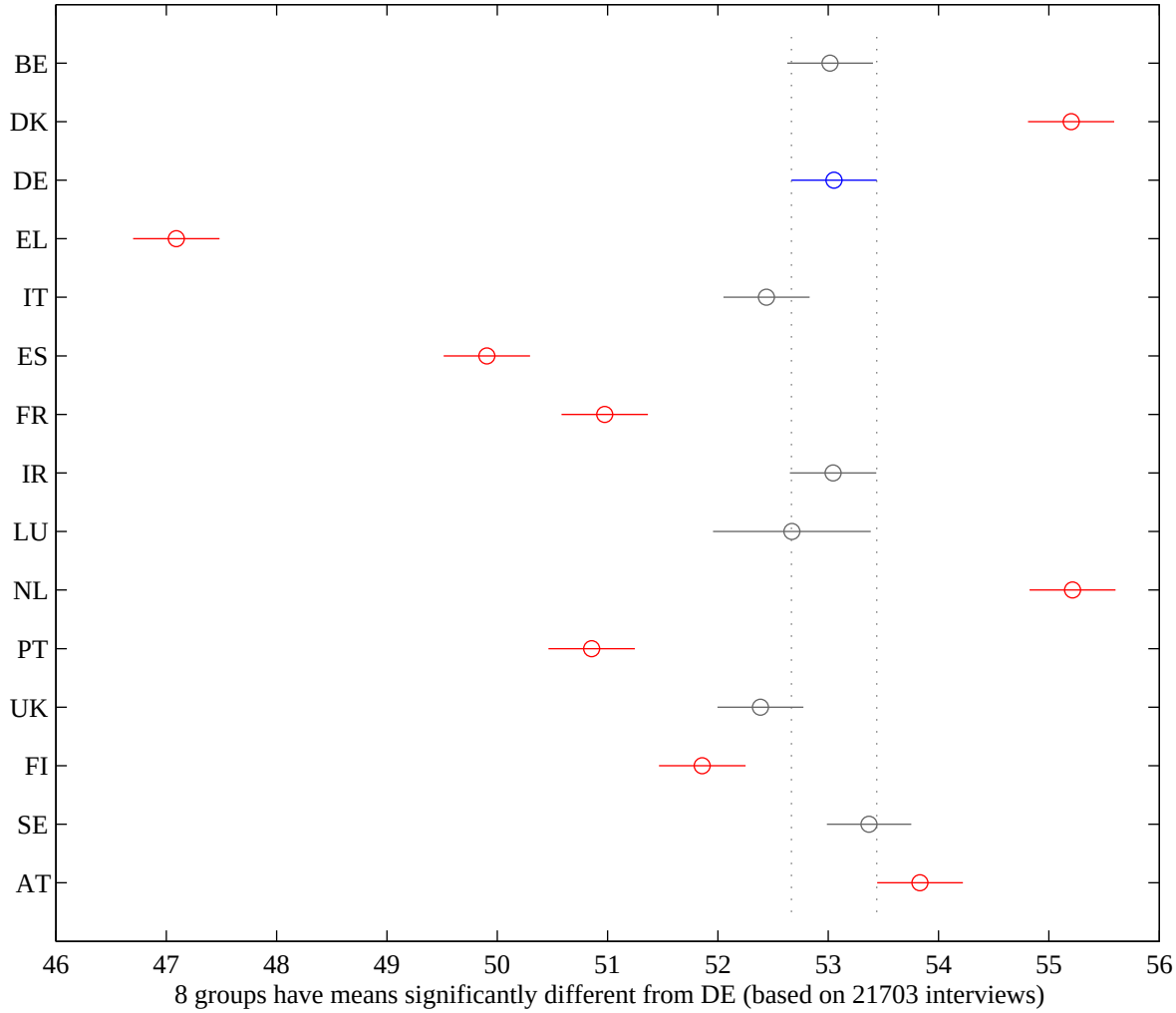


Table 2: Statistical significance of equality of working conditions for European countries (in %)

	BE	DK	DE	EL	IT	ES	FR	IR	LU	NL	PT	UK	FI	SE	AT
	1523	1506	1540	1500	1500	1500	1502	1502	502	1516	1502	1514	1496	1574	1526
BE		0	87	0	1	0	0	90	31	0	0	1	0	10	0
DK	0		0	0	0	0	0	0	0	94	0	0	0	0	0
DE	87	0		0	1	0	0	97	27	0	0	0	0	15	0
EL	0	0	0		0	0	0	0	0	0	0	0	0	0	0
IT	1	0	1	0		0	0	1	50	0	0	81	1	0	0
ES	0	0	0	0	0		0	0	0	0	0	0	0	0	0
FR	0	0	0	0	0	0		0	0	0	63	0	0	0	0
IR	90	0	97	0	1	0	0		27	0	0	0	0	13	0
LU	31	0	27	0	50	0	0	27		0	0	41	2	4	0
NL	0	94	0	0	0	0	0	0	0		0	0	0	0	0
PT	0	0	0	0	0	0	63	0	0	0		0	0	0	0
UK	1	0	0	0	81	0	0	0	41	0	0		3	0	0
FI	0	0	0	0	1	0	0	0	2	0	0	3		0	0
SE	10	0	15	0	0	0	0	13	4	0	0	0	0		4
AT	0	0	0	0	0	0	0	0	0	0	0	0	0	4	

Figure 19: The 5%-significant joint equality of working conditions for European countries



Kingdom, although *disjointly* Germany and Italy, and Germany and United Kingdom differ significantly; see Table 2.

Figure 19 can be used for testing hypotheses on joint difference of other countries; one should only imagine the shade from the interval of the country selected. As one can see, Greece is by far behind and the statistically inseparable Netherland and Denmark are by far ahead of other countries. The next worse is Spain and then statistically inseparable France and Portugal. Finland can be separated from all the countries but Italy, Luxembourg, and United Kingdom.

All of these show that, in spite of close indicator values, the working conditions in Europe differ significantly.

6 Analytical study I: Interaction of three aspects of quality of work

The second advantage of composite indicators is their appropriateness for analytical studies. Let us investigate the dependence of subjective estimations on objective working conditions and earnings.

For this purpose, express *Hourly Earnings* of every individual in the minimal hourly earnings observed in the interviews (= harmonized monthly level 1 divided by 120 hours per week); the national average values are given in the next to last column of Table 5 in Annex 2. Now each individual is characterized by a triplet, *Objective working conditions*, *Subjective estimations*, and *Hourly earnings*. For countries consider triplets of their average values and locate them in the three-dimensional space as shown in Figures 20–21. In the two-dimensional Figure 20, the coordinate *Subjective estimations* is depicted by colors, similarly to the relief height in geographical maps.

At the top of the figures there are equations of regression lines/plane fitted to the individual data. The indicator of quality of fit R^2 says how adequate is the linear model. Next goes the F-statistics derived under the null-hypothesis, that the 'real' regression line/plane is horizontal, contrary to observations. The low P_F value means that the actual slope of regression lines/plane is very unlikely to emerge by coincidence, so that the dependence between variables is statistically significant.

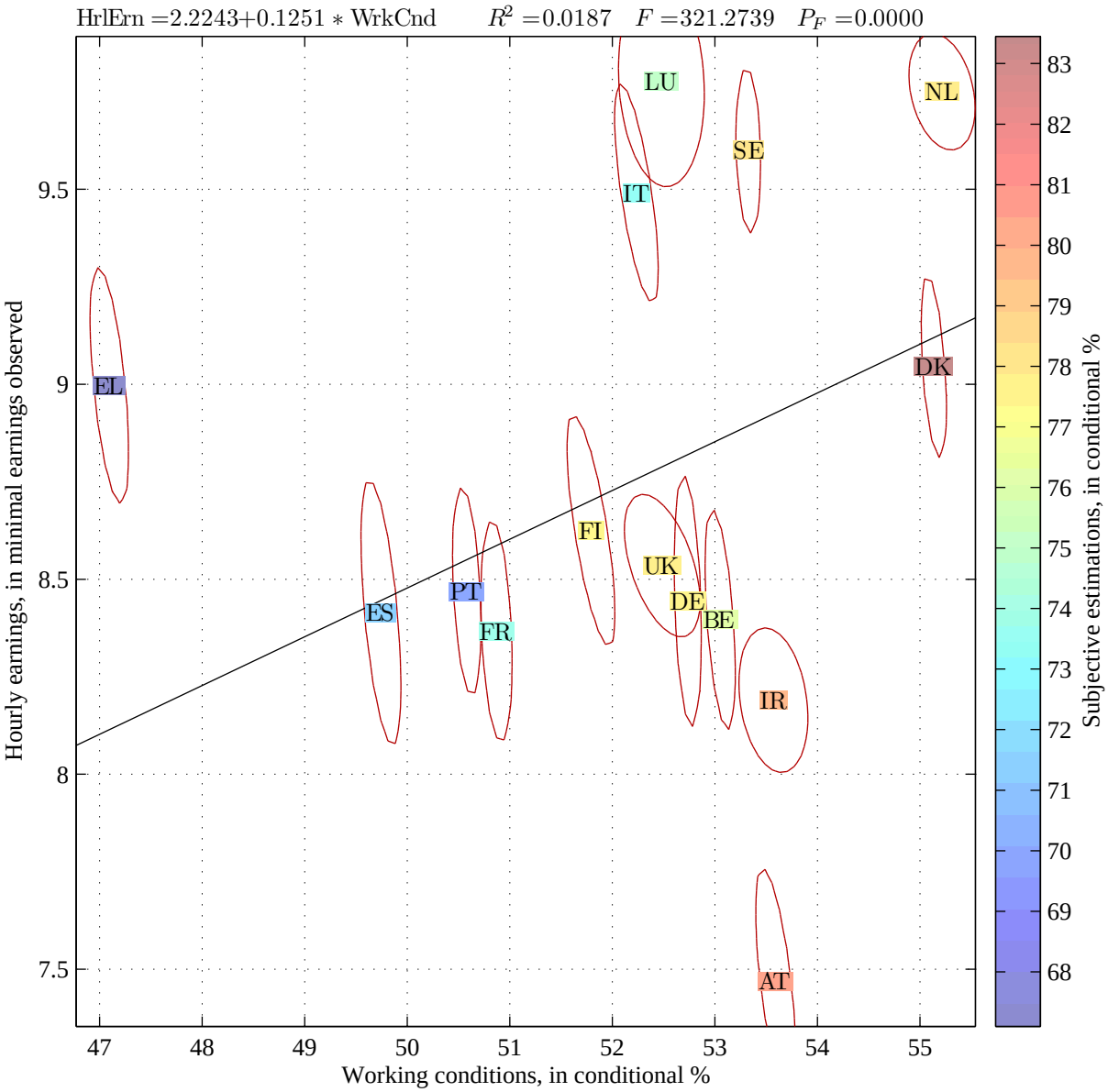
Note that the *Working conditions* of countries in Figure 20 somewhat differ from that in Figure 12 (for instance, Ireland is now ranked 4 instead of 6). It is caused by a drastic and disproportional reduction of the initial statistical sample by 22.4%: 4855 individuals provided no data on their earnings and are deleted from consideration. Nevertheless, the best working conditions remain to be in the Netherlands and Denmark which are rightmost in Figure 20. Greece at the left hand has the worst working conditions. Germany is still in the upper (= right-hand) third of the European range, being close to the United Kingdom, Belgium, Finland, Luxembourg, and Italy.

Which conclusions follow from Figures 20–21?

1. **Within countries: higher earnings compensate worse working conditions**

   The dispersion of vectors of individual indices around the national average is analyzed by the method of prime components (= factor analysis) which reveals the direction of maximal and minimal variance; see Jackson (1988), Krzanowski (1988),

Figure 20: Quality of work for European countries based on 16848 interviews which contain earnings data; ellipses depict prime factors of groups of observations (2D-standard deviation reduced to 0.02σ)



and Seber (1984). The vectors of prime components are semi-axes of a country's ellipse in Figure 20 (reduced to 0.02 of its actual size) which visualizes the proportions and orientation of the observation cloud.

The left slope of all the ellipses indicates at a negative correlation between working conditions and earnings within countries, meaning that worse conditions are generally compensated by higher earnings. The lowest compensation rate is inherent in the United Kingdom which ellipse has the greatest slope. The highest rewarding rate is in Sweden which ellipse is almost vertical.

2. **Converse trend in Europe: the better conditions, the higher earnings**

   The increasing regression line in Figure 20 fitted to all the 16848 observations exhibits a positive dependence of earnings on working conditions: the better conditions, the higher earnings. Due to a large number of observations the statistical significance of the null-hypothesis (= no dependence) is below 0.00005.

   Since countries are almost equally represented in the survey, this trend adequately reflects inter-country relations. We see that 'more developed' countries with higher earnings (= higher productivity) also offer better working conditions.

3. **Countries differ in working conditions more significantly than in earnings**

   The area occupied by the EU-countries in Figure 20 is scaled to a square to equalize the visual range of both coordinates. Consequently, a smaller horizontal than vertical extension of ellipses means that in the 'European space' working conditions within countries have relatively smaller variance (= are less dispersed) than hourly earnings. It implies that disparities among countries along the horizontal dimension, *Working conditions*, are statistically more significant (= more certain) than with respect to the vertical dimension, *Earnings*.

   It is likely caused by persistent differences in national norms, in industrial traditions, and in different trade unions activity. Therefore, equalization of working conditions can become a goal of the European Employment Policy to meet another European program on reducing disparities among countries and regions.

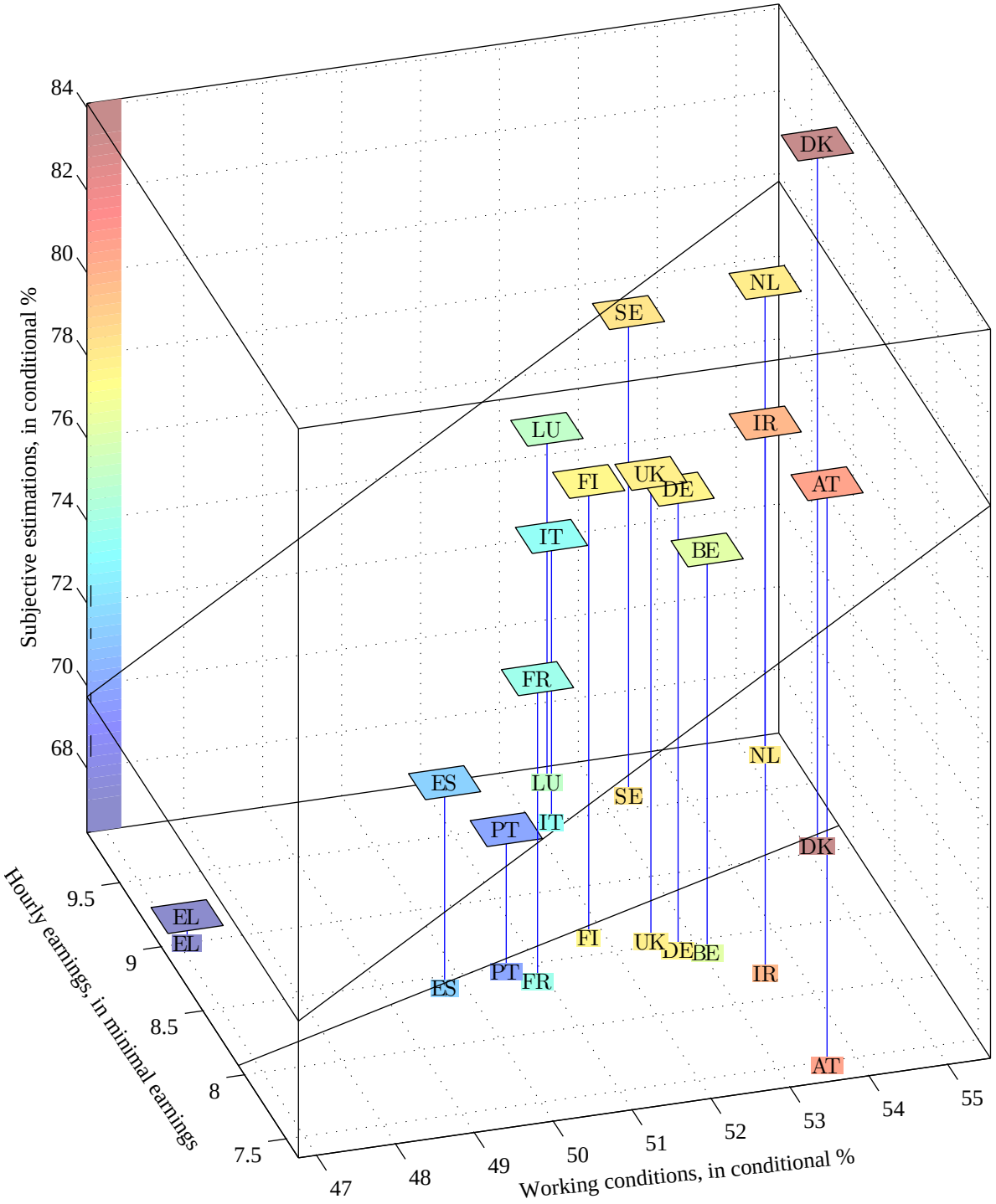
4. **Earnings play (almost) no role in subjective estimations**

   As one can see in the three-dimensional Figure 21, the regression plane fitted to 16848 individual vectors has no slope with respect to the earnings axis. It means that earnings play no role in subjective estimations, including satisfaction from work, and the only decisive are working conditions. This finding contributes to recent discoveries of Canadian survey *What's a Good Job?* by Lowe and Schellenberg (2001), that the most important factors in job satisfaction are social factors, in particular, relationships between colleagues; see also Lowe (2003). Similar findings are reported by Clark (2004) who, having studied answers of 14000 workers from the OECD countries, concluded that wages belong to the least important factors in job satisfaction; see also Kallenberg (1977), Warr (1999), Gardner and Oswald (2001), D'Addio et al. (2003), and Kirn (2005).

   The predominant role of social motivation for work, as opposed to economic motivation, manifested itself in extreme forms during certain historical periods. For

Figure 21: Quality of work for European countries based on 16848 interviews which contain earnings data

HrlErn $=2.2243\ +0.1251 * \text{WrkCnd}$	$R^2=0.0187$	$F=\ 321.2739$	$P_F=0.0000$
SbjEst $=16.0481+1.1481 * \text{WrkCnd}$	$R^2=0.2319$	$F=5087.2264$	$P_F=0.0000$
SbjEst $=74.6275+0.1633 * \text{HrlErn}$	$R^2=0.0039$	$F=\ 66.3562$	$P_F=0.0000$
SbjEst $=16.0673+1.1492 * \text{WrkCnd}-0.0086 * \text{HrlErn}$	$R^2=0.2320$	$F=2543.6155$	$P_F=0.0000$



instance, Russian workers under Stalin were rewarded poorer than before the Revolution of 1917 but were much more satisfied. From the standpoint of psychoanalysis, money is a surrogate for the expression of love (Freud 1915, 1933); reformulating this idea, wages compensate the lack of love in employment relations. Soviet workers, having been assured that the state took care of them, were quite satisfied, and many people remembered this period as the most happy.

Therefore, "adding more love" to employment relations by improving working conditions can discharge the tension which apparently manifests itself through demands for higher earnings. This idea goes in line with German political initiatives of the 1970s *Humanisierung des Arbeitslebens (HdA)* (= Humanization of Working Life); see the Editorial to *Arbeit*, 2004/3. Consequently, it makes sense to invest in improving working conditions even more than it might have seem necessary. This issue should be put on the agenda of governments, employers, and worker's associations, especially for the new EU member states.

These four observations need some reservations. The available data on earnings in harmonized units 1–4 are quite inaccurate, and one can only speak of general trends under limited accuracy. Another problem is the 22.4%-reduction of the total sample caused by missing data on earnings in individual interviews. This reduction is likely disproportional, since the highly-paid abstain from providing the earning data more often than the low-paid. Finally, the impact of the way the indicators are defined should also be taken into account.

7 Analytical study II: Interaction of three aspects of working time

The idea of a composite indicator is projecting all qualities of the phenomena considered onto a single axis, 'better–worse' in the case of the indicator *Working conditions*. Correspondingly, the survey questions which are irrelevant to such a qualification are not included in the indicator. However, there are important properties of working conditions which need an aggregate evaluation but in terms other than 'good' or 'bad'.

For example, Seifert (1989, p. 672–673) characterizes working time by

- *Duration,*
- *Location* within a day, week, or month, and
- *Flexibility* (rhythm by Seifert), that is, variability of both duration and location.

To operationally investigate these aspects of working time, introduce three corresponding indicators. To avoid ambiguity, consider full-time employed (17781 interviews). The *Duration* can be measured in hours worked per week as given in the interview question 14.

