



# Quality Assessment of the third European Company Survey

## Final Report

*This report presents the main results of the independent Quality Assessment of the third ECS. The assessment covers both the procedure and the output of the survey, the latter being structured according to the five output quality dimensions established in the quality framework of the ESS: relevance, accuracy (including sampling and non-sampling errors), timeliness and punctuality, accessibility and clarity, and coherence and comparability. The report completes the existing metadata of the third ECS and facilitates an appropriate understanding and application of the results of this survey. The quality assessment is based on the analysis of quality control information collected during the survey as well as primary analysis of data, paradata, metadata and dissemination products of the third ECS. The findings of this assessment support a series of recommendations on implementation strategy, methodology and management of the ECS that could be applied to enhance the quality of future waves of the survey.*

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*Note: This report has not been subject to the standard Eurofound editorial procedure. It reflects the authors' opinions but not necessarily those of Eurofound.*

### Acronyms used

|           |  |
|-----------|--|
| CoP       | Code of practice   |
| ECS       | European Company Survey  |
| ER        | Employee representative  |
| ESS       | European Statistical System  |
| ESWT      | European Survey on Working Time and Work-life Balance                          |
| Eurofound | European Foundation for the Improvement of Working and Living Conditions       |
| EWCS      | European Working Conditions Survey   |
| GSBPM     | Generic statistical business process model for quality and metadata management |
| MM        | Management   |
| MS        | Member States  |
| NSI       | National statistical institute   |
| QAF       | Quality assurance framework  |
| ToR       | Terms of reference   |

## Executive summary

### Aims

The Third European Company Survey focuses on work organisation, employee participation, workplace innovation, and social dialogue in workplaces. The survey provides information at an establishment level. It has been conducted in all 28 Member States of the EU (including Croatia, which was then a candidate country), the former Yugoslav Republic of Macedonia, Montenegro, Iceland, and Turkey. Due to the strong impact, at EU level, of the surveys carried out by Eurofound, the Agency has expressed its continuing commitment to quality. As a key procedure within Eurofound's quality management process, an external quality assessment has been carried out to make available information on the quality of the third ECS to Eurofound stakeholders and the research community.

The purpose of this quality assessment is twofold. Firstly, it provides an independent quality assessment of outputs and processes of the third ECS that completes the metadata, and facilitates an appropriate understanding and application of the results of the survey. Secondly, it helps Eurofound to identify how to improve the quality of the survey in future waves of the ECS.

### Methodology

The main inputs used for the assessment are:

- exhaustive quality control information on the third ECS collected during all stages (design phase, data collection, data processing and reporting) to enable real-time quality control;
- third ECS data, paradata and metadata;
- ECS dissemination products;
- other comparable European surveys.

This information had been assessed against the quality standards of the European Statistical System (ESS) and the Quality assurance framework for the third ECS.

Quality assessment of the third ECS includes the analysis of both the survey procedure and the survey output, the latter being assessed according to five output quality components: relevance, accuracy, timeliness and punctuality, accessibility and clarity, and coherence and comparability.

### Findings

#### *Assessment of third ECS procedure*

The survey contractor complied with the requirements in the ToR. All the modifications or adaptations in the survey processes had been previously agreed with Eurofound and were aimed at tackling potential deviations from the expected results. It should be highlighted that the third ECS introduced an improved translation procedure ensuring concept comparability among countries. Additionally, a big effort has been made to implement the recommendations on the sampling frames and non-response from the previous wave.

#### *Assessment of third ECS output*

**Relevance:** The ECS is the only European survey that provides policy makers, social agents and scientific researcher with information on work organisation, workplace innovation, employee participation and social dialogue at an establishment level. This is information that is not available in other statistical operations within the ESS and is relevant to enhance policy-making.

**Accuracy:** This quality dimension has been assessed through the analysis of both sampling and non-sampling errors, as well as the impact of the methodology to deal with them. Sampling errors for dichotomous items are in general lower than 5%, with a significance level of 95%. As regards non-sampling error, the complexity of finding reliable sampling frames at an establishment level may generate some coverage difficulties. Considering the third ECS is a company survey, and is not compulsory, the unit non-response rate is, in general, high. However, once an establishment began to

participate in the survey, no relevant problems of item non-response were detected. The information included in the sampling frame allowed for a proper computation of both design weights and establishment-proportional calibration weights in most of the cases. However, due to the limitations of the sampling frames for the public sector, approximated weights were considered for this sector.

**Timeliness and punctuality:** The assessment of this quality dimension is highly positive, with a difference between reference and dissemination dates of less than six months. The dissemination calendar was announced in advance and deadlines achieved. In the current, highly dynamic economic environment, such a tight schedule made the ECS highly relevant. The importance of this should be considered when analysing the trade-off between this quality dimension and others, such as accuracy.

**Accessibility and clarity:** Eurofound has successfully met the aim of 'enabling the users to access the survey findings and data easily and offering them the necessary background information for interpreting the findings'. The third ECS dissemination products are customised to appeal to the different segments of users, including a whole range of formats from microdata dissemination for researchers and expert users, to interactive and audio-visual tools, as well as analytical reports. Eurofound provides all the dissemination products online, with clear instructions, and adds direct links to the location of the information on its website, making the experience easy and user-friendly.

**Coherence and comparability:** The team-based translation methodology implemented in the third ECS enhances the coherence and comparability of the versions of the questionnaire applied in each country. However, the difficulties of finding appropriate sampling frames at an establishment level require the use of frames that are not completely harmonised between different countries, especially for the public sector. Since no official statistical information on the issues covered by the ECS is available at an establishment level, the coherence of the third ECS with other sources is difficult to check.

## Conclusions and recommendations

The quality assessment of the procedure and the output of the third ECS are quite positive. However, there are some specific actions that could improve the quality of future ECS.

**Revision of sampling approach.** A key requirement of the ECS is to provide information at an establishment level. However, since most of the information within the ESS is presented at a company level, this requirement generates difficulties in the selection of sampling frames and may affect the accuracy, coherence and comparability of the third ECS. A revision of the sampling design could help to cope with some of these difficulties. A clear distinction between sampling units (companies) and information units (establishments) could be introduced. Considering that the establishments within a given company should be more homogeneous than establishments within different companies, a stratified two-stage cluster sampling could be implemented. The above distinction between sampling and information units could help to improve other methodological issues of the third ECS, such as harmonisation of sampling frames and weighting procedures.

**Reduction of non-response and refusal rates.** As most non-response corresponds to refusals, special attention should be paid to the pre-survey promotion, contact with selected respondents, and interview training. Some additional incentives to answer the questionnaire could be considered, such as sending an individual report – to be produced automatically from the ECS database – with a basic benchmarking of the responding company/establishment with respect to the aggregate results for its stratum (guaranteeing confidentiality issues).

**Enhancing the harmonisation of the definitions of sampling units and codifications among countries and with ESS standards.** This issue is especially relevant for the definitions involved in the stratification of the sample (company, establishment, activity and size) and those for the public sector. Harmonisation of the questions and answering categories of the ECS is a more complex issue, the reason being the trade-off between comparability with other surveys and the relevance of ECS, which is enhanced by its flexibility in covering specific, relevant, issues. In those concepts and definitions where the ECS might need to use non-harmonised definitions, a correspondence to allow comparison of the ECS and other ESS sources is recommended.

## Introduction

DevStat - Servicios de Consultoría Estadística S.L. (DevStat, hereinafter the consultant) has been awarded the contract for the quality assessment of the third European Company Survey by the European Foundation for the Improvement of Living and Working Conditions (Eurofound).

Quality assessment is one of the elements of quality management frameworks. It takes existing information on quality and uses this as an input to:

- evaluate the statistical process and its outputs against pre-defined standards;
- identify strengths and weaknesses;
- derive the actions required for improvement.

Following this approach, the quality assessment of the third ECS is structured according to these two complementary parts (process and output). The quality of outputs is strongly related to the quality of processes. This quality assessment report presents the findings derived from the assessment of the third ECS in all 32 countries surveyed (EU28plus four candidate countries – the Former Yugoslav Republic of Macedonia , Iceland, Montenegro and Turkey),<sup>1</sup> but also recommendations for improvement and specific quality improvement objectives.

The report is structured as follows.

**Chapter 1: Quality assessment:** This chapter introduces some general issues about quality assurance and presents the distinction between quality assessment of the statistical output and quality assessment of the survey process.

**Chapter 2: Quality assessment of the main stages in the survey process:** The second chapter provides the assessment of the third ECS survey processes, based on a breakdown of phases proposed by the consultant. It ends with a series of conclusions that feed into the fourth chapter, including the recommended improvements.

**Chapter 3: Quality assessment of the statistical output:** The third chapter assesses the quality of the output of the third ECS against the five output quality dimensions set out in the ESS. The main conclusions resulting from the output assessment are included at the end of this chapter.

**Chapter 4: Recommendations:** Chapters 1 to 3 are intended to construct a comprehensive assessment framework, by presenting the conceptual approach of quality assessment (Chapter 1), and by evaluating the development and outputs of the third ECS. This assessment framework enables the formulation of recommendations and the identification of improvement opportunities, which are gathered in this fourth chapter.

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<sup>1</sup> Croatia is included among the EU Member States, following its recent integration to the EU, although during the preparation of the survey and fieldwork period it was a candidate country.

## Chapter 1: Quality assessment

Due to the strong impact, at EU level, of the surveys carried out by Eurofound, the foundation has expressed its continuing commitment to quality. Although the statistical processes carried out by Eurofound are not within the scope of the European Statistical System (ESS), Eurofound aims to ensure that it produces high quality data by complying with commonly agreed standards for survey methodology and procedures. Building on the ESS quality standards and bringing together elements from standards set by best practices in the field of cross-national comparative surveys, Eurofound has developed a tailored quality assurance framework for the third European Company Survey (ECS). This pledge of high quality statistical production is at the heart of Eurofound's strategic objective for 2013–2016: 'to provide high-quality, timely and policy-relevant knowledge as input to better informed policies in four priority areas'.<sup>2</sup>

### Quality definition in statistics

International standards definitions of quality are quite broad and define quality mainly related to the output. ISO 9000 defines quality as the 'Degree to which a set of inherent characteristics fulfils requirements', while ISO 8402:1986 defines it as 'The totality of features and characteristics of a product or services that bear on its ability to satisfy stated or implied needs'. These limitations have determined the need to develop a more precise definition of statistical quality in the ESS. This was provided in the ESS Working Group on Assessment of Quality in Statistics<sup>3</sup> and, further on, in a formal status, in the subsequent European Statistics Code of Practice (CoP).

For the evaluation of the statistical process of the third ECS and its outputs, the consultant considers, in this report, the following quality components as described in the ESS Handbook for Quality Reports, 2009 edition:<sup>4</sup>

#### *Process Quality Components*

- *Effectiveness*: leads to outputs of good quality;
- *Efficiency*: leads to the production of outputs at minimum costs both for the producer and for the respondents of the original data.

For individual statistical processes (e.g. surveys) these broad process quality components are reformulated as:

- *Sound methodology*, including adequate tools, procedures and expertise;
- *Appropriate statistical procedures*, implemented from design through data collection to data validation and evaluation;
- *Non-excessive burden on respondents* (the reporting burden is in proportion to the needs of the users and should not be excessive);
- *Cost effectiveness*.

#### *Output Quality Components*

- *Relevance*: outputs meet current and potential users' needs;

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<sup>2</sup> Eurofound (2012), *From crisis to recovery: Four-year work programme 2013–2016*, <http://www.eurofound.europa.eu/pubdocs/2012/52/en/1/EF1252EN.pdf>

<sup>3</sup> Doc. Eurostat/A4/Quality/03/General/Definition, Working Group 'Assessment of quality in statistics', Sixth meeting, Luxembourg 2-3 October 2003  
<http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/documents/ess%20quality%20definition.pdf>

<sup>4</sup> ESS Handbook for Quality Reports, 2009 edition, Eurostat  
[http://epp.eurostat.ec.europa.eu/portal/page/portal/ver-1/quality/documents/EHQR\\_FINAL.pdf](http://epp.eurostat.ec.europa.eu/portal/page/portal/ver-1/quality/documents/EHQR_FINAL.pdf)

- *Accuracy and Reliability*: outputs accurately and reliably portray reality;
- *Timeliness and Punctuality*: outputs are disseminated in a timely and punctual manner;
- *Accessibility and Clarity*: outputs are presented in a clear and understandable form, disseminated in a suitable and convenient manner, made available and accessible on an impartial basis, and accompanied by supporting metadata and guidance;
- *Coherence and Comparability*: coherence meaning that outputs are mutually consistent and can be used in combination, while comparability means that outputs referring to the same data items are mutually consistent and can be used for comparisons across time, region, or any other relevant domain.

It is important to note, from the beginning, that the quality of outputs is strongly related to the quality of processes.

There is no standard definition for process quality, although the use of key process variables has been recommended for its assessment.

Key process variables are usually referred to as those variables with the largest effect on product characteristics. They vary by product quality component and by type of process. Typical process variables are resources and the time used, response rates and burden, as well as editing error rates<sup>5</sup>. However, processes can also be characterised by stability and capability.

The capability of a survey process may be translated into process specifications. As part of the assessment, it can be checked whether the survey processes have the capability to comply with pre-defined process specifications. Examples of process specifications are production deadlines, minimum response rates, maximum coefficients of variation and broadly survey errors in general.

Survey errors can occur at any stage in the design, collection and processing of the data, and these have a direct impact on the survey results. Two broad types of survey errors can be distinguished: sampling errors and non-sampling errors.

Sampling errors are to be seen as inherent to sample surveys; they arise from the fact that not all the units of the targeted population are enumerated, but only a sample of them. Therefore, the information collected on the units in the sample may not perfectly reflect the 'true' information which could have been collected from the whole population.

Non-sampling errors can be sub-classified into coverage errors, measurement errors, processing errors and non-response errors. Coverage errors are due to the divergences existing between the target population and the frame population. Three types of coverage errors can be distinguished; under-coverage (units not accessible via the sampling frame), over-coverage (units accessible via the frame which do not belong to the target population) and misclassification (auxiliary information provided by the frame that is inaccurate for some population units). Measurement errors are those which occur during data collection and cause the recorded values of variables to be different from the true ones. Processing errors are those resulting from the coding, editing and weighting procedures applied; these can be monitored through editing and imputation rates. Non-response errors translate into the failure/low capacity of a survey to collect data on all survey variables, from all the population units designated for data collection in a sample or complete enumeration. Non-response errors can reflect unit non-response (no data are collected about a designate population unit) or item non-response (data on some but not all the survey variables are collected about a designated population unit)<sup>6</sup>.

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<sup>5</sup> Ehling M and Körner T. (eds.) (2007): Handbook on Data Quality Assessment Methods and Tools, Eurostat

<http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/documents/HANDBOOK%20ON%20DATA%20QUALITY%20ASSESSMENT%20METHODS%20AND%20TOOLS%20%20I.pdf>

<sup>6</sup> Ioannis Nikolaidis, National Statistical Service of Greece (2009): Quality Improvements of the Survey Processes, European Commission grant agreement n° 10300.2005.021-2007.331

An analysis of some of the survey errors described here is provided in Chapter 3 of this report. Although, in general, these are treated separately, there is a dependency relation between the sampling errors and the non-sampling errors. The sampling errors depend on the population and the sample size and the variability of the survey characteristics. The sampling errors increase when either the sample size decreases or the variability of the survey characteristics increases. Moreover, the non-sampling errors, apart from the fact that they may create bias, also increase the sampling errors because the non-response and the over coverage reduce the sample size, and because the misclassification, measurement errors and processing errors increase the variability of the survey characteristics<sup>7</sup>.

The general aspects of the process quality components are detailed and analysed in direct relation with the third ECS in the following chapters. However, at the end of this chapter, there is an overview of the main survey processes of the third ECS (including the evaluation phase) and their relation with the output quality components is provided (see Table 1).

**Table 1: Cross-tabulation of the survey processes**

|                           |                                    | Survey processes                                |   |  |   |
|---------------------------|------------------------------------|---|---|--|---|
|                           |                                    | Preparation for fieldwork/planning phase        | Fieldwork implementation  | Processing, analysis and reporting                                       | Evaluation  |
| <b>Quality dimensions</b> | <b>Relevance</b>                   | Stakeholders' needs                             | –   | User orientation in reporting  | Analysis of results of user satisfaction survey                               |
|                           | <b>Accuracy and reliability</b>    | Overall survey design                           | Sampling implementation and data collection (including fieldwork control) | Coding, editing, weighting   | Analysis of sampling and non-sampling errors                                  |
|                           | <b>Timeliness and punctuality</b>  | Survey scheduling                               | Fieldwork control (schedule)  | Release of data  | Assessment of punctuality and timeliness indicators                           |
|                           | <b>Accessibility and clarity</b>   | Definition of concepts and questionnaire design | –   | Dissemination of survey dataset, methodological description and metadata | Assessment of derived analyses (further uses of datasets)                     |
|                           | <b>Comparability and coherence</b> | Harmonisation of concepts and methodologies     | Conformity with sample design   | Coding and editing; dissemination of metadata                            | Benchmarking of sampling and estimation methods, classifications and concepts |

[http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/documents/Quality%20improvement%20of%20the%20survey%20processes%20EL%202009\\_0.pdf](http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/documents/Quality%20improvement%20of%20the%20survey%20processes%20EL%202009_0.pdf) Idem

<sup>7</sup> Idem



## Chapter 2: Quality assessment of the main stages in the survey process

The second chapter of this quality assessment report is focused on the survey processes of the third ECS. This quality assessment has been performed by the consultant as follows.

- The quality of the survey processes of the third ECS in the 32 countries surveyed is reviewed against the phases of the generic statistical business process model for quality and metadata management (GSBPM)<sup>8</sup>. This primary benchmarking framework makes it possible to identify the phases or processes that are exclusively, or mostly, implemented by the survey contractor.
- For each of these phases/processes, a process flowchart is drawn, which permits the identification of those sources of variation that directly affect the quality of the output. The flowcharts present the sequences of sub-processes, as implemented during the third ECS survey process, and identify the inputs and the outputs, as well as the main party responsible for the process (the survey contractor or Eurofound).
- Each of the processes is assessed and commented on, and preliminary conclusions (further discussed in Chapter 4) are formulated. The assessment and comments focus on the appropriateness and results of the sub-processes implemented, but also on the compliance of the steps, performed by the survey contractor, with the contractual requirements.

### Survey methodology

The ECS is a telephone survey that has been conducted three times since 2004. It examines a range of workplace practices and social dialogue in establishments in the European Union. The third ECS focuses on work organisation, employee participation, workplace innovation and social dialogue in workplaces. Work organisation was examined through the third ECS from the perspective of:

- how interactions are coordinated and monitored, both within and between establishments;
- how knowledge is managed in the establishment;
- a review of practices that support functional flexibility.

Social dialogue is captured by asking about the presence of social dialogue structures, the structures and the tools available to the actors involved.

The survey was conducted in all 28 EU Member States (including Croatia) and in the Former Yugoslav Republic of Macedonia, Iceland, Montenegro and Turkey, between 4 February and 19 June 2013. A total of 39,207 interviews were carried out, of which 30,113 interviews were with senior decision-makers responsible for staff, and 9,094 were with employee representatives.

The universe represented in the third ECS was the population of establishments with 10 or more employees. The establishments in the NACE rev. 2 categories B to S were represented in the survey, therefore excluding those establishments in the NACE rev. 2 A<sup>9</sup>, T<sup>10</sup> and U<sup>11</sup> categories.

The unit of enquiry was either the local company itself, (in the case of single-site companies), or a branch office or other outlet of the company (in case of multi-site companies).

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<sup>8</sup> Generic Statistical Business Process Model (version 5.0 – December 2013), Joint UNECE / Eurostat / OECD Work Session on Statistical Metadata

<http://www1.unece.org/stat/platform/display/metis/The+Generic+Statistical+Business+Process+Model>

<sup>9</sup> Agriculture, forestry and fishery activities

<sup>10</sup> Activities of households as employers

<sup>11</sup> Activities of extraterritorial organisations and bodies

### *General benchmarking framework: the GSBPM*

The Generic Statistical Business Process Model (GSBPM) describes and defines a set of business processes needed to produce official statistics. It provides a standard framework and harmonised terminology to help statistical organisations to modernise their statistical production processes, as well as to share methods and components. The GSBPM can also be used for integrating data and metadata standards, as a template for process documentation, for harmonising statistical computing infrastructures, and to provide a framework for process quality assessment and improvement.<sup>12</sup>

The GSBPM can be interpreted as the union of the main international models and standards<sup>13</sup>, since it reflects all their components. The GSBPM is intended to apply to all activities undertaken by producers of official statistics, at both the national and international levels, which result in data outputs. It is designed to be independent of the data source, so it can be used for the description and quality assessment of processes based on surveys, censuses, administrative records, and other non-statistical or mixed sources.

It should be noted that, as well as being applicable for processes which result in statistics, the GSBPM can also be applied to the development and maintenance of statistical registers, where the inputs are similar to those for statistical production (though typically with greater focus on administrative data), and the outputs are typically frames or data extractions, which are then used as inputs to other processes<sup>14</sup>.

The GSBPM structure is displayed in Figure 1. The diagram also identifies, in grey, the sub-processes implemented by the survey contractor or those which required its contribution. The remaining sub-processes are those exclusively implemented by Eurofound or by other organisations, such as process 8.2 – Conduct evaluation, which is the subject of this contract. It is important to note that, as the figure displays, all the phases outsourced by Eurofound form a continuous flow of related sub-processes within the GSBPM.

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<sup>12</sup> Generic Statistical Business Process Model (version 5.0 – December 2013), Joint UNECE / Eurostat / OECD Work Session on Statistical Metadata

<http://www1.unece.org/stat/platform/display/metis/The+Generic+Statistical+Business+Process+Model>

<sup>13</sup> Information Systems Architecture for National and International Statistical Offices, UN 1999, and the Eurostat ‘Cycle de Vie des Données’ CVD Model

<sup>14</sup> United Nations Economic and Social Council: Applying the Generic Statistical Business Process Model to business register maintenance, Group of Experts on Business Registers, Paris 14-15 September 2011  
<http://www1.unece.org/stat/platform/download/attachments/57835551/BR+meeting+paper2.doc>

Figure 1: The GSBPM



Figure 1 shows the important contribution of the third ECS survey contractor in six of the phases of the business process model. Of all the third ECS survey phases where the survey contractor intervened, the most relevant are the ‘Design’, ‘Build’, ‘Collect’ and ‘Process’ ones. However, the survey contractor also contributed to processes such as ‘Analyse’ and ‘Evaluate’.

There are two initial points to be made. First, it is important to note that, as shown in the figure, all the phases outsourced by Eurofound form a continuous flow of related processes within the GSBPM. The continuity of the processes outsourced can ensure an easy and effective monitoring, by Eurofound, of the work of the survey contractor.

Secondly, the design phase, as displayed in Figure 1, is important, as it is expected to use (as outputs from the Evaluate phase of the previous wave) the Quality Assessment of the Second ECS. For statistical outputs produced on a regular basis, the design phase usually occurs for the first round, but whenever possible improvements are identified in the Evaluate phase of a previous iteration, a ‘redesign’ is required.

Starting from the generic breakdown of phases, the survey processes of the third ECS are grouped for the purpose of the assessment in three phases:

- preparation for fieldwork or planning phase (including phases one to three of the GSBPM; specify needs, design and build);
- fieldwork implementation (phase four of the GSBPM; collect);
- data processing, analysis and reporting (phases five to eight of the GSBPM; process, analyse, disseminate and evaluate).

It should be noted that the quality assessment, of the survey process of the third ECS, does not focus only on the work performed by the survey contractor, but also on those processes exclusively implemented by Eurofound. A distinction between the processes implemented by the survey contractor and those implemented by Eurofound is also made in the flowcharts presenting the concrete sequence of steps/processes performed for the implementation of the survey, as interpreted by the consultant based on the survey documentation (such as terms of reference of the survey, preparation and implementation reports and documentation, and fieldwork materials). The third ECS process flowcharts drawn by the consultant are supposed to identify the sources of variation that have a direct impact on the quality of the output, identifying, as said, the owners or those mainly responsible of each process/action. The distinction between the process owners/responsible or decision maker is made using the following colour code:

- symbols in green represent the steps performed or outputs produced exclusively by the survey contractor;
- symbols in blue represent the steps performed, outputs produced or inputs provided exclusively by Eurofound;
- whenever the symbol line is of a distinct colour than the fill-in colour, the corresponding process has been implemented or the output produced in collaboration. For example:



Here, the quality control process was mainly implemented by the survey contractor with contributions from Eurofound.

### 2.1 Preparation for fieldwork/planning phase

The importance of the Design phase, as part of the GSBPM, in the third round of the ECS guides the contractor's approach in the assessment of the actions undertaken for the preparation for fieldwork.

Following the Quality Assessment of the second ECS, the following recommendations were made for the planning of the survey:

- conduct a user satisfaction survey;
- systematically monitor process indicators (real-time measurement of process variables);
- improve the quality of the sample, by using quality sampling registers;
- pilot the multimode survey approach (especially using web-based modes).

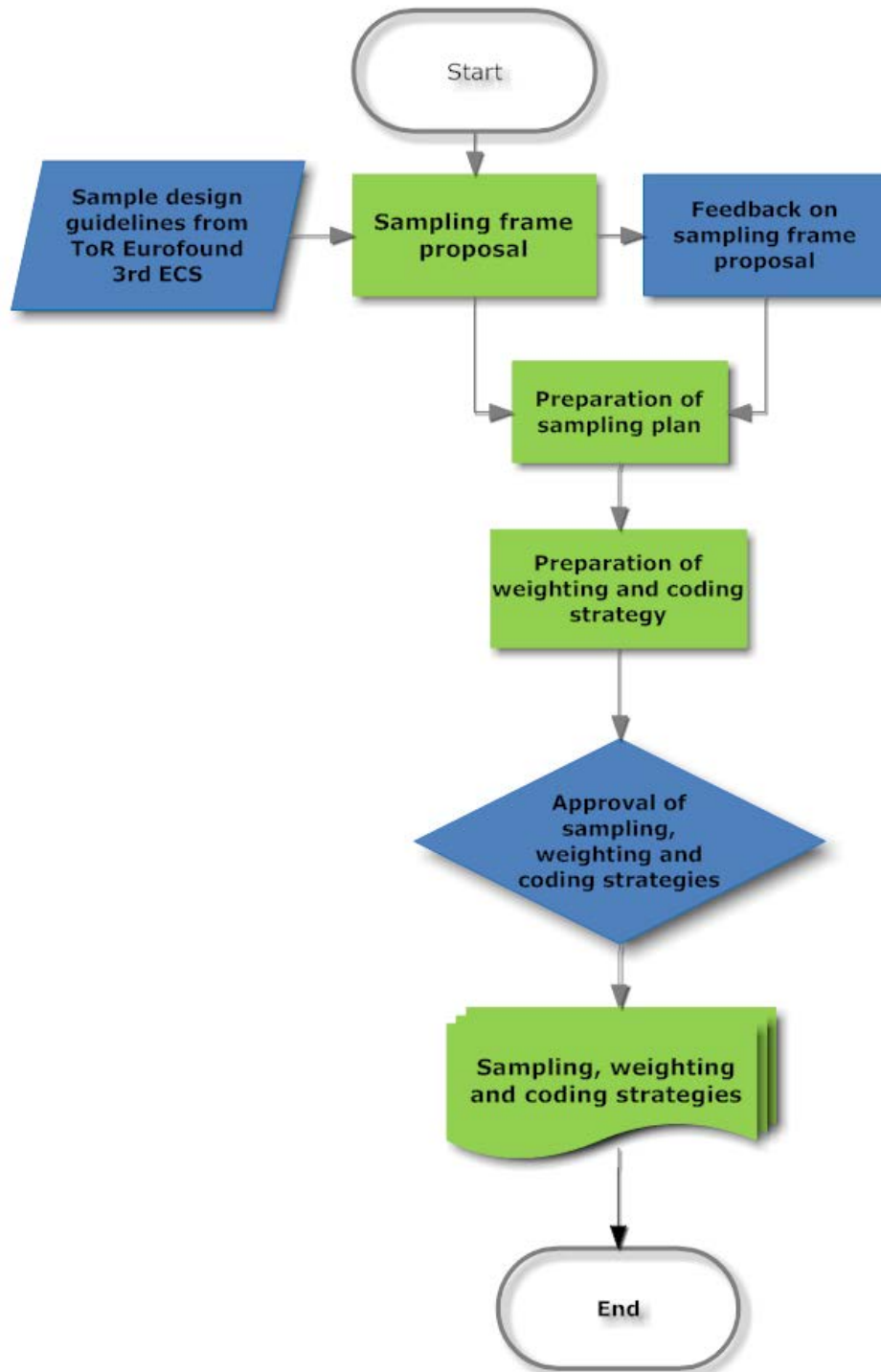
The consultant opted for breaking this phase into three sub-phases which focus on specific aspects to be assessed. The sub-phases are:

- design and implementation of the sampling frame;
- pre-testing;
- questionnaire translation.

This choice is based on considering these as main sub-processes that deal with survey design and which required the intervention of the survey contractor.

2.2.1 Design and implementation of the sampling frame

Figure 2: Sampling frame design and implementation (Preparation for fieldwork – part 1)



The sample design, as a process, has a strong relationship with all the dimensions of the quality of the statistical product, and as well with the costs of the survey. The availability of appropriate sampling frames continued to hamper the implementation of a straightforward sampling process. In fact, the unavailability of establishment-level sampling frames in some of the countries surveyed imposed variations in the sampling process.

Along with the tender specifications for the third ECS fieldwork, a Sampling Challenges Report (produced by an external contractor) has been put at the disposal of the companies tendering for this contract. The Sampling Challenges Report was produced by TNS Infratest, based on the Sampling Report compiled in the context of the European Survey on Working Time and Work-life Balance (ESWT) 2004–2005. It deals with the sampling and weighting challenges of this multi-country survey and is intended to be used as a work document for the further implementation of the ECS. The report provides a comprehensive overview of the sampling frames and reference statistics available in each country. Based on this overview, a typology of countries by availability of address-registers and statistical information on the universe is also established, based on the experience with the ESWT 2004–2005. As practical solutions for the sampling phase in those countries where no adequate establishment registers are available the application of a screening procedure (best practical approach, as described by the authors of the report) or the Yellow Pages-based sampling are proposed as practical alternative solutions.

The general sampling specifications for the third ECS established the minimum net sample size per country at between 300 to 1,500 interviews, depending on the size of the country. In addition, it was requested that the sampling frame strikes the right balance between representativeness on an employee-proportional and an establishment-proportional basis. Therefore, for each country, it was requested that a stratified probability sample of establishments was drawn from the registers available. Stratification had to consider the size class, the sector of activity and the region.

Most appropriate sampling frames had to be proposed by the tenderers, considering the representativeness and stratification criteria mentioned above. Where no high-quality establishment registers were available in a country, tenderers were required to design a screening procedure to select randomly one establishment in multi-establishment companies. An interview with the management respondent (based on the management questionnaire) had to be carried-out in all the establishments in the net sample. The target response rate for the management interviews was set at 50%. In addition, for those establishments where a recognised structure of employee representation was present, a second interview, with the employee representatives, had to be carried out. The target response rate for the employee representative interviews was set at 75%.

In practice, the following sample size was achieved for each of the country surveyed.

**Table 2: Sample size by country**

| <b>COUNTRY</b> | <b>ACHIEVED<br/>SAMPLE SIZE<br/>(MM)</b> | <b>TARGET SAMPLE<br/>SIZE (increased<br/>sample size)</b> | <b>REFERENCE<br/>SAMPLE SIZE<br/>(according to ToR)</b> |
|----------------|--|---|---|
| BE             | 1,107                                    | 1,100   | 1,000   |
| BG             | 557                                      | 550   | 500   |
| CZ             | 1,111                                    | 1,100   | 1,000   |
| DK             | 1,100                                    | 1,100   | 1,000   |
| DE             | 1,673                                    | 1,650   | 1,500   |
| EE             | 550                                      | 550   | 500   |
| EL             | 1,101                                    | 1,100   | 1,000   |
| ES             | 1,651                                    | 1,650   | 1,500   |
| FR             | 1,657                                    | 1,650   | 1,500   |
| IE             | 551                                      | 550   | 500   |
| IT             | 1,652                                    | 1,650   | 1,500   |
| CY             | 500                                      | 500   | 500   |
| LV             | 558                                      | 550   | 500   |
| LT             | 550                                      | 550   | 500   |
| LU             | 563                                      | 550   | 500   |
| HU             | 1,135                                    | 1,100   | 1,000   |
| MT             | 306                                      | 300   | 300   |
| NL             | 1,108                                    | 1,100   | 1,000   |
| AT             | 1,100                                    | 1,100   | 1,000   |
| PL             | 1,655                                    | 1,650   | 1,500   |
| PT             | 1,103                                    | 1,100   | 1,000   |
| RO             | 551                                      | 550   | 500   |
| SI             | 550                                      | 550   | 500   |
| SK             | 550                                      | 550   | 500   |
| FI             | 1,100                                    | 1,100   | 1,000   |
| SE             | 1,105                                    | 1,100   | 1,000   |
| UK             | 1,653                                    | 1,650   | 1,500   |
| HR             | 503                                      | 500   | 500   |
| IS             | 501                                      | 500   | 500   |
| MK             | 502                                      | 500   | 500   |
| ME             | 305                                      | 300   | 300   |
| TR             | 1,505                                    | 1,500   | 1,500   |
|                | <b>30,113</b>                            | <b>26,950</b>   | <b>24,300</b>   |

As regards the sample frames, the survey contractor established several criteria which the sample registers had to comply with, in order to select the best available option. The following criteria had been considered for the sampling registers:

- establishment-level based;
- (nearly) full coverage;
- (high) effective coverage ( the number of units lacking necessary auxiliary information, such as contact information, is as low as possible);
- available for commercial operators.

Although not a ‘fixed criterion’, but an implication of the set-up of the survey (contracting out the sampling part of the preparation of the survey), the fourth criterion could ‘downgrade’ the quality of the sampling frames. However, the extent to which this fourth criterion limits the use of more suitable sampling sources cannot be estimated. (If, for example, in cases where other sources existed, but the survey contractor could not use them because they were not available to commercial operators). Moreover, where it was practicable to access official business registers in the NSIs, commercial business registers could be at least compared and the questionnaires completed. As already formulated within the quality assessment of the second ECS, a progressive inclusion of official business registers is recommended in further waves of the ECS. To create statistics that are consistent across entities and internationally comparable, it is necessary to define and delineate standard statistical units that are suitable for data collection, compilation and aggregation. To improve the required harmonisation, the European Parliament adopted an official business regulation on 25 October 2007, then adopted by the Council of Ministers of the European Union on 21 January 2008, which came into force on 25 March 2008<sup>15</sup>. Although far from ideal, implementing this regulation guarantees a certain level of harmonisation between the registers in the various Member States. Eurostat, NSIs and other experts and stakeholders are participating in the Business Registers Working Group and other temporary and ad hoc working groups or task force meetings to enhance national official business registers. In cases where reference marginal distributions to be used in the calibration phase are obtained from official sources the use of official business registers could be more coherent. For all these reasons, official business registers – combined with commercial registers when required – could be considered as a larger component of the sampling frame.

In the third ECS, commercial registers have been used as sampling frames for 22 out of the 32 countries surveyed. The table below offers an overview of the sampling frames that were used<sup>16</sup>:

**Table 3: Sampling frames used for the third ECS**

| Country        | Sampling frame provider <sup>+</sup> | Unit-level    | Public sector covered | Total coverage | Frame database telephone coverage | Type of source |
|----------------|--------------------------------------|---------------|-----------------------|----------------|-----------------------------------|----------------|
| <b>Austria</b> | D&B <sup>+</sup>                     | establishment | no or only partly     | 138%           | 54%                               | Commercial     |
| <b>Belgium</b> | Infobel                              | establishment | yes                   | 99%            | 61%                               | Commercial     |

<sup>15</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32008R0177:EN:NOT>

<sup>16</sup> The effective coverage of the sampling frames is analysed in Section 3.3.2, A – Coverage, of this report. However, since a comparison between the reference and sampling frames was not available, it is difficult to identify potential sources of under and over coverage.



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| Country                                      | Sampling frame provider <sup>+</sup>                               | Unit-level    | Public sector covered | Total coverage | Frame database telephone coverage | Type of source |
|--|--|---------------|-----------------------|----------------|-----------------------------------|----------------|
| <b>Bulgaria</b>                              | Bulgarian National Statistical institute <sup>+</sup>              | company       | yes                   | 100%           | 67%                               | NSI            |
| <b>Croatia</b>                               | FINA (Financial Agency), 2011                                      | company       | yes                   | 100%           | 100%                              | NSI            |
| <b>Cyprus</b>                                | Statistical Services is Statistical Business Registry <sup>+</sup> | company       | yes                   | 100%           | 95%                               | NSI            |
| <b>Czech Rep.</b>                            | Albertina <sup>+</sup>   | company       | yes                   | 45%            | 100%                              | Commercial     |
| <b>Denmark</b>                               | Solidet  | establishment | yes                   | 79%            | 96%                               | Commercial     |
| <b>Estonia</b>                               | Kreddiinfo   | company       | yes                   | 90%            | 91%                               | Commercial     |
| <b>Finland</b>                               | Fonecta <sup>+</sup>   | establishment | yes                   | 144%           | 100%                              | Commercial     |
| <b>France</b>                                | LBM Direct   | establishment | yes                   | 101%           | 60%                               | Commercial     |
| <b>Former Yugoslav Republic of Macedonia</b> | Central Register of Macedonia <sup>+</sup>                         | company       | yes                   | 100%           | NA                                | NSI            |
| <b>Germany</b>                               | D&B  | establishment | yes                   | 95%            | 91%                               | Commercial     |
| <b>Greece</b>                                | ICAP <sup>+</sup>  | company       | no or only partly     | 71%            | 88%                               | Commercial     |
| <b>Hungary</b>                               | KSH  | company       | no or only partly     | 100%           | 56%                               | NSI            |
| <b>Iceland</b>                               | The Icelandic register of companies                                | company       | yes                   | 100%           | 80%                               | NSI            |
| <b>Ireland</b>                               | Bill Moss <sup>+</sup>   | establishment | yes                   | 140%           | 100%                              | Commercial     |
| <b>Italy</b>                                 | D&B <sup>+</sup>   | company       | no or only partly     | 49%            | 100%                              | Commercial     |
| <b>Latvia</b>                                | Business register of Central Statistical Bureau <sup>+</sup>       | company       | no or only partly     | 100%           | NA                                | NSI            |
| <b>Lithuania</b>                             | JSC 'Creditinfo Lietuva'   | company       | yes                   | 100%           | 99%                               | Commercial     |
| <b>Luxembourg</b>                            | EDITUS <sup>+</sup>  | establishment | yes                   | 94%            | 100%                              | Commercial     |

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| Country            | Sampling frame provider <sup>+</sup>                              | Unit-level    | Public sector covered | Total coverage | Frame database telephone coverage | Type of source             |
|--------------------|---|---------------|-----------------------|----------------|-----------------------------------|----------------------------|
| <b>Malta</b>       | Employment & Training Corporation                                 | company       | no or only partly     | 110%           | 100%                              | Commercial (semi-official) |
| <b>Montenegro</b>  | Statistical office/Central Registry of the Commercial Court – MNE | company       | no or only partly     | 100%           | NA                                | NSI                        |
| <b>Netherlands</b> | Chamber of Commerce Establishment Register                        | establishment | no or only partly     | 135%           | 62%                               | Commercial (semi-official) |
| <b>Poland</b>      | PCM (Polskie Centrum Marketingowa) <sup>+</sup>                   | establishment | yes                   | 54%            | 74%                               | Commercial                 |
| <b>Portugal</b>    | INFORMA   | company       | yes                   | 102%           | 96%                               | Commercial                 |
| <b>Romania</b>     | Listafirme <sup>+</sup>   | company       | no or only partly     | 92%            | 92%                               | Commercial                 |
| <b>Slovakia</b>    | Albertina <sup>+</sup>  | company       | yes                   | 99%            | 65%                               | Commercial                 |
| <b>Slovenia</b>    | Ipis <sup>+</sup>   | establishment | yes                   | 78%            | 93%                               | Commercial                 |
| <b>Spain</b>       | Shober <sup>+</sup>   | establishment | no or only partly     | 66%            | 82%                               | Commercial                 |
| <b>Sweden</b>      | PARAD   | establishment | yes                   | 75%            | 100%                              | Commercial                 |
| <b>Turkey</b>      | D&B   | company       | no or only partly     | 25%            | 100%                              | Commercial                 |
| <b>UK</b>          | D&B <sup>+</sup>  | establishment | no or only partly     | 57%            | 93%                               | Commercial                 |

<sup>+</sup> = frames retained from the second ECS

Of the sampling frames used, the sampling frame was at establishment level in 14 countries, and in 10 of these, the establishment-level frames also covered the public sector. These two criteria have been accomplished by the sampling frames in: BE, DK, DE, FR, IE, LU, PL, SI, FI and SE. However, for all these countries, commercial registers have been used as sampling frames, with a total coverage rate ranging from 144% in Finland to only 54% in Poland.

The sampling frames used in the remaining 18 countries were all at company level. Out of these, 10 covered the public sector as well, namely in: BG, CZ, EE, CY, LT, PT, SK, HR, IS and the Former Yugoslav Republic of Macedonia. In this group of 10, NSI registers were used in five, and commercial registers in the other five. It should be noted that here, the total coverage rates of the commercial registers improves considerably, except in the case of the Czech Republic, for which the sampling frame used covered only 45% of the universe statistics. For the remaining

countries, the total coverage rate represents: 90% in EE, 99% in SK, 100% in LT and 102% in PT.

These figures reveal that only in 10 countries was the sampling process homogenous, while variations had to be implemented for the remaining 22 countries. These variations might affect the internal coherence of the statistics produced.

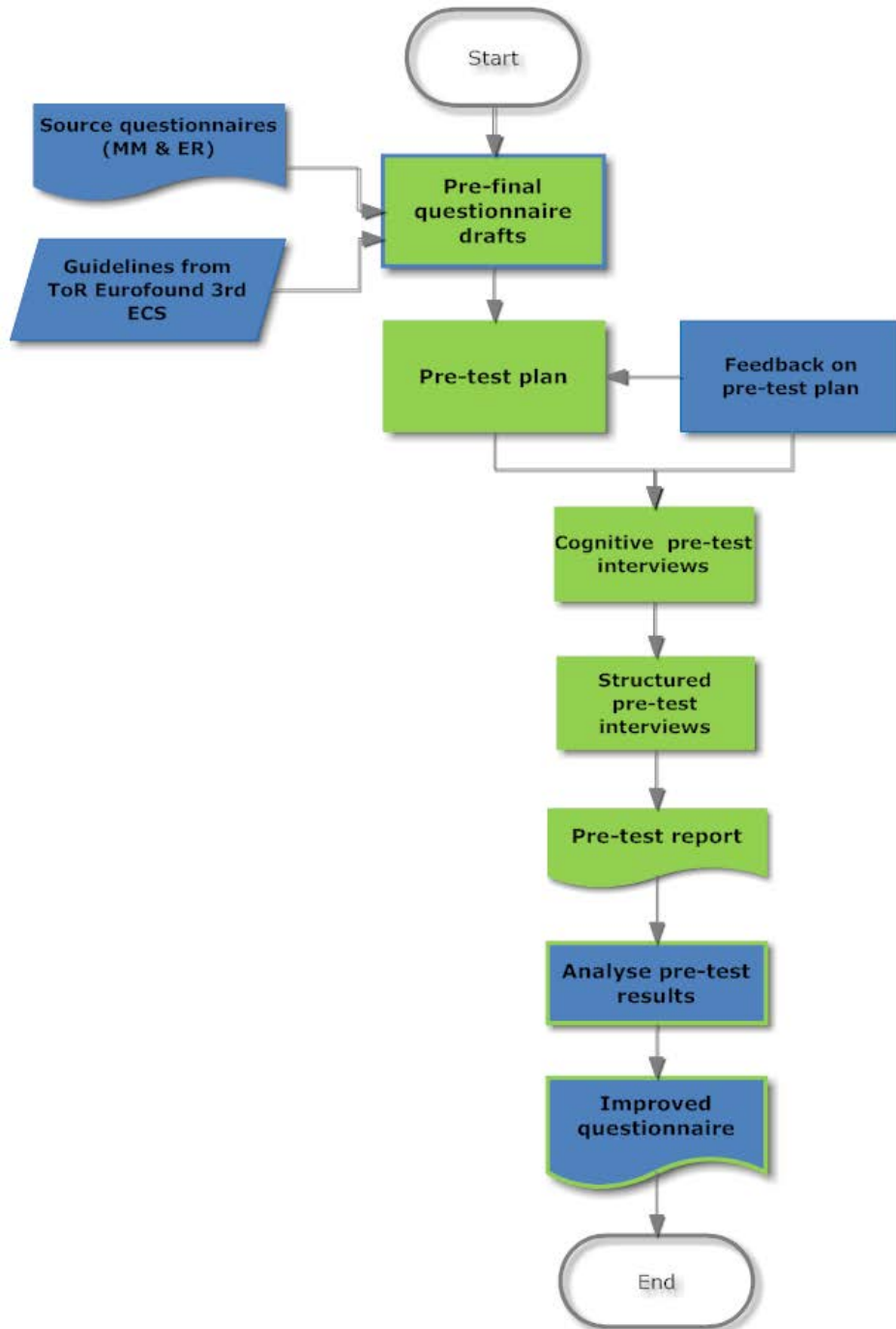
For the implementation of the third ECS, the coherence of the sampling process across countries could also have been affected by:

- the use of additional (diverse) resources for covering the public sector and the construction of proxy sampling frames for the public sector;
- the use of different sampling designs based on the availability of establishment-level or company-level frames: Stratified Simple Random Sampling Without Replacement – SSRSWR or Stratified Multi Stages Random Sampling Without Replacement (SMRSWR);
- introduction of pre-screening interviews in the sampling design for those countries where company-based registers were used. The main purpose of the pre-screening interviews was to identify the appropriate establishment (in case of company-level frames) and identify the eligible respondent within each establishment.

As regards the sampling frames, the availability, coverage, completeness, timeliness, information content, accuracy and companion documentation of the frame are essential and critical factors regarding its suitability for the needs of the survey. Rather than an issue of the quality of sample frames in terms of contact information accuracy, the main limitation of these seems to be their effective coverage. Contact information in the sampling frames is quite updated, as derived from the low proportion of available phone numbers that are non-working or disconnected (8.1% in the MM survey). The coverage of sampling frames may also affect the survey stratification.

2.1.2 Pre-testing

Figure 3: Pre-testing (Preparation for fieldwork – part 2)



Source questionnaires for the third ECS (both for the MM and ER interviews) were provided by Eurofound. The survey contractor participated in turning them into pre-final drafts, which were pre-tested to check for fitness and general applicability.

The pre-test focused primarily on new questions, dealing with complex concepts, but it also covered the whole questionnaire in order to test for contextual effects, as detailed in the ‘Pre-test report’.

Pre-testing interviews were conducted in English in Ireland, in French in France, and in German in Germany. The pre-testing was carried out using, in a first stage, a qualitative approach (cognitive interviews). Based on the findings from this, the questionnaire was updated, and then tested in its entirety using a quantitative (structured-interview) approach.

As to the planned and achieved sample size for the pre-testing, this wasn't achieved in Ireland for the ER interviews, either during the qualitative or quantitative testing, due to the lack of contacts<sup>17</sup>. Indeed, for the structured interviews (quantitative testing) the sample size planned for Ireland for the ER interviews was reallocated to Germany and France

**Table 4: Planned and achieved sample size for pre-testing**

| Questionnaire type                          | Planned sample size |    |    | Achieved sample size |    |    |
|---|---------------------|----|----|----------------------|----|----|
|   | IE                  | FR | DE | IE                   | FR | DE |
| <b>Cognitive interviews (qualitative)</b>   |                     |    |    |                      |    |    |
| <b>MM interviews</b>                        | 15                  | 15 | 15 | 15                   | 15 | 15 |
| <b>ER interviews</b>                        | 15                  | 15 | 15 | 11                   | 15 | 15 |
| <b>Structured interviews (quantitative)</b> |                     |    |    |                      |    |    |
| <b>MM interviews</b>                        | 20                  | 20 | 20 | 20                   | 26 | 22 |
| <b>ER interviews</b>                        | 20                  | 20 | 20 | 0                    | 27 | 34 |

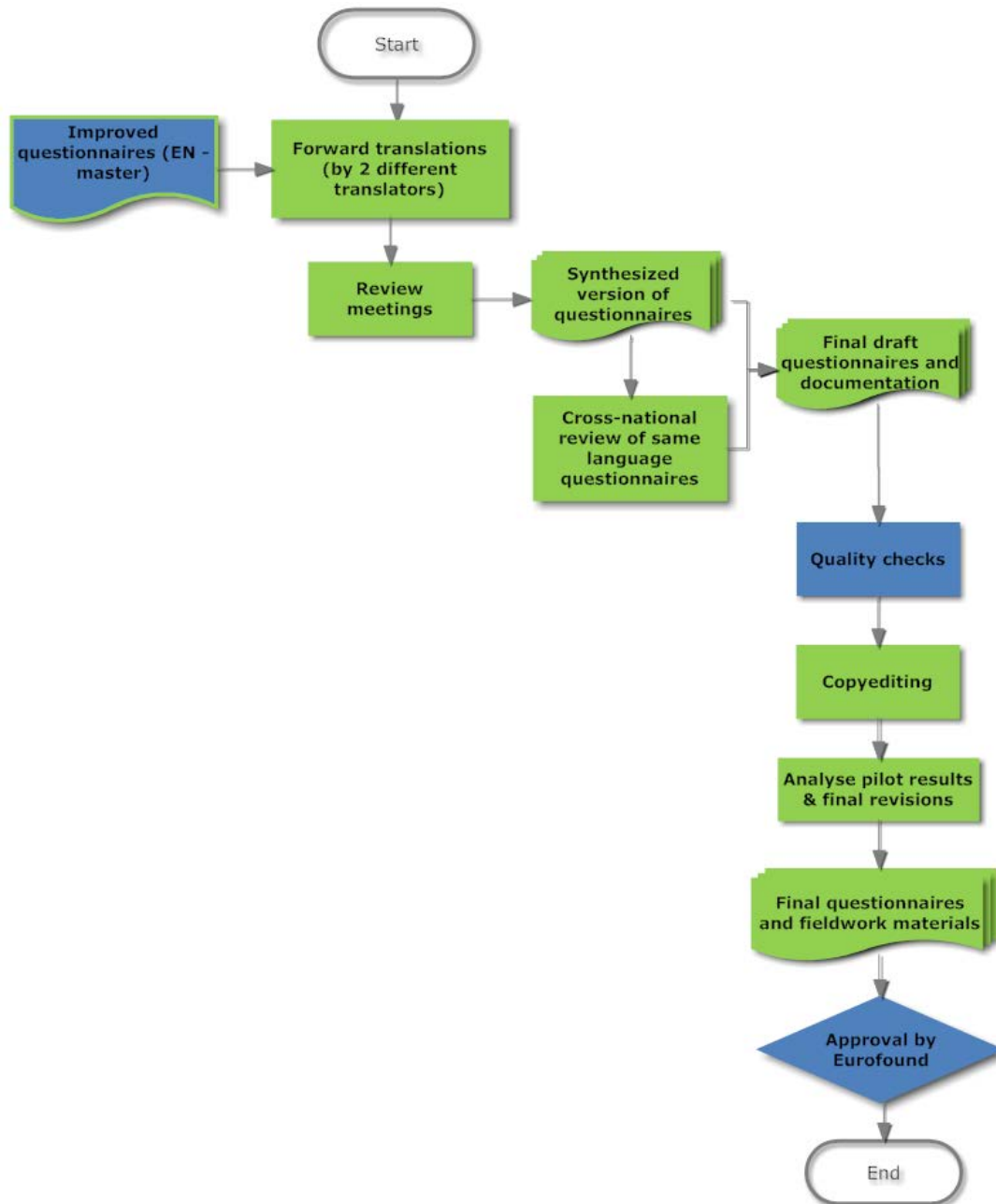
As regards the duration of the interviews, the pre-testing showed that interviews, on average, proved to be slightly longer than the expected 15 minutes. However, no further actions were taken in this respect, as the extra time was considered due to the need for getting qualitative feedback and for taking notes of reactions as well as replies.