To quantitatively represent the *Location*, one has to bring together the survey questions on evening work, night work, Saturday work, and Sunday work regarded by Seifert as most important forms of deviations from the 'normal' working time. It prompts to characterize the *Location* of working time by the degree of its abnormality measured as the frequency of deviation from the norm. The corresponding survey questions and coding

conventions of answers are shown in Table 3. The first number of each cell of the table is the national average answer to the question. The average is taken for the number of interviews indicated in parentheses next to the country name in the left-most column. The second number of the cell is the national average answer reduced to the normalized scale 0–100% (= never–always within a month) followed by the calibration error (see Appendix 1). The rank of the country with respect to the given question is provided after the slash.

The indicator *Flexibility* summarizes the variability of working hours within a day, of working days within a week, of starting and finishing time, as well as the frequency of the changes; see Table 3.

The indicators of *Duration, Location*, and *Flexibility* both by country and by industry sector are displayed in Figures 22–24. The 2D and 3D interaction of country indicators is depicted in Figures 25–28. Their design is the same as of Figures 20–21. Which findings are suggested by the figures?

1. **Independence of *Duration* of other aspects of working time**

   No slope of country's ellipses in Figure 25 and 26 means that within a country the duration of working week depends neither on abnormality, nor on flexibility of working hours. The only exception is Greece which ellipse in Figure 26 has a slope, indicating that abnormal working hours are compensated by a shorter working time.

   The increasing regression lines fitted to all the 17781 observations do not contradict this interpretation. The low quality of fit (R^2-value is small) means that the linear regression model with its 'increasing–decreasing' properties cannot be regarded as quite adequate.

2. **Dependence between *Abnormality* and *Flexibility* of working hours**

   The right-bottom slope of all country's ellipses in Figure 27 means that, within the EU countries, the more abnormal working hours, the lower their flexibility. In other words, the abnormal working hours are better planned, whereas normal working hours are more variable.

   The regression line fitted to all the observations exhibits an opposite trend. Again, its quality of fit (R-square) is too low to speak of contradictory interpretations.

3. **No compensation of *Abnormality* and *Flexibility* by *Duration* of work**

   The regression plane in Figure 28 is parallel to the axis *Duration*. It means that the duration of working week is irrelevant to *Flexibility–Abnormality* compensations. In other words, the production basis, the duration of working time, is separated from convenience/inconvenience aspects of working time. The abnormality and flexibility of working hours compensate each other (the more abnormal the less flexible) but none of these aspects is compensated by a shorter duration of work.

4. **Abnormality of working time: equal variance within all the EU countries**

   The equal vertical extension of country's ellipses in Figure 26 means that the abnormality of working time equally deviates from the national average in all the EU-countries. It can be interpreted as the equal respect to established national norms.

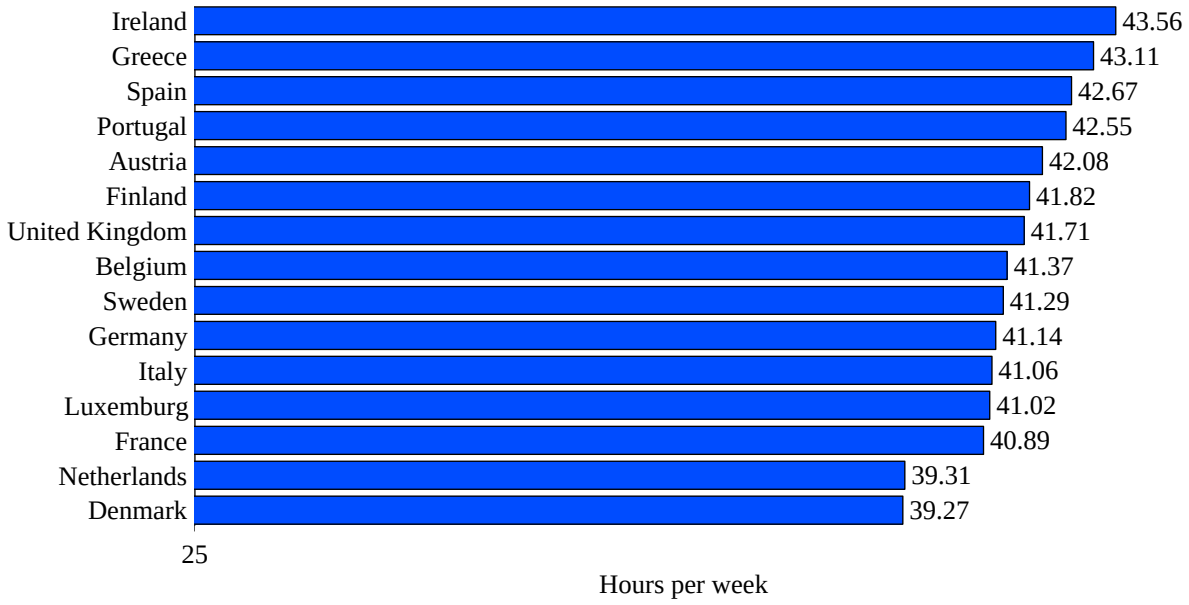
Table 3: Sheet A. Working time indicators for 17781 full-time employed / ranks

	Location (abnormality) of working time			
	Q16A Nightwork for at least 2 hours between 22:00–5:00	Q16B Evening work for at least 2 hours between 18:00–22:00	Q16D Saturday work	Q16C Sunday work
	1: no 2: 1–3 per month 3: 4–8 p.month 4: 9–12 p.month 5: 13–20 p.month 6: > 20 p.month	1: no 2: 1–3 per month 3: 4–8 p.month 4: 9–12 p.month 5: 13–20 p.month 6: > 20 p.month	1: no 2: 1 per month 3: 2 per month 4: 3 per month 5: >3 p.month	1: no 2: 1 per month 3: 2 per month 4: 3 per month 5: >3 p.month
BE (1221) Belgium	1.47 16.74±0.12 / 7	2.24 30.37±0.12 / 7	2.36 37.52±0.14 / 10	1.68 24.32±0.14 / 7
DK (1233) Denmark	1.35 14.51±0.12 / 14	1.83 22.74±0.12 / 14	1.72 23.93±0.14 / 15	1.59 23.26±0.14 / 9
DE (1252) Germany	1.38 15.04±0.12 / 12	1.93 24.69±0.12 / 13	2.26 35.89±0.14 / 11	1.49 19.97±0.14 / 14
EL (1424) Greece	1.59 18.49±0.11 / 2	3.34 49.38±0.11 / 2	3.52 61.48±0.13 / 1	2.23 35.37±0.13 / 1
IT (1350) Italy	1.31 13.61±0.11 / 15	2.32 31.58±0.11 / 5	3.05 51.81±0.13 / 2	1.51 20.69±0.13 / 13
ES (1259) Spain	1.54 17.64±0.12 / 5	3.59 53.36±0.12 / 1	2.75 45.74±0.14 / 3	1.63 22.56±0.14 / 11
FR (1252) France	1.46 16.40±0.12 / 8	2.39 32.64±0.12 / 3	2.64 43.46±0.14 / 4	1.71 24.79±0.14 / 6
IR (1227) Ireland	1.56 18.35±0.12 / 3	2.36 32.47±0.12 / 4	2.56 42.25±0.14 / 6	1.81 27.32±0.14 / 5
LU (427) Luxemburg	1.38 14.67±0.20 / 13	1.73 20.66±0.20 / 15	2.50 40.53±0.23 / 8	1.62 22.81±0.23 / 10
NL (919) Netherlands	1.42 16.38±0.14 / 9	2.02 26.59±0.14 / 12	1.89 27.68±0.16 / 13	1.50 20.92±0.16 / 12
PT (1336) Portugal	1.44 15.62±0.11 / 11	2.15 27.81±0.11 / 11	2.59 42.14±0.13 / 7	1.51 19.82±0.13 / 15
UK (1163) United Kingdom	1.61 19.48±0.12 / 1	2.18 29.35±0.12 / 9	2.60 43.16±0.14 / 5	1.92 29.76±0.14 / 2
FI (1311) Finland	1.50 18.11±0.11 / 4	2.29 31.46±0.11 / 6	2.08 32.09±0.13 / 12	1.86 28.95±0.13 / 3
SE (1177) Sweden	1.47 16.80±0.12 / 6	2.24 30.23±0.12 / 8	1.83 26.50±0.14 / 14	1.78 27.93±0.14 / 4
AT (1230) Austria	1.44 16.30±0.12 / 10	2.11 28.00±0.12 / 10	2.41 38.93±0.14 / 9	1.66 23.97±0.14 / 8

Table 3: Sheet B. Working time indicators for 17781 full-time employed / ranks

	Flexibility			
	Q1801 Working the same number of hours every day	Q1802 Working the same number of days every week	Q1803 Fixed starting and finishing time	Q19A1R Changes of working time during a month
	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: no 2: 1–3 per month 3: 4–8 p.month 4: 9–12 p.month 5: 13–20 p.month 6: > 20 p.month
BE (1221) Belgium	1.41 45.27±0.41 / 7	1.25 37.37±0.41 / 7	1.31 40.32±0.41 / 10	1.41 15.24±0.14 / 7
DK (1233) Denmark	1.60 55.21±0.41 / 1	1.27 38.34±0.41 / 4	1.29 39.56±0.41 / 13	1.41 15.20±0.14 / 8
DE (1252) Germany	1.41 45.57±0.41 / 6	1.25 37.30±0.41 / 8	1.30 40.10±0.41 / 11	1.71 20.13±0.14 / 2
EL (1424) Greece	1.34 41.89±0.38 / 11	1.17 33.74±0.38 / 13	1.35 42.56±0.38 / 7	1.25 12.45±0.13 / 14
IT (1350) Italy	1.38 44.04±0.39 / 9	1.27 38.59±0.39 / 3	1.39 44.70±0.39 / 3	1.40 15.04±0.13 / 9
ES (1259) Spain	1.28 39.06±0.41 / 14	1.15 32.70±0.41 / 14	1.26 38.22±0.41 / 14	1.30 13.27±0.14 / 13
FR (1252) France	1.42 45.81±0.41 / 5	1.21 35.62±0.41 / 11	1.33 41.69±0.41 / 8	1.53 17.09±0.14 / 5
IR (1227) Ireland	1.32 40.97±0.41 / 12	1.18 33.84±0.41 / 12	1.33 41.30±0.41 / 9	1.39 14.84±0.14 / 10
LU (427) Luxemburg	1.32 40.93±0.70 / 13	1.22 35.89±0.70 / 10	1.30 39.87±0.70 / 12	1.30 13.37±0.23 / 12
NL (919) Netherlands	1.38 43.88±0.48 / 10	1.24 37.19±0.48 / 9	1.39 44.64±0.48 / 4	1.31 13.45±0.16 / 11
PT (1336) Portugal	1.22 36.23±0.39 / 15	1.12 30.84±0.39 / 15	1.24 36.86±0.39 / 15	1.09 9.88±0.13 / 15
UK (1163) United Kingdom	1.39 44.39±0.42 / 8	1.25 37.38±0.42 / 6	1.38 43.87±0.42 / 5	1.58 18.04±0.14 / 3
FI (1311) Finland	1.48 48.76±0.40 / 3	1.26 38.08±0.40 / 5	1.41 45.25±0.40 / 1	1.56 17.64±0.13 / 4
SE (1177) Sweden	1.48 49.09±0.42 / 2	1.27 38.68±0.42 / 2	1.37 43.56±0.42 / 6	1.92 23.58±0.14 / 1
AT (1230) Austria	1.47 48.50±0.41 / 4	1.30 39.84±0.41 / 1	1.40 44.80±0.41 / 2	1.46 16.02±0.14 / 6

Figure 22: Duration of working time for 17781 full-time employed



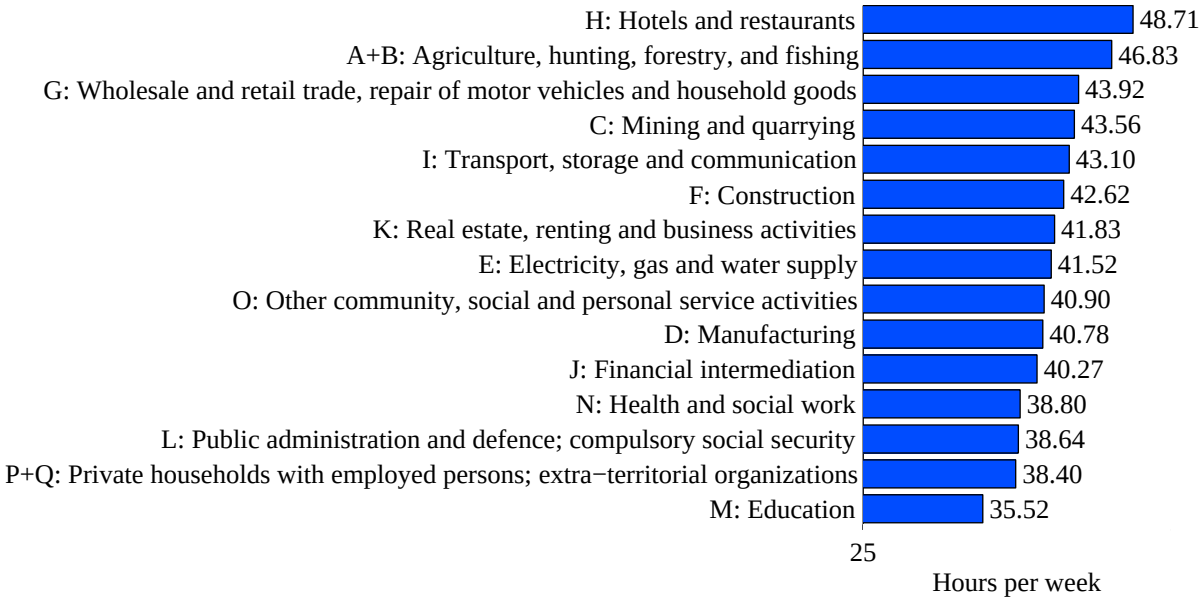
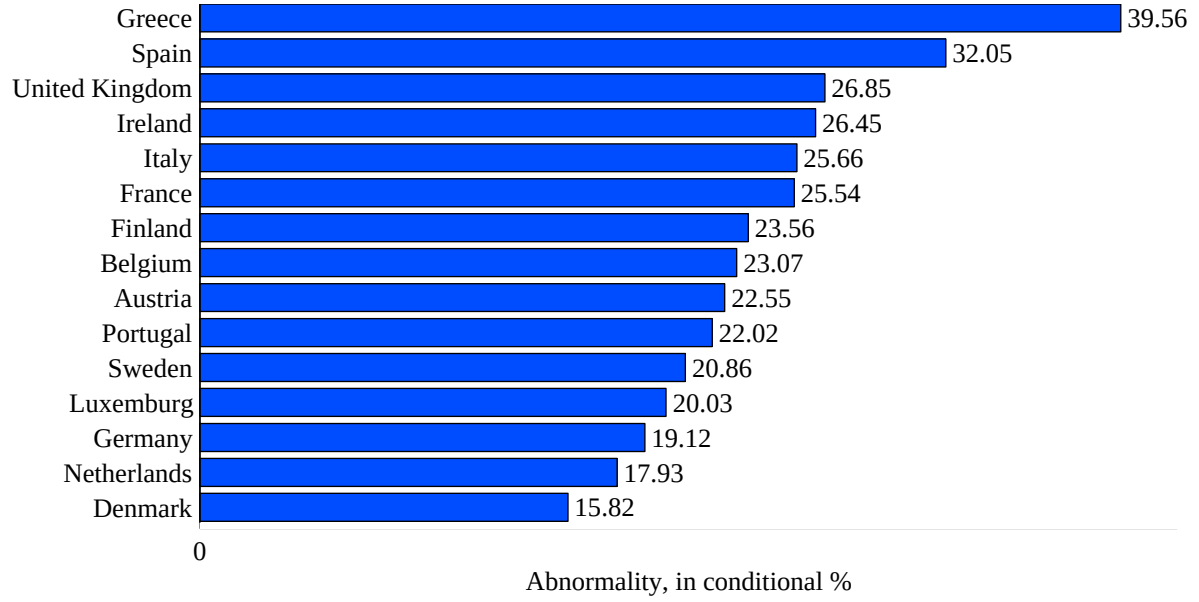


Figure 23: Composite indicator of Location (abnormality) of working time for 17781 full-time employed



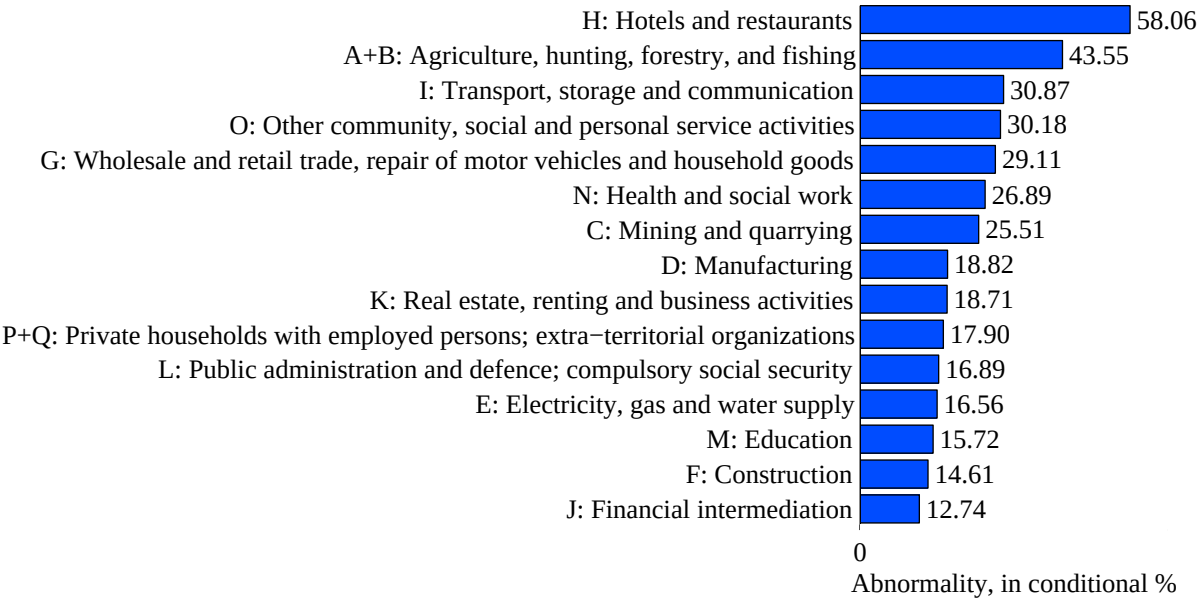
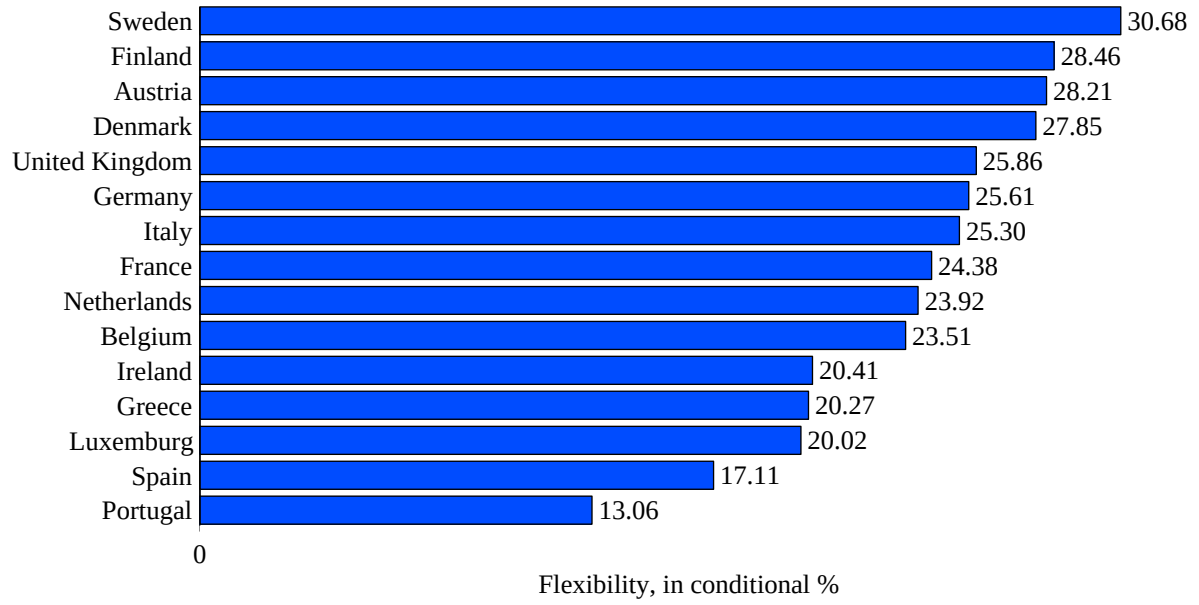


Figure 24: Composite indicator of Flexibility of working time for 17781 full-time employed