Based on the pre-test results, the survey contractor formulated several recommendations regarding the questions' wording and the exclusion of some ambiguous questions. Eurofound, using these recommendations, finalised the questionnaires. The consultant carried out an item non-response analysis for a subset of questions that proved to be problematic during the pre-testing phase (see Annex 1). Item non-response rates are high only for Q12 – 'Per week, what number of hours of your working time are you entitled to spend on your duties as an employee representative?' (ER interviews). For this question, item non-response rates exceeded 5% in 20 countries, with extreme values close or above 50% in FR, IT and IS.

<sup>17</sup> Although additional efforts have been performed by the survey contractor in order to facilitate the ER interviewing.

### 2.1.3. Questionnaire translation

Figure 4: Questionnaire translation (Preparation for fieldwork – part 3)



The translation of the third ECS was carried out using a team-based approach.

Relying on one person to provide a questionnaire translation may be problematic, in particular if no team-based assessment is undertaken. A translator working alone and simply ‘handing over’ the finished assignment has no opportunity to discuss and develop alternatives. Regional variance, idiosyncratic interpretations, and inevitable translator blind spots are better handled if several translators are involved and an exchange of versions and views is part of the review process. In addition, survey translations often call for words people say rather than words people

write. Group discussion (including input from survey fielding people) is likely to highlight such problems<sup>18</sup>.

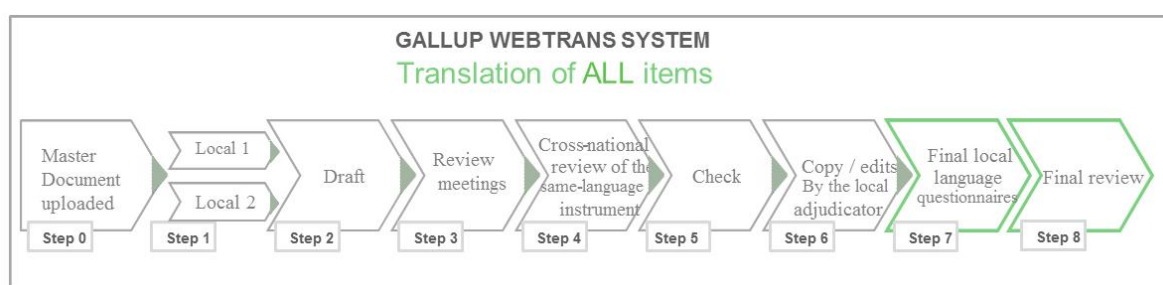
The translation procedure aimed at improving questions, rather than maintaining the longitudinal comparability for those items common to the previous and new waves (the second ECS and third ECS)<sup>19</sup>. The survey contractor was requested to:

- provide two independent translations for each target language;
- organise team-based interactive review meeting(s) to discuss the two translations, after which an adjudicator would decide on the final target language of the questionnaire;
- harmonise, as far as possible, the independent translation of the questionnaires for those countries sharing the same language;
- copyedit and check the final target language of the questionnaires.

The model adopted for the translation was the TRAPD – translation, review, adjudication, pre-testing and documentation, inspired by the European Social Survey. This method has been put in practice through a committee-based approach strategy involving teams of translators.

The translation procedure followed the steps as displayed in the figure below:

*Figure 5: Translation process*



During steps 1 and 2 (Forward translations), two translators (specifically trained for the task) translated the questionnaire item by item. The concerns, questions or comments arriving after this step were discussed during the review meetings (step 3), which were aimed at the reconciliation of the two initial forward translations, and counted with the input of an adjudicator. The output of this third step was a new (third) synthesised version of the questionnaire in the target language, which was later (in step 4 – Cross-national review of the same-language instrument) translated into the target language as many times as needed for the different countries that shared a particular target language. The cross-country harmonisation decisions/revisions were documented and the documentation was sent along with the final draft target language questionnaires for revision to Eurofound and the local experts (step 5). They performed quality checks, and their suggestions were considered by the survey contractor for the final editing of the questionnaire along with those conclusions/evidence that resulted from the piloting of the questionnaires (steps 6, 7 and 8).

<sup>18</sup> Harkness, J. A., Villar, A., & Edwards, B. (2010). Translation, Adaptation, and Design. In: Harkness, J.A., Braun, M., Edwards, B., Johnson, T. P., Lyberg, L., Mohler, P. Ph., Pennell, B.-E. & Smith, T. W. (Eds.). *Survey Methods in Multinational, Multiregional, and Multicultural Contexts*. pp. 117-140. Hoboken. New Jersey. John Wiley & Sons.

McKay, R. B., Breslow, M. J., Sangster, R. L., Gabbard, S. M., Reynolds, R. W., Nakamoto, J. M., Tarnai, J. (1996). *Translating Survey Questionnaires: Lessons Learned*. In: *New Directions for Evaluation*, 70. pp. 93-105.

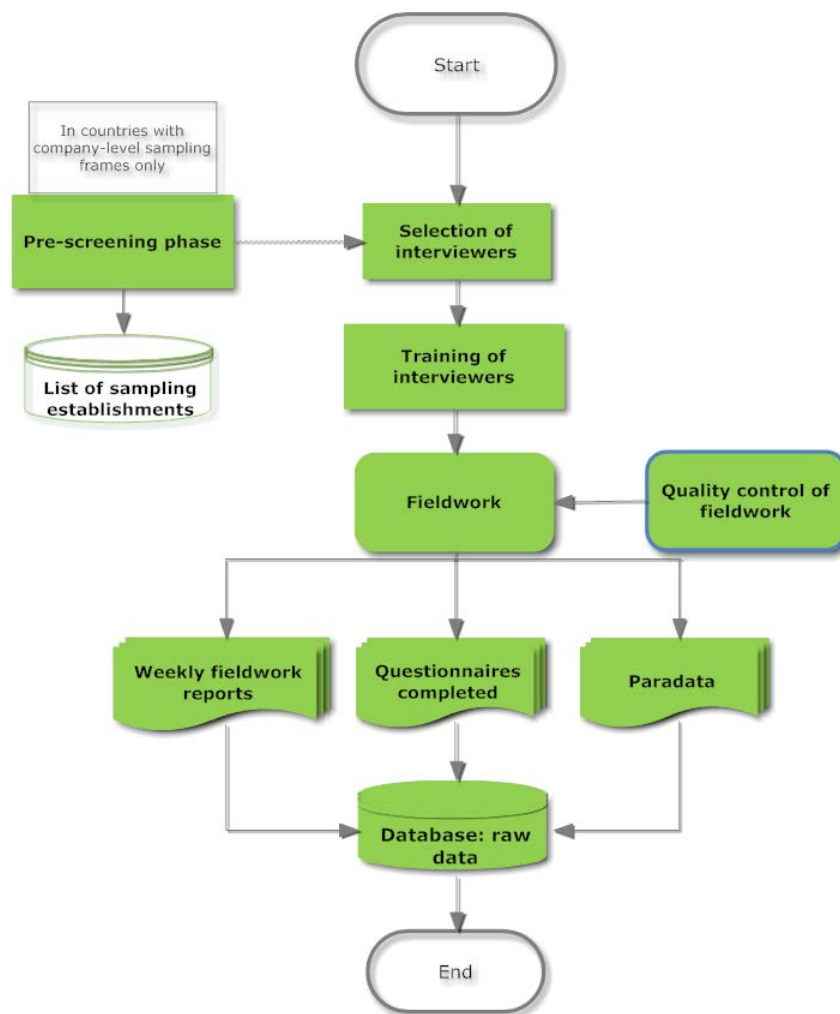
<sup>19</sup> The previous translations have been provided to the survey contractor only as ‘reference’ translations. It was not required to make use of the existing translations if a better version was agreed upon.

The whole process took about three months: from November 2012 until February 2013. The process concluded with a total of 44 language versions: 36 original translations and eight language adaptations for countries sharing a same language.

Instead of a standard double-back translation ‘English – national languages – English’, a committee approach was followed for the translation of the survey questionnaires of the third ECS. This approach allows for the assessment of the adequacy of the target language versions and presents process benefits, including different varieties of language by the translation team. The introduction of this translation methodology enhances the comprehension of the questionnaire and reduces the non-sampling errors – specifically measurement errors – of the ECS, thus enhancing the accuracy of its outputs.

## 2.2 Fieldwork implementation

Figure 6: Fieldwork implementation



The data for the third ECS was collected through computer assisted telephone interviews (CATI) in all countries. The CATI application used by the survey contractor was web-based, recording the answers directly on a central server.

The fieldwork started differently, based on the sampling procedures decided in an earlier phase. For example, a pre-screening phase was required in those countries where the sampling frame was based on a level other than the establishment.

The data collection started in the first week of February 2013 in most of the countries surveyed (23 out of the 32), and with a slight delay of one week in the remaining ones. The expected



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fieldwork duration, according to the ToR, was of 10 weeks plus two additional weeks for the employee representatives' interviews, for the reference sample size (see Table 2, above). The fieldwork period took longer than expected, but was finished in all countries by 31 May 2013. The delay was caused, not only as a consequence of the 10% increase in the sample size, but also due to some variations in the protocols agreed for the fieldwork as a consequence of slow sample size achievement. In fact, some sample restrictions were removed in the sixth week of fieldwork, because of the very slow survey progress after the first five weeks. The following key measures were adopted, as detailed in the technical report produced by the survey contractor:

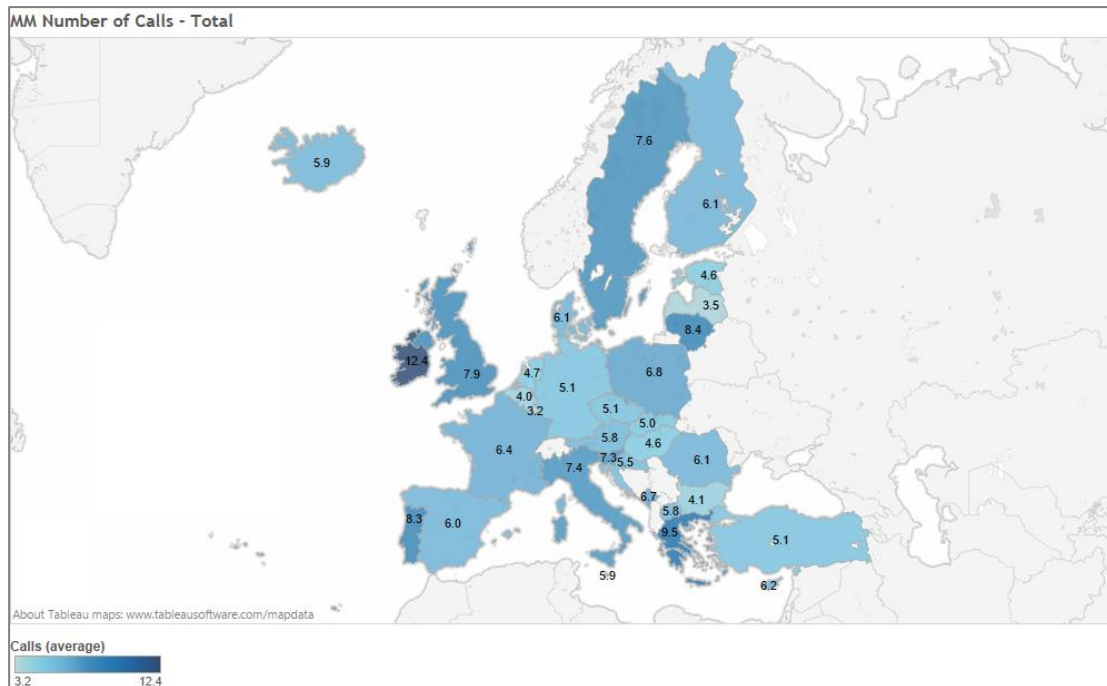
- ceasing the further exploration of the non-contacts, wrong numbers, and refusals received in the screening process (prior to reaching a potential final respondent);
- opening up further replicates, as previously open replicates were exhausted in a manner that enabled the continuation of the fieldwork.

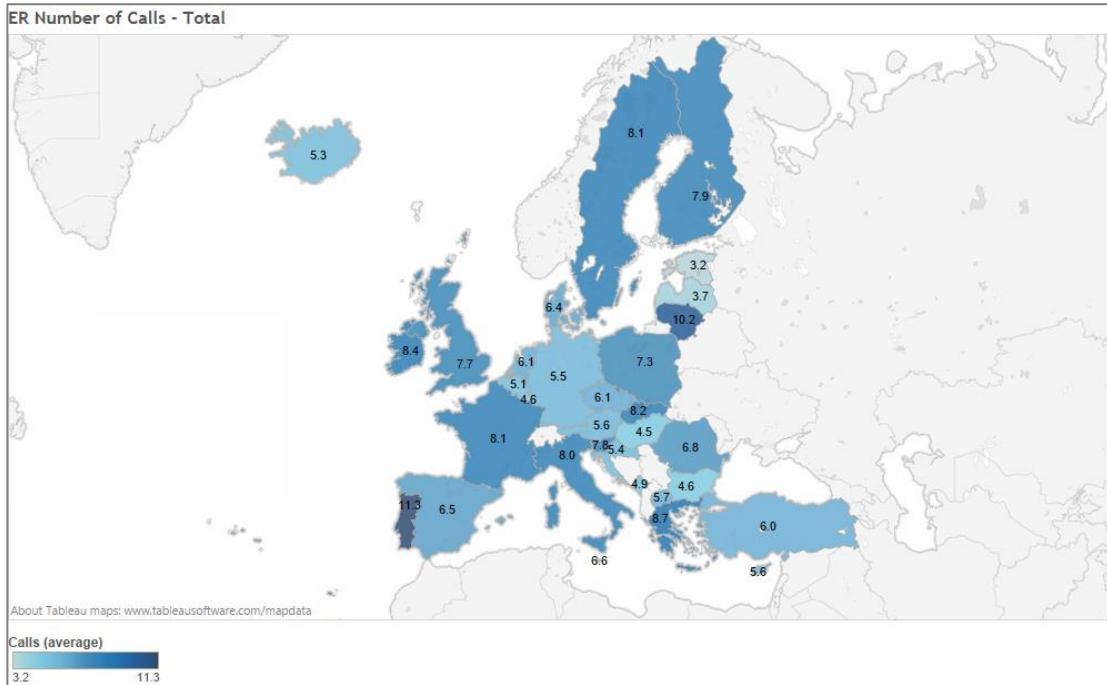
Four additional replicates were opened after the sixth week of the fieldwork (doubling the target sample size) in all the countries. The need of introducing such 'emergency' measures is interpreted by the consultant as a direct consequence of previous survey design processes (such as the demanding requirement of considering only a gross sample of twice the final sample).

However, quality monitoring was performed during the fieldwork period, both by representatives of the survey contractor and Eurofound. The quality monitoring framework being one of the novelties of this new wave consisted of real-time measuring of a series of quality indicators proposed in the quality control plan of the survey.

The number of calls required to complete each interview are 6.2 and 6.8 for MM and ER questionnaires, respectively. Figure 7 presents this indicator disaggregated by country.

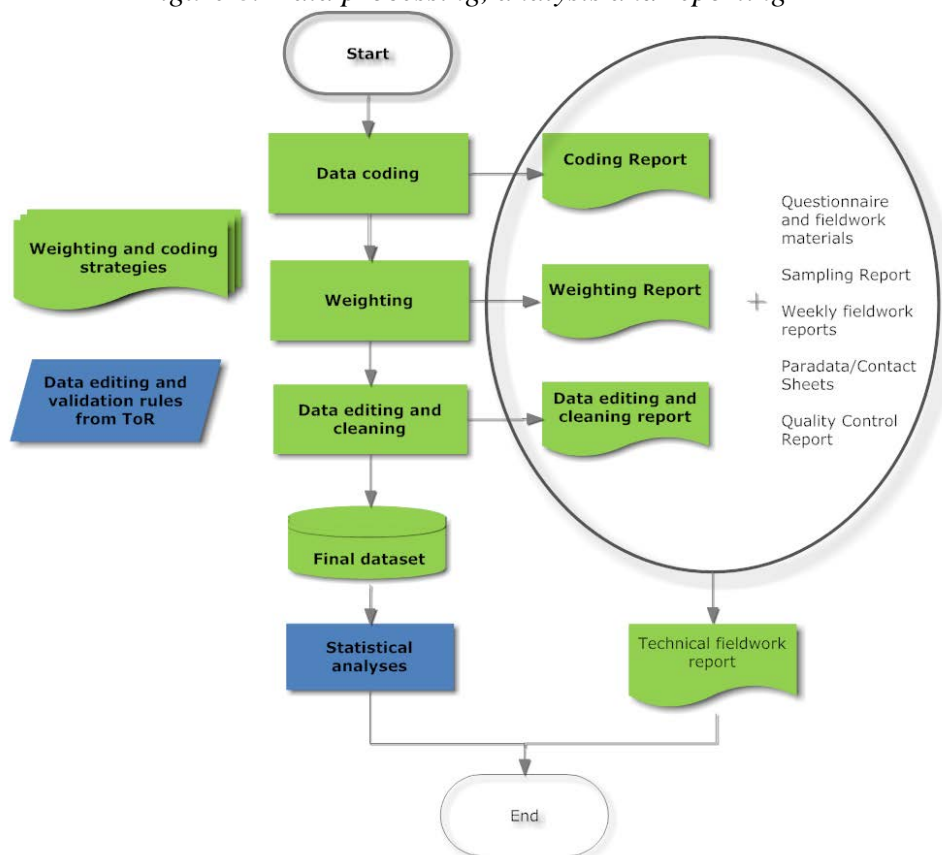
*Figure 7: Average number of calls to complete an interview for MM and ER by country*





## 2.3 Data processing, analysis and reporting

Figure 8: Data processing, analysis and reporting



Data processing, analysis and reporting were performed by the survey contractor according to the ToR. The weighting (as main sub-process) is analysed in Chapter 3.

#### **2.4. Main conclusions on the process assessment of the third ECS**

The survey contractor complied with the requirements in the ToR to a very large extent. All the modifications or adaptations in the survey processes had been previously agreed with Eurofound and were aimed at tackling important deviations from the expected results (such as the gross sample issue and the survey sample size achievement over the expected period). However, the suitability of the survey processes, and any remedial actions taken, have been a result of a quality monitoring framework, providing in-time regular monitoring indicators<sup>20</sup>.

From the point of view of the survey processes' owner and decider, the third ECS processes assessment has led to the following positive conclusions.

- Following the second ECS, a user satisfaction survey was introduced.
- The introduction of the user satisfaction survey led to an improved consultation procedure for establishing the users' needs for the third ECS.
- The third ECS counts with a specific quality framework, introduced for the first time in the ECS practice.
- The third ECS also counts with an improved translation procedure ensuring concepts comparability among countries.

However, there were also a series of points that require future follow-ups or considerations.

- Although a lot of effort has been made to implement the recommendations on the sampling frames and non-response from the previous wave, there is a gap for improvement in the fourth ECS, as discussed in Chapter 4.
- The requirements established for some of the processes outsourced (such as the sampling procedure), were described in detail in some companion documents (the Sampling Challenges Report) that were not strict requirements and were not explicitly included in the ToR.
- During some process implementation, corrective changes of procedures were produced (for example, to the fieldwork).

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<sup>20</sup> The 'Quality Control and assurance report' presents a detailed description of these indicators, as well as a measurement of the achievement level. The report is accessible in the third ECS website (<http://www.eurofound.europa.eu/surveys/ecs/2013/ecsmethodology/qa.htm>)

## Chapter 3: Output assessment of the third ECS

This report analyses the five quality dimensions of the output considered in the *ESS Standard for quality reports* (Eurostat, 2009), as presented in Chapter 1.

The inputs for the assessment of these dimensions is provided by the following documents and databases produced during the implementation of the third ECS:

- MM and ER questionnaires (English version);
- data file containing individual observations and sampling information, which has been used to calculate sampling errors and non-response rates;
- data files (two for each country) containing the paradata of the MM and ER questionnaires;
- ToR and technical proposal.

There were also the quality reports produced by Gallup, specifically:

- third European Company Survey – Technical Report EU27 and non-EU countries (Version July 2013);
- third European Company Survey – Sampling plan (Version January 2013);
- third European Company Survey – Final Quality Control Plan (Version June 2012);
- tender specifications for third European Company Survey (third ECS) – Annex 3 – Quality Assurance Plan.

### 3.1. Relevance and completeness

To assess the relevance of ECS, it is important to compare the topics covered by the ECS with those covered by other EU surveys. The following aspects are considered in order to assess the relevance of the third ESC.

#### *Needs covered by the ECS in the framework of European statistics*

- Availability of comparative data on work organisation, workplace innovation, employee participation and social dialogue, which means availability of a map of a number of practices used in European workplaces, as well as how they are discussed and negotiated at workplace level and some of their outcomes.
- Contribution to the European 2020 Strategy<sup>21</sup> through mapping and understanding company policies and practices which can have an impact on smart, sustainable and inclusive growth, as well as the development of social dialogue in companies.
- Development of homogeneous and comparative indicators of European business policies and human resources facts for an European audience map.
- Assessment and quantification of information on company policies and practices across Europe on a harmonised basis.
- Analysis of relationships between company practices and their impact as well as practices from the point of view of structures at company level, focusing in particular on social dialogue.

#### *User assessment and feedback*

The analysis of the use of data sets from the UK Data Archive reports – as presented in section 3.4. – provides information on the actual use of ECS database and companion reports.

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<sup>21</sup> [http://ec.europa.eu/europe2020/index\\_en.htm](http://ec.europa.eu/europe2020/index_en.htm)

Completeness can be defined as the extent to which all statistics that are needed are available. Following the EU enlargement, the geographical scope of the survey has expanded. The third ECS is based on 32 countries including the then 27 EU Member States and Croatia, the Former Yugoslav Republic of Macedonia, Iceland, Montenegro and Turkey (the second ECS in 2009 included 30 countries: the 27 EU Member States, plus Croatia, the Former Yugoslav Republic of Macedonia and Turkey, while the first one, carried out in 2004–2005 included the 15 ‘old’ EU Member States and Cyprus, the Czech Republic, Hungary, Latvia, Poland and Slovenia).

### 3.2. Accuracy and reliability

The accuracy and reliability of the third ECS depends on several factors, such as sampling and non-sampling errors and the impact of the methodology to deal with them.

The analysis of sampling and non-sampling errors requires much more time for analysis and computation than generating estimates of totals and proportions, which, in general, are weighted sums of the sample units. Moreover, when the samples are complex (such as multistage or unequal probabilities) not all the information necessary for the exact calculation of the error is always available in the original microdata files, namely the variable specifying the clustering and stratification. Thus, approximations that do not distort the results significantly must be used instead. Due to the reasons given above, the practice of statistical agencies or private pollsters is not to calculate all possible sampling errors of a survey. Instead, they usually proceed to calculate the sampling errors of a certain number of variables that cover the main objectives in the MM and ER questionnaires and, consequently, convey a good idea about the rest. In this case, 22 questions (14 of the MM and 8 of the ER questionnaires) have been chosen. None of the socio-demographic segmentation questions have been included in the computation of the sampling errors:

#### *MM questionnaire*

**Q23 (BINNOORG).** Since the beginning of 2010, has this establishment introduced any organisational change?

1 Yes, 2 No, 3 Don't know, 4 No answer

**H14 (HFLEXI).** Approximately what percentage of employees have the possibility to adapt within certain limits the time when they begin or finish their daily work according to their personal needs or wishes?

996 All, 997 None, 998 Don't Know, 999 No answer

**H23A (HVPRES).** Now I am going to read out certain variable payment options on top of basic pay that might be in place in your establishment. Could you please tell me if payment by results, for example piece rates, provisions, brokerages or commissions are available to at least some employees?

1 Yes, 2 No, 8 Don't know, 9 No answer

**H23C (HVPGRPE).** Now I am going to read out certain variable payment options on top of basic pay that might be in place in your

establishment. Could you please tell me if variable extra pay linked to the performance of the team, working group or department are available to at least some employees?

1 Yes, 2 No, 8 Don't know, 9 No answer

**H23D (HVPPRSH).** Now I am going to read out certain variable payment options on top of basic pay that might be in place in your establishment. Could you please tell me if variable extra pay linked to the results of the company or establishment (profit sharing scheme) are available to at least some employees?

1 Yes, 2 No, 8 Don't know, 9 No answer

**ER12A (ICAEST).** Are employees in this establishment covered by a collective wage agreement negotiated at the establishment or company level?

1 Yes, 2 No, 8 Don't know, 9 No answer

**E1A (JREGMEE).** In this establishment regular meetings between employees and immediate manager are used to involve employees in how work is organised?

1 Yes, 2 No, 8 Don't know, 9 No answer

**E1D (JDISSINF).** In this establishment dissemination of information through newsletters, website, notice boards, email etc. is used to involve employees in how work is organised?

1 Yes, 2 No, 8 Don't know, 9 No answer

## Quality assessment of the third European Company Survey

**E1F (JSUGGS).** In this establishment suggestion schemes (the collection of ideas and suggestions from the employees, voluntary and at any time, traditionally by means of a 'Suggestion Box' are used to involve employees in how work is organised?

1 Yes, 2 No, 8 Don't know, 9 No answer

**P1A (KOSICK).** Does the management encounter high level of sickness leave at this establishment currently?

1 Yes, 2 No, 8 Don't know, 9 No answer

**P1E (KOLOMOT).** Does the management encounter low motivation of employees at this establishment currently?

1 Yes, 2 No, 8 Don't know, 9 No answer

**P2 (KCLIMATE).** How would you rate the current general work climate in this establishment? Is it:

- a. Very good
- b. Good
- c. Neither good nor bad
- d. Bad
- e. Very bad

1 Very good, 2 Good, 3 Neither good nor bad, 4 Bad, 5 Very bad, 8 Don't know, 9 No answer

**P2.1 (KCLIMACH).** Since the beginning of 2010, the general work climate in this establishment...?

- a. Improved
- b. Worsened
- c. Remained about the same
- d. Don't know
- e. No answer

1 Improved, 3 Worsened, 2 Remained about the same, 8 Don't know, 9 No answer

instance, people in a specific occupational category?

1 The entire workforce, 2 Part of the workforce, 8 Don't know, 9 No answer

**Q19.** Under normal circumstances, how often does the employee representation have meetings with management? Is this...?

1 At least once a week, 2 At least once a month, 3 At least once every quarter, 4 At least once a year, 5 Less than once a year, 8 Don't know, 9 No answer

**Q26B.** Recruitment and dismissals – In the last 12 months, were any major decisions taken by the management of this establishment in the following areas?

1 Yes, 2 No, 8 Don't know, 9 No answer

**Q26F.** Restructuring measures – In the last 12 months, were any major decisions taken by the management of this establishment in the following areas?

1 Yes, 2 No, 8 Don't know, 9 No answer

**Q44.** How would you rate the current general work climate in this establishment? Is it 'very good', 'good', 'neither good nor bad', 'bad', or 'very bad'?

1 Very good, 2 Good, 3 Neither good nor bad, 4 Bad, 5 Very bad, 8 Don't know, 9 No answer

**Q46C.** Strike of a day or more - Please tell me if any of the following types of industrial action took place in this establishment, since the beginning of 2010?

1 Yes, 2 No, 8 Don't know, 9 No answer

### *ER questionnaire*

**Q1.** Besides you, how many representatives are on the (ER body) that you are a member of?

998 Don't know, 999 No answer

**Q4.** Approximately what percentage of employees at this establishment are members of a trade union?

998 Don't know, 999 No answer

**Q10.** Does this trade union represent the entire workforce or only a part of the workforce, for

For each of the 32 countries included in the microdata files, **standard errors** have been computed as indicators of sampling error, for the total population and disaggregated by sector (manufacturing, service and public) and size (10–49, 50–249 and 250 or more employees) of the establishment. These calculations make it possible to perform a minimum assessment of the capacity of the third ECS to break results down by these basic classification variables. The variances have been calculated by means of the usual unbiased estimates based on the sampling design that can be found, for example, in Lehtonen (2003)<sup>22</sup> or Lohr (1999)<sup>23</sup>. Specifically, the variance of the total for a variable  $y$  is estimated as:

$$V(\hat{Y}) = \sum_{h=1}^H (1 - f_h)n_h S_h^2 + \sum_{h=1}^H \sum_{k=1}^{n_h} \pi_{hi} \sum_{k=1}^{K_{hi}} U_{hik}$$

where  $\pi_{hi}$  is the first stage inclusion probability for the primary sampling unit  $i$  in stratum  $h$ .  $K_{hi}$  is the number of second stage strata in the primary sampling unit  $i$  within the first stage stratum  $h$ .  $U_{hik}$  is variance contribution from the second stage stratum  $k$  from the primary sampling unit  $h_i$ . Its value depends on the second stage sampling method. Since sampling without replacement is considered, then

$$U_{hik} = (1 - f_{hi})n_{hi}S_{hi}^2$$

As an indicator of the effectiveness of the sample design, in addition to standard errors, the design effect has been computed (Annex 2) taking, as a basis, a simple random sampling with replacement design. The design effect is a measure of the precision in comparison to Simple Random Sampling, and is also used to derive the effective sample size. The design effect has been computed as the ratio between the variance of the complex sampling according to the above formula and the variance of a simple random sampling design with replacement for the same sample size of final units.

### 3.2.1. Analysis of sampling errors and design effects

The analysis of accuracy with regard to sampling error provides information about standard error and design effects. Table 5 presents the computation of the standard errors at a confidence level of 95%. Design effects can be consulted in annex 2. Sampling errors for the MM are lower than 5% in all the analysed questions, the MM survey being accurate enough at an aggregate level in all countries. Sampling errors are higher in the ER survey, due to the smaller size of the corresponding samples. However, out of the selected questions, only Q10 presents high sampling errors in four countries.

The design of the sample (Annex 2) is quite efficient in most of the countries, with design effects lower than 1 in BE, CZ, EE, GR, HR, CY, LV, LT, LU, MT, SI, IS, ME and MK. In DE, IT and UK design effects are larger, reducing the effectiveness of the sample.

<sup>22</sup> Lehtonen, R. and Pahkinen, E. Practical methods for design and analysis of complex surveys, 2nd ed. John Wiley & Sons. 2003.

<sup>23</sup> Lohr, S. Sampling: Design and Analysis. Duxbury Press. 1999.

**Table 5: Sampling error (confidence level 95%) by country.**

| Items                   | BE   | BG   | CZ   | DK   | DE   | EE   | IE   | EL   | ES   | FR   | HR   | IT   | CY   | LV   | LT   | LU   | HU   | MT   | NL   | AT   | PL   | PT   | RO   | SI   | SK   | FI   | SE   | UK   | IS   | ME   | MK <sup>24</sup> | TR   |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------------|------|
| <b>BINN-OORG</b>        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                  |      |
| <b>Yes</b>              | 1.8% | 3.4% | 1.7% | 2.2% | 1.4% | 2.9% | 2.8% | 2.2% | 1.7% | 1.5% | 2.3% | 1.8% | 2.5% | 3.3% | 2.7% | 2.9% | 1.8% | 3.4% | 1.9% | 2.1% | 1.7% | 2.0% | 2.4% | 2.5% | 2.5% | 3.6% | 1.9% | 1.9% | 2.5% | 3.7% | 2.7%             | 1.6% |
| <b>HVP-BRES [H23_A]</b> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                  |      |
| <b>Yes</b>              | 1.6% | 2.6% | 1.9% | 1.9% | 1.3% | 3.0% | 2.4% | 1.7% | 1.4% | 1.3% | 2.4% | 1.4% | 2.3% | 2.3% | 2.7% | 2.3% | 1.5% | 3.3% | 1.9% | 2.0% | 1.5% | 1.7% | 2.7% | 2.5% | 2.9% | 2.9% | 1.6% | 1.7% | 2.4% | 3.7% | 2.6%             | 1.8% |
| <b>HVP-GRPE [H23_C]</b> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                  |      |
| <b>Yes</b>              | 1.3% | 3.4% | 1.7% | 2.0% | 1.1% | 2.9% | 2.4% | 1.3% | 1.4% | 1.2% | 1.9% | 1.4% | 1.9% | 2.8% | 2.6% | 2.3% | 1.4% | 2.7% | 1.6% | 1.8% | 1.6% | 1.8% | 2.4% | 2.6% | 2.7% | 3.2% | 1.5% | 1.5% | 1.7% | 3.7% | 2.5%             | 1.6% |
| <b>HVP-PRSH [H23_D]</b> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                  |      |
| <b>Yes</b>              | 1.4% | 2.9% | 1.8% | 1.7% | 1.3% | 2.7% | 2.4% | 1.2% | 1.3% | 1.4% | 1.9% | 1.3% | 2.1% | 2.0% | 2.7% | 2.2% | 1.2% | 2.1% | 1.8% | 1.9% | 1.4% | 1.5% | 2.5% | 2.6% | 2.9% | 3.7% | 1.7% | 1.5% | 2.2% | 3.7% | 2.6%             | 1.5% |
| <b>ICAEST [ER 12_A]</b> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                  |      |
| <b>Yes</b>              | 1.6% | 3.3% | 1.4% | 2.2% | 1.5% | 1.4% | 2.9% | 1.9% | 1.6% | 1.5% | 2.1% | 1.3% | 2.6% | 1.7% | 1.5% | 2.9% | 0.9% | 2.4% | 1.8% | 1.3% | 1.6% | 1.6% | 3.0% | 2.5% | 2.3% | 3.3% | 2.1% | 2.0% | 2.4% | 3.8% | 2.7%             | 1.4% |
| <b>JREG MEE [E1_A]</b>  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                  |      |
| <b>Yes</b>              | 1.4% | 2.0% | 0.9% | 1.0% | 0.9% | 2.4% | 2.0% | 1.3% | 1.3% | 1.2% | 1.6% | 1.3% | 1.8% | 1.9% | 2.0% | 2.1% | 0.7% | 2.7% | 1.1% | 0.9% | 1.3% | 1.4% | 2.0% | 1.3% | 1.5% | 0.9% | 0.8% | 1.0% | 1.9% | 1.7% | 1.4%             | 1.1% |
| <b>JDIS SINF [E1_D]</b> |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                  |      |
| <b>Yes</b>              | 1.6% | 3.4% | 1.6% | 1.3% | 1.4% | 2.4% | 2.6% | 1.9% | 1.6% | 1.3% | 2.4% | 1.8% | 2.6% | 2.6% | 2.5% | 2.8% | 2.0% | 3.1% | 1.6% | 1.6% | 1.6% | 2.0% | 3.0% | 1.9% | 2.5% | 2.9% | 1.4% | 1.6% | 2.3% | 3.2% | 2.5%             | 1.8% |

<sup>24</sup> MK being ISO code 3166. This is a provisional code that does not prejudice in any way the definitive nomenclature for this country, which will be agreed following the conclusion of negotiations currently taking place under the auspices of the United Nations ([http://www.iso.org/iso/country\\_codes/iso\\_3166\\_code\\_lists.htm](http://www.iso.org/iso/country_codes/iso_3166_code_lists.htm))



| Items                          | BE   | BG   | CZ    | DK   | DE   | EE   | IE   | EL   | ES   | FR    | HR    | IT    | CY   | LV   | LT   | LU   | HU   | MT    | NL    | AT   | PL   | PT    | RO   | SI    | SK   | FI   | SE    | UK    | IS   | ME   | MK <sup>24</sup> | TR    |
|--------------------------------|------|------|-------|------|------|------|------|------|------|-------|-------|-------|------|------|------|------|------|-------|-------|------|------|-------|------|-------|------|------|-------|-------|------|------|------------------|-------|
| <b>JSUGGS [E1_F]</b>           |      |      |       |      |      |      |      |      |      |       |       |       |      |      |      |      |      |       |       |      |      |       |      |       |      |      |       |       |      |      |                  |       |
| <b>Yes</b>                     | 1.7% | 3.5% | 1.8%  | 2.1% | 1.6% | 2.8% | 3.2% | 2.2% | 1.7% | 1.4%  | 2.2%  | 1.8%  | 2.6% | 3.3% | 2.5% | 2.8% | 1.9% | 3.2%  | 1.9%  | 2.1% | 1.7% | 2.1%  | 2.9% | 2.6%  | 2.8% | 3.5% | 2.1%  | 2.0%  | 2.4% | 3.7% | 2.7%             | 1.9%  |
| <b>KOSICK [P1_A]</b>           |      |      |       |      |      |      |      |      |      |       |       |       |      |      |      |      |      |       |       |      |      |       |      |       |      |      |       |       |      |      |                  |       |
| <b>Yes</b>                     | 1.5% | 2.6% | 0.9%  | 1.6% | 1.4% | 1.8% | 1.4% | 1.1% | 1.2% | 1.2%  | 1.1%  | 1.0%  | 1.4% | 2.4% | 1.6% | 2.6% | 1.1% | 2.4%  | 1.4%  | 1.2% | 1.1% | 1.4%  | 1.2% | 1.9%  | 2.0% | 1.5% | 1.2%  | 1.2%  | 2.3% | 1.8% | 1.3%             | 1.3%  |
| <b>KOLOMOT [P1_E]</b>          |      |      |       |      |      |      |      |      |      |       |       |       |      |      |      |      |      |       |       |      |      |       |      |       |      |      |       |       |      |      |                  |       |
| <b>Yes</b>                     | 1.5% | 3.2% | 1.5%  | 1.3% | 1.0% | 3.1% | 2.3% | 1.8% | 1.6% | 1.1%  | 1.7%  | 1.6%  | 1.8% | 1.9% | 2.4% | 1.7% | 1.9% | 2.3%  | 1.2%  | 1.2% | 1.5% | 1.8%  | 2.8% | 2.1%  | 2.7% | 2.3% | 1.1%  | 1.2%  | 1.4% | 3.4% | 2.2%             | 1.8%  |
| <b>KCLIMATE [P2]</b>           |      |      |       |      |      |      |      |      |      |       |       |       |      |      |      |      |      |       |       |      |      |       |      |       |      |      |       |       |      |      |                  |       |
| <b>Very good</b>               | 1.5% | 3.5% | 1.7%  | 2.2% | 1.4% | 2.1% | 3.0% | 2.2% | 1.5% | 1.1%  | 2.6%  | 1.1%  | 2.6% | 2.7% | 1.9% | 2.5% | 1.5% | 3.0%  | 1.7%  | 2.0% | 1.3% | 1.4%  | 2.9% | 2.0%  | 2.4% | 3.3% | 2.1%  | 1.8%  | 2.4% | 3.5% | 2.5%             | 1.6%  |
| <b>Good</b>                    | 1.8% | 3.4% | 1.8%  | 2.2% | 1.6% | 3.0% | 3.1% | 2.2% | 1.8% | 1.5%  | 2.6%  | 1.7%  | 2.6% | 3.2% | 2.5% | 2.7% | 1.9% | 3.3%  | 1.8%  | 2.0% | 1.7% | 1.8%  | 2.9% | 2.5%  | 2.8% | 3.6% | 2.2%  | 1.9%  | 2.5% | 3.7% | 2.7%             | 1.8%  |
| <b>Neither good nor bad</b>    | 1.2% | 1.2% | 1.0%  | 1.2% | 1.0% | 2.7% | 1.8% | 1.4% | 1.5% | 1.1%  | 1.3%  | 1.5%  | 1.3% | 2.4% | 2.0% | 1.6% | 1.5% | 1.9%  | 1.0%  | 1.1% | 1.2% | 1.3%  | 1.1% | 1.8%  | 2.0% | 1.3% | .9%   | 1.5%  | 1.1% | 2.7% | 1.7%             | 1.2%  |
| <b>Bad</b>                     | .4%  | .3%  | .3%   | .4%  | .5%  | .7%  | 1.1% | .4%  | .5%  | .4%   | .9%   | .6%   | .5%  | .5%  | .4%  | .4%  | .6%  | 1.2%  | .4%   | .2%  | .4%  | .3%   | .3%  | .9%   | .8%  | 2.0% | .3%   | .4%   | .1%  | .6%  | .8%              | .4%   |
| <b>Very bad</b>                | .1%  | .2%  | .2%   | 0.0% | 0.0% | 0.0% | .1%  | 0.0% | .4%  | .3%   | .5%   | .1%   | .3%  | 0.0% | 0.0% | .1%  | .1%  | 0.0%  | 0.0%  | .3%  | .2%  | .4%   | .0%  | .4%   | 0.0% | .0%  | 0.0%  | .1%   | 0.0% | 1.1% | .3%              | .2%   |
| <b>KCLIMACH [P2_1]</b>         |      |      |       |      |      |      |      |      |      |       |       |       |      |      |      |      |      |       |       |      |      |       |      |       |      |      |       |       |      |      |                  |       |
| <b>Improved</b>                | 1.7% | 3.4% | 1.7%  | 2.2% | 1.5% | 3.1% | 3.1% | 2.2% | 1.6% | 1.4%  | 2.1%  | 1.5%  | 2.6% | 3.3% | 2.6% | 2.7% | 1.7% | 3.2%  | 1.9%  | 1.9% | 1.7% | 2.1%  | 3.0% | 2.3%  | 2.6% | 3.8% | 2.2%  | 1.9%  | 2.5% | 3.7% | 2.7%             | 1.6%  |
| <b>Remained about the same</b> | 1.8% | 3.4% | 1.8%  | 2.2% | 1.6% | 3.0% | 3.0% | 2.0% | 1.8% | 1.5%  | 2.6%  | 1.7%  | 2.6% | 3.3% | 2.7% | 2.8% | 2.0% | 3.3%  | 1.9%  | 2.1% | 1.8% | 2.1%  | 3.0% | 2.6%  | 2.9% | 3.6% | 2.1%  | 1.9%  | 2.4% | 3.7% | 2.5%             | 1.5%  |
| <b>Worsened</b>                | 1.2% | 1.2% | 1.1%  | 1.2% | .9%  | 1.4% | 2.8% | 1.9% | 1.6% | 1.0%  | 2.0%  | 1.3%  | 1.9% | 1.2% | 1.7% | 1.1% | 1.6% | 1.9%  | 1.0%  | 1.3% | 1.3% | 1.6%  | 1.8% | 2.3%  | 2.1% | 2.8% | 1.1%  | 1.2%  | .9%  | 2.1% | 1.8%             | .8%   |
| <b>Q10<sup>25</sup></b>        |      |      |       |      |      |      |      |      |      |       |       |       |      |      |      |      |      |       |       |      |      |       |      |       |      |      |       |       |      |      |                  |       |
| <b>The entire workforce</b>    | 9.5% |      | 33.7% | 0.0% |      |      | 0.0% | 0.0% | 7.2% | 14.6% | 29.1% | 12.4% | 4.8% | 0.0% | 0.0% | 7.5% | 0.0% | 25.4% | 17.6% |      | 0.0% | 17.5% |      | 14.9% | 0.0% | 4.9% | 10.8% | 28.8% | 6.6% | 0.0% | 0.0%             | 28.5% |

<sup>25</sup> In BG, DE, EE, AT and RO Q10 were not asked.

| Items                       | BE   | BG    | CZ    | DK   | DE   | EE   | IE   | EL   | ES   | FR    | HR    | IT    | CY   | LV    | LT   | LU   | HU   | MT    | NL    | AT   | PL   | PT    | RO   | SI    | SK   | FI   | SE    | UK    | IS   | ME   | MK <sup>24</sup> | TR    |
|-----------------------------|------|-------|-------|------|------|------|------|------|------|-------|-------|-------|------|-------|------|------|------|-------|-------|------|------|-------|------|-------|------|------|-------|-------|------|------|------------------|-------|
| Part of the workforce       | 9.5% |       | 33.7% | 0.0% |      |      | 0.0% | 0.0% | 7.2% | 14.6% | 29.1% | 12.4% | 4.8% | 0.0%  | 0.0% | 7.5% | 0.0% | 25.4% | 17.6% |      | 0.0% | 17.5% |      | 14.9% | 0.0% | 4.9% | 10.8% | 28.8% | 6.6% | 0.0% | 0.0%             | 28.5% |
| <b>Q19</b>                  |      |       |       |      |      |      |      |      |      |       |       |       |      |       |      |      |      |       |       |      |      |       |      |       |      |      |       |       |      |      |                  |       |
| At least once a week        | 2.1% | 10.6% | 1.9%  | 1.7% | 3.4% | 5.5% | 4.2% | 6.5% | 2.5% | 1.2%  | 3.5%  | 3.2%  | 4.0% | 11.1% | 3.9% | 3.3% | 3.5% | 5.7%  | 1.7%  | 2.8% | 1.4% | 2.2%  | 4.3% | 3.1%  | 4.8% | 1.3% | 1.7%  | 6.3%  | 2.2% | 6.2% | 3.9%             | 4.2%  |
| At least once a month       | 3.2% | 11.7% | 4.4%  | 3.0% | 4.7% | 4.0% | 8.6% | 6.3% | 3.4% | 3.1%  | 5.0%  | 3.7%  | 4.8% | 9.8%  | 4.5% | 4.9% | 5.1% | 7.8%  | 3.2%  | 4.1% | 3.3% | 4.3%  | 5.2% | 4.0%  | 4.8% | 5.9% | 3.4%  | 7.6%  | 2.6% | 7.5% | 5.4%             | 4.3%  |
| At least once every quarter | 2.5% | 10.0% | 5.0%  | 3.3% | 4.6% | 5.7% | 8.9% | 7.2% | 3.4% | 2.9%  | 4.7%  | 5.1%  | 4.4% | 7.6%  | 5.7% | 4.1% | 4.7% | 10.1% | 3.4%  | 4.3% | 3.6% | 4.9%  | 4.3% | 4.2%  | 4.2% | 5.9% | 2.7%  | 6.1%  | 3.0% | 6.3% | 5.3%             | 2.4%  |
| At least once a year        | 1.7% | 1.3%  | 5.2%  | 2.0% | 2.4% | 4.0% | 6.9% | 3.1% | 2.4% | 1.6%  | 2.1%  | 5.5%  | 3.1% | 1.1%  | 3.9% | 4.8% | 2.2% | 6.5%  | 1.5%  | 3.6% | 2.6% | 8.1%  | 1.3% | 2.3%  | 4.1% | 2.8% | 2.2%  | 4.5%  | 2.9% | 5.3% | 5.3%             | 1.6%  |
| Less than once a year       | .7%  | .4%   | 3.1%  | .6%  | .2%  | 1.9% | 6.9% | 2.0% | 1.3% | 1.3%  | 2.8%  | 2.7%  | .9%  | .4%   | 3.2% | 1.4% | 3.1% | 8.4%  | .9%   | 0.0% | 2.4% | 8.5%  | .9%  | 1.4%  | 2.8% | 5.3% | 2.1%  | 4.6%  | 3.0% | .3%  | 3.2%             | .9%   |
| <b>Q26_B</b>                |      |       |       |      |      |      |      |      |      |       |       |       |      |       |      |      |      |       |       |      |      |       |      |       |      |      |       |       |      |      |                  |       |
| Yes                         | 3.2% | 11.7% | 3.7%  | 3.3% | 4.7% | 3.2% | 4.4% | 7.2% | 3.5% | 3.0%  | 3.1%  | 3.4%  | 4.8% | 3.8%  | 5.7% | 5.1% | 4.3% | 7.9%  | 3.3%  | 4.0% | 3.5% | 7.3%  | 4.0% | 4.2%  | 4.7% | 5.5% | 2.6%  | 7.3%  | 2.9% | 6.9% | 5.6%             | 4.2%  |
| <b>Q26_F</b>                |      |       |       |      |      |      |      |      |      |       |       |       |      |       |      |      |      |       |       |      |      |       |      |       |      |      |       |       |      |      |                  |       |
| Yes                         | 3.3% | 11.5% | 3.5%  | 3.2% | 4.2% | 4.5% | 4.5% | 7.1% | 3.5% | 2.9%  | 3.3%  | 3.4%  | 3.8% | 11.2% | 5.9% | 5.1% | 4.6% | 7.9%  | 3.4%  | 3.7% | 3.5% | 8.2%  | 2.9% | 3.8%  | 3.9% | 4.5% | 3.3%  | 7.4%  | 2.8% | 6.6% | 5.6%             | 4.2%  |
| <b>Q44</b>                  |      |       |       |      |      |      |      |      |      |       |       |       |      |       |      |      |      |       |       |      |      |       |      |       |      |      |       |       |      |      |                  |       |
| Very good                   | 2.5% | 10.0% | 3.8%  | 3.1% | 2.3% | 3.8% | 7.4% | 4.8% | 2.2% | 1.6%  | 3.4%  | 2.6%  | 4.0% | 7.5%  | 3.8% | 4.1% | 4.1% | 4.6%  | 2.6%  | 4.0% | 3.0% | 4.9%  | 4.9% | 3.0%  | 4.2% | 1.9% | 3.1%  | 4.5%  | 3.0% | 5.5% | 5.1%             | 3.4%  |
| Good                        | 3.2% | 11.4% | 4.7%  | 3.3% | 4.7% | 5.4% | 8.9% | 6.9% | 3.5% | 3.1%  | 5.0%  | 5.3%  | 4.9% | 11.0% | 5.2% | 4.9% | 5.1% | 9.9%  | 3.3%  | 4.4% | 3.6% | 8.0%  | 4.9% | 4.2%  | 5.3% | 5.5% | 3.3%  | 7.2%  | 3.1% | 7.3% | 5.5%             | 4.0%  |
| Neither good nor bad        | 2.5% | 2.6%  | 2.8%  | 1.0% | 4.3% | 4.3% | 5.0% | 6.7% | 3.3% | 3.0%  | 4.3%  | 5.3%  | 4.3% | 7.8%  | 4.3% | 3.2% | 4.5% | 9.4%  | 2.4%  | 3.4% | 2.9% | 5.9%  | 1.8% | 3.6%  | 4.9% | 5.2% | 2.4%  | 6.7%  | 1.7% | 6.0% | 3.6%             | 2.9%  |
| Bad                         | .9%  | 9.8%  | 2.0%  | 1.4% | 2.5% | 2.5% | 2.7% | 5.7% | 2.3% | 1.9%  | 2.3%  | 1.1%  | 1.8% | 7.5%  | .2%  | 1.3% | 1.8% | 1.6%  | 1.6%  | 2.0% | 2.2% | 3.8%  | .5%  | 2.3%  | 2.2% | 1.3% | 1.5%  | 7.1%  | 1.0% | 4.7% | 2.7%             | .5%   |
| Very bad                    | .5%  | 0.0%  | .1%   | .4%  | .8%  | 0.0% | 2.5% | .7%  | 1.0% | 1.2%  | .6%   | 1.5%  | .2%  | .4%   | 0.0% | .8%  | .4%  | .9%   | .0%   | .2%  | .5%  | 6.0%  | .2%  | .9%   | 2.0% | .5%  | .6%   | 1.7%  | .6%  | 2.9% | 2.4%             | 0.0%  |
| <b>Q46_C</b>                |      |       |       |      |      |      |      |      |      |       |       |       |      |       |      |      |      |       |       |      |      |       |      |       |      |      |       |       |      |      |                  |       |
| Yes                         | 2.3% | 1.6%  | 1.4%  | 1.3% | 3.1% | 2.6% | 8.0% | 7.1% | 3.2% | 1.9%  | 4.8%  | 4.3%  | 3.8% | 0.0%  | 0.0% | 0.0% | 0.0% | 0.0%  | 1.4%  | 0.1% | 0.4% | 6.7%  | 2.9% | 3.8%  | 4.0% | 1.1% | 1.0%  | 6.7%  | 0.2% | 4.1% | 3.4%             | 2.2%  |