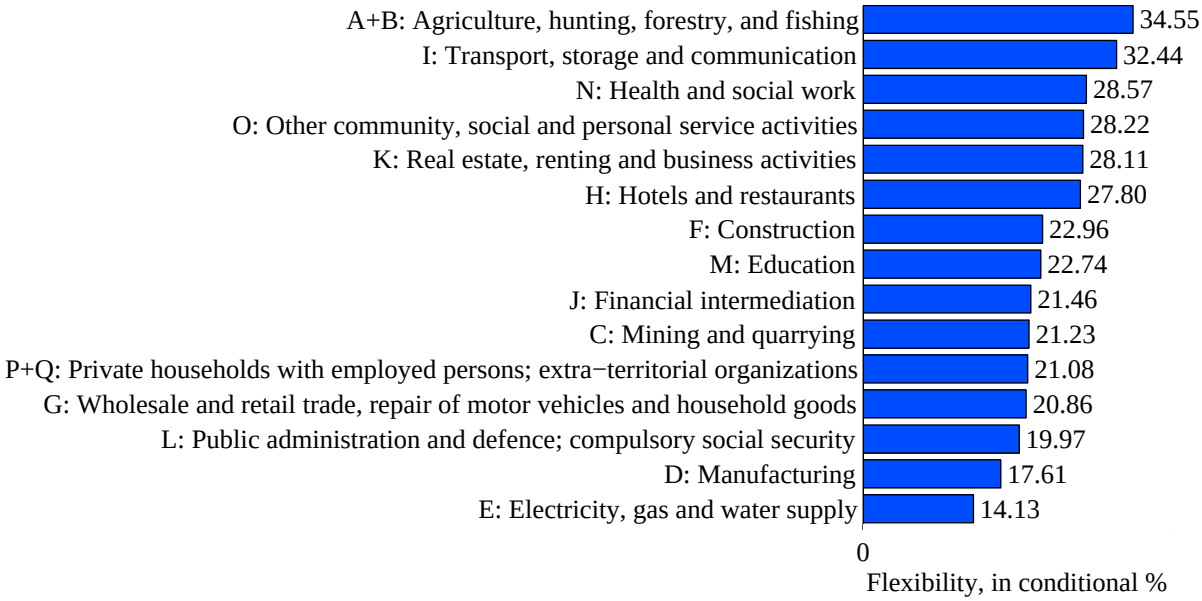


Figure 25: Working time factors for 17781 full-time employed for European countries; ellipses depict prime factors of groups of observations (2D-standard deviation reduced to 0.02σ)

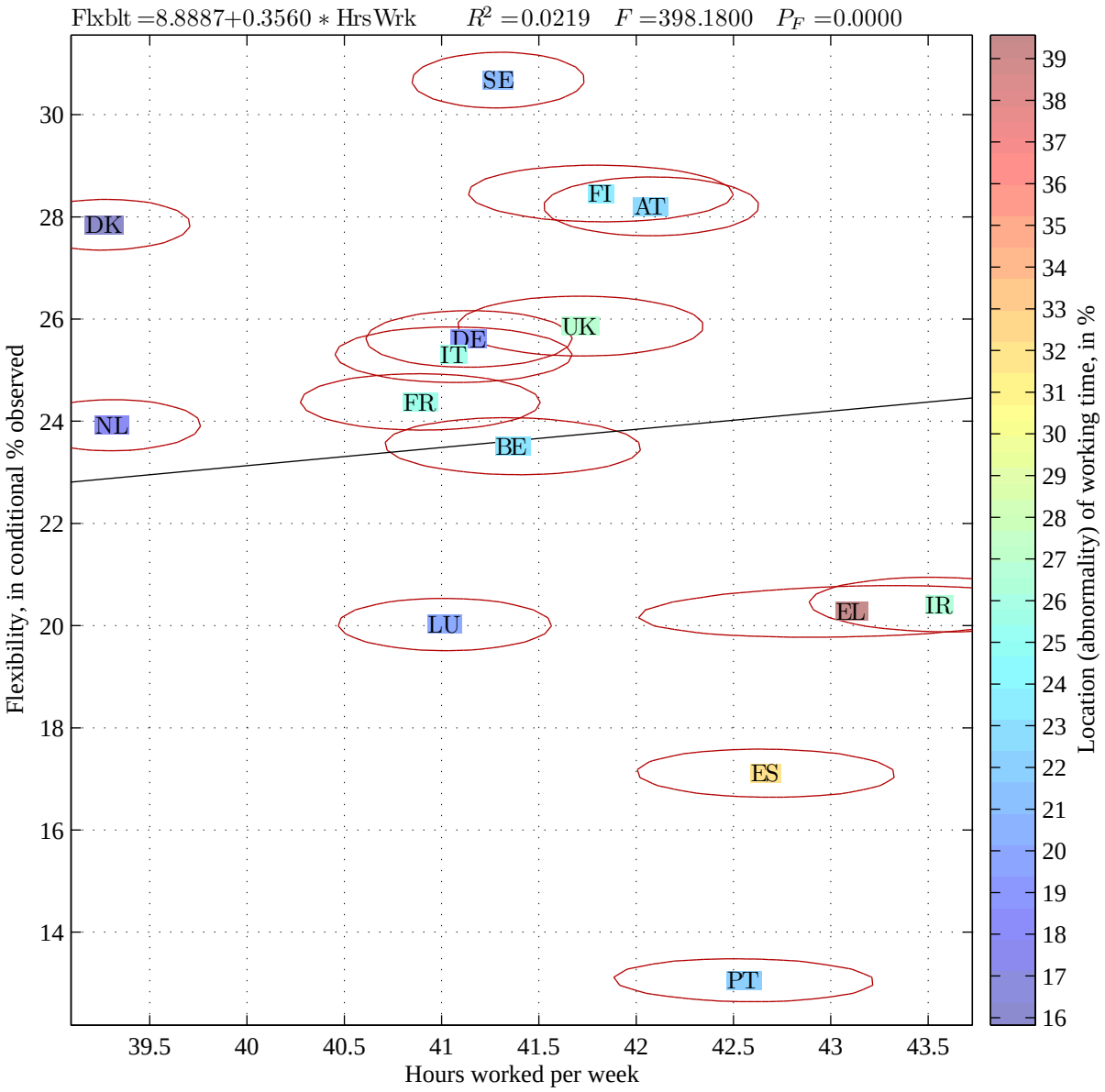


Figure 26: Working time factors for 17781 full-time employed for European countries; ellipses depict prime factors of groups of observations (2D-standard deviation reduced to 0.02σ)

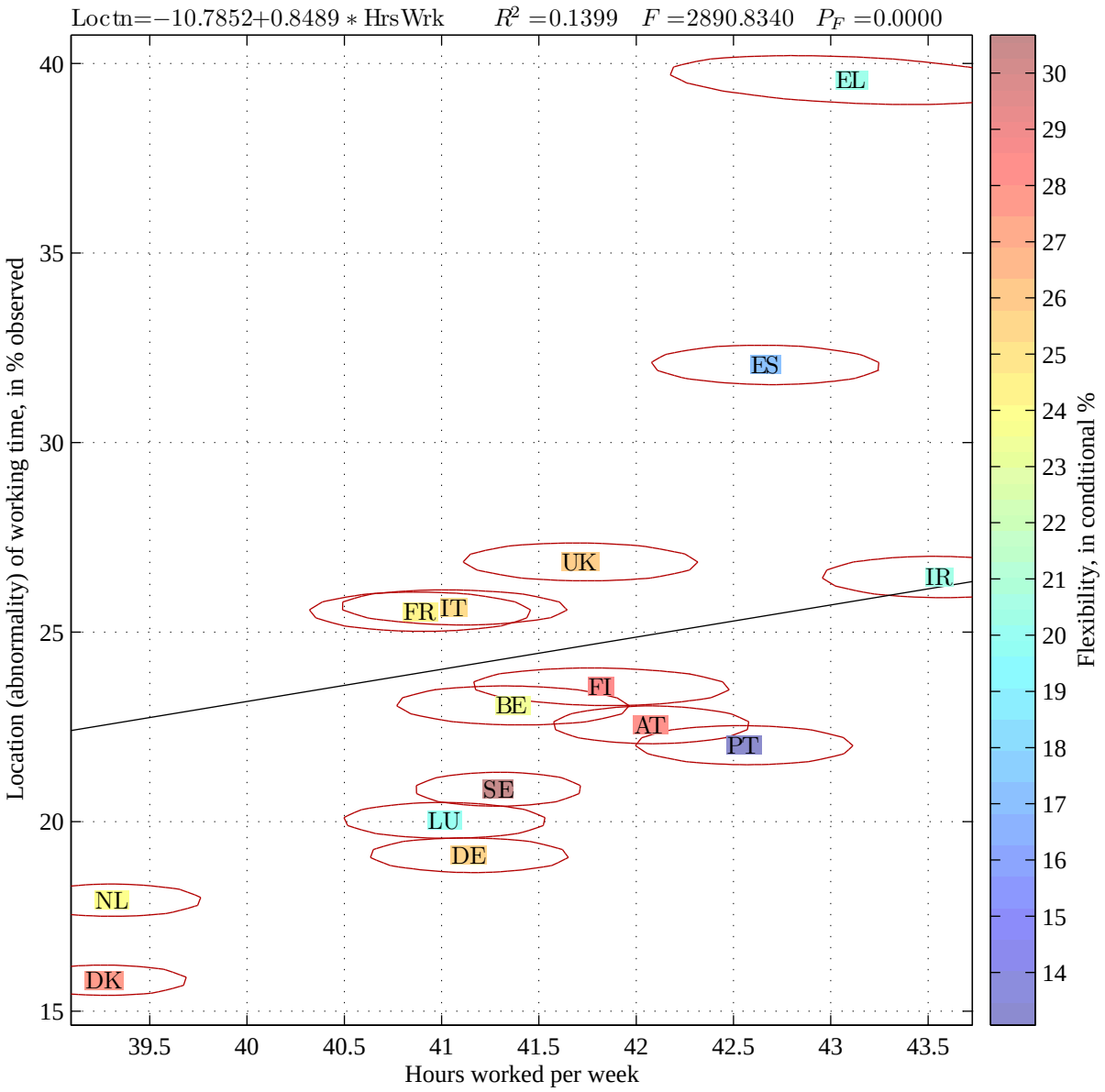


Figure 27: Working time factors for 17781 full-time employed for European countries; ellipses depict prime factors of groups of observations (2D-standard deviation reduced to 0.02σ)

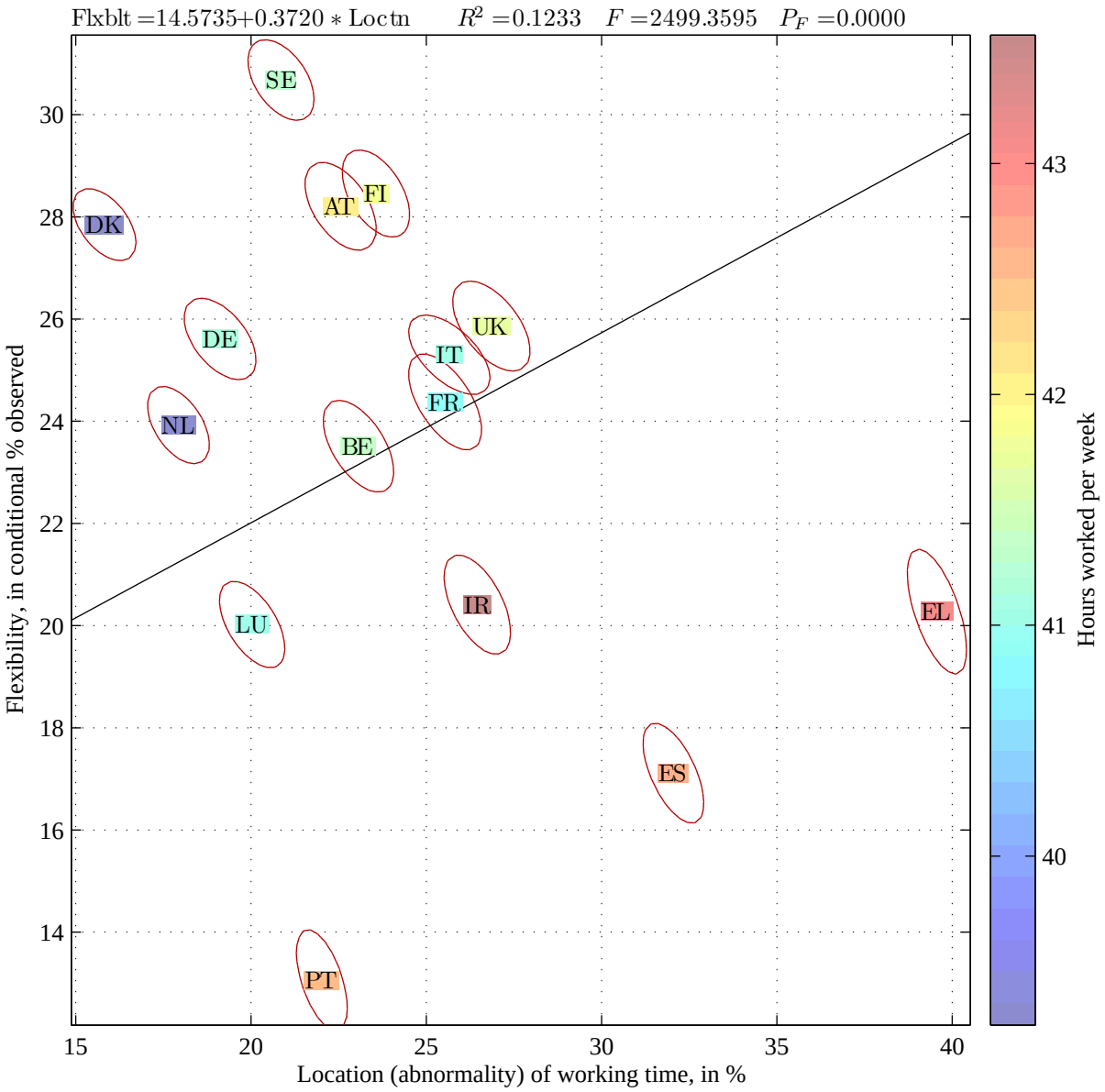
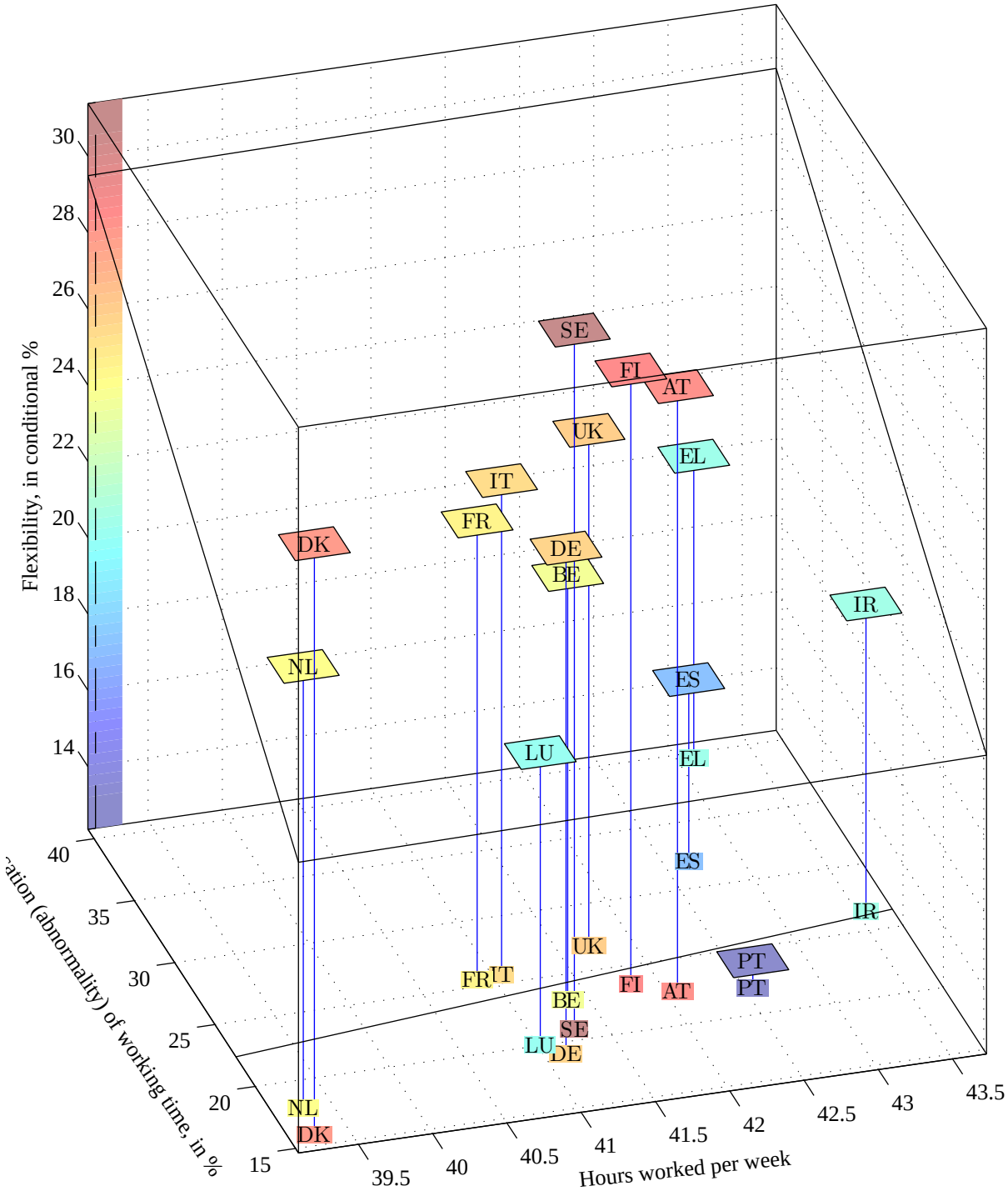


Figure 28: Working time factors for 17781 full-time employed for European countries

Loctn=	$-10.7852+0.8489 * \text{HrsWrk}$	R^2 =0.1399	F =2890.8340	P_F =0.0000
Flxblt=	$8.8887 +0.3560 * \text{HrsWrk}$	R^2 =0.0219	F = 398.1800	P_F =0.0000
Flxblt=	$14.5735+0.3720 * \text{Loctn}$	R^2 =0.1233	F =2499.3595	P_F =0.0000
Flxblt=	$12.8180+0.0467 * \text{HrsWrk}+0.3643 * \text{Loctn}$	R^2 =0.1236	F =1253.3658	P_F =0.0000



8 Discussion

1. **Composite indicators as EU policy instruments**

   Composite indicators allow to distinguish the prime from the secondary, to see general matters beyond particularities, "the forest behind the trees". It meets the main goal of European surveys to provide a basis for high-level European policy making which requires (a) aggregated representation of trends, (b) their evaluation to see the progress and to make comparisons, and (c) planning targets and controlling their achievement. All of these is hardly attainable without composite indicators.

   Another advantage of composite indicators is their transparency for both policy makers and public opinion, which is an important attribute of democracy. The evaluation principles are implemented in formulas, so that "the rules of the game" are known, can be discussed, adjusted, and applied anew. Therefore, composite indicators allow not only to keep control over processes, but to be kept under control themselves.

2. **Complementarity of composite indicators and detailed data analysis**

   Data aggregation certainly leads to a loss of information, so that some "trees in the forest" can be overlooked. Therefore, composite indicators do not replace a detailed analysis of survey data performed by European Foundation (2001) but complement it with a high-level outlook. It may well happen that policy makers are interested in some particular questions, or analysts wish to design their own indicators from the raw data (like the three indicators of *Working time* considered). The same data can be represented by several composite indicators with different objectives.

   The adequacy of an integral composite indicator can be certainly put in question. In this case, an intermediate aggregation level can be desired, like the set of 10 summary indicators for different topics. As known from psychology, decision makers base their decision on 7–9 factors (Larichev 1979). The fact that already 7 most important criteria are sufficient to derive correct decisions with reliability $> 99\%$ is mathematically proved by Tangian (1997). It means that 10 indicators are by far sufficient for monitoring working conditions in the EU.

3. **Planning composite indicators for European surveys in advance**

   The *Third European Survey on Working Conditions* was organized with no planning composite indicators. The indicator considered is developed later which required surmounting a number of difficulties. Certain problems emerged in selecting questions, grouping them into topics, and recoding (calibrating) the answers. All of these cause inaccuracies, errors, and possible misinterpretations.

   It might be reasonable to organize surveys with planning composite indicators for policy monitoring in advance. It includes thematic orientation, structural arrangements of the questionnaire, and universal coding standards for interview answers. In other words, 'the rules of the game' should be known in advance to make the results of the Survey more clear, reliable, and useful for European policy making.

4. **Development kit for constructing and applying composite indicators**

   Taking into account an general increasing demand for composite indicators (not

only for surveys like of European Foundation or EuroStat), it might be reasonable to create a computer environment for their development and applications. It might be possible to make the construction of composite indicators almost as simple as the design of tables and graphs in EXCEL. A (partially) standardized design implies, among other things, the compatibility of results obtained with different indicators, similarly to the compatibility of statistical data processed with a unified methodology.