| Items                   | BE  | BG   | CZ  | DK  | DE  | EE  | IE  | EL  | ES  | FR  | HR  | IT  | CY  | LV   | LT  | LU  | HU  | MT  | NL  | AT  | PL  | PT  | RO  | SI  | SK  | FI  | SE  | UK  | IS  | ME  | MK <sup>24</sup> | TR  |
|-------------------------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------------|-----|
| <b>HFLEXI<br/>[H14]</b> | 1.8 | 2.4  | 1.6 | 2.2 | 1.6 | 2.4 | 2.6 | 1.3 | 1.7 | 1.4 | 1.6 | 1.8 | 1.8 | 2.9  | 2.6 | 3.0 | 1.6 | 3.5 | 1.7 | 2.0 | 1.0 | 1.9 | 2.2 | 2.7 | 2.8 | 3.8 | 2.2 | 1.9 | 2.3 | 2.0 | 1.9              | 1.3 |
| <b>Q1</b>               | 0.4 | 0.5  | 0.6 | 0.3 | 0.3 |     | 0.9 | 0.6 | 0.5 | 0.4 | 0.4 | 0.2 | 0.4 | 10.2 | 0.7 | 1.0 | 0.2 | 0.2 | 0.4 | 0.5 | 2.6 | 0.5 | 0.2 | 0.6 | 1.2 | 3.3 | 9.3 | 1.0 | 0.4 | 0.1 | 0.6              | 0.4 |
| <b>Q4</b>               | 2.6 | 11.7 | 4.5 | 1.4 | 2.0 | 8.2 | 7.7 | 7.0 | 2.4 | 1.3 | 3.2 | 2.7 | 2.5 | 4.9  | 2.8 | 3.6 | 3.3 | 5.1 | 2.2 | 3.0 | 2.0 | 7.0 | 4.7 | 3.0 | 4.4 | 2.5 | 1.4 | 4.6 | 0.4 | 2.1 | 3.8              | 2.0 |

### 3.2.2. Analysis of non-sampling errors

#### A. Coverage

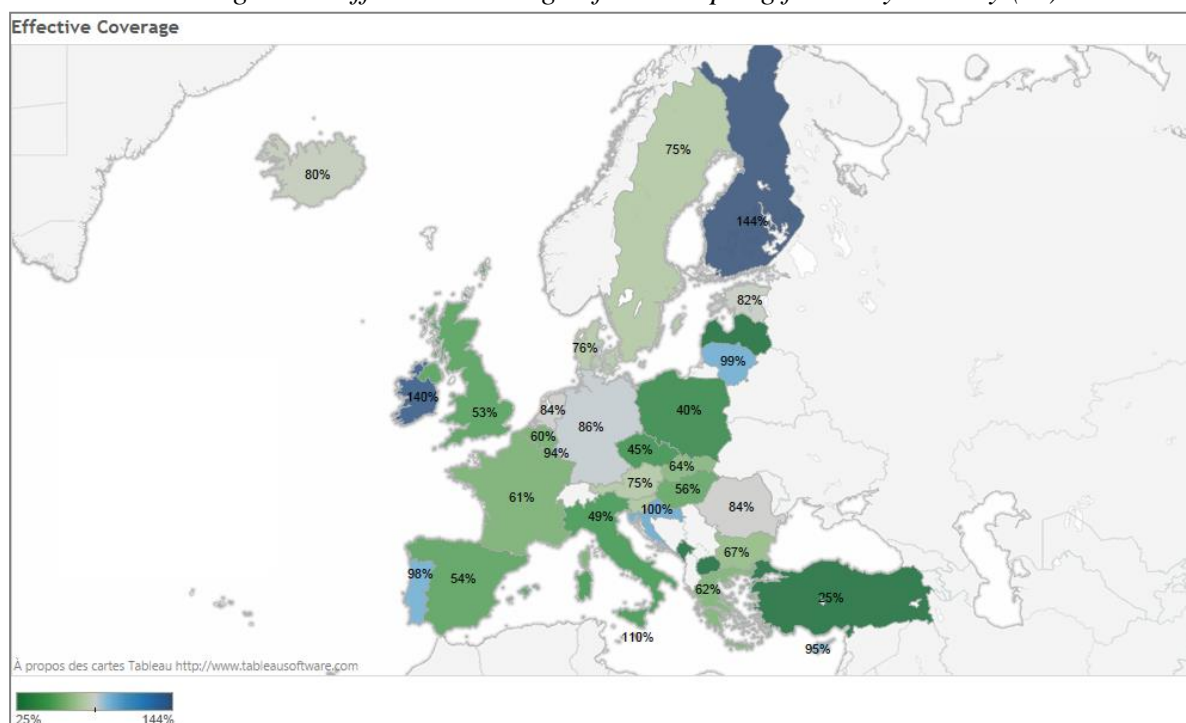
The ‘*Sampling Plan Report*’ produced by Gallup gives information on the effective coverage level of the sampling frame, defined as the ratio of the size of the statistical reference population over the effective size of the actual sampling (the number of companies in the actual sampling frame whose telephone number is available). According to this report, effective coverage levels differ from country to country. In three cases (Finland, Ireland and Malta) the sampling frame included more companies or establishments than those in the statistical population, which might be an indicator that these frames have not been updated and include non-existent units or undercoverage of the reference frames. In another 13 countries, the coverage level varies between 75% and 100% of the statistical reference population. The ‘*Sampling Plan Report*’ also concludes that, in some countries, effective coverage level varies among NACE codes and sizes. As discussed in section 2.1.1, this fact may affect the accuracy and comparability among countries of the third ECS.

**Table 6: Effective coverage of the sampling frame by country (%)**

|  | <b>Effective coverage</b> | <b>Unit level</b> | <b>Type of register</b> |
|--|---------------------------|-------------------|-------------------------|
| <b>Austria</b>                               | 75%                       | Establishment     | Commercial              |
| <b>Belgium</b>                               | 60%                       | Establishment     | Commercial              |
| <b>Bulgaria</b>                              | 67%                       | Company           | NSI                     |
| <b>Croatia</b>                               | 100%                      | Company           | NSI                     |
| <b>Cyprus</b>                                | 95%                       | Company           | NSI                     |
| <b>Czech Republic</b>                        | 45%                       | Company           | Commercial              |
| <b>Denmark</b>                               | 76%                       | Establishment     | Commercial              |
| <b>Estonia</b>                               | 82%                       | Company           | Commercial              |
| <b>Finland</b>                               | 144%                      | Establishment     | Commercial              |
| <b>France</b>                                | 61%                       | Establishment     | Commercial              |
| <b>Former Yugoslav Republic of Macedonia</b> | NA                        | Company           | NSI                     |
| <b>Germany</b>                               | 86%                       | Establishment     | Commercial              |
| <b>Greece</b>                                | 62%                       | Mixed             | Commercial              |
| <b>Hungary</b>                               | 56%                       | Company           | NSI                     |
| <b>Iceland</b>                               | 80%                       | Company           | NSI                     |
| <b>Ireland</b>                               | 140%                      | Company           | Commercial              |
| <b>Italy</b>                                 | 49%                       | Company           | Commercial              |
| <b>Latvia</b>                                | NA                        | Company           | NSI                     |
| <b>Lithuania</b>                             | 99%                       | Company           | Commercial              |
| <b>Luxembourg</b>                            | 94%                       | Establishment     | Commercial              |
| <b>Malta</b>                                 | 110%                      | Company           | Trade registry          |
| <b>Montenegro</b>                            | NA                        | Company           | NSI                     |

|                    | Effective coverage | Unit level    | Type of register |
|--------------------|--------------------|---------------|------------------|
| <b>Netherlands</b> | 84%                | Establishment | Trade registry   |
| <b>Poland</b>      | 40%                | Establishment | Commercial       |
| <b>Portugal</b>    | 98%                | Company       | Commercial       |
| <b>Romania</b>     | 84%                | Company       | Commercial       |
| <b>Slovakia</b>    | 64%                | Company       | Commercial       |
| <b>Slovenia</b>    | 73%                | Establishment | Commercial       |
| <b>Spain</b>       | 54%                | Establishment | Commercial       |
| <b>Sweden</b>      | 75%                | Establishment | Commercial       |
| <b>Turkey</b>      | 25%                | Company       | Commercial       |
| <b>UK</b>          | 53%                | Establishment | Commercial       |

Figure 9: Effective coverage of the sampling frame by country (%)



## B. Unit non-response

Unit non-response can be defined as the failure to obtain information from an eligible company. In the ECS non-response is classified as being due to either:

- the inability to make contact with the selected sample unit (no contact);
- unwillingness of the sampled unit to participate in the survey (refusal);
- being unable to complete the interview with the sample unit<sup>26</sup>.

This information is collected in the paradata database of the ECS and processed by the consultant. Two indicators of unit non-response are considered in this report:

<sup>26</sup> The American Association for Public Opinion Research. 2009. Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys. 6th edition. AAPOR.

- **Gross unit non-response rate (MM):** percentage of units in the gross sample whose final status is not a completed interview (whatever the reason), the base for this percentage being the total gross sample.
- **Refusal rate (MM):** percentage of units in the gross sample that refused to answer the questions or terminated the interview before completing the questionnaire, the base for this percentage being the total gross sample.

For computing these indicators in the ER survey, the total ‘gross’ sample is defined as those establishments in the net sample of the MM that have ER and contact to this ER is allowed by the respondent of the MM survey<sup>27</sup>.

MM non-response rates are in general high, corresponding to 68.2% of the gross sample for the MM survey questionnaire and 41.0% for the ER survey. Non-response rate varies significantly among countries, from the 82% in Austria to 31% in Montenegro. The ToR of the third ECS established a non-response rate lower than 50% in each country. Considering the fact that the ECS is not a compulsory survey within the ESS – as is SBS – and the features of the available sampling frames, this objective could be considered as too ambitious. In fact, such a response rate of 50% was achieved only in 10 countries<sup>28</sup> (ME, the Former Yugoslav Republic of Macedonia, SI, HR, LU, RO, HU, EL, CY and EE). The following figure present unit non-response at a country level.

Figure 10: Gross unit non-response rates for MM by country (% of the gross sample)

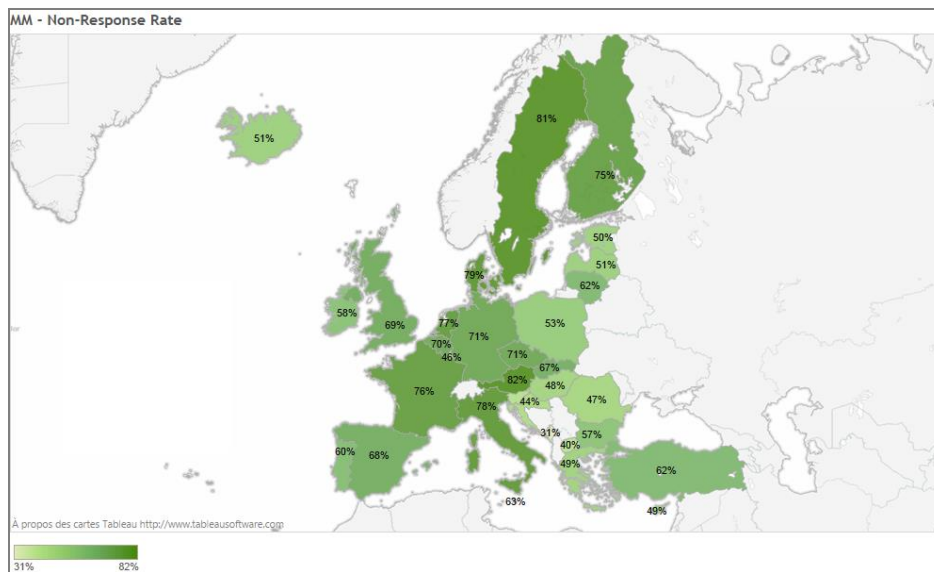
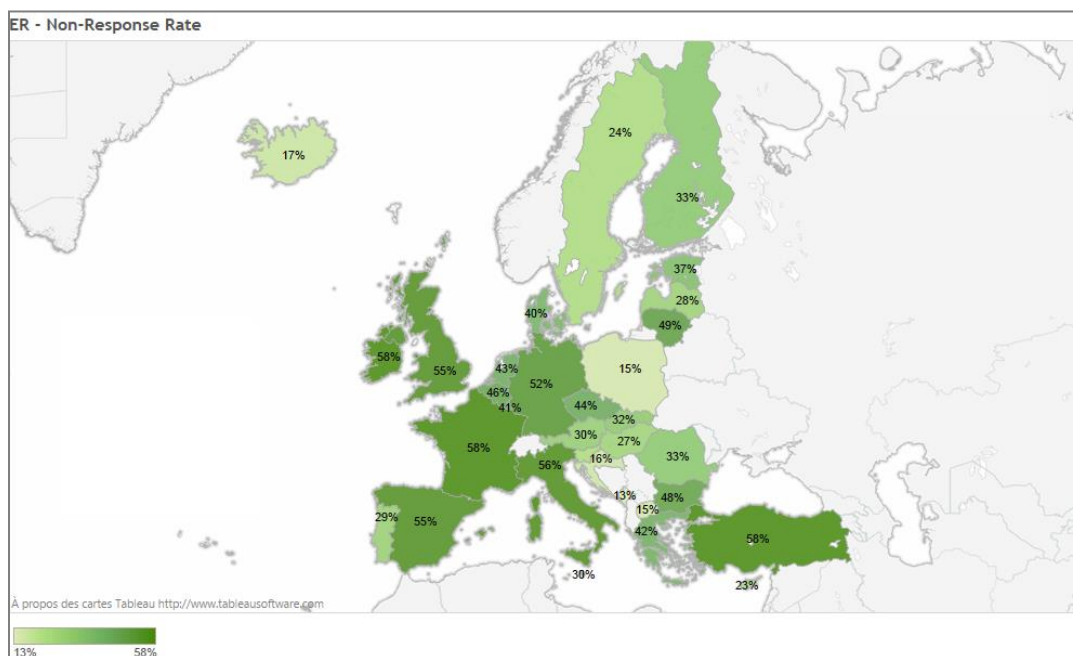


Figure 11: Gross unit non-response rates for ER by country (% of the sample of establishment with ER and permission to contact them)

<sup>27</sup> There are some minor differences between the definition of non-response and refusal rates presented in this report and those in the Gallup Technical report. The reason for these differences is the different codes used for the variable ‘final status’ in the paradata provided to the consultant and in the paradata used by Gallup. The differences affect the following categories: Max allowed calls made – eligible, No answer – eligible and other. These codes are not present in the paradata provided to the consultant but used in the formulas used by Gallup. In any case, the differences are small and have no impact on the analysis of non-response and refusal carried out by the consultant. As presented in Gallup’s technical report (page 49), this rates decrease when an allocation method is applied to these units with unknown eligibility. In that case, non-response rate is given by 65% and varies from 82% in Austria to 24% in Montenegro.

<sup>28</sup> In three other countries (LV, IS and PL) the response rates are closed to the target percentage established by the technical specifications.



As shown in Tables 7 and 8, refusal is the largest source of non-response in both questionnaires. Adding up these reasons that are related to refusal (such as; refused by the respondent, no other respondent is available, hard refusal, refused by the gatekeeper, terminated interview), refusal-related issues account for 39.7% of the non-response in MM survey and 21.5% in the ER survey. The attrition rate, due to difficulty in convincing the respondent to participate in the survey, once she or he decides to answer the questionnaire, is very low (in both surveys, fewer than 1% of the interviews were terminated before completing). Refusal is the only relevant source of non-response in the ER survey.

In the MM survey, the impossibility of carrying out the interview before the fieldwork deadline accounted for 28.0% of the non-responses (schedule time for call-back + respondent is not available during the fieldwork + starting interview another time). A strategy to recover some of the potential respondents that were lost for this reason – considering some kind of flexibility in the deadlines once a company is contacted – might be considered in the fourth ECS.

Non-contact (faulty/disconnected number + no answer + max allowed calls + fax /data line/pager + answering machine) is the third source of non-response in MM survey, being responsible for 21.7% of the non-responses.

Finally, 8.3% of the non-responses in the MM survey is due to lack of eligibility (the company or all its establishments have fewer than 10 employees + residence, not business).

**Table 7: Reasons for unit non-response for MM (n and % of the gross sample)**

| Reasons for non-response   | n      | %    |
|--|--------|------|
| <b>Refused by the respondent, no other respondent is available</b> | 37,503 | 24.3 |
| <b>Schedule time for call-back</b>                                 | 30,670 | 19.9 |
| <b>Hard refusal</b>  | 21,818 | 14.1 |
| <b>Non-working/disconnected number</b>                             | 12,485 | 8.1  |
| <b>Respondent is not available during the fieldwork</b>            | 11,687 | 7.6  |
| <b>No answer</b>   | 8,772  | 5.7  |
| <b>Less than 10 employees</b>                                      | 8,114  | 5.3  |
| <b>Max allowed calls</b>   | 6,673  | 4.3  |

| Reasons for non-response                                       | n              | %            |
|--|----------------|--------------|
| Fax/data line / pager  | 4,563          | 3.0          |
| Residence, not business  | 4,126          | 2.7          |
| The company is under liquidation                               | 1,591          | 1.0          |
| Refused by gatekeeper  | 1,166          | 0.8          |
| Answering machine  | 986            | 0.6          |
| Terminated interview   | 797            | 0.5          |
| Start interview other time                                     | 797            | 0.5          |
| Language barrier   | 593            | 0.4          |
| The contacted person cannot put through to the eligible person | 497            | 0.3          |
| None of the establishments has 10 or more employees            | 407            | 0.3          |
| Others   | 400            | 0.3          |
| <b>Total</b>   | <b>154,207</b> | <b>100.0</b> |

**Table 8: Reasons for unit non-response for ER (n and % of companies answering the MM questionnaire and allowing contacting the ER representative)**

| Reasons for non-response                         | n             | %            |
|--|---------------|--------------|
| Hard refusal by the eligible respondent          | 2,637         | 20.6         |
| Respondent is not available during the fieldwork | 150           | 1.2          |
| No answer  | 140           | 1.1          |
| Fax/data line / pager                            | 124           | 1.0          |
| Terminated interview                             | 117           | 0.9          |
| Non-working / disconnected number                | 81            | 0.6          |
| Call-back  | 62            | 0.5          |
| Max allowed calls                                | 51            | 0.4          |
| Call blocking                                    | 50            | 0.4          |
| <b>Total</b>                                     | <b>12,793</b> | <b>100.0</b> |

Refusal rates are 63.1% and 37.9% in the MM and ER questionnaires respectively. These rates present significant variations between countries, as shown in Figure 12.



Figure 12: Refusal rates for MM by country (% of gross sample)

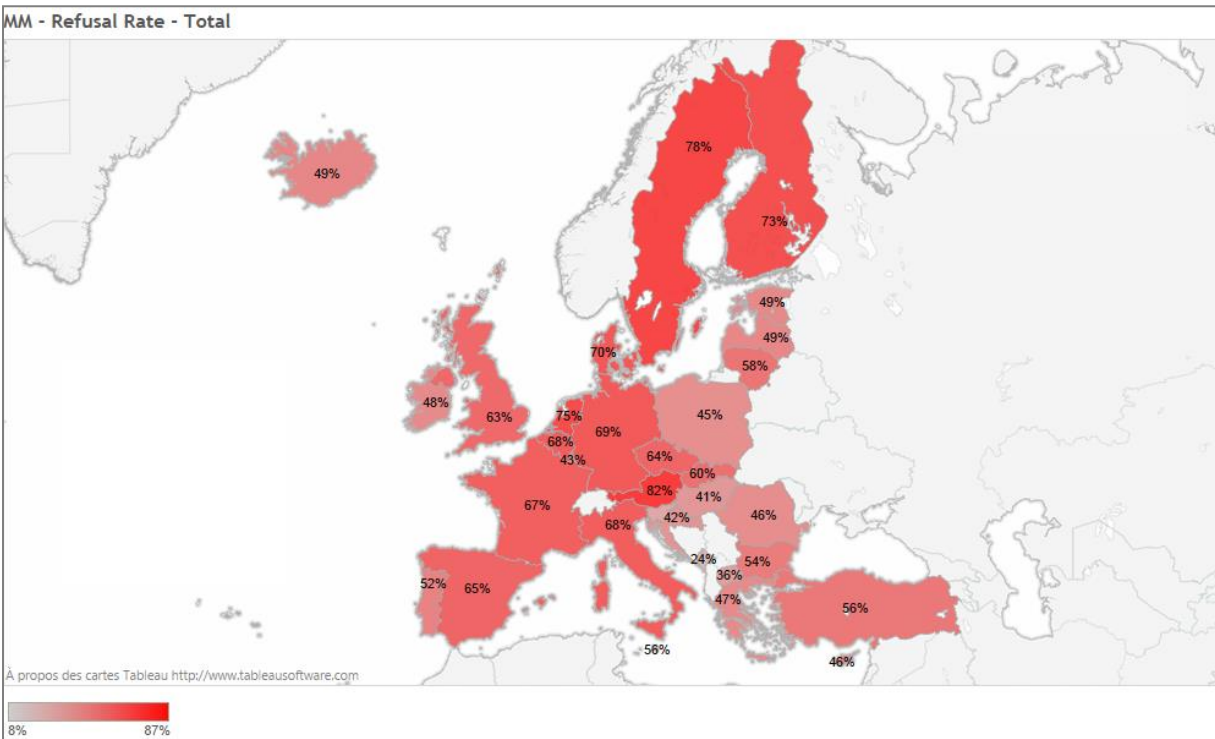
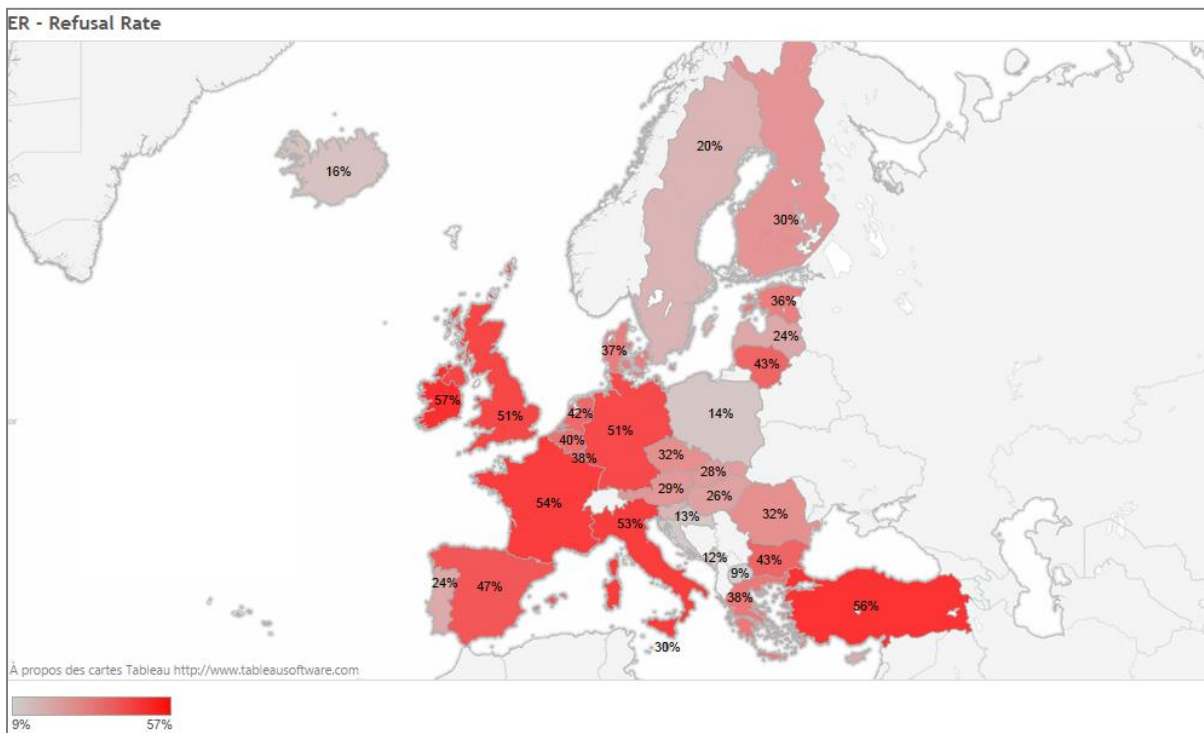


Figure 13: Refusal rates for ER by country (% establishments with ER and permission to contact them)



The rate of non-response is consistently higher in the MM questionnaire compared with the ER one. Table 8, above, shows that high rates of non-response are registered independently of the establishment size or the business sector, except for public administration, where managers have been more willing to answer the questionnaire, probably because they more used to such initiatives. The same statement on public

sector can be applied to the ER questionnaire, as we can see in Table 9 below. However, the gap between public and other sectors in the rate of non-responses is higher in the ER questionnaire compared to the MM one. Moreover, the average rate of non-response is slightly higher within small-size establishments, probably because of the close proximity between managers and workers.

**Table 9: Gross unit non-response for MM by country, sector and size (% of the gross sample)**

| MM Questionnaire | Non-Response Rate |          |          |        |                 |                  |                |
|------------------|-------------------|----------|----------|--------|-----------------|------------------|----------------|
|                  | Total             | Industry | Services | Public | 10–49 employees | 50–249 employees | 250+ employees |
| Belgium          | 70%               | 71%      | 72%      | 50%    | 76%             | 68%              | 69%            |
| Bulgaria         | 57%               | 52%      | 63%      | 39%    | 64%             | 48%              | 48%            |
| Czech Republic   | 71%               | 67%      | 75%      | 54%    | 76%             | 67%              | 67%            |
| Denmark          | 79%               | 81%      | 79%      | 68%    | 81%             | 79%              | 74%            |
| Germany          | 71%               | 76%      | 69%      | 55%    | 74%             | 66%              | 73%            |
| Estonia          | 50%               | 41%      | 57%      | 28%    | 61%             | 41%              | 22%            |
| Ireland          | 58%               | 58%      | 58%      | 53%    | 59%             | 52%              | 62%            |
| Greece           | 49%               | 51%      | 49%      | 50%    | 44%             | 56%              | 47%            |
| Spain            | 68%               | 69%      | 69%      | 51%    | 68%             | 73%              | 68%            |
| France           | 76%               | 76%      | 77%      | 73%    | 69%             | 76%              | 84%            |
| Croatia          | 44%               | 44%      | 44%      | 29%    | 47%             | 36%              | 51%            |
| Italy            | 78%               | 75%      | 79%      | 79%    | 80%             | 73%              | 75%            |
| Cyprus           | 49%               | 44%      | 51%      | 49%    | 50%             | 52%              | 32%            |
| Latvia           | 51%               | 51%      | 54%      | 21%    | 56%             | 52%              | 46%            |
| Lithuania        | 62%               | 61%      | 64%      | 42%    | 65%             | 57%              | 66%            |
| Luxembourg       | 46%               | 51%      | 42%      | 57%    | 45%             | 51%              | 23%            |
| Hungary          | 48%               | 47%      | 51%      | 28%    | 27%             | 53%              | 49%            |
| Malta            | 63%               | 53%      | 65%      | 74%    | 68%             | 52%              | 49%            |
| Netherlands      | 77%               | 77%      | 78%      | 73%    | 76%             | 79%              | 78%            |
| Austria          | 82%               | 84%      | 82%      | 66%    | 87%             | 79%              | 74%            |
| Poland           | 53%               | 50%      | 58%      | 20%    | 56%             | 52%              | 55%            |
| Portugal         | 60%               | 56%      | 65%      | 45%    | 58%             | 56%              | 70%            |
| Romania          | 47%               | 43%      | 53%      | 33%    | 48%             | 52%              | 45%            |
| Slovenia         | 41%               | 42%      | 41%      | 44%    | 49%             | 33%              | 32%            |
| Slovakia         | 67%               | 64%      | 70%      | 58%    | 73%             | 64%              | 56%            |
| Finland          | 75%               | 76%      | 77%      | 50%    | 78%             | 74%              | 76%            |
| Sweden           | 81%               | 81%      | 82%      | 54%    | 85%             | 78%              | 78%            |
| United           | 69%               | 66%      | 70%      | 64%    | 58%             | 77%              | 73%            |

| MM Questionnaire                      | Non-Response Rate |          |          |        |                 |                  |                |
|---------------------------------------|-------------------|----------|----------|--------|-----------------|------------------|----------------|
|                                       | Total             | Industry | Services | Public | 10–49 employees | 50–249 employees | 250+ employees |
| Kingdom                               |                   |          |          |        |                 |                  |                |
| Iceland                               | 51%               | 54%      | 52%      | 48%    | 55%             | 47%              | 43%            |
| Montenegro                            | 31%               | 32%      | 31%      | 28%    | 37%             | 26%              | 11%            |
| Former Yugoslav Republic of Macedonia | 40%               | 36%      | 46%      | 18%    | 37%             | 46%              | 44%            |
| Turkey                                | 62%               | 62%      | 62%      | 60%    | 58%             | 69%              | 56%            |

Colour saturation proportional to the unit non-response rates (lowest value = white / largest value =darkest green).

**Table 10: Gross unit non-response for ER by country, sector and size (% establishments with ER)**

| ER Questionnaire | Non-Response Rate |          |          |        |                 |                  |                |
|------------------|-------------------|----------|----------|--------|-----------------|------------------|----------------|
|                  | Total             | Industry | Services | Public | 10–49 employees | 50–249 employees | 250+ employees |
| Belgium          | 46%               | 49%      | 50%      | 24%    | 61%             | 41%              | 51%            |
| Bulgaria         | 48%               | 45%      | 69%      | 29%    | 67%             | 55%              | 46%            |
| Czech Republic   | 34%               | 33%      | 42%      | 26%    | 43%             | 34%              | 36%            |
| Denmark          | 40%               | 44%      | 42%      | 19%    | 50%             | 38%              | 40%            |
| Germany          | 52%               | 50%      | 61%      | 42%    | 80%             | 61%              | 46%            |
| Estonia          | 38%               | 40%      | 41%      | 12%    | 33%             | 49%              | 34%            |
| Ireland          | 58%               | 58%      | 63%      | 55%    | 65%             | 64%              | 57%            |
| Greece           | 42%               | 43%      | 48%      | 34%    | 51%             | 43%              | 45%            |
| Spain            | 55%               | 51%      | 60%      | 36%    | 58%             | 57%              | 56%            |
| France           | 58%               | 56%      | 62%      | 44%    | 55%             | 54%              | 70%            |
| Croatia          | 16%               | 17%      | 19%      | 11%    | 25%             | 21%              | 13%            |
| Italy            | 56%               | 59%      | 63%      | 35%    | 68%             | 55%              | 62%            |
| Cyprus           | 23%               | 18%      | 19%      | 57%    | 21%             | 19%              | 15%            |
| Latvia           | 28%               | 24%      | 41%      | 20%    | 65%             | 37%              | 18%            |
| Lithuania        | 49%               | 46%      | 58%      | 17%    | 65%             | 50%              | 37%            |
| Luxembourg       | 41%               | 42%      | 44%      | 25%    | 54%             | 37%              | 40%            |
| Hungary          | 27%               | 27%      | 33%      | 15%    | 26%             | 35%              | 27%            |
| Malta            | 30%               | 28%      | 27%      | 73%    | 33%             | 23%              | 29%            |
| Netherlands      | 43%               | 40%      | 49%      | 26%    | 64%             | 38%              | 38%            |
| Austria          | 30%               | 30%      | 33%      | 25%    | 46%             | 29%              | 29%            |
| Poland           | 15%               | 20%      | 13%      | 9%     | 16%             | 17%              | 16%            |

| ER Questionnaire                      | Non-Response Rate |          |          |        |                 |                  |                |
|---------------------------------------|-------------------|----------|----------|--------|-----------------|------------------|----------------|
|                                       | Total             | Industry | Services | Public | 10–49 employees | 50–249 employees | 250+ employees |
| Portugal                              | 29%               | 34%      | 31%      | 9%     | 19%             | 31%              | 37%            |
| Romania                               | 33%               | 33%      | 39%      | 9%     | 40%             | 35%              | 33%            |
| Slovenia                              | 23%               | 24%      | 27%      | 17%    | 38%             | 23%              | 19%            |
| Slovakia                              | 32%               | 39%      | 29%      | 22%    | 42%             | 30%              | 32%            |
| Finland                               | 33%               | 25%      | 42%      | 23%    | 45%             | 27%              | 29%            |
| Sweden                                | 24%               | 19%      | 29%      | 20%    | 32%             | 23%              | 20%            |
| United Kingdom                        | 55%               | 62%      | 70%      | 30%    | 85%             | 64%              | 63%            |
| Iceland                               | 17%               | 18%      | 29%      | 5%     | 18%             | 20%              | 17%            |
| Montenegro                            | 13%               | 9%       | 16%      | 12%    | 24%             | 8%               | 12%            |
| Former Yugoslav Republic of Macedonia | 15%               | 17%      | 16%      | 10%    | 18%             | 14%              | 20%            |
| Turkey                                | 58%               | 51%      | 65%      | 40%    | 59%             | 56%              | 69%            |

Colour saturation proportional to the unit non-response rates (lowest value = white / largest value =darkest green).

Refusal rates also depend on the sector and size of the establishment. Refusal rates in both MM and ER interviews are generally lower in the public sector, except for a few countries such as Malta or the Netherlands. For some countries, low rates of refusals have been registered in bigger establishments.

**Table 11: Refusal for MM by country, sector and size (% of gross sample)**

| MM Questionnaire | Estimated Refusal Rate |          |          |        |                 |                  |                |
|------------------|------------------------|----------|----------|--------|-----------------|------------------|----------------|
|                  | Total                  | Industry | Services | Public | 10–49 employees | 50–249 employees | 250+ employees |
| Belgium          | 68%                    | 69%      | 70%      | 40%    | 74%             | 65%              | 66%            |
| Bulgaria         | 54%                    | 48%      | 60%      | 37%    | 60%             | 46%              | 47%            |
| Czech Republic   | 64%                    | 61%      | 68%      | 52%    | 69%             | 63%              | 59%            |
| Denmark          | 70%                    | 75%      | 70%      | 52%    | 74%             | 71%              | 60%            |
| Germany          | 69%                    | 74%      | 67%      | 54%    | 73%             | 65%              | 71%            |
| Estonia          | 49%                    | 41%      | 56%      | 24%    | 60%             | 40%              | 22%            |
| Ireland          | 48%                    | 49%      | 47%      | 44%    | 51%             | 37%              | 51%            |
| Greece           | 47%                    | 49%      | 46%      | 48%    | 43%             | 53%              | 43%            |
| Spain            | 65%                    | 65%      | 66%      | 51%    | 64%             | 69%              | 65%            |
| France           | 67%                    | 69%      | 67%      | 59%    | 61%             | 60%              | 79%            |
| Croatia          | 42%                    | 43%      | 44%      | 29%    | 46%             | 34%              | 51%            |
| Italy            | 68%                    | 69%      | 69%      | 53%    | 73%             | 64%              | 67%            |

| MM Questionnaire                             | Estimated Refusal Rate |          |          |        |                 |                  |                |
|--|------------------------|----------|----------|--------|-----------------|------------------|----------------|
|  | Total                  | Industry | Services | Public | 10–49 employees | 50–249 employees | 250+ employees |
| <b>Cyprus</b>                                | 46%                    | 41%      | 48%      | 45%    | 48%             | 47%              | 32%            |
| <b>Latvia</b>                                | 49%                    | 49%      | 52%      | 21%    | 55%             | 49%              | 44%            |
| <b>Lithuania</b>                             | 58%                    | 57%      | 60%      | 41%    | 60%             | 55%              | 61%            |
| <b>Luxembourg</b>                            | 43%                    | 48%      | 39%      | 54%    | 43%             | 46%              | 22%            |
| <b>Hungary</b>                               | 41%                    | 40%      | 43%      | 27%    | 40%             | 45%              | 45%            |
| <b>Malta</b>                                 | 56%                    | 47%      | 56%      | 71%    | 60%             | 46%              | 45%            |
| <b>Netherlands</b>                           | 75%                    | 75%      | 76%      | 71%    | 75%             | 77%              | 75%            |
| <b>Austria</b>                               | 82%                    | 83%      | 82%      | 64%    | 87%             | 78%              | 73%            |
| <b>Poland</b>                                | 45%                    | 42%      | 50%      | 20%    | 47%             | 42%              | 52%            |
| <b>Portugal</b>                              | 52%                    | 46%      | 57%      | 42%    | 46%             | 50%              | 65%            |
| <b>Romania</b>                               | 46%                    | 42%      | 52%      | 31%    | 48%             | 51%              | 42%            |
| <b>Slovenia</b>                              | 33%                    | 33%      | 33%      | 33%    | 41%             | 25%              | 19%            |
| <b>Slovakia</b>                              | 60%                    | 55%      | 64%      | 54%    | 66%             | 60%              | 43%            |
| <b>Finland</b>                               | 73%                    | 74%      | 75%      | 46%    | 77%             | 71%              | 72%            |
| <b>Sweden</b>                                | 78%                    | 78%      | 80%      | 42%    | 82%             | 77%              | 74%            |
| <b>United Kingdom</b>                        | 63%                    | 59%      | 65%      | 51%    | 55%             | 70%              | 66%            |
| <b>Iceland</b>                               | 49%                    | 53%      | 50%      | 46%    | 53%             | 46%              | 43%            |
| <b>Montenegro</b>                            | 24%                    | 26%      | 24%      | 21%    | 28%             | 22%              | 8%             |
| <b>Former Yugoslav Republic of Macedonia</b> | 36%                    | 33%      | 42%      | 13%    | 34%             | 43%              | 42%            |
| <b>Turkey</b>                                | 56%                    | 56%      | 56%      | 57%    | 56%             | 59%              | 48%            |

*Colour saturation proportional to the refusal rates (lowest value = white / largest value = darkest red).*

**Table 12: Refusal for ER by country, sector and size (% establishments with ER)**

| ER Questionnaire                             | Estimated Refusal Rate |          |          |        |                 |                  |                |
|--|------------------------|----------|----------|--------|-----------------|------------------|----------------|
|  | Total                  | Industry | Services | Public | 10-49 employees | 50-249 employees | 250+ employees |
| <b>Belgium</b>                               | 40%                    | 44%      | 43%      | 20%    | 57%             | 35%              | 44%            |
| <b>Bulgaria</b>                              | 43%                    | 39%      | 65%      | 29%    | 58%             | 50%              | 42%            |
| <b>Czech Republic</b>                        | 32%                    | 30%      | 41%      | 26%    | 40%             | 33%              | 34%            |
| <b>Denmark</b>                               | 37%                    | 41%      | 39%      | 13%    | 46%             | 36%              | 33%            |
| <b>Germany</b>                               | 51%                    | 50%      | 57%      | 42%    | 68%             | 61%              | 46%            |
| <b>Estonia</b>                               | 36%                    | 39%      | 41%      | 12%    | 33%             | 48%              | 34%            |
| <b>Ireland</b>                               | 57%                    | 55%      | 62%      | 55%    | 63%             | 64%              | 54%            |
| <b>Greece</b>                                | 38%                    | 41%      | 42%      | 32%    | 47%             | 39%              | 41%            |
| <b>Spain</b>                                 | 47%                    | 43%      | 53%      | 31%    | 50%             | 49%              | 48%            |
| <b>France</b>                                | 54%                    | 53%      | 58%      | 39%    | 51%             | 47%              | 68%            |
| <b>Croatia</b>                               | 13%                    | 12%      | 15%      | 11%    | 21%             | 15%              | 9%             |
| <b>Italy</b>                                 | 53%                    | 56%      | 62%      | 28%    | 64%             | 52%              | 61%            |
| <b>Cyprus</b>                                | 23%                    | 18%      | 19%      | 54%    | 21%             | 19%              | 15%            |
| <b>Latvia</b>                                | 24%                    | 22%      | 39%      | 12%    | 65%             | 34%              | 15%            |
| <b>Lithuania</b>                             | 43%                    | 42%      | 51%      | 10%    | 59%             | 44%              | 34%            |
| <b>Luxembourg</b>                            | 38%                    | 39%      | 42%      | 25%    | 52%             | 34%              | 37%            |
| <b>Hungary</b>                               | 26%                    | 26%      | 32%      | 15%    | 24%             | 34%              | 27%            |
| <b>Malta</b>                                 | 30%                    | 28%      | 27%      | 73%    | 33%             | 23%              | 29%            |
| <b>Netherlands</b>                           | 42%                    | 39%      | 48%      | 25%    | 62%             | 38%              | 37%            |
| <b>Austria</b>                               | 29%                    | 29%      | 33%      | 24%    | 44%             | 28%              | 29%            |
| <b>Poland</b>                                | 14%                    | 19%      | 11%      | 5%     | 15%             | 16%              | 15%            |
| <b>Portugal</b>                              | 24%                    | 28%      | 30%      | 0%     | 19%             | 24%              | 33%            |
| <b>Romania</b>                               | 32%                    | 32%      | 38%      | 9%     | 37%             | 34%              | 33%            |
| <b>Slovenia</b>                              | 20%                    | 21%      | 24%      | 9%     | 35%             | 21%              | 12%            |
| <b>Slovakia</b>                              | 28%                    | 35%      | 24%      | 20%    | 40%             | 26%              | 24%            |
| <b>Finland</b>                               | 30%                    | 23%      | 39%      | 17%    | 42%             | 24%              | 27%            |
| <b>Sweden</b>                                | 20%                    | 16%      | 25%      | 11%    | 28%             | 19%              | 17%            |
| <b>United Kingdom</b>                        | 51%                    | 60%      | 63%      | 30%    | 63%             | 62%              | 62%            |
| <b>Iceland</b>                               | 16%                    | 16%      | 18%      | 2%     | 18%             | 17%              | 17%            |
| <b>Montenegro</b>                            | 12%                    | 9%       | 14%      | 13%    | 24%             | 8%               | 8%             |
| <b>Former Yugoslav Republic of Macedonia</b> | 9%                     | 11%      | 8%       | 10%    | 12%             | 7%               | 13%            |

| ER Questionnaire | Estimated Refusal Rate |          |          |        |                 |                  |                |
|------------------|------------------------|----------|----------|--------|-----------------|------------------|----------------|
|                  | Total                  | Industry | Services | Public | 10-49 employees | 50-249 employees | 250+ employees |
| Turkey           | 56%                    | 50%      | 62%      | 40%    | 56%             | 56%              | 66%            |

*Colour saturation proportional to the refusal rates (lowest value = white / largest value =darkest red).*

### C. Item Non-Response

The consultant has carried out an analysis of the item non-response for the 22 variables proposed in subsection 3.2.2, as well as for these questions that presented high non-response rates during the pre-test (See section 2.1.2).

In general, the third ECS does not exhibit significant problems of item non-response. As we can see in Table 13, the rates of item non-response are globally very low, except for a few, specific, cases where higher results seems to be the consequence of specific national issues, such as the representativeness of trade unions in Hungary or the frequency of meetings between employees and managers in Iceland. High rates of non-response have been registered in almost all countries only for item Q4, which deals with the proportion of employees who are members of a trade union. The average rate of non-response for this specific item is 13.5%, compared to a global average of 1.5%. A more detailed analysis based on Table 13 below shows that high values have been registered, independent of the business sector or the size of the establishment.

The analysis of item non-response analysis for the subset of questions that proved to be problematic during the pre-testing phase (Annex 1) shows that potential problems related to non-response were solved in the final version of the questionnaire. Item non-response rates are high only for Q12 – ‘Per week, what number of hours of your working time are you entitled to spend on your duties as an employee representative?’ (ER interviews). For this question, item non-response rate exceeded 5% in 20 countries, with extreme values close or above 50% in FR, IT and IS.