For this purpose, three types of input data should be processed with special methods: (a) continuous (percentage) and quasi-continuous (standardized large numbers, like sums of money), (b) calibrated, like evaluations with a few points, and (c) ordinal, like ranks of several options. At least three aggregation levels should be provided: (a) low level aggregation of each variable, (b) intermediate aggregation into 7–10 summary indicators, and (c) an integral composite indicator. The domains of applications should include: (a) policy monitoring, (b) analysis, (c) optimization and allocation of resources. The user should be provided with tools of interactively adjusting composite indicators with respect to objectives and feedback from test applications.

9 Conclusions

1. **Composite indicator of *Working conditions* for the EU-15**

   The given study suggests a composite indicator *Working conditions* constructed from the data of the Third European Survey on Working Conditions. It serves for policy monitoring and analytical purposes.

2. **Significant disparities among working conditions in the EU countries**

   The disparities in working conditions among EU countries are statistically quite significant (certain), being even more significant than with respect to hourly earnings. The degree of inequality in working conditions within countries is the same all over Europe.

3. **Decisive role of working conditions in subjective estimations and subjective satisfaction**

   Job satisfaction depends on working conditions rather than on earnings. Consequently, more attention should be paid to improving the latter, which is an important point for policy makers and trade unions.

4. **Study of three aspects of working time**

   A brief study of working time with indicators of duration, abnormality, and flexibility shows that the duration of working time takes no part in compensating abnormality and flexibility of working hours which compensate only each other (the more abnormal the less flexible).

5. **Remarks on developing composite indicators**

   The best results can be obtained if a survey is planned with composite indicators as one of its goals.

A development kit for constructing and applying composite indicators, for a broader context than survey data, could be developed for the EU policy monitoring, analysis, and optimization.

10 Annex 1: Constructing the composite indicator of *Working conditions*

The general OECD (2003) guide-lines for developing composite indicators of country performance deal with continuous first-level indicators expressed either in %, or in large numbers. The latter, being reduced to the normalized scale 0–1, are considered quasi-continuous. The bottle-neck of developing a composite indicator for the *Third European Survey on Working Conditions* is the discontinuity of its data, containing mainly Yes/No answers, or evaluations with a few points.

However, the survey data can be considered *calibrated*. Calibration means that a continuity is reduced to a few values rounded to within certain thresholds. For example, the continuous variable 'degree of consent' ranging 0–100% (definite No–definite Yes with all intermediate grades), after having introduced the threshold 50%, is calibrated to simple 'Yes' and 'No'.

The notion of calibration bridges composite indicators with continuous entries to the discontinuous survey data. One only has to take into account 'intermediation errors' resulting from calibration. The model described below is based on methods for practically constructing utility functions (Tangian 2002, 2004a) and, more specifically, on the author's experience in designing indices for equalizing German regional labour market policy and for monitoring European flexicurity policies (Tangian 2003, 2004b).

Constructing a composite indicator from calibrated variables Consider interview answers as calibrated continuous scores. Consequently, if one defines an indicator as a weighted sum of continuous scores and disposes but calibrated answers, it is natural to substitute the calibrated values for the scores.

This idea goes back to the justification of Borda's (1733–1799) method of marks by Laplace (1749–1827); for the modern account see Black (1958), Tangian (1991), and McLane and Urken (1994). Recall that Borda proposed to evaluate candidates to the members of the Royal Academy of Sciences in Paris by the sum of their ranks in the ballot schedules. Laplace assumed that these ranks were manifestations of some n latent metrical estimates (scores) uniformly distributed in the segment $[0;1]$. He showed that the ratio of expectations of the scores was as that of their ranks

$$\mu_1 : \mu_2 : \ \ldots \ : \mu_n = 1 : 2 : \ \ldots \ : n \ .$$

By the Central Limit Theorem (the first version is attributed to Moivre (1667–1754); see Kendall and Stuart 1958, Korn and Korn 1968) a sum of a large number of metrical scores is well approximated by the sum of their expectations, or ranks. Laplace concluded that in a large statistical model scores could be replaced by ranks with a negligible error.

This way of thought can be implemented already for a few metrical estimates (scores). The next theorem suggests a normalizing rule for the input calibrated answers (differing from the standardization of metrical input) and estimates the errors of the composite indicator which result from the calibration of its continuous entries.

Theorem 1 (Accuracy of a composite indicator with calibrated input) *Let evaluation scores x_{iq} of working conditions by individuals $i = 1, \ldots, 21703$ according to questions $q = 1, \ldots, 102$ be independent continuous random variables in the segment*

$[0;1]$. *For every q divide the segment $[0;1]$ into R_q equal calibration segments. By r_{iq} denote the caliber of x_{iq}, that is, the number of calibration segment which contains x_{iq}, and assume that x_{iq} is uniformly distributed within the segment (default statistical assumption). Consider a composite indicator (sum of variables with weights a_q) for individual i both for continuous and calibrated evaluation:*

$$I_i^{continuous} = \sum_q a_q x_{iq} \quad \leftrightarrow \quad I_i^{calibrated} = \sum_q a_q \frac{r_{iq} - 0.5}{R_q}, \qquad \sum_q a_q = 1, \quad a_q \geq 0 \ . \quad (1)$$

Then the error caused by calibration $\Delta_i = I_i^{continuous} - I_i^{calibrated}$ has expectation and variance, respectively,

$$\mu_i = \mathsf{E}\,\Delta_i \ = \ 0 \quad (2)$$

$$\sigma_i^2 = \mathsf{V}\,\Delta_i \ = \ \frac{1}{12}\sum_q \frac{a_q^2}{R_q^2} \ . \quad (3)$$

Proof. A variable x_{iq} uniformly distributed in segment centered at $\frac{r_{iq}-0.5}{R_q}$ and of length $\frac{1}{R_q}$ has the expectation and variance, respectively,

$$\mathsf{E}x_{iq} = \frac{r_{iq} - 0.5}{R_q} \ , \qquad \mathsf{V}x_{iq} = \frac{1}{12R_q^2}$$

(Korn and Korn, paragraph 18.8.5). Taking into account that calibers r_{iq} are constant,

$$\mu_i = \mathsf{E}\,\Delta_i = \mathsf{E}\,I_i^{continuous} - \mathsf{E}\,I_i^{calibrated} = \sum_q a_q \frac{r_{iq} - 0.5}{R_q} - \sum_q a_q \frac{r_{iq} - 0.5}{R_q} = 0 \ .$$

The variance of sum of independent variables is equal to the sum of their variances. Hence,

$$\begin{aligned} \sigma_i^2 &= \mathsf{V}\,\Delta_i \\ &= \mathsf{V}\,I_i^{continuous} + \mathsf{V}\,I_i^{calibrated} \qquad \overset{\mathsf{V}\,I_i^{calibrated}=0 \text{ since } I_i^{calibrated} \text{ is constant}}{\Longrightarrow} \\ &= \sum_q a_q^2 \frac{1}{12R_q^2} \ . \end{aligned}$$

■

Independence of answers to survey questions The expectation of a sum of random variables is always the sum of their expectations. Consequently, (2) always holds, implying no bias of the calibrated indicator with respect to its continuous version (1).

Comparing to the 'exact' continuous composite indicator, the standard error σ_i of its calibrated version is given by formula (3) for independent first-level indicators. To check up the independence, compute the correlation between 21703-vectors of answers to 109 questions $q_1 < q_2$. The histogram of correlation for all the $\frac{109 \cdot 108}{2} = 5885$ pairs is shown in Figure 29. It exhibits a quite low general correlation. A few exceptions are collected in Table 4. Consequently, Theorem 1 is valid with minor reservations, implying that the inaccuracy σ_i of the calibrated composite indicator *Working conditions* can be somewhat greater than the estimate (3) derived for independent variables.

Figure 29: Histogram of paired correlation $\rho_{q_1 q_2}$ between survey variables $q_1, q_2 = 1 : 109$

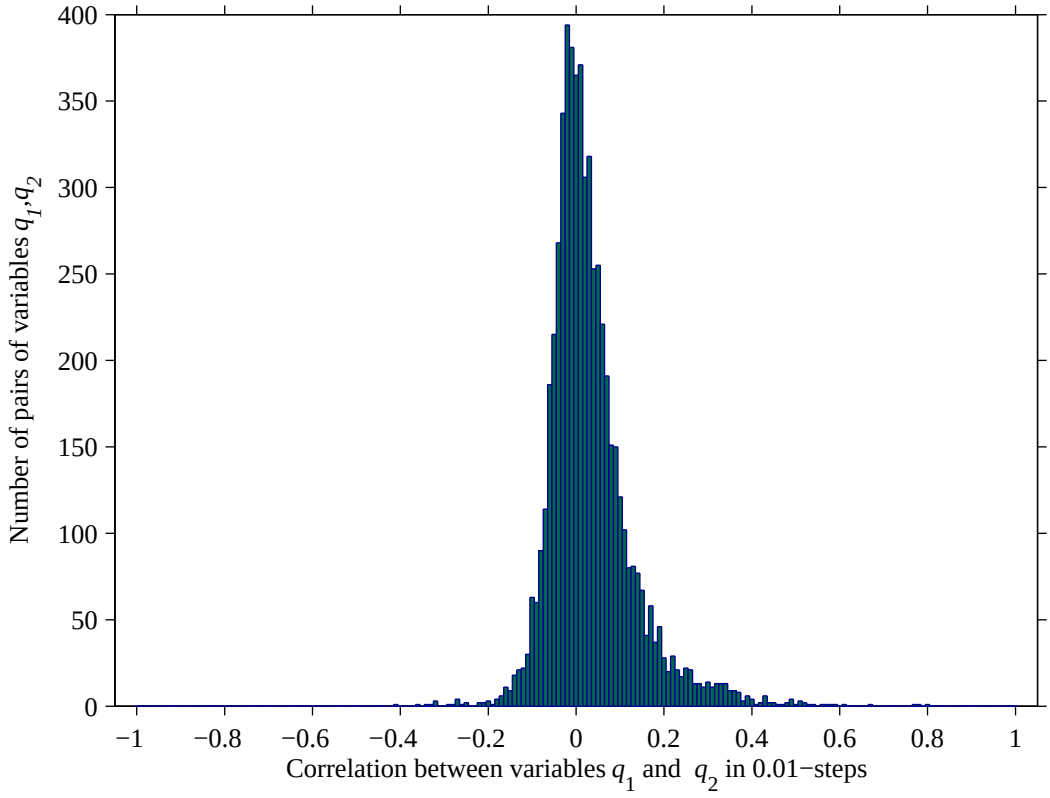


Table 4: Most correlated survey variables q_1, q_2 (for $|\rho_{q_1 q_2}| \geq -0.40,\ q_1 < q_2$)

Variable q_1	Variable q_2	Correlation	Variable q_1	Variable q_2	Correlation
Q2405	Q2406	−0.4080	Q21B1	Q21B2	0.4853
Q12A	Q35C05	0.4027	Q11B	Q11E	0.4884
Q35C05	Q35C09	0.4028	Q16D	Q16C	0.4909
Q35C04	Q35C17	0.4038	Q35C05	Q35C08	0.4927
Q11C	Q11E	0.4095	Q2501	Q2503	0.4985
Q3102	Q3103	0.4165	Q35C08	Q35C09	0.5109
Q3204	Q3210	0.4192	Q3204	Q3205	0.5123
Q16B	Q16D	0.4251	Q14	Q16E	0.5142
Q11B	Q11C	0.4274	Q3102	Q3202	0.5163
Q3209	Q3210	0.4312	Q12A	Q12B	0.5163
Q16B	Q16C	0.4329	Q2502	Q2503	0.5350
Q3104	Q3204	0.4331	Q3202	Q3203	0.5389
Q16B	Q16E	0.4348	Q11E	Q11F	0.5609
Q3101	Q3201	0.4354	Q3103	Q3203	0.5679
Q16A	Q16C	0.4425	Q35C09	Q35C10	0.5773
Q11C	Q11D	0.4472	Q11A	Q11B	0.5871
Q27B1	Q27B2	0.4548	Q2501	Q2502	0.6060
Q11A	Q11E	0.4622	Q3107	Q3108	0.6707
Q12A	Q12C	0.4650	Q3207	Q3208	0.7677
Q3106	Q3206	0.4796	Q30A1	Q30A2	0.7794
Q3105	Q3205	0.4822	EF2004	EF2005	0.7989

Computation of the composite indicator *Working conditions* Using the calibrated composite indicator (1) for individuals i with equal question weights $a_q = \frac{1}{102}$, define the index of *Working conditions* for country C with $|C|$ individuals, taking the national average:

$$I_C = \frac{1}{102 \cdot |C|} \sum_{i \in C} \sum_{q}^{102} \frac{r_{iq} - 0.5}{R_q} \ .$$

Certainly, C can be any social group specified by one or combination of *Classifiers*.

The range of each first-level indicator is the segment $\left[\frac{1}{102}\sum_{q=1}^{102}\frac{1}{2R_q}\ ;\ 1 - \frac{1}{102}\sum_{q=1}^{102}\frac{1}{2R_q}\right]$. To express the indicator of *Working conditions* in %, it should be appropriately normalized:

$$I_C = \frac{\frac{1}{102\cdot|C|}\sum_{i\in C}\sum_{q}^{102}\frac{r_{iq}-0.5}{R_q} - \frac{1}{102}\sum_{q=1}^{102}\frac{1}{2R_q}}{1 - \frac{1}{102}\sum_{q=1}^{102}\frac{1}{R_q}} \cdot 100\% = \frac{\sum_{i\in C}\sum_{q}^{102}\frac{r_{iq}}{R_q}}{|C|\left(102 - \sum_{q=1}^{102}\frac{1}{R_q}\right)} \cdot 100\% \ .$$

Assuming the independence of individuals, the accuracy of a country's calibrated composite indicator, comparing to its 'exact' version, follows from the sum of individual variances (3):

$$\sigma_C = \frac{\sqrt{\sum_{i\in C}\sum_{q=1}^{102}\frac{1}{R_q^2}}}{102|C|\sqrt{12}\left(1 - \frac{1}{102}\sum_{q=1}^{102}\frac{1}{R_q}\right)} \cdot 100\% = \frac{\sqrt{\sum_{i\in C}\sum_{q=1}^{102}\frac{1}{R_q^2}}}{|C|\sqrt{12}\left(102 - \sum_{q=1}^{102}\frac{1}{R_q}\right)} \cdot 100\% \ .$$

Due to a large number of respondents (about 1500 in every country), the standard error σ_C for every European country is 0.05% and 0.08% for Luxembourg represented by 502 respondents. These errors are given in the last column of Table 5.

11 Annex 2: Main table

Table 5 is a detailed version of Table 1. Its columns correspond to 109 questions selected from the *Third European Survey on Working Conditions 2000* for the index *Quality of work*. Their labels Q11A, Q11B, etc., and coding conventions follow European Foundation (2001, pp. 45–62) with minor exceptions. Rows of the table correspond to countries. The number of individuals for each country is indicated in parentheses.

Each table cell contains three numbers. The top number is the code of the national average answer to the given question. For instance, 6.17 in the top left cell means that the average Belgian almost never experiences vibrations. The average Dane with the answer code 6.40 experiences vibrations the least. The second number in the cell, 81.00 for the Belgian and 84.23 for the Dane, is the normalized score of the average answer given in % (that is, converted to the 0–100% scale and, if necessary, inverted to respect the positive direction of preference). The ±0.11 means the standard error from calibrating the answers. The third number is the county's rank for the given question.

Table's 12 last columns are summary indicators for each of 10 topics, *Hourly earnings*, and the composite indicator of *Working conditions*. The cells of this section contain no average code but only the normalized scores with their standard errors and country ranks. No standard error is provided for *Hourly earnings* which are not calibrated and, consequently, have no calibration error.

Table 5: Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Physical environment				
	Q11A Vibrations	Q11B Noise	Q11C High temperatures	Q11D Low temperatures	Q11E Breathing difficulties
	1: always 2: ∼always 3: 3/4 time 4: 1/2 time 5: 1/4 time 6: ∼never 7: never	1: always 2: ∼always 3: 3/4 time 4: 1/2 time 5: 1/4 time 6: ∼never 7: never	1: always 2: ∼always 3: 3/4 time 4: 1/2 time 5: 1/4 time 6: ∼never 7: never	1: always 2: ∼always 3: 3/4 time 4: 1/2 time 5: 1/4 time 6: ∼never 7: never	1: always 2: ∼always 3: 3/4 time 4: 1/2 time 5: 1/4 time 6: ∼never 7: never
BE (1523) Belgium	6.17 81.00±0.11 / 5	5.91 77.23±0.11 / 4	6.14 80.53±0.11 / 6	6.31 83.05±0.11 / 6	6.25 82.19±0.11 / 4
DK (1506) Denmark	6.40 84.23±0.11 / 1	5.81 75.86±0.11 / 6	6.33 83.22±0.11 / 2	6.34 83.41±0.11 / 4	6.26 82.34±0.11 / 1
DE (1540) Germany	5.94 77.76±0.11 / 10	5.86 76.64±0.11 / 5	6.13 80.38±0.11 / 7	6.31 82.99±0.11 / 7	6.21 81.58±0.11 / 5
EL (1500) Greece	5.70 74.34±0.11 / 15	5.61 72.99±0.11 / 14	5.58 72.50±0.11 / 15	5.78 75.43±0.11 / 15	5.20 67.21±0.11 / 15
IT (1500) Italy	6.18 81.13±0.11 / 4	6.10 79.99±0.11 / 2	6.38 84.06±0.11 / 1	6.45 84.95±0.11 / 2	6.26 82.28±0.11 / 2
ES (1500) Spain	5.77 75.30±0.11 / 14	5.71 74.41±0.11 / 10	5.90 77.17±0.11 / 13	6.05 79.26±0.11 / 11	5.84 76.35±0.11 / 13
FR (1502) France	5.98 78.25±0.11 / 9	5.67 73.85±0.11 / 12	6.05 79.22±0.11 / 10	6.04 79.19±0.11 / 12	5.89 76.96±0.11 / 12
IR (1502) Ireland	6.00 78.58±0.11 / 8	5.62 73.08±0.11 / 13	6.12 80.35±0.11 / 8	6.05 79.28±0.11 / 10	6.01 78.67±0.11 / 9
LU (502) Luxemburg	5.89 77.06±0.18 / 11	5.77 75.24±0.18 / 9	6.10 79.99±0.18 / 9	6.19 81.30±0.18 / 9	5.93 77.55±0.18 / 11
NL (1516) Netherlands	6.35 83.55±0.11 / 2	5.91 77.34±0.11 / 3	6.00 78.58±0.11 / 11	6.26 82.24±0.11 / 8	6.26 82.22±0.11 / 3
PT (1502) Portugal	5.85 76.47±0.11 / 12	5.80 75.71±0.11 / 7	6.29 82.70±0.11 / 3	6.49 85.52±0.11 / 1	6.00 78.61±0.11 / 10
UK (1514) United Kingdom	6.17 80.94±0.11 / 6	5.79 75.55±0.11 / 8	5.98 78.24±0.11 / 12	5.93 77.58±0.11 / 14	6.04 79.09±0.11 / 7
FI (1496) Finland	5.79 75.57±0.11 / 13	5.34 69.09±0.11 / 15	5.89 77.00±0.11 / 14	5.93 77.59±0.11 / 13	5.67 73.87±0.11 / 14
SE (1574) Sweden	6.32 83.08±0.10 / 3	5.68 74.00±0.10 / 11	6.28 82.60±0.10 / 4	6.33 83.32±0.10 / 5	6.02 78.86±0.10 / 8
AT (1526) Austria	6.13 80.36±0.11 / 7	6.13 80.48±0.11 / 1	6.28 82.56±0.11 / 5	6.37 83.92±0.11 / 3	6.15 80.72±0.11 / 6