**Table 13: Item non-response rate by country**

| Questions | BE          | CZ         | DK          | DE          | EE          | GR         | ES          | FR          | IE         | IT          | CY         | LV          | LT         | LU          | HU         | MT         | NL          | AT         | PL         | PT          | SI          | SK         | FI          | SE          | UK          | BG          | HR         | RO          | IS         | MK         | ME         | TR          |
|-----------|-------------|------------|-------------|-------------|-------------|------------|-------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|------------|-------------|------------|------------|-------------|-------------|------------|-------------|-------------|-------------|-------------|------------|-------------|------------|------------|------------|-------------|
| BINNOORG  | 1.0         | 0.5        | 0.5         | 0.8         | 0.2         | 0.7        | 0.2         | 1.1         | 0.4        | 0.5         | 1.6        | 0.9         | 1.5        | 3.0         | 0.6        | 1.0        | 2.3         | 0.4        | 0.6        | 0.5         | 0.0         | 1.8        | 0.2         | 0.7         | 2.7         | 1.1         | 0.2        | 2.5         | 0.4        | 0.8        | 0.7        | 2.2         |
| HFLEXI    | 2.2         | 0.5        | 0.7         | 1.2         | 0.4         | 2.2        | 4.5         | 4.0         | 3.5        | 0.8         | 1.1        | 7.0         | 4.8        | 4.5         | 1.4        | 0.4        | 2.9         | 1.0        | 1.9        | 2.2         | 1.6         | 1.5        | 1.0         | 3.5         | 4.8         | 1.3         | 0.4        | 3.2         | 1.9        | 1.2        | 0.3        | 2.9         |
| R_hvpprsh | 1.1         | 0.9        | 0.5         | 1.6         | 1.1         | 0.8        | 1.3         | 1.7         | 0.5        | 0.5         | 0.6        | 1.4         | 2.2        | 4.8         | 1.4        | 1.0        | 0.7         | 0.3        | 0.9        | 1.0         | 0.9         | 0.7        | 0.1         | 0.4         | 2.8         | 5.4         | 1.8        | 4.4         | 0.8        | 3.4        | 2.6        | 3.5         |
| ICAEST    | 8.8         | 0.5        | 1.5         | 1.6         | 0.7         | 6.1        | 1.0         | 1.7         | 2.4        | 1.9         | 4.0        | 0.9         | 2.4        | 4.6         | 2.0        | 1.3        | 1.6         | 1.5        | 2.6        | 3.6         | 2.0         | 1.1        | 1.4         | 2.4         | 8.8         | 2.7         | 0.8        | 3.1         | 4.2        | 11.4       | 5.6        | 5.0         |
| ICAEST    | 0.4         | 0.2        | 0.3         | 0.1         | 0.2         | 0.3        | 0.2         | 0.7         | 0.2        | 0.3         | 0.0        | 0.5         | 0.2        | 1.2         | 0.5        | 0.7        | 0.5         | 0.2        | 0.3        | 0.3         | 0.0         | 0.4        | 0.3         | 0.1         | 0.3         | 0.5         | 0.0        | 1.8         | 0.2        | 0.4        | 0.3        | 1.4         |
| JSUGGS    | 0.3         | 0.0        | 0.1         | 0.2         | 0.0         | 0.2        | 0.1         | 2.7         | 0.2        | 0.2         | 0.0        | 1.1         | 0.4        | 5.5         | 0.8        | 0.0        | 0.7         | 0.4        | 0.8        | 0.5         | 0.0         | 1.6        | 0.1         | 0.4         | 0.8         | 1.3         | 0.0        | 2.0         | 0.2        | 0.4        | 0.3        | 1.9         |
| KOSICK    | 1.1         | 0.1        | 0.1         | 0.7         | 0.2         | 0.4        | 0.5         | 0.6         | 0.2        | 0.2         | 0.4        | 0.0         | 0.5        | 2.8         | 1.1        | 0.3        | 0.5         | 0.7        | 0.5        | 0.5         | 0.2         | 0.5        | 0.4         | 0.3         | 0.8         | 0.7         | 0.2        | 2.0         | 0.6        | 0.0        | 0.7        | 2.1         |
| KOLOMOT   | 1.6         | 1.9        | 0.8         | 1.5         | 2.2         | 1.1        | 2.2         | 1.7         | 0.7        | 1.8         | 0.4        | 3.0         | 1.8        | 6.6         | 4.9        | 4.6        | 0.9         | 1.3        | 2.7        | 1.2         | 0.4         | 1.5        | 0.2         | 0.9         | 2.1         | 3.9         | 0.8        | 6.9         | 1.8        | 4.0        | 2.6        | 2.4         |
| KCLIMATE  | 0.5         | 0.3        | 0.0         | 0.3         | 0.0         | 0.2        | 0.1         | 0.0         | 0.4        | 0.1         | 0.2        | 0.0         | 0.4        | 0.2         | 0.6        | 0.7        | 0.1         | 0.0        | 0.4        | 0.4         | 0.0         | 0.5        | 0.1         | 0.0         | 0.2         | 0.2         | 0.0        | 0.7         | 0.4        | 0.2        | 0.7        | 1.8         |
| Q1        | 2.2         | 0.5        | 1.6         | 0.3         | 0.0         | 2.8        | 0.7         | 2.3         | 1.0        | 0.0         | 3.1        | 1.4         | 5.7        | 0.0         | 0.7        | 0.0        | 0.7         | 0.5        | 1.3        | 0.0         | 2.3         | 0.6        | 5.0         | 5.8         | 3.2         | 5.9         | 0.6        | 5.4         | 5.5        | 7.4        | 1.0        | 11.8        |
| Q4        | <b>24.2</b> | <b>0.0</b> | <b>22.8</b> | <b>23.8</b> | <b>16.7</b> | <b>9.7</b> | <b>27.2</b> | <b>33.0</b> | <b>5.0</b> | <b>11.3</b> | <b>0.7</b> | <b>39.6</b> | <b>6.3</b> | <b>21.7</b> | <b>3.9</b> | <b>8.9</b> | <b>30.0</b> | <b>9.9</b> | <b>5.6</b> | <b>12.1</b> | <b>11.2</b> | <b>6.6</b> | <b>15.9</b> | <b>10.4</b> | <b>13.7</b> | <b>11.1</b> | <b>5.6</b> | <b>16.7</b> | <b>8.6</b> | <b>5.2</b> | <b>2.9</b> | <b>11.7</b> |
| Q10       | 4.8         | 0.0        | 0.0         | 0.0         | 0.0         | 0.0        | 0.0         | 0.0         | 0.0        | 0.0         | 0.0        | 0.0         | 0.0        | 0.0         | 0.0        | 0.0        | 0.0         | 0.0        | 0.0        | 0.0         | 0.0         | 0.0        | 0.0         | 0.0         | 5.0         | 0.0         | 20.0       | 0.0         | 0.0        | 0.0        | 0.0        | 0.0         |
| Q19       | 0.7         | 0.5        | 2.1         | 1.7         | 1.4         | 0.0        | 2.8         | 0.4         | 1.0        | 5.8         | 0.6        | 2.2         | 6.0        | 0.9         | 1.0        | 4.3        | 0.2         | 0.3        | 3.2        | 5.3         | 1.2         | 0.0        | 1.6         | 5.1         | 1.8         | 2.5         | 3.3        | 13.5        | 21.8       | 15.6       | 5.8        | 0.0         |
| Q44       | 0.0         | 0.5        | 0.0         | 0.3         | 0.0         | 0.0        | 0.0         | 0.0         | 0.0        | 0.0         | 0.6        | 0.0         | 0.0        | 0.0         | 0.7        | 0.0        | 0.4         | 0.0        | 0.5        | 0.0         | 0.0         | 1.0        | 0.0         | 0.0         | 0.5         | 0.0         | 0.6        | 0.4         | 0.9        | 0.0        | 0.0        | 0.0         |
| HVBPRES   | 1.3         | 0.6        | 0.5         | 1.3         | 0.4         | 0.7        | 1.4         | 0.8         | 0.2        | 0.5         | 0.4        | 1.1         | 2.2        | 3.2         | 1.3        | 1.0        | 0.5         | 0.3        | 0.7        | 0.9         | 1.3         | 0.7        | 0.0         | 0.5         | 2.8         | 2.5         | 1.2        | 2.9         | 0.4        | 1.6        | 3.0        | 3.2         |
| HVPGRPE   | 1.4         | 0.8        | 0.5         | 1.4         | 0.9         | 0.9        | 1.2         | 1.2         | 0.7        | 1.5         | 0.8        | 0.7         | 2.2        | 4.6         | 1.3        | 1.3        | 0.7         | 0.4        | 0.8        | 1.2         | 0.9         | 0.7        | 0.1         | 0.3         | 2.6         | 3.1         | 1.8        | 3.4         | 0.6        | 1.6        | 2.3        | 3.3         |
| KCLIMACH  | 1.8         | 1.4        | 0.8         | 1.1         | 1.6         | 1.3        | 0.3         | 1.1         | 0.9        | 0.6         | 2.0        | 2.9         | 2.2        | 1.1         | 1.7        | 0.7        | 1.4         | 1.5        | 1.8        | 1.1         | 0.5         | 2.5        | 0.9         | 1.6         | 2.3         | 2.9         | 0.0        | 2.7         | 1.0        | 1.4        | 1.0        | 2.0         |
| Q26_B     | 1.0         | 0.5        | 0.5         | 0.6         | 0.7         | 0.7        | 0.0         | 1.1         | 1.0        | 0.0         | 1.3        | 2.2         | 4.8        | 0.4         | 0.3        | 0.0        | 0.4         | 0.3        | 1.0        | 1.5         | 0.4         | 0.5        | 0.8         | 0.7         | 0.9         | 5.9         | 0.6        | 4.6         | 0.3        | 4.4        | 2.9        | 0.8         |
| Q26_F     | 1.5         | 1.0        | 0.0         | 0.3         | 1.4         | 2.1        | 0.4         | 0.8         | 1.0        | 0.3         | 2.5        | 3.3         | 11.9       | 0.9         | 0.3        | 0.0        | 0.4         | 0.0        | 3.9        | 2.3         | 2.4         | 0.0        | 1.6         | 2.1         | 0.9         | 4.2         | 1.1        | 3.1         | 0.6        | 8.1        | 7.7        | 1.3         |
| Q46_C     | 0.2         | 0.5        | 0.3         | 0.0         | 0.0         | 0.0        | 0.0         | 0.6         | 0.0        | 0.0         | 0.6        | 0.0         | 0.0        | 0.0         | 0.7        | 0.0        | 0.4         | 0.0        | 0.2        | 0.8         | 0.0         | 0.0        | 0.2         | 0.3         | 0.5         | 0.0         | 0.0        | 0.0         | 0.0        | 1.5        | 0.0        | 0.0         |



**Table 14: Item non-response for Q4 in ER survey by sector and size**

| <b>Q4: Approximately what percentage of employees at this establishment are members of a trade union?</b> |                 |                 |               |                        |                         |                       |
|---|-----------------|-----------------|---------------|------------------------|-------------------------|-----------------------|
|   | <b>Industry</b> | <b>Services</b> | <b>Public</b> | <b>10–49 employees</b> | <b>50–249 employees</b> | <b>250+ employees</b> |
| <b>BE</b>   | 20.0%           | 28.1%           | 21.0%         | 23.0%                  | 26.6%                   | 22.4%                 |
| <b>BG</b>   | 12.3%           | 18.2%           | 0.0%          | 10.0%                  | 17.5%                   | 10.8%                 |
| <b>CZ</b>   | 0.0%            | 0.0%            | 0.0%          | 0.0%                   | 0.0%                    | 0.0%                  |
| <b>DK</b>   | 19.7%           | 26.9%           | 10.4%         | 23.7%                  | 24.3%                   | 28.4%                 |
| <b>DE</b>   | 20.4%           | 18.8%           | 41.7%         | 25.0%                  | 25.0%                   | 17.3%                 |
| <b>EE</b>   | 16.7%           | 25.0%           | 0.0%          | 66.7%                  | 0.0%                    | 0.0%                  |
| <b>IE</b>   | 3.2%            | 7.5%            | 0.0%          | 0.0%                   | 15.4%                   | 2.6%                  |
| <b>GR</b>   | 7.5%            | 9.3%            | 15.0%         | 5.3%                   | 10.8%                   | 7.4%                  |
| <b>ES</b>   | 25.4%           | 28.0%           | 30.0%         | 22.6%                  | 28.8%                   | 29.1%                 |
| <b>FR</b>   | 33.6%           | 31.7%           | 37.0%         | 16.3%                  | 32.3%                   | 47.2%                 |
| <b>HR</b>   | 7.7%            | 3.2%            | 7.1%          | 5.6%                   | 5.4%                    | 5.1%                  |
| <b>IT</b>   | 9.2%            | 12.0%           | 14.8%         | 19.2%                  | 11.0%                   | 7.8%                  |
| <b>CY</b>   | 1.9%            | 0.0%            | 0.0%          | 0.0%                   | 1.6%                    | 0.0%                  |
| <b>LV</b>   | 32.1%           | 40.0%           | 45.5%         | 100.0%                 | 25.0%                   | 31.3%                 |
| <b>LT</b>   | 8.0%            | 1.6%            | 13.0%         | 8.3%                   | 5.5%                    | 2.2%                  |
| <b>LU</b>   | 21.3%           | 22.6%           | 19.0%         | 39.4%                  | 14.1%                   | 24.1%                 |
| <b>HU</b>   | 4.6%            | 1.9%            | 6.5%          | 0.0%                   | 1.7%                    | 4.8%                  |
| <b>MT</b>   | 14.3%           | 4.8%            | 0.0%          | 0.0%                   | 9.1%                    | 16.7%                 |
| <b>NL</b>   | 26.3%           | 30.9%           | 34.4%         | 26.8%                  | 33.1%                   | 27.1%                 |
| <b>AT</b>   | 5.4%            | 12.4%           | 13.8%         | 19.5%                  | 6.4%                    | 8.4%                  |
| <b>PL</b>   | 7.0%            | 3.5%            | 8.7%          | 5.8%                   | 2.9%                    | 6.5%                  |
| <b>PT</b>   | 6.7%            | 16.1%           | 17.4%         | 0.0%                   | 3.7%                    | 17.1%                 |
| <b>RO</b>   | 16.2%           | 22.6%           | 5.4%          | 21.7%                  | 21.9%                   | 13.6%                 |
| <b>SI</b>   | 12.0%           | 13.8%           | 3.1%          | 7.1%                   | 15.1%                   | 11.9%                 |
| <b>SK</b>   | 9.1%            | 3.0%            | 10.0%         | 0.0%                   | 7.1%                    | 8.3%                  |
| <b>FI</b>   | 10.0%           | 20.7%           | 20.6%         | 12.0%                  | 15.3%                   | 18.8%                 |
| <b>SE</b>   | 6.7%            | 12.5%           | 15.0%         | 8.1%                   | 14.2%                   | 7.6%                  |
| <b>UK</b>   | 14.3%           | 15.8%           | 11.7%         | 9.1%                   | 19.4%                   | 14.1%                 |
| <b>IS</b>   | 5.0%            | 11.0%           | 7.5%          | 6.1%                   | 11.1%                   | 21.7%                 |

| Q4: Approximately what percentage of employees at this establishment are members of a trade union? |          |          |        |                 |                  |                |
|--|----------|----------|--------|-----------------|------------------|----------------|
|  | Industry | Services | Public | 10–49 employees | 50–249 employees | 250+ employees |
| ME   | 2.4%     | 4.1%     | 0.0%   | 5.3%            | 2.1%             | 4.3%           |
| MK   | 5.4%     | 5.6%     | 4.3%   | 18.2%           | 2.3%             | 0.0%           |
| TR   | 9.5%     | 14.2%    | 11.1%  | 12.8%           | 10.9%            | 0.0%           |

### 3.2.3. Weighting and calibration

The information included in the business registers used as sampling frame allowed for a proper computation of both design weights and establishment-proportional calibration weights in most of the cases. However, due to the limitations of the sampling frames, it was not possible directly to compute the design weights for the establishments in the public sector and approximated weights were considered. Moreover, since the lack of reliable reference information made it impossible to consider the actual number of employees at any of the selection stages, no design weight related to the number of employees in the establishment could be reasonably computed. For this reason, the employee-proportional weights were computed in a strictly analytical weight, unrelated to the survey design, as a self-referential derived weight. This solution does not guarantee that potential biases in the distributions of employees in the sample – for instance, potential biases induced by unit non-response – are not translated into the aggregate estimates.

### 3.3. Timeliness and punctuality

The assessment of this quality dimension for third ECS is highly positive.

- *Timeliness.* The time lag between data collection (from February to June 2013) and dissemination (November 2013) is less than half a year. In the current highly dynamic economic environment, such a tight schedule makes the ECS even more relevant for policy makers and other users. The importance of relevance should be considered in the analysis of the trade-off between this quality dimension and others, such as accuracy. For instance, a potential reduction in the non-response rate by extending fieldwork deadlines (as discussed in subsection 3.2.2.B.) would damage the timeliness and the relevance of the survey.
- *Punctuality.* A dissemination calendar for the third ECS is established in the Eurofound Annual Work Programme 2013.<sup>29</sup> The milestones specified in this document – dissemination of the data and first finding summaries before the end of 2013 – has been achieved.

### 3.4. Accessibility and clarity

Eurofound make the results of the third ECS accessible in different formats according to the different segments of users, from microdata dissemination for researchers and expert users to interactive and audio-visual tools, as well as analytical reports.

The website of the third ECS gives access to all the relevant information on the survey<sup>30</sup> and its methodology. The website is well organised and the information easy to find. The website, although in English, is partially accessible in 25 other European languages. It is user-friendly, and good for non-specialised users, as it highlights the main survey results in a written summary and

<sup>29</sup> [www.eurofound.europa.eu/pubdocs/2012/79/en/3/EF1279EN.pdf](http://www.eurofound.europa.eu/pubdocs/2012/79/en/3/EF1279EN.pdf) (pages 39–40).

<sup>30</sup> [www.eurofound.europa.eu/surveys/ecs/2013/index.htm](http://www.eurofound.europa.eu/surveys/ecs/2013/index.htm)

with videos. A contact e-mail address is included for those wanting further information or clarification.

Eurofound offers an interactive survey-mapping tool to access the findings of the survey<sup>31</sup>. This tool provides interactive graphs representing the main results of the third ECS by country, with a breakdown by size and sector. Data associated to the graphs can be easily downloaded. Basic, clear, interpretations of the figures are also provided. The survey-mapping tool, which is available in English, French, German, Spanish and Italian, is very user-friendly.

Fundamental information on the methodology, questionnaire, sampling, coding, weighting and quality assurance is available on the website, providing the user with the necessary background information for correctly interpreting the findings.

Microdata from the third ECS are accessible through the UK Data Archive. This process is relatively quick and was completed in few days.

The résumé *Third European Company Survey: First findings* has been published in 25 European languages, presenting the main conclusions of the survey.

Technical reports with detailed technical information on the survey can be downloaded from the third ECS website.

In short, it is evident that Eurofound has successfully met the aim of ‘enabling the users to access the survey findings and data easily and offering them the necessary background information for interpreting the findings’. Eurofound provides clear instructions and adds direct links to the location of the information on its website making the user experience easy and user-friendly.

Finally, accessibility can also be assessed by an analysis of the actual downloads of the data and publications of ECS. Since there is no available information on the number of downloads of the microdata of the third ECS, the available information on the dissemination of the second ECS microdata shows that the survey dataset has been mainly used for research and education purposes. As we can see in Table 15 below, the very large majority of users downloading the dataset are staff members or students at an institution of research and education.

**Table 15: Downloads of 2nd ECS dataset by user type**

| User type               |   | Number of downloads |     |
|-------------------------|---|---------------------|-----|
| Research and education  | Staff at institute of higher education      | 65                  | 210 |
|                         | Staff at institute of further education     | 12                  |     |
|                         | School teacher                              | 1                   |     |
|                         | School student                              | 5                   |     |
|                         | Undergraduate                               | 22                  |     |
|                         | Postgraduate                                | 83                  |     |
|                         | Student in further education                | 22                  |     |
| Government              | Central government staff                    | 3                   | 4   |
|                         | Local government staff                      | 1                   |     |
| Non-Profit Organisation | Non-Governmental Organisation or registered | 5                   | 18  |

<sup>31</sup> [www.eurofound.europa.eu/DVS/DVT/?dataSource=3RDECS](http://www.eurofound.europa.eu/DVS/DVT/?dataSource=3RDECS)

| User type   |                              | Number of downloads |   |
|-------------|------------------------------|---------------------|---|
|             | charity staff                |                     |   |
|             | Other not-for-profit         | 13                  |   |
| Other users | Personal / genealogical user | 1                   | 3 |
|             | Commercial user              | 2                   |   |

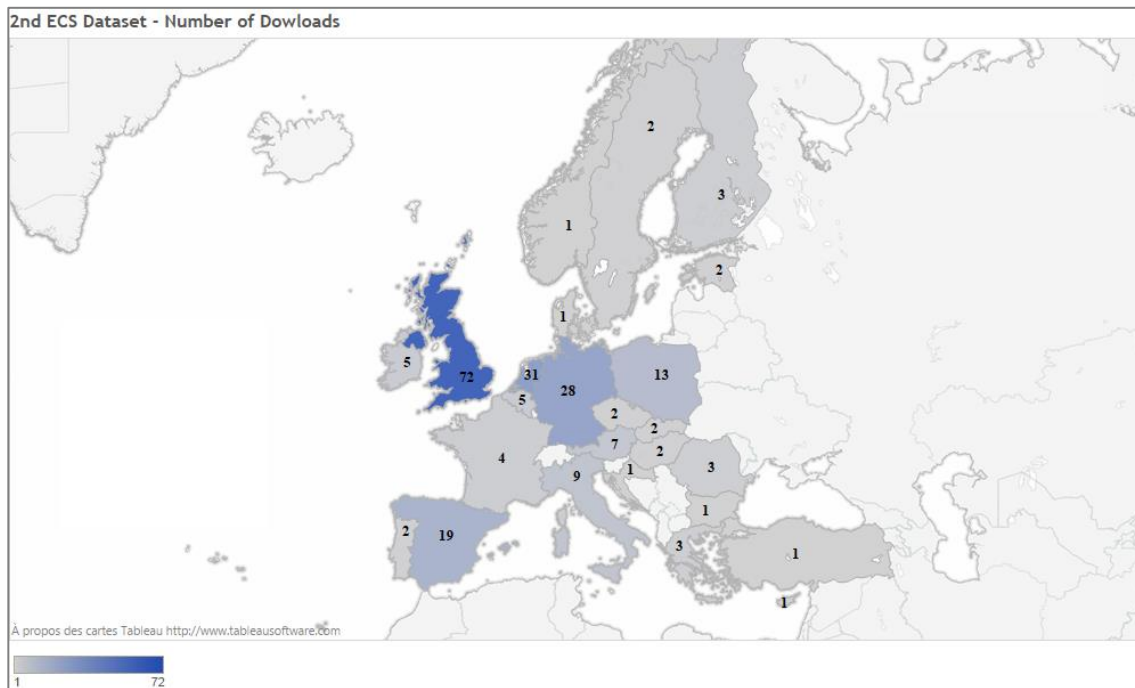
A consistent proportion of downloads have been carried out by users linked to higher education institutions and related postgraduate courses. The data is mostly used in research activities on topics related to labour market and working conditions. In some cases, the dataset is used for teaching.

While the ECS microdata have been quite often used for independent research studies, mainly produced by non-profit organisations, commercial or governmental users have barely downloaded the dataset.

As for the geographical distribution of the downloads, we can see in Figure 14 below that they are mainly concentrated in the United Kingdom and few other northern countries such as Germany or the Netherlands. The higher results for these countries are due to the dissemination of the survey data through the UK data service. Nevertheless, a relatively high proportion of downloads have been registered in Spain and Italy.

The information available shows that the ECS dataset has a wide reach outside the EU. Users from USA, Canada, China, Australia, Japan and South Africa have downloaded the survey data. A big proportion of non-EU users are from the USA, probably due to the high amount of partnerships between English and American education institutions.

Figure 14: Downloads of Second ECS dataset by country



Finally, concerning the ECS-related publications, the information available shows that the second ECS overview report (EF/10/05), the document on Part-time work in Europe (EF/10/86) and the executive summary on HRM practices and establishment performance (EF/11/691) have been more intensively downloaded.

In addition, the high amount of downloads of the résumé of the first findings of the third ECS seems to reveal an increasing interest about the survey and related results.

### **3.5. Coherence and comparability**

The coherence of two or more statistical outputs refers to the degree to which the statistical processes by which they were generated used the same concepts – classifications, definitions, and target populations – and harmonised methods. Coherent statistical outputs have the potential to be validly combined and used jointly. Comparability is a special case of coherence and refers to where the statistical outputs refer to the same data items and the aim of combining them is to make comparisons over time, or across regions or other domains.

#### **3.5.1. Internal coherence and comparability of third ECS**

The internal coherence and comparability of the third ECS should be analysed at both geographical and temporal levels.

#### **Internal coherence and comparability among countries**

- *Classifications and definitions:* the existence of differences in the definitions and classifications used in the countries should be considered for comparison of the third ECS between different countries. The definition of company and establishment are not exactly the same in all countries, depending on the legal framework and the fact that the sampling frames are mostly provided by private sources that do not always use harmonised classifications. This lack of harmonisation is more relevant in defining what an establishment is when referring to the public sector. Activity classification is based in NACE rev.2 but, in some cases, a non-standard codification or NACE rev. 1 is used. Breakdown by size is not the same in all countries.
- *Sampling:* sampling frames are not always harmonised. As regards the data source, Bulgaria, Croatia, Cyprus, the Former Yugoslav Republic of Macedonia, Hungary, Iceland, Latvia and Montenegro sampling frames are provided by the respective NSI, with those in Malta and the Netherlands provided by the trade registry. All other countries use commercial registers. The unit level in those sampling frames from NSI are companies, meanwhile commercial registers present a list of establishments or companies depending on the country. As discussed in section 3.3.2, coverage levels change among the sampling frame in different countries.
- *Questionnaire translation:* The TRAPD methodology used in the translation process (see section 2.1.3. for details), ensures the coherence and comparability of the versions of the questionnaire applied in each country.
- *Fieldwork schedule:* There are no relevant differences in the period where the fieldwork was implemented in the different countries (February to May for the MM survey; February to June for the ER survey). The average length of the interviews was 27 minutes for the MM questionnaire and 18 minutes for the ER questionnaire, with no relevant differences among countries that could affect the comparability of the results (the minimum and maximum lengths were 23 and 31 minutes for the MM questionnaire; 15 and 23 minutes for the ER questionnaire).

## Internal coherence and comparability

The specific objectives of ECS questionnaire are updated from wave to wave, the objectives of the third ECS being focused on work organisation, employee participation, workplace innovation and social dialogue in workplaces. However, there is a set of common items in the second and third ECS questionnaires that make this survey comparable over time.

Specifically<sup>32</sup>, 23 out of the 65 questions in the MM questionnaire and 12 out of the 47 questions in the ER questionnaire (excluding contact information) were already included in the previous wave. Annex 4 presents a detailed comparison of the questionnaires and an exhaustive list of these common questions.

The length of MM questionnaire is very similar in the second and third waves (65 and 63 questions respectively); however, the number of items in the ER questionnaire has increased from 29 in the second wave to 47 in the current one.

### 3.5.2. Coherence and comparability of third ECS within the ESS

Business surveys considering establishments as a sampling unit are not common within the ESS. This fact makes it difficult to compare the results of the third ECS with official data, such as those provided by the Structural Business Survey (SBS).

The only establishment-based benchmarking survey available to assess the coherence is Finland's MEADOW (Measuring the Dynamics of Organisations and Work) survey<sup>33</sup>, founded by Tekes. The data in Finland's MEADOW survey consists of employer and employee interviews. Employer interviews were carried out in March–June 2012. They consist of 1,531 telephone interviews (net response rate: 76%). The interviews were directed only to employer units with at least 10 employees. Employee interviews were carried out in September–December 2012. The employees to be interviewed were randomly selected from these units, based on the registration data. The number of interviews carried out per unit was one or two, depending on the size of the employer unit. The total number of interviews amounted to 1,711. The results of the employer and employee interviews were published in Finnish in September 2013 in the form of two electronic Tekes reviews. Microdata of Finland's MEADOW survey were not available and the consultant was not able to compute MEADOWS sampling errors.