Table 5: Sheet A. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Physical environment				
	Q11F Contact with dangerous substances	Q11G Radiation	Q12A Painful positions	Q12B Heavy loads	Q12C Repetitive movements
	1: always 2: ∼always 3: 3/4 time 4: 1/2 time 5: 1/4 time 6: ∼never 7: never	1: always 2: ∼always 3: 3/4 time 4: 1/2 time 5: 1/4 time 6: ∼never 7: never	1: always 2: ∼always 3: 3/4 time 4: 1/2 time 5: 1/4 time 6: ∼never 7: never	1: always 2: ∼always 3: 3/4 time 4: 1/2 time 5: 1/4 time 6: ∼never 7: never	1: always 2: ∼always 3: 3/4 time 4: 1/2 time 5: 1/4 time 6: ∼never 7: never
BE (1523) Belgium	6.50 85.73±0.11 / 3	6.78 89.68±0.11 / 6	5.30 68.63±0.11 / 4	5.67 73.92±0.11 / 7	4.69 59.81±0.11 / 5
DK (1506) Denmark	6.57 86.75±0.11 / 1	6.78 89.68±0.11 / 5	5.64 73.47±0.11 / 1	5.86 76.60±0.11 / 2	4.96 63.76±0.11 / 2
DE (1540) Germany	6.46 85.17±0.11 / 6	6.75 89.23±0.11 / 8	5.25 67.82±0.11 / 5	5.62 73.18±0.11 / 8	4.99 64.09±0.11 / 1
EL (1500) Greece	5.92 77.43±0.11 / 15	6.70 88.64±0.11 / 11	3.78 46.91±0.11 / 15	5.20 67.10±0.11 / 14	3.85 47.90±0.11 / 13
IT (1500) Italy	6.52 86.04±0.11 / 2	6.83 90.47±0.11 / 1	5.19 66.93±0.11 / 8	6.05 79.29±0.11 / 1	4.76 60.79±0.11 / 4
ES (1500) Spain	6.26 82.25±0.11 / 11	6.72 88.92±0.11 / 10	4.83 61.86±0.11 / 12	5.41 70.13±0.11 / 11	3.70 45.67±0.11 / 14
FR (1502) France	6.31 82.95±0.11 / 10	6.82 90.25±0.11 / 2	4.48 56.83±0.11 / 14	5.17 66.72±0.11 / 15	3.88 48.23±0.11 / 12
IR (1502) Ireland	6.23 81.79±0.11 / 12	6.68 88.35±0.11 / 12	5.20 67.21±0.11 / 7	5.59 72.76±0.11 / 9	4.49 57.06±0.11 / 7
LU (502) Luxemburg	6.39 84.15±0.18 / 9	6.79 89.87±0.18 / 4	5.10 65.68±0.18 / 9	5.76 75.13±0.18 / 4	4.64 59.16±0.18 / 6
NL (1516) Netherlands	6.40 84.22±0.11 / 8	6.76 89.41±0.11 / 7	5.57 72.43±0.11 / 2	5.79 75.62±0.11 / 3	3.88 48.33±0.11 / 11
PT (1502) Portugal	6.48 85.49±0.11 / 5	6.80 90.00±0.11 / 3	4.77 61.00±0.11 / 13	5.71 74.42±0.11 / 5	4.04 50.51±0.11 / 10
UK (1514) United Kingdom	6.17 80.93±0.11 / 14	6.66 88.06±0.11 / 13	5.21 67.31±0.11 / 6	5.21 67.30±0.11 / 13	4.35 55.04±0.11 / 8
FI (1496) Finland	6.18 81.13±0.11 / 13	6.57 86.76±0.11 / 15	5.05 64.94±0.11 / 10	5.45 70.73±0.11 / 10	3.67 45.29±0.11 / 15
SE (1574) Sweden	6.40 84.33±0.10 / 7	6.66 87.97±0.10 / 14	5.00 64.24±0.10 / 11	5.32 68.85±0.10 / 12	4.23 53.22±0.10 / 9
AT (1526) Austria	6.50 85.69±0.11 / 4	6.72 88.93±0.11 / 9	5.42 70.25±0.11 / 3	5.68 74.05±0.11 / 6	4.88 62.52±0.11 / 3

Table 5: Sheet B. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Health				
	Q35C02 Hearing problems	Q35C03 Vision problems	Q35C04 Skin problems	Q35C05 Backaches problems	Q35C06 Headaches
	1: Yes 0: No	1: Yes 0: No	1: Yes 0: No	1: Yes 0: No	1: Yes 0: No
BE (1523) Belgium	0.05 72.41±0.37 / 4	0.12 68.76±0.37 / 14	0.04 73.00±0.37 / 3	0.27 61.70±0.37 / 4	0.12 68.86±0.37 / 4
DK (1506) Denmark	0.08 70.98±0.37 / 13	0.02 73.90±0.37 / 2	0.06 72.18±0.37 / 9	0.30 60.19±0.37 / 6	0.17 66.63±0.37 / 11
DE (1540) Germany	0.06 71.98±0.37 / 8	0.05 72.73±0.37 / 5	0.04 73.02±0.37 / 2	0.35 57.37±0.37 / 11	0.13 68.57±0.37 / 6
EL (1500) Greece	0.06 72.17±0.37 / 6	0.09 70.57±0.37 / 10	0.12 68.87±0.37 / 14	0.42 54.23±0.37 / 15	0.22 63.97±0.37 / 14
IT (1500) Italy	0.08 71.20±0.37 / 11	0.12 68.80±0.37 / 13	0.06 72.10±0.37 / 10	0.32 58.97±0.37 / 8	0.17 66.47±0.37 / 12
ES (1500) Spain	0.08 71.17±0.37 / 12	0.10 69.97±0.37 / 11	0.06 71.83±0.37 / 11	0.39 55.63±0.37 / 12	0.16 67.00±0.37 / 10
FR (1502) France	0.06 72.00±0.37 / 7	0.15 67.58±0.37 / 15	0.07 71.50±0.37 / 12	0.39 55.53±0.37 / 13	0.15 67.31±0.37 / 9
IR (1502) Ireland	0.03 73.74±0.37 / 1	0.02 74.13±0.37 / 1	0.03 73.47±0.37 / 1	0.11 69.51±0.37 / 1	0.04 73.20±0.37 / 1
LU (502) Luxemburg	0.06 71.81±0.64 / 10	0.11 69.72±0.64 / 12	0.05 72.41±0.64 / 6	0.35 57.47±0.64 / 10	0.15 67.73±0.64 / 8
NL (1516) Netherlands	0.06 71.83±0.37 / 9	0.05 72.30±0.37 / 6	0.04 72.92±0.37 / 5	0.26 61.97±0.37 / 3	0.12 68.96±0.37 / 3
PT (1502) Portugal	0.05 72.54±0.37 / 3	0.09 70.64±0.37 / 8	0.05 72.30±0.37 / 8	0.32 59.02±0.37 / 7	0.14 67.78±0.37 / 7
UK (1514) United Kingdom	0.05 72.59±0.37 / 2	0.04 72.95±0.37 / 3	0.05 72.36±0.37 / 7	0.25 62.42±0.37 / 2	0.13 68.63±0.37 / 5
FI (1496) Finland	0.18 65.94±0.37 / 15	0.08 70.79±0.37 / 7	0.15 67.48±0.37 / 15	0.39 55.35±0.37 / 14	0.21 64.37±0.37 / 13
SE (1574) Sweden	0.14 67.82±0.36 / 14	0.04 72.94±0.36 / 4	0.11 69.35±0.36 / 13	0.35 57.50±0.36 / 9	0.22 63.75±0.36 / 15
AT (1526) Austria	0.05 72.28±0.37 / 5	0.09 70.58±0.37 / 9	0.04 72.94±0.37 / 4	0.28 60.78±0.37 / 5	0.09 70.41±0.37 / 2

Table 5: Sheet C. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Health				
	Q35C07 Stomach ache	Q35C08 Muscular pains in shoulders and neck	Q35C09 Muscular pains in upper limbs	Q35C10 Muscular pains in lower limbs	Q35C11 Respiratory problems
	1: Yes 0: No	1: Yes 0: No	1: Yes 0: No	1: Yes 0: No	1: Yes 0: No
BE (1523) Belgium	0.08 70.96±0.37 / 14	0.16 66.96±0.37 / 3	0.12 69.22±0.37 / 7	0.10 69.91±0.37 / 6	0.02 73.79±0.37 / 3
DK (1506) Denmark	0.02 73.97±0.37 / 4	0.33 58.63±0.37 / 13	0.17 66.30±0.37 / 11	0.13 68.56±0.37 / 8	0.03 73.74±0.37 / 4
DE (1540) Germany	0.04 73.12±0.37 / 8	0.22 63.99±0.37 / 8	0.09 70.45±0.37 / 3	0.07 71.40±0.37 / 4	0.03 73.60±0.37 / 5
EL (1500) Greece	0.07 71.53±0.37 / 12	0.28 61.03±0.37 / 12	0.27 61.47±0.37 / 15	0.29 60.37±0.37 / 15	0.10 70.10±0.37 / 15
IT (1500) Italy	0.06 72.10±0.37 / 11	0.19 65.50±0.37 / 7	0.11 69.70±0.37 / 5	0.11 69.47±0.37 / 7	0.04 73.10±0.37 / 9
ES (1500) Spain	0.03 73.47±0.37 / 7	0.28 61.17±0.37 / 11	0.19 65.70±0.37 / 12	0.20 65.20±0.37 / 14	0.06 72.07±0.37 / 13
FR (1502) France	0.05 72.50±0.37 / 9	0.25 62.55±0.37 / 10	0.16 67.24±0.37 / 9	0.15 67.68±0.37 / 10	0.04 73.17±0.37 / 8
IR (1502) Ireland	0.01 74.60±0.37 / 1	0.08 70.87±0.37 / 1	0.04 73.04±0.37 / 1	0.04 73.10±0.37 / 1	0.02 74.07±0.37 / 2
LU (502) Luxemburg	0.07 71.31±0.64 / 13	0.16 67.23±0.64 / 2	0.16 66.83±0.64 / 10	0.14 68.03±0.64 / 9	0.04 73.01±0.64 / 10
NL (1516) Netherlands	0.01 74.34±0.37 / 2	0.24 62.93±0.37 / 9	0.09 70.32±0.37 / 4	0.06 71.83±0.37 / 3	0.02 74.11±0.37 / 1
PT (1502) Portugal	0.03 73.70±0.37 / 5	0.18 65.85±0.37 / 5	0.15 67.58±0.37 / 8	0.16 66.78±0.37 / 12	0.05 72.34±0.37 / 12
UK (1514) United Kingdom	0.02 74.17±0.37 / 3	0.19 65.72±0.37 / 6	0.11 69.48±0.37 / 6	0.09 70.67±0.37 / 5	0.03 73.55±0.37 / 6
FI (1496) Finland	0.06 72.23±0.37 / 10	0.54 47.79±0.37 / 15	0.21 64.27±0.37 / 13	0.17 66.28±0.37 / 13	0.06 72.03±0.37 / 14
SE (1574) Sweden	0.11 69.31±0.36 / 15	0.40 54.76±0.36 / 14	0.25 62.48±0.36 / 14	0.16 66.96±0.36 / 11	0.04 72.84±0.36 / 11
AT (1526) Austria	0.03 73.49±0.37 / 6	0.17 66.61±0.37 / 4	0.06 71.89±0.37 / 2	0.06 72.05±0.37 / 2	0.03 73.49±0.37 / 7

Table 5: Sheet D. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Health				
	Q35C12 Heart problems	Q35C13 Injury	Q35C14 Stress	Q35C15 Overall fatigue	Q35C16 Sleeping problems
	1: Yes 0: No	1: Yes 0: No	1: Yes 0: No	1: Yes 0: No	1: Yes 0: No
BE (1523) Belgium	0.01 74.28±0.37 / 11	0.08 71.03±0.37 / 11	0.29 60.46±0.37 / 9	0.22 63.77±0.37 / 10	0.09 70.67±0.37 / 11
DK (1506) Denmark	0.01 74.60±0.37 / 5	0.03 73.54±0.37 / 2	0.27 61.39±0.37 / 8	0.11 69.65±0.37 / 3	0.06 72.08±0.37 / 5
DE (1540) Germany	0.01 74.61±0.37 / 4	0.06 72.01±0.37 / 6	0.24 62.79±0.37 / 5	0.16 67.05±0.37 / 5	0.07 71.36±0.37 / 9
EL (1500) Greece	0.02 73.93±0.37 / 15	0.05 72.57±0.37 / 4	0.53 48.67±0.37 / 15	0.62 43.87±0.37 / 15	0.07 71.37±0.37 / 8
IT (1500) Italy	0.01 74.50±0.37 / 8	0.06 72.20±0.37 / 5	0.35 57.53±0.37 / 12	0.23 63.27±0.37 / 11	0.05 72.27±0.37 / 4
ES (1500) Spain	0.01 74.57±0.37 / 7	0.08 70.83±0.37 / 12	0.27 61.50±0.37 / 7	0.36 57.10±0.37 / 14	0.06 71.77±0.37 / 6
FR (1502) France	0.01 74.60±0.37 / 6	0.11 69.67±0.37 / 13	0.32 59.15±0.37 / 10	0.33 58.46±0.37 / 13	0.11 69.74±0.37 / 13
IR (1502) Ireland	0.00 74.80±0.37 / 2	0.02 73.80±0.37 / 1	0.12 68.77±0.37 / 1	0.09 70.61±0.37 / 2	0.04 73.10±0.37 / 2
LU (502) Luxemburg	0.02 74.00±0.64 / 13	0.12 69.02±0.64 / 14	0.37 56.47±0.64 / 13	0.17 66.73±0.64 / 7	0.08 71.02±0.64 / 10
NL (1516) Netherlands	0.01 74.64±0.37 / 3	0.06 71.90±0.37 / 7	0.25 62.60±0.37 / 6	0.19 65.40±0.37 / 8	0.07 71.70±0.37 / 7
PT (1502) Portugal	0.02 74.20±0.37 / 12	0.04 73.00±0.37 / 3	0.18 65.78±0.37 / 2	0.20 64.85±0.37 / 9	0.03 73.60±0.37 / 1
UK (1514) United Kingdom	0.00 74.80±0.37 / 1	0.07 71.66±0.37 / 9	0.22 63.80±0.37 / 4	0.16 66.94±0.37 / 6	0.09 70.57±0.37 / 12
FI (1496) Finland	0.01 74.36±0.37 / 9	0.07 71.59±0.37 / 10	0.34 58.05±0.37 / 11	0.26 61.80±0.37 / 12	0.14 68.01±0.37 / 14
SE (1574) Sweden	0.02 73.98±0.36 / 14	0.12 68.96±0.36 / 15	0.39 55.59±0.36 / 14	0.13 68.55±0.36 / 4	0.16 66.93±0.36 / 15
AT (1526) Austria	0.01 74.34±0.37 / 10	0.06 71.85±0.37 / 8	0.19 65.66±0.37 / 3	0.05 72.58±0.37 / 1	0.05 72.38±0.37 / 3

Table 5: Sheet E. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Health				
	Q35C17 Allergies	Q35C18 Anxiety	Q35C19 Irritability	Q35C20 Trauma	Q35C21 Other
	1: Yes 0: No	1: Yes 0: No	1: Yes 0: No	1: Yes 0: No	1: Yes 0: No
BE (1523) Belgium	0.03 73.69±0.37 / 5	0.10 29.83±0.37 / 5	0.12 69.09±0.37 / 12	0.01 74.44±0.37 / 6	0.02 74.02±0.37 / 12
DK (1506) Denmark	0.04 72.97±0.37 / 9	0.01 25.53±0.37 / 13	0.06 71.88±0.37 / 4	0.03 73.41±0.37 / 13	0.01 74.54±0.37 / 2
DE (1540) Germany	0.03 73.60±0.37 / 6	0.01 25.68±0.37 / 12	0.08 71.01±0.37 / 5	0.01 74.58±0.37 / 5	0.01 74.48±0.37 / 3
EL (1500) Greece	0.08 70.97±0.37 / 13	0.20 34.97±0.37 / 1	0.10 70.03±0.37 / 9	0.06 72.17±0.37 / 15	0.01 74.40±0.37 / 5
IT (1500) Italy	0.03 73.37±0.37 / 7	0.10 30.07±0.37 / 4	0.13 68.37±0.37 / 13	0.03 73.57±0.37 / 11	0.01 74.37±0.37 / 7
ES (1500) Spain	0.04 73.20±0.37 / 8	0.08 28.97±0.37 / 6	0.10 70.17±0.37 / 8	0.04 72.80±0.37 / 14	0.02 73.83±0.37 / 14
FR (1502) France	0.05 72.34±0.37 / 11	0.15 32.46±0.37 / 2	0.14 68.24±0.37 / 14	0.01 74.27±0.37 / 8	0.01 74.37±0.37 / 6
IR (1502) Ireland	0.01 74.43±0.37 / 1	0.03 26.73±0.37 / 10	0.03 73.30±0.37 / 1	0.02 74.17±0.37 / 9	0.02 74.07±0.37 / 11
LU (502) Luxemburg	0.04 72.91±0.64 / 10	0.03 26.49±0.64 / 11	0.11 69.32±0.64 / 11	0.01 74.60±0.64 / 3	0.01 74.60±0.64 / 1
NL (1516) Netherlands	0.03 73.71±0.37 / 4	0.01 25.46±0.37 / 15	0.09 70.32±0.37 / 7	0.01 74.70±0.37 / 2	0.03 73.61±0.37 / 15
PT (1502) Portugal	0.06 72.20±0.37 / 12	0.04 26.80±0.37 / 9	0.06 72.10±0.37 / 3	0.01 74.60±0.37 / 4	0.02 74.20±0.37 / 9
UK (1514) United Kingdom	0.02 74.11±0.37 / 2	0.07 28.30±0.37 / 7	0.09 70.64±0.37 / 6	0.02 74.04±0.37 / 10	0.02 73.84±0.37 / 13
FI (1496) Finland	0.08 70.92±0.37 / 14	0.06 27.84±0.37 / 8	0.15 67.68±0.37 / 15	0.03 73.56±0.37 / 12	0.01 74.47±0.37 / 4
SE (1574) Sweden	0.09 70.71±0.36 / 15	0.13 31.42±0.36 / 3	0.11 69.57±0.36 / 10	0.01 74.30±0.36 / 7	0.02 74.08±0.36 / 10
AT (1526) Austria	0.03 73.72±0.37 / 3	0.01 25.49±0.37 / 14	0.06 72.12±0.37 / 2	0.00 74.87±0.37 / 1	0.01 74.34±0.37 / 8

Table 5: Sheet F. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Health				Time factors
	Q35C22 Positive influence of work on health	Q36A Sick leave due to accident at work	Q36B Sick leave caused by the work	Q36C Sick leave caused by other problems	Q14 Hours worked per week
	1: Yes 0: No	1: No 2: 1–2 days 3: 3–7 days 4: 8–14 days 5: 15–30 days 6: 31–90 days 7: 91–180 d. 8: 181–270 d. 9: >270 days	1: No 2: 1–2 days 3: 3–7 days 4: 8–14 days 5: 15–30 days 6: 31–90 days 7: 91–180 d. 8: 181–270 d. 9: >270 days	1: No 2: 1–2 days 3: 3–7 days 4: 8–14 days 5: 15–30 days 6: 31–90 days 7: 91–180 d. 8: 181–270 d. 9: >270 days	Hours
BE (1523) Belgium	0.00 25.13±0.37 / 13	1.22 8.01±0.08 / 4	1.27 8.58±0.08 / 7	1.84 14.89±0.08 / 8	37.41 71.33±0.00 / 5
DK (1506) Denmark	0.02 25.86±0.37 / 2	1.13 7.04±0.08 / 9	1.23 8.15±0.08 / 9	2.13 18.16±0.08 / 2	36.51 72.04±0.00 / 3
DE (1540) Germany	0.04 26.79±0.37 / 1	1.26 8.46±0.08 / 2	1.31 9.03±0.08 / 5	2.05 17.19±0.08 / 6	37.20 71.50±0.00 / 4
EL (1500) Greece	0.01 25.47±0.37 / 6	1.06 6.21±0.08 / 15	1.13 6.99±0.08 / 14	1.43 10.34±0.08 / 15	43.06 66.88±0.00 / 15
IT (1500) Italy	0.01 25.33±0.37 / 9	1.09 6.55±0.08 / 14	1.15 7.23±0.08 / 13	2.07 17.46±0.08 / 5	39.34 69.81±0.00 / 10
ES (1500) Spain	0.00 25.20±0.37 / 11	1.18 7.53±0.08 / 7	1.16 7.39±0.08 / 11	1.47 10.83±0.08 / 14	40.28 69.07±0.00 / 13
FR (1502) France	0.01 25.43±0.37 / 8	1.21 7.87±0.08 / 5	1.24 8.27±0.08 / 8	1.62 12.41±0.08 / 12	37.96 70.90±0.00 / 7
IR (1502) Ireland	0.01 25.43±0.37 / 8	1.11 6.75±0.08 / 13	1.12 6.86±0.08 / 15	1.72 13.59±0.08 / 10	39.73 69.50±0.00 / 11
LU (502) Luxemburg	0.01 25.30±0.64 / 10	1.24 8.17±0.14 / 3	1.30 8.94±0.14 / 6	1.78 14.25±0.14 / 9	38.61 70.38±0.00 / 9
NL (1516) Netherlands	0.01 25.46±0.37 / 7	1.13 6.99±0.08 / 11	1.56 11.79±0.08 / 1	2.13 18.12±0.08 / 3	31.57 75.93±0.00 / 1
PT (1502) Portugal	0.00 25.10±0.37 / 14	1.13 7.03±0.08 / 10	1.16 7.33±0.08 / 12	1.60 12.24±0.08 / 13	41.20 68.34±0.00 / 14
UK (1514) United Kingdom	0.00 25.13±0.37 / 12	1.13 7.05±0.08 / 8	1.21 7.87±0.08 / 10	1.70 13.39±0.08 / 11	36.44 72.10±0.00 / 2
FI (1496) Finland	0.01 25.47±0.37 / 5	1.28 8.65±0.08 / 1	1.50 11.10±0.08 / 2	2.13 18.06±0.08 / 4	40.01 69.29±0.00 / 12
SE (1574) Sweden	0.01 25.54±0.36 / 4	1.12 6.93±0.08 / 12	1.37 9.70±0.08 / 4	2.16 18.42±0.08 / 1	37.53 71.23±0.00 / 6
AT (1526) Austria	0.01 25.72±0.37 / 3	1.20 7.75±0.08 / 6	1.37 9.71±0.08 / 3	1.98 16.43±0.08 / 7	38.42 70.54±0.00 / 8

Table 5: Sheet G. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Time factors				
	Q15R Time to work and back	Q16A Nightwork for at least 2 hours between 22:00–5:00	Q16B Evening work for at least 2 hours between 18:00–22:00	Q16D Saturday work	Q16C Sunday work
	1: 0min 2: 1–30min 3: 31–60min 4: 61–90min 5: 91–120min 6: 121–180min 7: 181–240min 8: 241–300min 9: >300min	1: no 2: 1–3 per month 3: 4–8 p.month 4: 9–12 p.month 5: 13–20 p.month 6: > 20 p.month	1: no 2: 1–3 per month 3: 4–8 p.month 4: 9–12 p.month 5: 13–20 p.month 6: > 20 p.month	1: no 2: 1 per month 3: 2 per month 4: 3 per month 5: >3 p.month	1: no 2: 1 per month 3: 2 per month 4: 3 per month 5: >3 p.month
BE (1523) Belgium	2.69 81.86±0.08 / 13	1.43 83.91±0.11 / 9	2.17 70.86±0.11 / 8	2.35 62.52±0.12 / 6	1.67 75.73±0.12 / 9
DK (1506) Denmark	2.67 82.14±0.08 / 12	1.34 85.78±0.11 / 3	1.83 77.26±0.11 / 2	1.77 74.79±0.12 / 1	1.63 75.74±0.12 / 8
DE (1540) Germany	2.68 81.70±0.08 / 14	1.35 85.68±0.11 / 4	1.89 75.98±0.11 / 3	2.20 65.24±0.12 / 5	1.47 80.49±0.12 / 1
EL (1500) Greece	2.43 86.69±0.08 / 1	1.60 81.37±0.11 / 15	3.38 49.92±0.11 / 14	3.53 38.22±0.12 / 15	2.24 64.33±0.12 / 15
IT (1500) Italy	2.46 85.93±0.08 / 2	1.30 86.61±0.11 / 1	2.26 69.51±0.11 / 10	2.99 49.40±0.12 / 14	1.51 79.32±0.12 / 3
ES (1500) Spain	2.52 84.61±0.08 / 4	1.51 83.03±0.11 / 11	3.48 48.54±0.11 / 15	2.74 54.48±0.12 / 13	1.61 77.81±0.12 / 5
FR (1502) France	2.54 84.07±0.08 / 7	1.43 84.28±0.11 / 8	2.33 68.41±0.11 / 13	2.69 55.63±0.12 / 12	1.71 75.36±0.12 / 10
IR (1502) Ireland	2.63 82.59±0.08 / 11	1.51 82.54±0.11 / 12	2.30 68.47±0.11 / 12	2.52 58.82±0.12 / 10	1.78 73.45±0.12 / 11
LU (502) Luxemburg	2.53 84.29±0.14 / 6	1.35 85.86±0.18 / 2	1.73 79.40±0.18 / 1	2.42 61.19±0.21 / 8	1.61 77.46±0.21 / 6
NL (1516) Netherlands	2.54 83.71±0.08 / 8	1.34 85.33±0.11 / 5	1.98 74.13±0.11 / 5	1.90 72.06±0.12 / 2	1.51 78.83±0.12 / 4
PT (1502) Portugal	2.53 84.57±0.08 / 5	1.43 84.55±0.11 / 7	2.12 72.71±0.11 / 6	2.58 57.90±0.12 / 11	1.52 79.94±0.12 / 2
UK (1514) United Kingdom	2.61 83.40±0.08 / 10	1.54 81.87±0.11 / 14	2.12 71.82±0.11 / 7	2.51 58.98±0.12 / 9	1.84 71.83±0.12 / 12
FI (1496) Finland	2.70 81.32±0.08 / 15	1.48 82.33±0.11 / 13	2.27 68.84±0.11 / 11	2.11 67.19±0.12 / 4	1.85 71.21±0.12 / 13
SE (1574) Sweden	2.59 83.53±0.08 / 9	1.45 83.61±0.10 / 10	2.22 70.01±0.10 / 9	1.90 71.60±0.12 / 3	1.84 70.69±0.12 / 14
AT (1526) Austria	2.52 84.66±0.08 / 3	1.39 84.69±0.11 / 6	1.99 74.14±0.11 / 4	2.34 62.47±0.12 / 7	1.62 77.00±0.12 / 7

Table 5: Sheet H. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Time factors		Stressing factors		
	Q16E Overwork (more than 10 hours a day)	Q18B Shiftwork	Q19B1 Planning working time changes	Q21A Repetitive tasks	Q21B1 Work at very high speed
	1: no 2: 1–3 per month 3: 4–8 p.month 4: 9–12 p.month 5: 13–20 p.month 6: > 20 p.month	1: Yes 2: No	1: Same day 2: 1 day in advance 3: 2–3 days i.adv. 4: 4–7 days i.adv. 5: 8–14 days i.adv. 6: 15–30 days i.adv. 7: >30 days i.adv.	1: every 5 sec 2: every 30 sec 3: every min 4: every 5 min 5: every 10 min 6: no repetitive tasks	1: always 2: ∼always 3: 3/4 time 4: 1/2 time 5: 1/4 time 6: ∼never 7: never
BE (1523) Belgium	1.78 77.22±0.11 / 7	1.81 65.74±0.37 / 11	2.09 30.95±0.09 / 7	4.81 71.91±0.12 / 4	4.87 62.41±0.11 / 3
DK (1506) Denmark	1.68 77.97±0.11 / 6	1.92 70.92±0.37 / 1	1.98 28.97±0.09 / 11	4.92 73.71±0.12 / 1	4.65 59.24±0.11 / 8
DE (1540) Germany	1.66 79.39±0.11 / 4	1.83 66.30±0.37 / 7	1.94 27.20±0.09 / 14	4.61 68.56±0.12 / 6	4.48 56.82±0.11 / 11
EL (1500) Greece	2.29 68.72±0.11 / 15	1.85 67.30±0.37 / 5	1.98 29.82±0.09 / 9	3.70 53.32±0.12 / 15	4.26 53.70±0.11 / 12
IT (1500) Italy	1.77 76.89±0.11 / 9	1.80 64.93±0.37 / 12	2.11 31.65±0.09 / 2	4.82 71.94±0.12 / 3	4.60 58.51±0.11 / 9
ES (1500) Spain	1.70 79.20±0.11 / 5	1.80 64.83±0.37 / 13	2.03 30.53±0.09 / 8	3.93 57.13±0.12 / 14	5.17 66.73±0.11 / 1
FR (1502) France	1.81 76.93±0.11 / 8	1.82 65.98±0.37 / 9	2.16 32.13±0.09 / 1	4.43 65.49±0.12 / 11	4.66 59.43±0.11 / 7
IR (1502) Ireland	1.95 73.92±0.11 / 12	1.82 66.01±0.37 / 8	2.09 31.08±0.09 / 5	4.37 64.50±0.12 / 12	4.97 63.80±0.11 / 2
LU (502) Luxemburg	1.53 81.70±0.18 / 1	1.84 67.13±0.64 / 6	2.11 31.55±0.16 / 4	4.78 71.41±0.21 / 5	4.72 60.27±0.18 / 6
NL (1516) Netherlands	1.59 79.99±0.11 / 2	1.87 68.73±0.37 / 4	2.07 31.03±0.09 / 6	4.59 68.14±0.12 / 7	3.87 48.10±0.11 / 14
PT (1502) Portugal	1.69 79.86±0.11 / 3	1.92 70.84±0.37 / 2	2.05 31.62±0.09 / 3	4.57 67.85±0.12 / 9	4.77 60.94±0.11 / 5
UK (1514) United Kingdom	1.93 74.57±0.11 / 11	1.74 62.12±0.37 / 15	2.02 29.33±0.09 / 10	4.55 67.43±0.12 / 10	4.81 61.57±0.11 / 4
FI (1496) Finland	1.93 72.70±0.11 / 14	1.78 64.07±0.37 / 14	1.94 27.58±0.09 / 13	3.96 57.65±0.12 / 13	4.02 50.27±0.11 / 13
SE (1574) Sweden	1.87 73.65±0.10 / 13	1.82 65.88±0.36 / 10	1.62 20.97±0.09 / 15	4.57 67.92±0.12 / 8	3.64 44.92±0.10 / 15
AT (1526) Austria	1.80 76.68±0.11 / 10	1.88 68.87±0.37 / 3	1.95 28.78±0.09 / 12	4.84 72.36±0.12 / 2	4.49 56.99±0.11 / 10

Table 5: Sheet I. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Stressing factors				
	Q21B2 Work to tight deadlines	Q2201 Dependence on work of colleagues	Q2202 Dependence on customers	Q2203 Numerical production targets	Q2204 Automatic speed determined by machines
	1: always 2: ∼always 3: 3/4 time 4: 1/2 time 5: 1/4 time 6: ∼never 7: never	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No
BE (1523) Belgium	4.76 60.83±0.11 / 3	1.59 54.65±0.37 / 6	1.27 38.69±0.37 / 9	1.71 60.36±0.37 / 9	1.84 66.92±0.37 / 4
DK (1506) Denmark	4.48 56.79±0.11 / 7	1.55 52.62±0.37 / 10	1.28 39.01±0.37 / 7	1.85 67.50±0.37 / 2	1.90 69.75±0.37 / 2
DE (1540) Germany	4.14 51.99±0.11 / 12	1.66 58.18±0.37 / 1	1.36 42.79±0.37 / 2	1.75 62.69±0.37 / 5	1.83 66.27±0.37 / 6
EL (1500) Greece	4.46 56.52±0.11 / 8	1.63 56.50±0.37 / 3	1.24 36.97±0.37 / 13	1.61 55.73±0.37 / 14	1.79 64.43±0.37 / 11
IT (1500) Italy	4.71 60.21±0.11 / 5	1.60 54.87±0.37 / 5	1.26 37.83±0.37 / 10	1.71 60.40±0.37 / 8	1.82 65.83±0.37 / 7
ES (1500) Spain	5.14 66.24±0.11 / 2	1.63 56.50±0.37 / 3	1.31 40.57±0.37 / 4	1.65 57.30±0.37 / 12	1.79 64.37±0.37 / 12
FR (1502) France	4.45 56.49±0.11 / 9	1.58 54.16±0.37 / 7	1.28 38.78±0.37 / 8	1.69 59.32±0.37 / 11	1.80 65.25±0.37 / 8
IR (1502) Ireland	4.14 52.02±0.11 / 11	1.44 47.17±0.37 / 13	1.30 40.05±0.37 / 6	1.76 62.98±0.37 / 4	1.76 62.98±0.37 / 15
LU (502) Luxemburg	4.73 60.42±0.18 / 4	1.54 51.89±0.64 / 12	1.35 42.53±0.64 / 3	1.74 61.95±0.64 / 7	1.78 64.14±0.64 / 13
NL (1516) Netherlands	4.55 57.87±0.11 / 6	1.57 53.63±0.37 / 8	1.31 40.34±0.37 / 5	1.85 67.55±0.37 / 1	1.83 66.72±0.37 / 5
PT (1502) Portugal	5.58 72.55±0.11 / 1	1.60 55.16±0.37 / 4	1.41 45.44±0.37 / 1	1.75 62.45±0.37 / 6	1.80 64.95±0.37 / 10
UK (1514) United Kingdom	3.75 46.47±0.11 / 15	1.43 46.43±0.37 / 14	1.22 35.77±0.37 / 14	1.70 59.87±0.37 / 10	1.78 64.00±0.37 / 14
FI (1496) Finland	4.00 49.96±0.11 / 14	1.56 53.01±0.37 / 9	1.25 37.37±0.37 / 12	1.55 52.34±0.37 / 15	1.80 65.11±0.37 / 9
SE (1574) Sweden	4.04 50.64±0.10 / 13	1.55 52.54±0.36 / 11	1.21 35.26±0.36 / 15	1.63 56.48±0.36 / 13	1.92 70.87±0.36 / 1
AT (1526) Austria	4.17 52.38±0.11 / 10	1.63 56.52±0.37 / 2	1.26 37.81±0.37 / 11	1.78 64.06±0.37 / 3	1.86 67.76±0.37 / 3

Table 5: Sheet J. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Stressing factors				
	Q2205 Direct control of the boss	Q23A Interruptions and unforseen tasks	Q2401 Precise quality standards	Q2402 Assessing yourself the quality	Q2403 Solving unforeseen problems on your own
	1: Yes 2: No	1: several a day 2: a few in a day 3: several a week 4: a few in a week 5: seldom	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No
BE (1523) Belgium	1.63 56.65±0.37 / 13	2.83 46.60±0.15 / 10	1.33 41.45±0.37 / 6	1.25 62.46±0.37 / 7	1.12 31.07±0.37 / 12
DK (1506) Denmark	1.84 67.00±0.37 / 3	2.47 39.36±0.15 / 14	1.21 35.26±0.37 / 13	1.11 69.65±0.37 / 1	1.07 28.32±0.37 / 14
DE (1540) Germany	1.72 60.78±0.37 / 7	3.16 53.14±0.15 / 4	1.36 42.92±0.37 / 4	1.29 60.36±0.37 / 12	1.20 35.19±0.37 / 6
EL (1500) Greece	1.66 57.87±0.37 / 9	3.54 60.89±0.15 / 1	1.44 46.77±0.37 / 2	1.35 57.50±0.37 / 15	1.25 37.60±0.37 / 4
IT (1500) Italy	1.73 61.40±0.37 / 6	3.02 50.49±0.15 / 6	1.32 41.10±0.37 / 7	1.29 60.73±0.37 / 11	1.20 34.83±0.37 / 7
ES (1500) Spain	1.66 57.93±0.37 / 8	3.21 54.15±0.15 / 2	1.32 40.77±0.37 / 8	1.26 62.07±0.37 / 9	1.15 32.60±0.37 / 10
FR (1502) France	1.64 56.92±0.37 / 11	3.07 51.37±0.15 / 5	1.29 39.61±0.37 / 9	1.19 65.75±0.37 / 3	1.13 31.26±0.37 / 11
IR (1502) Ireland	1.56 52.83±0.37 / 14	2.93 48.58±0.15 / 8	1.27 38.75±0.37 / 10	1.27 61.38±0.37 / 10	1.26 37.78±0.37 / 2
LU (502) Luxemburg	1.64 57.17±0.64 / 10	2.84 46.81±0.26 / 9	1.33 41.63±0.64 / 5	1.33 58.27±0.64 / 14	1.25 37.65±0.64 / 3
NL (1516) Netherlands	1.89 69.53±0.37 / 1	2.35 37.01±0.15 / 15	1.20 34.96±0.37 / 14	1.16 67.18±0.37 / 2	1.06 28.23±0.37 / 15
PT (1502) Portugal	1.64 56.89±0.37 / 12	3.20 54.05±0.15 / 3	1.41 45.67±0.37 / 3	1.31 59.42±0.37 / 13	1.30 39.81±0.37 / 1
UK (1514) United Kingdom	1.54 51.95±0.37 / 15	2.67 43.46±0.15 / 12	1.19 34.35±0.37 / 15	1.22 63.90±0.37 / 5	1.19 34.48±0.37 / 8
FI (1496) Finland	1.86 68.15±0.37 / 2	2.63 42.61±0.15 / 13	1.24 37.03±0.37 / 11	1.19 65.54±0.37 / 4	1.23 36.46±0.37 / 5
SE (1574) Sweden	1.83 66.65±0.36 / 4	2.71 44.18±0.15 / 11	1.44 46.86±0.36 / 1	1.22 63.75±0.36 / 6	1.07 28.68±0.36 / 13
AT (1526) Austria	1.74 62.22±0.37 / 5	2.99 49.80±0.15 / 7	1.24 36.80±0.37 / 12	1.26 62.12±0.37 / 8	1.19 34.34±0.37 / 9

Table 5: Sheet K. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Stressing factors		Independence		
	Q2404 Monotonous tasks	Q2405 Complex tasks	Q2501 Choosing the order of tasks	Q2502 Choosing methods of work	Q2503 Choosing speed of work
	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No
BE (1523) Belgium	1.69 59.34±0.37 / 6	1.53 51.43±0.37 / 5	1.32 59.08±0.37 / 6	1.31 59.27±0.37 / 7	1.32 59.01±0.37 / 10
DK (1506) Denmark	1.68 59.13±0.37 / 7	1.30 40.04±0.37 / 14	1.19 65.57±0.37 / 1	1.19 65.54±0.37 / 3	1.19 65.67±0.37 / 1
DE (1540) Germany	1.75 62.66±0.37 / 2	1.32 41.10±0.37 / 12	1.42 53.96±0.37 / 14	1.25 62.37±0.37 / 4	1.31 59.32±0.37 / 8
EL (1500) Greece	1.44 46.97±0.37 / 13	1.56 53.07±0.37 / 3	1.41 54.27±0.37 / 13	1.40 55.13±0.37 / 14	1.31 59.37±0.37 / 7
IT (1500) Italy	1.67 58.73±0.37 / 8	1.55 52.43±0.37 / 4	1.41 54.33±0.37 / 12	1.26 61.87±0.37 / 5	1.24 63.07±0.37 / 3
ES (1500) Spain	1.38 43.80±0.37 / 15	1.58 54.23±0.37 / 2	1.38 56.23±0.37 / 9	1.37 56.67±0.37 / 12	1.32 58.87±0.37 / 12
FR (1502) France	1.60 55.19±0.37 / 9	1.49 49.43±0.37 / 7	1.31 59.39±0.37 / 5	1.34 57.82±0.37 / 10	1.32 58.95±0.37 / 11
IR (1502) Ireland	1.48 48.87±0.37 / 12	1.50 50.03±0.37 / 6	1.40 55.09±0.37 / 11	1.38 56.03±0.37 / 13	1.32 58.85±0.37 / 13
LU (502) Luxemburg	1.70 59.86±0.64 / 5	1.47 48.31±0.64 / 8	1.40 55.18±0.64 / 10	1.33 58.67±0.64 / 9	1.31 59.26±0.64 / 9
NL (1516) Netherlands	1.71 60.49±0.37 / 4	1.40 44.85±0.37 / 11	1.22 63.95±0.37 / 3	1.18 65.90±0.37 / 2	1.20 65.14±0.37 / 2
PT (1502) Portugal	1.56 53.06±0.37 / 10	1.62 56.19±0.37 / 1	1.44 52.76±0.37 / 15	1.41 54.66±0.37 / 15	1.39 55.56±0.37 / 15
UK (1514) United Kingdom	1.41 45.31±0.37 / 14	1.40 45.11±0.37 / 10	1.33 58.29±0.37 / 7	1.35 57.63±0.37 / 11	1.30 60.04±0.37 / 5
FI (1496) Finland	1.51 50.50±0.37 / 11	1.30 40.21±0.37 / 13	1.22 63.94±0.37 / 4	1.29 60.59±0.37 / 6	1.31 59.59±0.37 / 6
SE (1574) Sweden	1.76 62.80±0.36 / 1	1.43 46.60±0.36 / 9	1.20 65.09±0.36 / 2	1.13 68.49±0.36 / 1	1.35 57.50±0.36 / 14
AT (1526) Austria	1.74 62.02±0.37 / 3	1.21 35.45±0.37 / 15	1.36 57.18±0.37 / 8	1.32 58.81±0.37 / 8	1.27 61.70±0.37 / 4

Table 5: Sheet L. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Independence				
	Q2602 Choosing time for break	Q2603 Choosing time for holidays	Q2604 Influence working hours	Q2605 Sufficient time to make the job	Q2606 Possibility to make private calls
	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No
BE (1523) Belgium	1.43 53.69±0.37 / 12	1.35 57.60±0.37 / 5	1.52 48.90±0.37 / 6	1.19 65.41±0.37 / 5	1.34 57.86±0.37 / 13
DK (1506) Denmark	1.33 58.37±0.37 / 4	1.33 58.47±0.37 / 1	1.41 54.68±0.37 / 1	1.28 60.92±0.37 / 15	1.08 70.75±0.37 / 1
DE (1540) Germany	1.53 48.57±0.37 / 15	1.49 50.52±0.37 / 11	1.60 45.13±0.37 / 12	1.21 64.45±0.37 / 7	1.29 60.39±0.37 / 8
EL (1500) Greece	1.41 54.30±0.37 / 8	1.44 53.10±0.37 / 8	1.52 49.17±0.37 / 4	1.18 65.77±0.37 / 4	1.26 61.93±0.37 / 7
IT (1500) Italy	1.23 63.73±0.37 / 1	1.34 58.07±0.37 / 4	1.56 47.00±0.37 / 10	1.16 67.17±0.37 / 3	1.30 60.00±0.37 / 10
ES (1500) Spain	1.42 54.00±0.37 / 11	1.54 48.20±0.37 / 13	1.69 40.73±0.37 / 15	1.12 69.23±0.37 / 1	1.26 62.17±0.37 / 6
FR (1502) France	1.32 58.79±0.37 / 3	1.50 50.20±0.37 / 12	1.57 46.67±0.37 / 11	1.22 64.25±0.37 / 8	1.36 56.82±0.37 / 14
IR (1502) Ireland	1.41 54.49±0.37 / 6	1.40 54.93±0.37 / 7	1.55 47.30±0.37 / 8	1.15 67.28±0.37 / 2	1.20 65.05±0.37 / 3
LU (502) Luxemburg	1.42 54.18±0.64 / 9	1.45 52.59±0.64 / 9	1.62 44.22±0.64 / 13	1.24 62.85±0.64 / 11	1.29 60.36±0.64 / 9
NL (1516) Netherlands	1.48 50.76±0.37 / 14	1.33 58.31±0.37 / 3	1.50 50.00±0.37 / 3	1.25 62.50±0.37 / 12	1.33 58.41±0.37 / 12
PT (1502) Portugal	1.29 60.55±0.37 / 2	1.56 46.94±0.37 / 14	1.64 43.04±0.37 / 14	1.22 64.11±0.37 / 9	1.30 59.99±0.37 / 11
UK (1514) United Kingdom	1.42 54.06±0.37 / 10	1.33 58.32±0.37 / 2	1.53 48.65±0.37 / 7	1.23 63.51±0.37 / 10	1.24 63.01±0.37 / 5
FI (1496) Finland	1.38 56.12±0.37 / 5	1.60 44.99±0.37 / 15	1.52 49.16±0.37 / 5	1.28 61.13±0.37 / 14	1.22 63.97±0.37 / 4
SE (1574) Sweden	1.41 54.35±0.36 / 7	1.47 51.75±0.36 / 10	1.44 52.80±0.36 / 2	1.26 61.88±0.36 / 13	1.12 69.03±0.36 / 2
AT (1526) Austria	1.43 53.51±0.37 / 13	1.36 56.95±0.37 / 6	1.56 47.02±0.37 / 9	1.20 64.97±0.37 / 6	1.40 54.78±0.37 / 15

Table 5: Sheet M. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Collectivity			Social environment	
	Q2601 Assistence from collegues	Q27B1 Rotating tasks between colleagues	Q27B2 (Partially) working in a team	Q30A1 Ability to discuss working conditions in general	Q30A2 Ability to discuss the changes of work organization
	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No
BE (1523) Belgium	1.18 66.07±0.37 / 9	1.62 44.24±0.37 / 11	1.51 49.59±0.37 / 12	1.19 65.45±0.37 / 7	1.21 64.53±0.37 / 7
DK (1506) Denmark	1.07 71.48±0.37 / 1	1.56 46.88±0.37 / 7	1.34 57.77±0.37 / 5	1.09 70.32±0.37 / 2	1.13 68.66±0.37 / 2
DE (1540) Germany	1.15 67.56±0.37 / 8	1.57 46.36±0.37 / 8	1.46 51.85±0.37 / 9	1.27 61.33±0.37 / 9	1.28 60.94±0.37 / 10
EL (1500) Greece	1.37 56.57±0.37 / 15	1.59 45.27±0.37 / 10	1.53 48.73±0.37 / 13	1.30 59.83±0.37 / 13	1.34 58.10±0.37 / 13
IT (1500) Italy	1.22 63.93±0.37 / 11	1.65 42.60±0.37 / 13	1.61 44.60±0.37 / 15	1.29 60.73±0.37 / 11	1.28 60.90±0.37 / 11
ES (1500) Spain	1.27 61.73±0.37 / 13	1.71 39.37±0.37 / 15	1.54 47.97±0.37 / 14	1.33 58.50±0.37 / 14	1.38 56.00±0.37 / 14
FR (1502) France	1.23 63.62±0.37 / 12	1.58 45.81±0.37 / 9	1.46 51.83±0.37 / 10	1.29 60.59±0.37 / 12	1.27 61.32±0.37 / 9
IR (1502) Ireland	1.13 68.71±0.37 / 6	1.44 52.83±0.37 / 2	1.29 60.35±0.37 / 2	1.17 66.64±0.37 / 5	1.20 64.88±0.37 / 5
LU (502) Luxemburg	1.14 68.13±0.64 / 7	1.48 51.10±0.64 / 4	1.33 58.57±0.64 / 4	1.17 66.43±0.64 / 6	1.20 64.84±0.64 / 6
NL (1516) Netherlands	1.09 70.38±0.37 / 4	1.49 50.46±0.37 / 5	1.32 58.81±0.37 / 3	1.08 71.17±0.37 / 1	1.10 70.02±0.37 / 1
PT (1502) Portugal	1.29 60.65±0.37 / 14	1.66 42.04±0.37 / 14	1.50 50.17±0.37 / 11	1.50 49.97±0.37 / 15	1.51 49.27±0.37 / 15
UK (1514) United Kingdom	1.09 70.57±0.37 / 3	1.44 53.17±0.37 / 1	1.25 62.55±0.37 / 1	1.20 65.03±0.37 / 8	1.24 62.88±0.37 / 8
FI (1496) Finland	1.12 68.88±0.37 / 5	1.63 43.32±0.37 / 12	1.38 56.22±0.37 / 7	1.13 68.72±0.37 / 3	1.13 68.52±0.37 / 3
SE (1574) Sweden	1.08 71.16±0.36 / 2	1.50 49.90±0.36 / 6	1.40 54.96±0.36 / 8	1.14 68.14±0.36 / 4	1.19 65.63±0.36 / 4
AT (1526) Austria	1.18 66.02±0.37 / 10	1.45 52.33±0.37 / 3	1.37 56.72±0.37 / 6	1.28 60.98±0.37 / 10	1.29 60.45±0.37 / 12

Table 5: Sheet N. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Social environment				
	Q3101 Personal experience of physical violence from colleagues	Q3102 Personal experience of physical violence from other people	Q3103 Personal experience of intimidation	Q3104 Personal experience of sexual discrimination	Q3105 Personal experience of unwanted sexual attention
	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No
BE (1523) Belgium	1.99 25.66±0.37 / 9	1.96 27.23±0.37 / 6	1.89 30.55±0.37 / 5	1.98 25.76±0.37 / 8	1.98 25.85±0.37 / 10
DK (1506) Denmark	1.98 26.00±0.37 / 3	1.97 26.29±0.37 / 9	1.91 29.28±0.37 / 8	1.99 25.70±0.37 / 10	1.98 25.80±0.37 / 11
DE (1540) Germany	2.00 25.13±0.37 / 15	1.98 26.20±0.37 / 10	1.93 28.41±0.37 / 9	1.98 25.91±0.37 / 7	1.98 25.94±0.37 / 8
EL (1500) Greece	2.00 25.20±0.37 / 14	1.99 25.70±0.37 / 13	1.95 27.37±0.37 / 12	1.98 25.97±0.37 / 6	1.97 26.30±0.37 / 6
IT (1500) Italy	1.99 25.30±0.37 / 13	1.99 25.30±0.37 / 15	1.97 26.67±0.37 / 15	1.99 25.47±0.37 / 14	1.99 25.30±0.37 / 15
ES (1500) Spain	1.99 25.37±0.37 / 12	1.97 26.57±0.37 / 8	1.95 27.33±0.37 / 13	1.99 25.53±0.37 / 12	1.99 25.53±0.37 / 13
FR (1502) France	1.99 25.67±0.37 / 8	1.96 27.13±0.37 / 7	1.90 30.23±0.37 / 7	1.99 25.60±0.37 / 11	1.98 25.93±0.37 / 9
IR (1502) Ireland	1.98 25.97±0.37 / 5	1.95 27.60±0.37 / 4	1.89 30.46±0.37 / 6	1.99 25.73±0.37 / 9	1.98 26.23±0.37 / 7
LU (502) Luxemburg	1.99 25.70±0.64 / 7	1.98 25.90±0.64 / 12	1.94 27.89±0.64 / 11	1.99 25.50±0.64 / 13	1.99 25.60±0.64 / 12
NL (1516) Netherlands	1.98 25.99±0.37 / 4	1.91 29.58±0.37 / 2	1.86 32.06±0.37 / 3	1.97 26.39±0.37 / 3	1.96 26.91±0.37 / 2
PT (1502) Portugal	1.99 25.40±0.37 / 10	1.99 25.47±0.37 / 14	1.96 26.93±0.37 / 14	2.00 25.20±0.37 / 15	1.99 25.47±0.37 / 14
UK (1514) United Kingdom	1.95 27.48±0.37 / 2	1.90 29.95±0.37 / 1	1.85 32.43±0.37 / 1	1.97 26.39±0.37 / 2	1.96 26.75±0.37 / 4
FI (1496) Finland	1.99 25.37±0.37 / 11	1.93 28.28±0.37 / 3	1.85 32.25±0.37 / 2	1.98 26.04±0.37 / 5	1.96 26.87±0.37 / 3
SE (1574) Sweden	1.94 27.86±0.36 / 1	1.95 27.54±0.36 / 5	1.86 31.96±0.36 / 4	1.98 26.21±0.36 / 4	1.95 27.26±0.36 / 1
AT (1526) Austria	1.98 25.82±0.37 / 6	1.98 26.05±0.37 / 11	1.93 28.28±0.37 / 10	1.97 26.64±0.37 / 1	1.97 26.61±0.37 / 5

Table 5: Sheet O. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Social environment				
	Q3106 Personal experience of age discrinimation	Q3107 Personal experience of discrinimation linked to nationality	Q3108 Personal experience of discrinimation linked to ethnic back-ground/race	Q3109 Personal experience of discrinimation linked to disability	Q3110 Personal experience of discrinimation linked to sexual orientation
	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No
BE (1523) Belgium	1.97 26.28±0.37 / 8	1.99 25.53±0.37 / 8	1.99 25.46±0.37 / 8	2.00 25.20±0.37 / 7	2.00 25.20±0.37 / 4
DK (1506) Denmark	1.98 25.76±0.37 / 12	2.00 25.20±0.37 / 14	2.00 25.20±0.37 / 13	2.00 25.07±0.37 / 14	2.00 25.07±0.37 / 11
DE (1540) Germany	1.97 26.49±0.37 / 7	1.99 25.42±0.37 / 9	2.00 25.16±0.37 / 14	2.00 25.13±0.37 / 9	2.00 25.06±0.37 / 12
EL (1500) Greece	1.98 26.20±0.37 / 9	1.99 25.60±0.37 / 7	1.99 25.57±0.37 / 7	2.00 25.10±0.37 / 10	2.00 25.17±0.37 / 5
IT (1500) Italy	1.98 25.77±0.37 / 11	2.00 25.17±0.37 / 15	2.00 25.10±0.37 / 15	2.00 25.17±0.37 / 8	2.00 25.17±0.37 / 5
ES (1500) Spain	1.99 25.73±0.37 / 13	1.99 25.30±0.37 / 10	2.00 25.23±0.37 / 11	2.00 25.17±0.37 / 8	2.00 25.10±0.37 / 6
FR (1502) France	1.97 26.66±0.37 / 5	1.98 25.80±0.37 / 4	1.98 25.90±0.37 / 2	1.99 25.37±0.37 / 4	2.00 25.23±0.37 / 2
IR (1502) Ireland	1.98 26.20±0.37 / 10	1.99 25.30±0.37 / 11	1.99 25.30±0.37 / 9	2.00 25.10±0.37 / 11	2.00 25.10±0.37 / 7
LU (502) Luxemburg	1.99 25.70±0.64 / 14	1.97 26.59±0.64 / 1	1.98 25.90±0.64 / 3	2.00 25.10±0.64 / 12	2.00 25.10±0.64 / 8
NL (1516) Netherlands	1.97 26.65±0.37 / 6	1.98 25.99±0.37 / 2	1.98 26.09±0.37 / 1	1.99 25.69±0.37 / 1	1.99 25.53±0.37 / 1
PT (1502) Portugal	1.99 25.47±0.37 / 15	2.00 25.23±0.37 / 12	2.00 25.23±0.37 / 12	2.00 25.07±0.37 / 13	2.00 25.00±0.37 / 13
UK (1514) United Kingdom	1.97 26.72±0.37 / 4	1.98 25.89±0.37 / 3	1.99 25.73±0.37 / 4	1.99 25.33±0.37 / 5	2.00 25.23±0.37 / 3
FI (1496) Finland	1.96 27.01±0.37 / 1	2.00 25.20±0.37 / 13	2.00 25.23±0.37 / 10	2.00 25.23±0.37 / 6	2.00 25.00±0.37 / 13
SE (1574) Sweden	1.96 26.91±0.36 / 2	1.99 25.70±0.36 / 6	1.99 25.57±0.36 / 6	1.99 25.51±0.36 / 2	2.00 25.10±0.36 / 10
AT (1526) Austria	1.96 26.77±0.37 / 3	1.99 25.72±0.37 / 5	1.99 25.66±0.37 / 5	1.99 25.39±0.37 / 3	2.00 25.10±0.37 / 9

Table 5: Sheet P. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Social environment				
	Q3201 Awareness of cases of physical violence from colleagues	Q3202 Awareness of cases of physical violence from other people	Q3203 Awareness of cases of intimidation	Q3204 Awareness of cases of sexual discrimination	Q3205 Awareness of cases of unwanted sexual attention
	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No
BE (1523) Belgium	1.96 27.07±0.37 / 7	1.92 28.84±0.37 / 7	1.84 32.94±0.37 / 6	1.95 27.27±0.37 / 8	1.94 28.02±0.37 / 6
DK (1506) Denmark	1.94 27.92±0.37 / 3	1.90 30.11±0.37 / 5	1.82 34.10±0.37 / 5	1.96 27.16±0.37 / 9	1.96 26.99±0.37 / 10
DE (1540) Germany	1.98 25.88±0.37 / 14	1.96 27.14±0.37 / 12	1.87 31.49±0.37 / 9	1.95 27.53±0.37 / 7	1.96 27.08±0.37 / 9
EL (1500) Greece	1.97 26.67±0.37 / 10	1.94 27.93±0.37 / 9	1.90 29.93±0.37 / 10	1.95 27.53±0.37 / 6	1.94 27.83±0.37 / 7
IT (1500) Italy	1.99 25.33±0.37 / 15	1.99 25.57±0.37 / 15	1.95 27.57±0.37 / 15	1.98 25.80±0.37 / 14	1.99 25.53±0.37 / 15
ES (1500) Spain	1.98 26.00±0.37 / 13	1.96 27.17±0.37 / 11	1.94 28.00±0.37 / 14	1.98 26.13±0.37 / 13	1.98 25.77±0.37 / 14
FR (1502) France	1.96 27.13±0.37 / 6	1.93 28.56±0.37 / 8	1.87 31.56±0.37 / 8	1.97 26.63±0.37 / 11	1.97 26.43±0.37 / 12
IR (1502) Ireland	1.96 27.23±0.37 / 4	1.92 29.13±0.37 / 6	1.87 31.66±0.37 / 7	1.96 27.13±0.37 / 10	1.95 27.50±0.37 / 8
LU (502) Luxemburg	1.96 27.19±0.64 / 5	1.94 27.89±0.64 / 10	1.91 29.68±0.64 / 11	1.97 26.39±0.64 / 12	1.96 26.79±0.64 / 11
NL (1516) Netherlands	1.96 27.04±0.37 / 8	1.84 32.85±0.37 / 3	1.80 35.19±0.37 / 3	1.93 28.69±0.37 / 2	1.89 30.41±0.37 / 2
PT (1502) Portugal	1.97 26.36±0.37 / 11	1.97 26.70±0.37 / 13	1.93 28.73±0.37 / 13	1.98 25.77±0.37 / 15	1.98 26.13±0.37 / 13
UK (1514) United Kingdom	1.91 29.69±0.37 / 1	1.83 33.55±0.37 / 1	1.81 34.51±0.37 / 4	1.94 28.20±0.37 / 3	1.93 28.63±0.37 / 4
FI (1496) Finland	1.96 27.04±0.37 / 9	1.83 33.46±0.37 / 2	1.74 37.77±0.37 / 1	1.92 29.11±0.37 / 1	1.89 30.51±0.37 / 1
SE (1574) Sweden	1.91 29.57±0.36 / 2	1.89 30.72±0.36 / 4	1.78 36.18±0.36 / 2	1.94 27.89±0.36 / 4	1.91 29.67±0.36 / 3
AT (1526) Austria	1.97 26.28±0.37 / 12	1.97 26.44±0.37 / 14	1.91 29.65±0.37 / 12	1.95 27.69±0.37 / 5	1.94 28.11±0.37 / 5

Table 5: Sheet Q. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Social environment				
	Q3206 Awareness of cases of age discrinimation	Q3207 Awareness of cases of discrinimation linked to nationality	Q3208 Awareness of cases of discrinimation linked to ethnic back-ground/race	Q3209 Awareness of cases of discrinimation linked to disability	Q3210 Awareness of cases of discrinimation linked to sexual orientation
	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No	1: Yes 2: No
BE (1523) Belgium	1.94 27.92±0.37 / 5	1.95 27.66±0.37 / 5	1.94 27.76±0.37 / 7	1.98 26.05±0.37 / 6	1.97 26.31±0.37 / 4
DK (1506) Denmark	1.96 27.22±0.37 / 7	1.95 27.26±0.37 / 10	1.94 28.02±0.37 / 5	1.99 25.66±0.37 / 11	1.99 25.43±0.37 / 12
DE (1540) Germany	1.96 27.08±0.37 / 8	1.97 26.49±0.37 / 11	1.98 25.78±0.37 / 14	1.99 25.49±0.37 / 14	1.99 25.42±0.37 / 13
EL (1500) Greece	1.96 27.00±0.37 / 9	1.95 27.53±0.37 / 8	1.95 27.50±0.37 / 8	1.99 25.67±0.37 / 10	1.97 26.27±0.37 / 5
IT (1500) Italy	1.98 26.00±0.37 / 15	1.99 25.63±0.37 / 15	1.99 25.63±0.37 / 15	1.99 25.50±0.37 / 13	1.99 25.53±0.37 / 11
ES (1500) Spain	1.97 26.50±0.37 / 12	1.98 26.03±0.37 / 14	1.98 26.10±0.37 / 13	1.99 25.60±0.37 / 12	1.99 25.40±0.37 / 14
FR (1502) France	1.96 26.80±0.37 / 11	1.95 27.63±0.37 / 6	1.94 27.96±0.37 / 6	1.98 25.97±0.37 / 7	1.98 26.00±0.37 / 6
IR (1502) Ireland	1.96 26.96±0.37 / 10	1.97 26.40±0.37 / 12	1.97 26.33±0.37 / 12	1.98 25.83±0.37 / 9	1.99 25.70±0.37 / 7
LU (502) Luxemburg	1.98 26.20±0.64 / 14	1.93 28.39±0.64 / 2	1.96 27.19±0.64 / 9	1.98 25.90±0.64 / 8	1.99 25.60±0.64 / 10
NL (1516) Netherlands	1.94 28.00±0.37 / 4	1.93 28.36±0.37 / 3	1.93 28.50±0.37 / 1	1.97 26.75±0.37 / 2	1.96 26.91±0.37 / 2
PT (1502) Portugal	1.97 26.50±0.37 / 13	1.97 26.30±0.37 / 13	1.97 26.53±0.37 / 11	1.99 25.33±0.37 / 15	1.99 25.40±0.37 / 15
UK (1514) United Kingdom	1.94 28.04±0.37 / 3	1.95 27.48±0.37 / 9	1.94 28.07±0.37 / 4	1.98 26.12±0.37 / 5	1.97 26.59±0.37 / 3
FI (1496) Finland	1.85 32.62±0.37 / 1	1.94 28.21±0.37 / 4	1.94 28.07±0.37 / 3	1.95 27.31±0.37 / 1	1.96 26.94±0.37 / 1
SE (1574) Sweden	1.93 28.30±0.36 / 2	1.93 28.68±0.36 / 1	1.94 28.24±0.36 / 2	1.97 26.30±0.36 / 3	1.99 25.70±0.36 / 8
AT (1526) Austria	1.94 27.92±0.37 / 6	1.95 27.56±0.37 / 7	1.96 26.90±0.37 / 10	1.97 26.28±0.37 / 4	1.99 25.69±0.37 / 9

Table 5: Sheet R. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Career prospects (training)		Work–Life balance		
	Q2406 Learning new things at work	Q29 Professional training in past 12 months	EF2001 Voluntary or charitable activity	EF2002 Political/trade union activity	EF2003 Caring for and educating children
	1: Yes 2: No	1: No 2: 1–2 days 3: 3–7 days 4: 8–14 days 5: 15–30 days 6: 31–90 days 7: >90 days	1: everyday 2: every 2 days 3: every week 4: every months 5: every year 6: never	1: everyday 2: every 2 days 3: every week 4: every months 5: every year 6: never	1: everyday 2: every 2 days 3: every week 4: every months 5: every year 6: never
BE (1523) Belgium	1.26 61.93±0.37 / 6	1.75 19.37±0.09 / 8	5.44 17.66±0.12 / 9	5.81 11.54±0.12 / 9	3.61 48.11±0.12 / 7
DK (1506) Denmark	1.13 68.56±0.37 / 2	2.33 29.19±0.09 / 1	5.39 18.50±0.12 / 7	5.78 11.96±0.12 / 7	3.42 51.28±0.12 / 3
DE (1540) Germany	1.33 58.73±0.37 / 11	1.67 18.26±0.09 / 10	5.39 18.52±0.12 / 6	5.79 11.85±0.12 / 8	3.78 45.28±0.12 / 11
EL (1500) Greece	1.52 48.90±0.37 / 15	1.37 12.45±0.09 / 14	5.65 14.12±0.12 / 13	5.74 12.67±0.12 / 5	3.87 43.90±0.12 / 15
IT (1500) Italy	1.27 61.37±0.37 / 9	1.58 16.30±0.09 / 11	5.52 16.29±0.12 / 12	5.74 12.71±0.12 / 4	3.04 57.67±0.12 / 1
ES (1500) Spain	1.36 57.07±0.37 / 13	1.56 15.33±0.09 / 13	5.68 13.69±0.12 / 15	5.81 11.46±0.12 / 10	3.76 45.66±0.12 / 9
FR (1502) France	1.27 61.62±0.37 / 8	1.58 16.25±0.09 / 12	5.51 16.52±0.12 / 11	5.86 10.66±0.12 / 12	3.61 48.21±0.12 / 6
IR (1502) Ireland	1.33 58.36±0.37 / 12	1.74 19.48±0.09 / 7	5.34 19.29±0.12 / 5	5.86 10.71±0.12 / 11	3.56 49.07±0.12 / 4
LU (502) Luxemburg	1.25 62.45±0.64 / 5	1.75 19.20±0.16 / 9	5.17 22.24±0.21 / 3	5.67 13.84±0.21 / 1	3.76 45.58±0.21 / 10
NL (1516) Netherlands	1.22 64.22±0.37 / 4	2.05 25.00±0.09 / 4	5.01 24.78±0.12 / 1	5.91 9.77±0.12 / 13	3.32 53.08±0.12 / 2
PT (1502) Portugal	1.46 52.06±0.37 / 14	1.27 10.80±0.09 / 15	5.65 14.10±0.12 / 14	5.94 9.28±0.12 / 15	3.59 48.48±0.12 / 5
UK (1514) United Kingdom	1.26 61.89±0.37 / 7	2.08 25.46±0.09 / 3	5.48 17.02±0.12 / 10	5.93 9.49±0.12 / 14	3.83 44.42±0.12 / 13
FI (1496) Finland	1.10 69.75±0.37 / 1	2.07 25.99±0.09 / 2	5.28 20.29±0.12 / 4	5.74 12.62±0.12 / 6	3.83 44.44±0.12 / 12
SE (1574) Sweden	1.17 66.45±0.36 / 3	1.96 23.55±0.09 / 5	5.08 23.72±0.12 / 2	5.71 13.12±0.12 / 3	3.84 44.32±0.12 / 14
AT (1526) Austria	1.28 60.88±0.37 / 10	1.81 20.32±0.09 / 6	5.40 18.33±0.12 / 8	5.70 13.34±0.12 / 2	3.69 46.90±0.12 / 8

Table 5: Sheet S. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Work–Life balance				
	EF2004 Cooking	EF2005 Housework	EF2006 Caring for eldery/disabled relatives	EF2007 Taking training or educational course	EF2008 Sporting activity
	1: everyday 2: every 2 days 3: every week 4: every months 5: every year 6: never	1: everyday 2: every 2 days 3: every week 4: every months 5: every year 6: never	1: everyday 2: every 2 days 3: every week 4: every months 5: every year 6: never	1: everyday 2: every 2 days 3: every week 4: every months 5: every year 6: never	1: everyday 2: every 2 days 3: every week 4: every months 5: every year 6: never
BE (1523) Belgium	2.92 59.69±0.12 / 9	3.03 57.90±0.12 / 10	5.56 15.64±0.12 / 13	5.39 18.43±0.12 / 6	4.50 33.25±0.12 / 10
DK (1506) Denmark	2.24 71.07±0.12 / 3	2.33 69.48±0.12 / 3	5.68 13.63±0.12 / 14	5.14 22.59±0.12 / 4	4.39 35.14±0.12 / 7
DE (1540) Germany	3.01 58.11±0.12 / 11	2.75 62.55±0.12 / 7	4.91 26.48±0.12 / 1	5.42 17.92±0.12 / 10	4.30 36.71±0.12 / 6
EL (1500) Greece	3.83 44.47±0.12 / 15	3.78 45.33±0.12 / 15	5.43 17.77±0.12 / 8	5.72 12.96±0.12 / 15	5.19 21.86±0.12 / 14
IT (1500) Italy	3.46 50.73±0.12 / 14	3.54 49.41±0.12 / 14	5.05 24.23±0.12 / 2	5.51 16.50±0.12 / 12	4.55 32.58±0.12 / 11
ES (1500) Spain	3.31 53.20±0.12 / 13	3.19 55.16±0.12 / 11	5.50 16.67±0.12 / 12	5.40 18.41±0.12 / 7	4.58 31.92±0.12 / 12
FR (1502) France	2.71 63.15±0.12 / 6	3.01 58.20±0.12 / 9	5.76 12.28±0.12 / 15	5.56 15.66±0.12 / 13	4.64 31.06±0.12 / 13
IR (1502) Ireland	2.77 62.12±0.12 / 7	2.83 61.14±0.12 / 8	5.36 18.96±0.12 / 5	5.43 17.87±0.12 / 11	4.46 33.97±0.12 / 8
LU (502) Luxemburg	3.19 55.11±0.21 / 12	3.45 50.80±0.21 / 13	5.44 17.66±0.21 / 9	5.42 17.93±0.21 / 9	4.25 37.48±0.21 / 5
NL (1516) Netherlands	2.60 64.97±0.12 / 5	2.47 67.15±0.12 / 4	5.36 19.01±0.12 / 4	4.94 25.98±0.12 / 1	4.21 38.25±0.12 / 4
PT (1502) Portugal	2.97 58.75±0.12 / 10	3.23 54.44±0.12 / 12	5.46 17.34±0.12 / 11	5.64 14.29±0.12 / 14	5.35 19.13±0.12 / 15
UK (1514) United Kingdom	2.46 67.42±0.12 / 4	2.58 65.29±0.12 / 6	5.39 18.47±0.12 / 7	5.40 18.34±0.12 / 8	4.49 33.42±0.12 / 9
FI (1496) Finland	2.16 72.40±0.12 / 2	2.00 75.02±0.12 / 1	5.21 21.43±0.12 / 3	5.09 23.45±0.12 / 2	3.05 57.54±0.12 / 1
SE (1574) Sweden	2.14 72.67±0.12 / 1	2.15 72.52±0.12 / 2	5.39 18.52±0.12 / 6	5.10 23.26±0.12 / 3	3.89 43.46±0.12 / 2
AT (1526) Austria	2.90 60.06±0.12 / 8	2.58 65.35±0.12 / 5	5.45 17.55±0.12 / 10	5.29 20.21±0.12 / 5	4.01 41.48±0.12 / 3

Table 5: Sheet T. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Work–Life balance		Subjective estimations		
	EF2009 Cultural activity	EF2010 Leisure activity	Q13 Information about risks	Q34 Health risks at work	Q37 Possibility to do the same work after 60
	1: everyday 2: every 2 days 3: every week 4: every months 5: every year 6: never	1: everyday 2: every 2 days 3: every week 4: every months 5: every year 6: never	1: Full 2: Rather full 3: Rather little 4: Little	1: Yes 2: No	1: Yes 2: No
BE (1523) Belgium	4.88 26.99±0.12 / 10	3.59 48.52±0.12 / 9	1.73 69.16±0.18 / 8	1.74 62.10±0.37 / 9	1.34 57.76±0.37 / 11
DK (1506) Denmark	4.77 28.76±0.12 / 6	4.03 41.10±0.12 / 14	1.53 74.25±0.19 / 1	1.77 63.71±0.37 / 5	1.28 60.99±0.37 / 6
DE (1540) Germany	4.79 28.50±0.12 / 7	3.49 50.19±0.12 / 6	1.62 72.00±0.18 / 5	1.78 64.09±0.37 / 4	1.22 63.80±0.37 / 2
EL (1500) Greece	5.19 21.91±0.12 / 13	3.70 46.69±0.12 / 11	1.92 64.62±0.19 / 14	1.54 52.10±0.37 / 15	1.37 56.67±0.37 / 13
IT (1500) Italy	4.82 27.92±0.12 / 9	3.70 46.70±0.12 / 10	1.86 65.93±0.19 / 13	1.76 62.93±0.37 / 7	1.22 64.23±0.37 / 1
ES (1500) Spain	4.51 33.18±0.12 / 1	3.12 56.29±0.12 / 2	1.83 66.65±0.19 / 12	1.64 56.77±0.37 / 13	1.26 62.03±0.37 / 4
FR (1502) France	4.66 30.71±0.12 / 2	3.82 44.65±0.12 / 12	1.78 67.99±0.19 / 11	1.71 60.62±0.37 / 12	1.37 56.49±0.37 / 14
IR (1502) Ireland	5.18 22.07±0.12 / 12	3.47 50.50±0.12 / 4	1.58 72.95±0.19 / 3	1.78 64.18±0.37 / 3	1.28 60.85±0.37 / 7
LU (502) Luxemburg	4.79 28.42±0.21 / 8	3.54 49.27±0.21 / 8	1.74 69.07±0.32 / 9	1.71 60.66±0.64 / 11	1.30 59.86±0.64 / 9
NL (1516) Netherlands	4.95 25.77±0.12 / 11	2.95 59.11±0.12 / 1	1.76 68.44±0.19 / 10	1.77 63.39±0.37 / 6	1.30 60.16±0.37 / 8
PT (1502) Portugal	5.32 19.61±0.12 / 14	4.60 31.59±0.12 / 15	2.02 62.03±0.19 / 15	1.59 54.66±0.37 / 14	1.38 56.13±0.37 / 15
UK (1514) United Kingdom	5.34 19.33±0.12 / 15	3.49 50.24±0.12 / 5	1.56 73.50±0.19 / 2	1.72 61.13±0.37 / 10	1.26 61.96±0.37 / 5
FI (1496) Finland	4.73 29.55±0.12 / 5	3.95 42.56±0.12 / 13	1.70 69.90±0.19 / 7	1.75 62.73±0.37 / 8	1.35 57.45±0.37 / 12
SE (1574) Sweden	4.68 30.28±0.12 / 4	3.54 49.33±0.12 / 7	1.69 70.22±0.18 / 6	1.95 72.74±0.36 / 1	1.33 58.51±0.36 / 10
AT (1526) Austria	4.68 30.34±0.12 / 3	3.24 54.29±0.12 / 3	1.59 72.72±0.18 / 4	1.79 64.42±0.37 / 2	1.23 63.66±0.37 / 3

Table 5: Sheet U. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Subjective estimations			
	Q17B Appreciation of the number of working hours	Q20 Compatibility of working hours with family and social commitments	Q28R Matching working demands	Q38 Satisfaction with working conditions
	1: No 2: Yes	1: Very good 2: Rather good 3: Rather bad 4: Bad	1: Yes 2: No	1: Yes 2: Rather yes 3: Rather no 4: No
BE (1523) Belgium	1.92 71.03±0.37 / 12	1.73 69.13±0.18 / 4	1.13 68.60±0.37 / 4	1.80 67.47±0.18 / 6
DK (1506) Denmark	1.95 72.41±0.37 / 7	1.47 75.76±0.19 / 1	1.08 71.08±0.37 / 1	1.51 74.87±0.19 / 1
DE (1540) Germany	1.96 72.92±0.37 / 5	1.86 66.02±0.18 / 10	1.13 68.41±0.37 / 5	1.89 65.15±0.18 / 10
EL (1500) Greece	1.97 73.73±0.37 / 1	2.41 52.18±0.19 / 15	1.14 67.80±0.37 / 6	2.26 55.95±0.19 / 15
IT (1500) Italy	1.96 73.20±0.37 / 2	2.19 57.77±0.19 / 14	1.18 65.87±0.37 / 13	2.02 61.98±0.19 / 12
ES (1500) Spain	1.91 70.70±0.37 / 13	2.13 59.17±0.19 / 13	1.14 67.77±0.37 / 7	2.07 60.70±0.19 / 13
FR (1502) France	1.93 71.37±0.37 / 11	1.88 65.58±0.19 / 11	1.16 67.11±0.37 / 11	2.02 62.12±0.19 / 11
IR (1502) Ireland	1.94 72.04±0.37 / 9	1.69 70.36±0.19 / 2	1.18 66.18±0.37 / 12	1.61 72.29±0.19 / 2
LU (502) Luxemburg	1.96 72.81±0.64 / 6	1.77 68.28±0.32 / 7	1.19 65.64±0.64 / 14	1.87 65.64±0.32 / 8
NL (1516) Netherlands	1.89 69.46±0.37 / 15	1.76 68.52±0.19 / 6	1.15 67.35±0.37 / 9	1.64 71.42±0.19 / 3
PT (1502) Portugal	1.96 72.94±0.37 / 4	2.04 61.43±0.19 / 12	1.11 69.57±0.37 / 3	2.08 60.54±0.19 / 14
UK (1514) United Kingdom	1.93 71.47±0.37 / 10	1.76 68.61±0.19 / 5	1.19 65.39±0.37 / 15	1.74 69.07±0.19 / 5
FI (1496) Finland	1.94 72.13±0.37 / 8	1.83 66.73±0.19 / 9	1.08 70.86±0.37 / 2	1.82 67.03±0.19 / 7
SE (1574) Sweden	1.89 69.70±0.36 / 14	1.83 66.82±0.18 / 8	1.15 67.60±0.36 / 8	1.88 65.52±0.18 / 9
AT (1526) Austria	1.96 73.03±0.37 / 3	1.70 69.90±0.18 / 3	1.16 67.17±0.37 / 10	1.70 69.95±0.18 / 4

Table 5: Sheet V. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Summary indicators				
	Physical environment	Health	Time factors	Stressing factors	Independence
	Conditional %	Conditional %	Conditional %	Conditional %	Conditional %
BE (1523) Belgium	82.87±0.03 / 4	66.21±0.07 / 7	78.55±0.07 / 8	54.96±0.08 / 3	65.21±0.13 / 6
DK (1506) Denmark	84.92±0.03 / 1	66.25±0.07 / 6	82.69±0.07 / 2	53.94±0.08 / 6	74.99±0.13 / 1
DE (1540) Germany	82.53±0.03 / 5	67.08±0.07 / 4	81.12±0.06 / 4	54.41±0.08 / 5	61.18±0.13 / 14
EL (1500) Greece	72.22±0.03 / 15	60.35±0.07 / 15	68.63±0.07 / 15	51.92±0.08 / 11	63.26±0.13 / 10
IT (1500) Italy	84.52±0.03 / 2	65.45±0.07 / 9	77.52±0.07 / 9	55.53±0.08 / 2	68.81±0.13 / 3
ES (1500) Spain	76.99±0.03 / 13	63.59±0.07 / 12	74.38±0.07 / 14	53.79±0.08 / 7	61.52±0.13 / 13
FR (1502) France	77.12±0.03 / 12	64.00±0.07 / 11	77.39±0.07 / 10	53.32±0.08 / 8	63.22±0.13 / 11
IR (1502) Ireland	80.00±0.03 / 10	70.21±0.07 / 1	76.45±0.07 / 13	51.39±0.08 / 12	64.76±0.13 / 8
LU (502) Luxemburg	80.93±0.06 / 7	64.99±0.12 / 10	81.30±0.11 / 3	54.76±0.14 / 4	61.83±0.23 / 12
NL (1516) Netherlands	81.96±0.03 / 6	67.31±0.07 / 3	83.00±0.07 / 1	52.78±0.08 / 10	68.74±0.13 / 4
PT (1502) Portugal	80.39±0.03 / 9	66.07±0.07 / 8	79.99±0.07 / 6	58.25±0.08 / 1	59.40±0.13 / 15
UK (1514) United Kingdom	79.17±0.03 / 11	67.07±0.07 / 5	76.66±0.07 / 12	47.77±0.08 / 15	65.88±0.13 / 5
FI (1496) Finland	75.90±0.03 / 14	62.01±0.07 / 14	76.70±0.07 / 11	48.24±0.08 / 14	64.87±0.13 / 7
SE (1574) Sweden	80.39±0.03 / 8	63.09±0.07 / 13	78.70±0.06 / 7	50.99±0.08 / 13	70.22±0.13 / 2
AT (1526) Austria	83.77±0.03 / 3	68.34±0.07 / 2	80.04±0.07 / 5	53.19±0.08 / 9	63.73±0.13 / 9

Table 5: Sheet W. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Summary indicators			
	Collectivity	Social environment	Carrier (training)	Work–life balance
	Conditional %	Conditional %	Conditional %	Conditional %
BE (1523) Belgium	56.60±0.21 / 11	11.14±0.08 / 6	36.41±0.19 / 7	30.53±0.04 / 10
DK (1506) Denmark	67.42±0.21 / 5	11.66±0.08 / 5	48.36±0.19 / 1	33.62±0.04 / 5
DE (1540) Germany	60.52±0.21 / 9	9.14±0.08 / 11	33.27±0.19 / 12	32.73±0.04 / 6
EL (1500) Greece	50.38±0.22 / 14	9.09±0.08 / 12	21.89±0.19 / 15	23.80±0.04 / 15
IT (1500) Italy	50.76±0.22 / 13	7.65±0.08 / 13	33.76±0.19 / 11	30.17±0.04 / 12
ES (1500) Spain	49.38±0.22 / 15	7.64±0.08 / 14	29.93±0.19 / 13	30.27±0.04 / 11
FR (1502) France	57.50±0.22 / 10	10.01±0.08 / 9	33.91±0.19 / 9	29.73±0.04 / 13
IR (1502) Ireland	71.26±0.22 / 2	10.76±0.08 / 7	33.88±0.19 / 10	31.48±0.04 / 7
LU (502) Luxemburg	68.53±0.37 / 4	10.13±0.14 / 8	36.65±0.33 / 6	30.60±0.07 / 9
NL (1516) Netherlands	69.77±0.21 / 3	14.07±0.08 / 1	42.16±0.19 / 4	36.54±0.04 / 3
PT (1502) Portugal	51.91±0.22 / 12	6.13±0.08 / 15	22.99±0.19 / 14	24.44±0.04 / 14
UK (1514) United Kingdom	74.20±0.21 / 1	12.79±0.08 / 4	40.80±0.19 / 5	31.21±0.04 / 8
FI (1496) Finland	62.28±0.22 / 8	14.07±0.08 / 2	46.91±0.19 / 2	37.92±0.04 / 1
SE (1574) Sweden	67.34±0.21 / 6	13.15±0.08 / 3	42.73±0.19 / 3	36.95±0.04 / 2
AT (1526) Austria	66.71±0.21 / 7	9.63±0.08 / 10	36.33±0.19 / 8	34.14±0.04 / 4

Table 5: Sheet X. Idicators of quality of work for European countries and their scores in conditional % / ranks for 21703 employed

	Summary indicators		
	Subjective satisfaction	Hourly earnings	Aggregate working conditions
	Conditional %	in minimal earnings observed	Conditional %
BE (1523) Belgium	77.12±0.12 / 9	10.63±0.11 / 5	53.02±0.05 / 7
DK (1506) Denmark	83.67±0.12 / 1	9.74±0.11 / 10	55.20±0.05 / 2
DE (1540) Germany	78.80±0.11 / 4	9.91±0.12 / 9	53.05±0.05 / 5
EL (1500) Greece	67.19±0.12 / 15	9.52±0.09 / 11	47.09±0.05 / 15
IT (1500) Italy	73.98±0.12 / 11	11.33±0.11 / 2	52.44±0.05 / 9
ES (1500) Spain	72.07±0.12 / 13	10.11±0.12 / 7	49.91±0.05 / 14
FR (1502) France	73.83±0.12 / 12	9.17±0.10 / 13	50.97±0.05 / 12
IR (1502) Ireland	80.32±0.12 / 3	10.53±0.10 / 6	53.04±0.05 / 6
LU (502) Luxemburg	76.34±0.20 / 10	10.65±0.17 / 4	52.67±0.08 / 8
NL (1516) Netherlands	77.94±0.12 / 7	10.86±0.16 / 3	55.21±0.05 / 1
PT (1502) Portugal	70.54±0.12 / 14	9.15±0.09 / 14	50.86±0.05 / 13
UK (1514) United Kingdom	78.50±0.12 / 5	11.42±0.15 / 1	52.39±0.05 / 10
FI (1496) Finland	77.49±0.12 / 8	8.76±0.13 / 15	51.86±0.05 / 11
SE (1574) Sweden	78.50±0.11 / 6	10.08±0.11 / 8	53.37±0.05 / 4
AT (1526) Austria	80.79±0.12 / 2	9.26±0.09 / 12	53.83±0.05 / 3

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