Annex 3 summarises those questions included in both the third ECS and MEADOW survey and are included in the coherence exercise carried out by the consultant. Table 16 shows the point estimates provided by MEADOW survey and the confidence interval (95% confidence level) for the very same questions provided by third ECS<sup>34</sup>. Numbers are written in bold where the punctual estimate of the MEADOW survey is not included in the confidence interval of the estimate of third ECS.

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<sup>32</sup> This comparison is carried out in term of questions, independently of the number of potential answers (or items) included for each question.

<sup>33</sup> [www.tekes.fi/Global/Ohjelmat%20ja%20palvelut/Ohjelmat/Liideri/Dynamics%20of%20organisations%20and%20work%20in%20Finland.pdf](http://www.tekes.fi/Global/Ohjelmat%20ja%20palvelut/Ohjelmat/Liideri/Dynamics%20of%20organisations%20and%20work%20in%20Finland.pdf)

<sup>34</sup> The aggregate information available for Finland's MEADOW survey shows that the sample does not include establishments with less than 2 years. For the sake of comparability, such establishments are neither considered in the computation of the estimations and confidence intervals for the third ECS in Table 16.

**Table 16: Comparison of third ECS (2013) and Finland's MEADOW survey (2012)**

|  |                       | MEADOW       | ECS          |                     |              |
|--|-----------------------|--------------|--------------|---------------------|--------------|
|  |                       | Estimate     | Estimate     | Confidence interval |              |
|  |                       |              |              | lower               | higher       |
| <b>Years of establishment (AYEARSOP)</b>   | 2 to 9 years          | 16.7%        | 20.3%        | 14.9%               | 26.9%        |
|  | <b>10 to 49 years</b> | <b>68.1%</b> | <b>60.2%</b> | <b>52.5%</b>        | <b>67.3%</b> |
|  | 50 years or more      | 14.5%        | 19.6%        | 13.9%               | 26.8%        |
| <b>Significantly changed products or services (BINNPRSE)</b>                             | Yes                   | <b>42.5%</b> | <b>34.5%</b> | <b>27.9%</b>        | <b>41.7%</b> |
| <b>Significantly changed processes producing goods or supplying services (BINNOPROC)</b> | Yes                   | <b>69.6%</b> | <b>43.8%</b> | <b>36.6%</b>        | <b>51.3%</b> |
| <b>Number of hierarchical levels (EHIERACH)</b>  | 1                     | <b>4.7%</b>  | <b>2.7%</b>  | <b>1.5%</b>         | <b>4.6%</b>  |
|  | 2                     | <b>29.8%</b> | <b>21.9%</b> | <b>16.4%</b>        | <b>28.5%</b> |
|  | 3                     | <b>46.5%</b> | <b>60.8%</b> | <b>53.5%</b>        | <b>67.6%</b> |
|  | 4                     | 14.5%        | 13.0%        | 9.1%                | 18.1%        |
|  | 5                     | <b>3.1%</b>  | <b>1.5%</b>  | <b>1.0%</b>         | <b>2.2%</b>  |
|  | 6                     | <b>0.7%</b>  | <b>0.1%</b>  | <b>0.1%</b>         | <b>0.2%</b>  |
|  | 7                     | <b>0.2%</b>  | <b>0.1%</b>  | <b>0.0%</b>         | <b>0.2%</b>  |
|  | 8+                    | 0.2%         | 0.0%         | 0.0%                | 0.2%         |
| <b>Departments by function (DDEPFUN)</b>   | Yes                   | 62.1%        | 63.4%        | 55.3%               | 70.8%        |
| <b>Departments by types of products or service (DDEPTYP)</b>                             | Yes                   | 46.1%        | 51.3%        | 43.8%               | 58.8%        |
| <b>Department by geographical area (DDEPGEO)</b>   | Yes                   | <b>44.5%</b> | <b>21.7%</b> | <b>16.3%</b>        | <b>28.2%</b> |
| <b>Collaboration on development of new products or services (GCOLD EDE)</b>              | Yes                   | <b>67.8%</b> | <b>83.1%</b> | <b>75.9%</b>        | <b>88.4%</b> |
| <b>Collaboration on production of goods or services (GCOLDPROD)</b>                      | Yes                   | <b>44.7%</b> | <b>76.8%</b> | <b>67.8%</b>        | <b>83.9%</b> |
| <b>Collaboration on sales or marketing of goods or services (GCOLD)</b>                  | Yes                   | <b>55.4%</b> | <b>76.8%</b> | <b>67.8%</b>        | <b>83.9%</b> |

|  |                        | MEADOW   | ECS      |                     |       |
|--|------------------------|----------|----------|---------------------|-------|
|  |                        | Estimate | Estimate | Confidence interval |       |
| <b>ARK)</b>  |                        |          |          |                     |       |
| <b>Outsourcing on development of new products or services (GOUTDEDE)</b>       | Yes                    | 19.5%    | 27.9%    | 22.7%               | 33.9% |
| <b>Outsourcing on production of goods or services GOUTPROD)</b>                | Yes                    | 31.7%    | 44.7%    | 37.8%               | 51.8% |
| <b>% employees received paid time-off to training (HTRAIN)</b>                 | 0-29%                  | 31.0%    | 32.3%    | 26.0%               | 39.4% |
|  | 30-69%                 | 12.2%    | 19.7%    | 14.5%               | 26.1% |
|  | 70-99%                 | 20.5%    | 13.7%    | 9.2%                | 19.9% |
|  | 100%                   | 35.2%    | 34.3%    | 26.0%               | 43.7% |
| <b>% employees received on-the-job training (HONJOB)</b>                       | 0-29%                  | 27.2%    | 16.6%    | 12.0%               | 22.6% |
|  | 30-69%                 | 10.7%    | 16.6%    | 13.0%               | 20.9% |
|  | 70-99%                 | 14.2%    | 14.3%    | 9.2%                | 21.7% |
|  | 100%                   | 47.0%    | 52.4%    | 44.5%               | 60.2% |
| <b>% employees has performance appraisal or evaluation interview (HAPRAIS)</b> | 0%                     | 26.7%    | 13.4%    | 10.4%               | 17.2% |
|  | 1-50%                  | 15.5%    | 9.8%     | 7.4%                | 12.9% |
|  | 51-99%                 | 10.7%    | 10.9%    | 6.3%                | 18.2% |
|  | 100%                   | 46.2%    | 65.9%    | 59.0%               | 72.2% |
| <b>Position (LPOSIT)</b>   | Manager                | 22.7%    | 50.3%    | 42.8%               | 57.8% |
|  | Owner                  | 44.3%    | 21.2%    | 16.4%               | 26.9% |
|  | Human Resource Manager | 25.2%    | 11.5%    | 7.8%                | 16.7% |
|  | Other                  | 7.7%     | 16.9%    | 11.9%               | 23.5% |
| <b>Years working in the establishment (LTENURE)</b>                            | <2                     | 5.8%     | 7.2%     | 5.2%                | 9.9%  |
|  | 2-5                    | 22.2%    | 27.8%    | 21.2%               | 35.4% |
|  | 6-10                   | 22.5%    | 20.0%    | 14.2%               | 27.4% |
|  | 10+                    | 49.6%    | 45.1%    | 37.8%               | 52.5% |

The information on the methodology or quality assessment of Finland's MEADOW available is quite limited and the microdata of this survey are not available for the analysis. In these conditions, it is quite difficult to provide a clear interpretation of the results presented in Table 16. Firstly, the analysis of coherence between both surveys is stricter than a comparison considering confidence intervals for both surveys. The confidence interval of both surveys could be expected to intersect in most of the cases, since the differences between the punctual estimate of Finland's MEADOW and the extremes points of the confidence intervals of the estimates of the third ECS are quite small for several items. Secondly, in these cases where significant differences may arise,



the lack of information on Finland's MEADOW makes it impossible to determine the potential sources of such differences.

### **3.6. Conclusions on the output assessment**

The quality assessment of the output of the third ECS is quite positive in most of the quality dimensions.

- This survey provides policymakers, social agents and scientific researchers with information on work organisation, workplace innovation, employee participation and social dialogue at an establishment level. This information is not available in other statistical operations within the ESS and is relevant to enhance policy-making.
- The results and methodology of the survey are accessible and easy to understand through a series of online tools. Users seem to have no problem in accessing and downloading ECS datasets.
- Sampling errors are, in general, small, especially in the MM survey.
- Once the respondent agrees to answer the questionnaire, items in general do not present non-response problems.
- The difference between reference and dissemination dates is less than six months. The dissemination calendar is announced in advance and deadlines achieved.
- Users have access to the analytical reports but also to anonymous microdata to carry out further customised analysis.

Although sampling errors can be precisely quantified, measuring non-sampling errors is always a challenge in any survey quality assessment. In this chapter, coverage and non-response rates are considered to develop the non-sampling error assessment. However, other relevant potential sources of non-sampling error, such as measurement error, can be analysed qualitatively. As discussed in Chapter 3, the assessment of the third ECS procedure provides some qualitative insights on measurement error, such as the translation procedure followed to reduce measurement errors and guarantee coherence in the understanding of each questionnaire item in all languages. As discussed in subsection 3.2.2, the third ECS also presents some aspects related to non-sampling errors that offer improvement opportunities for future waves of the survey. These are specifically the effective coverage of the sampling frames (3.2.2.A) as well as non-response and refusal rates (3.2.2.A and 3.2.2.B.). These issues are analysed in detail in Chapter 4, where some guidelines for improvement are suggested.

## Chapter 4: Recommendations

### 4.1. SWOT analysis

This section presents the evaluation of the Strengths, Weaknesses, Opportunities, and Threats of the ECS in terms of achieving its objectives for the five key quality dimensions<sup>35</sup>, where:

- strengths are attributes of the ECS which are helpful in efficiently and effectively achieving the quality objectives;
- weaknesses are attributes of the ECS which are harmful to efficiently and effectively achieving the quality objectives;
- opportunities are external conditions which are helpful to efficiently and effectively achieving the quality objectives;
- threats are external conditions which could do damage to efficiently and effectively achieving the quality objectives.

The SWOT analysis is presented according to the eight steps of the GSBPM, excluding the last step (evaluation), which is the goal of the present document.

#### *Step 1 in GSBPM: Specify needs*

##### **Strengths**

- More flexibility to cover topics related to workplace practices and social dialogue, specifically work organisation, employee participation, workplace innovation and social dialogue in workplaces detail than other more general ESS and non-ESS company surveys.
- The third ECS provides information on work organisation, employee participation, workplace innovation and social dialogue in workplaces at establishment level; other company surveys consider this at company level.
- Participation of the tripartite board of Eurofound through an advisory committee guarantees that the needs of the different stakeholders are considered in the design of the third ECS.
- Introduction of a User Satisfaction Survey among the post-survey actions of the Second ECS.
- The contractor was provided with a questionnaire script with variables already specified.
- The timeliness of ECS – results are provided just six months after the reference dates – which gives users up-to-date information for analysis and policymaking.

##### **Weaknesses**

- Although international-oriented users are focused in international comparisons, the ECS is not completely harmonised among all countries, for instance in the definition of establishment or in the version of the NACE classification to be applied.

##### **Opportunities**

- No other survey provides this information for all the countries at establishment level.
- New tools satisfy users' needs with a lower cost (on-line user surveys).

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<sup>35</sup> Relevance and completeness; Accuracy and reliability; Timeliness and Punctuality; Accessibility and clarity; Coherence and comparability

## Threats

- Since there is no other survey providing the same information as ECS and at establishment level, there is no threat related to users' needs.

### *Steps 2 and 3 in GSBPM: Design and build*

## Strengths

- High involvement of Eurofound staff in the design of ECS.
- The ToR of ECS specifies precisely both the statistical outputs to be produced and the methodology (process and analyse) to obtain them.
- The design considers establishments as information units.
- The variables to be collected are well specified by Eurofound in a questionnaire script.
- Adoption for translation of the TRAPD model – Translation, Review, Adjudication, Pre-testing and Documentation – inspired by the European Social Survey.
- Different language versions of the questionnaire created for each country, even if versions of the same language are spoken across several countries.
- Implementation and evaluation of a survey pilot, according to the technical specifications.

## Weaknesses

- The design considers establishments as sampling units. This feature generates problems to find reliable sampling frames.
- The concept of 'establishment' is not clearly defined in the public sector. This issue makes the design of ECS in this sector more complicated, as regards sampling frames and comparability among countries.
- Sampling frames present weak points such as potential under coverage and lack of harmonisation.
- As in other non-ESS surveys and Eurobarometers, a small sample size at the country level does not allow detailed outputs (such as sub-populations) and reduces the accuracy of aggregates. This weakness does not apply to those strata, specifically large establishments in specific sectors, where the sampling rate of ECS is already high and where the increment of the sample size would imply a full census.

## Opportunities

- Further cooperation with Eurostat and NSIs will allow the exploration of more intense use of official business registers or the use of master samples selected from these official registers by the NSIs.
- Improving policymaking requires information-specific issues related to workplace practices and social dialogue, as provided by the ECS and not available in other ESS surveys.

## Threats

- As in any other international survey, language and culture heterogeneity among countries could mean that fully comparable outputs are not obtained.

## *Step 4 in GSBPM: Collect*

### **Strengths**

- Use of piloted questionnaire.
- Contact information in the sampling frames is updated and non-contact rates are low.
- Combination of local fieldwork resources with centralised coordination.
- Flexibility in implementing changes in the original fieldwork plan, especially the extension of the gross sample during fieldwork implementation to speed up the process.
- Item non-response is very low and concentrated in a very few areas. Those problems related to item non-response that were detected during the pilot, were solved in the final version of the questionnaire.

### **Weaknesses**

- Need to increment the initial gross sample to speed up fieldwork implementation. Four additional replicates were opened after the sixth week of the fieldwork (meaning twice the target sample size) in all the countries.
- Unit non-response rates are 68.2% of the gross sample for the MM survey and 41.0% for the ER questionnaire. These levels of unit non-response may generate some biases in the output of the MM survey.
- High refusal rates in both MM and ER questionnaires (63.1% and 37.86% respectively).

### **Opportunities**

- Establishment of standard procedures of respondent selection for all countries and control procedures to enforce them.
- Existence of networks of specialists in training interviewers and permanent staff in some EU NSIs. In these cases where the costs and potential administrative barriers were not too high, such interviewers could be used for assisting the ECS.

### **Threats**

- Increasing reluctance by the EU companies to answer surveys, due to the increasing respondent load
- Other business surveys in place add burden to respondents.

## *Steps 5 and 6 in GSBPM: Process and analyse*

### **Strengths**

- High involvement of Eurofound staff in the process of ECS and the quality control of its implementation.

### **Weaknesses**

- The computation of design probabilities and calibration weights could not be always properly carried out due to the limitations of the sampling frame and the lack of reliable calibration variables available at an establishment level. This issue is more relevant for the computation of employee-proportional weights and weighting/calibration for the public sector.
- No information on potential trimming of large weights is available.

## Opportunities

- Availability of more complete methodologies for weighting and imputation.
- Application of additional statistical techniques (multivariate analysis, modelling, etc.) to obtain more information from the data.

## Threats

- General trend of rising non-response in business surveys will require more complete methodology for data processing, and specific weighting and imputation methodologies to cope with the potential biases induced by the increasing unit and item non-response rates.
- The accuracy level may be reduced due to both sampling (limited sample size per country) and non-sampling errors (for example, under coverage, non-response and other problems that may appear during calibration and other procedures during data editing and analysis).

### *Step 7 in GSBPM: Disseminate*

## Strengths

- The dissemination timeliness is very tight, with a lag between reference and dissemination dates of less than six months. This timeliness enhances the relevance of the survey.
- The dissemination calendar was previously established and properly achieved.
- ECS results will be disseminated in a range of formats (from microdata to interactive internet tools for survey mapping<sup>36</sup>) customized to the different profiles of users.
- third ECS website is user-friendly and well structured: all relevant information is presented and it is easy to find.

## Weaknesses

- Precision indicators such as sampling errors have not been disseminated.

## Opportunities

- ICT and new dissemination methodologies such as interactive visualisation will allow for further improvement and customisation of the dissemination process. Although Eurofound is currently using a friendly multilingual interactive visualisation tool, some extensions could be included, such as providing an integrated access and visualisation of specific metadata (for example, sampling error, coefficients of variation, design affects or non-response information).

## Threats

- No threats detected.

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<sup>36</sup> [www.eurofound.europa.eu/DVS/DVT/?dataSource=3RDECS](http://www.eurofound.europa.eu/DVS/DVT/?dataSource=3RDECS)

## **4.2. Recommendations on the strategy for the implementation of the fourth ECS**

### *Seeking further synergies with the ESS*

Further involvement of the ESS, specifically the NSIs, and the resulting transfer of know-how could enhance the quality of the process and output of the ECS. In particular, a closer cooperation with ESS institutions could help to enhance the sampling procedure and the quality of the sampling frame, at least at a company level.

In the third ECS, NSIs of only seven countries (Bulgaria, Croatia, Cyprus, Hungary, Iceland and Montenegro) provided the business register, always at a company level. The use of official sampling frames could be extended in the next wave of ECS using some alternative strategies, such as:

- asking the NSI for a master sample, instead of a complete business register;
- introducing some methodological changes in the sampling design that mean establishments can be kept as information units but relaying in companies as first-step sampling units (see 4.3 for details). This strategy could also help to improve the availability and quality of the information used for calibration, specifically that required for computing employee-proportional weights.

### *Enhancing the cooperation with Ministries of Public Administration (or equivalent institutions)*

The definition of sampling and information units in the Public Sector, as well as the sampling frames, could be improved in the fourth ECS with a closer collaboration between Ministries of Public Administration or institutions in charge of the organisation and management of public sector in the different countries. This cooperation could be focused on

- defining more precise and comparable definitions of ‘establishment’ and ‘organisation’ in the public sector;
- constructing a more harmonised sampling frame allowing for the computation of reliable design, calibration and employee-proportional weights.

## **4.3. Recommendations on ECS methodology**

### *Design and building of the questionnaire*

Great effort has been made to guarantee the quality of the questionnaire, specifically the quality of the translation to local languages. The TRAPD approach – translation, review, adjudication, pre-testing and documentation – should be also used in future waves of the ECS.

### *Improvement of the harmonisation of concepts and definitions*

Some definitions used in the third ECS could be made more precise and comparable among countries and with the standards in the ESS. This issue is especially relevant for the definitions involved in the specification of the sampling procedure and the stratification of the sample (company, establishment, activity and size) and those for the public sector. The issue of harmonisation of the questions and answering categories of the ECS is a more complex issue, the reason being the trade-off between comparability with other surveys and the relevance of ECS, which is enhanced by its flexibility to cover specific relevant issues. In those concepts and definitions where the ECS might need to use definitions that were not completely harmonised

with the ESS, the establishment of correspondences to be used for matching the ECS with external sources could be useful to enhance comparability.

### *Revision of sampling design*

A key requirement of the ECS – and one of the main sources of its relevance for social policymakers, social agents and researchers – is to provide information on work organisation, workplace innovation, employee participation and social dialogue at an establishment level. However, since most of the information within the ESS is presented at a company level, this feature raises relevant difficulties in the sampling and weighting procedures that affect the accuracy, coherence and comparability of the data provided by ECS.

A revision of the sampling design could help to cope with some of these difficulties. A clear distinction between sampling units (companies) and information units (establishments) could be introduced. Considering that the establishments within a given company should be more homogeneous than establishments within different companies, a stratified two-stage cluster sampling could be considered. In a first step, strata could be defined as combinations of country, activity sector and size. Within each stratum, in a first stage some companies (clusters of establishments) could be selected at random with a probability proportional to the number of establishments, or to a proxy of this figure such as the total number of employees. Then, in a second stage, a sample of establishment would be selected within the company, this sample size being small and depending on the structure of the company. This first suggestion should be understood as just a first step for towards an in-depth discussion to optimise ECS sampling design.

The above distinction between sampling and information units could help to improve other methodological issues of the third ECS.

- **Sampling frames:** if companies were taken as primary sampling units for a two-stage sampling with selection of establishment in the second stage, the chances to consider official business would be wider. This approach could facilitate the collaboration with NSI – probably via Eurostat – and use official business registers or at least integrate commercial and official registers to define the sampling frame. Although access to official registers or master samples is not easy – and, in some cases, impossible – a progressive integration of official information could be considered as a mid-term strategy to improve ECS, as discussed in 2.1.1.

In those cases where official frames could not be considered in the fourth ECS, a two-stage sampling design would enlarge the possible commercial sampling frames to be considered in each country, since no frame at establishment level would be required. Finally, the sampling frame would not be conditioned to potentially non-harmonised definitions of establishment that could be considered in the different commercial databases.

- **Weighting process:** weights to expand and aggregate individual sample data to the population level could be calculated by using (the inverse of) selection probabilities of the company and the number of establishment of the selected companies. Moreover, the availability and quality of calibration variables could improve, with the opportunity of using information at a company level within the ESS. The process could be described and implemented in similar ways in all countries, with comparable and updated reference company populations.

### *Achieving higher response rates*

As most non-response is refusal, special attention should be paid to the pre-survey promotion, contact with selected respondents, and interview training in order to minimise refusals. Some additional incentives to answer the questionnaire could be considered, such as sending an individual report – to be produced automatically from the ECS database – with a basic benchmarking of the responding company/establishment with respect to the aggregate results for its stratum (guaranteeing confidentiality issues). The technical solutions proposed by the bidders should be evaluated for the award of the contract and their impact evaluated during the pilot phase (case-control approach) to select and apply the most effective ones to the final sample.

## **4.4. Recommendations on the management of ECS**

### *Dissemination of metadata on sampling and weighting of third ECS at country / sector level*

Since sampling and weighting methodologies in the third ECS present some differences at country and activity sector (mainly private / public sector) levels, a clear dissemination of metadata explaining this methodology could improve the comparability of the results among countries.

### *Clarifying the survey name*

The name of a statistical operation may play a role comparable to that of a 'brand'. It helps to position the operation within the statistical and could enhance the use level and relevance of a survey. In the specific case of the ECS, the name of European Company Survey may be sometimes misleading, since it refers to 'companies' instead of 'establishments' and contains no reference to its specific scope.

## **4.5. Conclusions**

The SWOT analysis shows that the third ECS plays a relevant role in the framework of European business statistics, as a reliable and flexible source of information on work organisation, workplace innovation, employee participation and social dialogue. However, as presented in the recommendations, there are some specific strategies that could improve the quality of ECS in future waves.

From the consultant's viewpoint, the three main recommendations to be implemented in the fourth ECS are:

- revision of the sampling approach - as described in 4.3 - that will allow keeping the establishment as key information unit, while improving the quality of the sampling frames and the weighting/calibration processes;
- reduction of non-response and refusal rates;
- enhancing the harmonisation of the definitions of sampling units and codifications in the fourth ECS among countries and with ESS standards, especially in the public sector.

These recommendations, specifically the first one, may affect the comparability of the results of the fourth ECS with those of the previous waves, but could enhance the accuracy and comparability of this survey significantly. It is important to carry out a complete analysis of the trade-off between stability and capability of ECS implied in any methodological revision. This analysis should be completed before the development of the ToR of the fourth ECS.



## Annex 1: Item non-response for a subset of items that proved to be problematic during the pre-testing phase

| Items | CONJOB | EHIERA | FTEAMEX | FTEASIN | Q27   | Q30  | DDEPTYP | EINFSYS | IINIMWPP | Q11  | Q23  | Q32_a | Q32_b | Q12   |
|-------|--------|--------|---------|---------|-------|------|---------|---------|----------|------|------|-------|-------|-------|
| BE    | 4,6%   | 1,4%   | 0,3%    | 0,8%    | 2,9%  | 0,9% | 1,0%    | 3,7%    | 7,0%     | 0,2% | 0,5% | 0,0%  | 0,0%  | 13,6% |
| BG    | 2,8%   | 1,4%   | 0,7%    | 0,8%    | 3,5%  | 0,9% | 2,0%    | 9,7%    | 1,8%     | 2,5% | 3,0% | 2,2%  | 4,4%  | 29,4% |
| CZ    | 1,3%   | 1,4%   | 0,3%    | 0,3%    | 0,0%  | 0,0% | 0,7%    | 1,6%    | 1,6%     | 0,0% | 0,5% | 3,7%  | 3,7%  | 2,4%  |
| DK    | 2,7%   | 0,1%   | 0,0%    | 1,9%    | 3,3%  | 1,6% | 1,1%    | 4,4%    | 0,9%     | 0,7% | 0,4% | 2,9%  | 1,0%  | 3,8%  |
| DE    | 3,1%   | 0,9%   | 0,1%    | 0,4%    | 5,5%  | 0,0% | 0,4%    | 2,7%    | 2,0%     | 0,3% | 2,2% | 0,0%  | 1,6%  | 4,2%  |
| EE    | 1,4%   | 1,1%   | 0,2%    | 0,9%    | 2,3%  | 3,5% | 0,5%    | 6,0%    | 3,9%     | 0,0% | 0,9% | 4,0%  | 4,0%  | 3,8%  |
| IE    | 3,0%   | 0,9%   | 0,4%    | 0,7%    | 1,7%  | 0,0% | 0,0%    | 2,9%    | 1,4%     | 0,0% | 0,0% | 0,0%  | 0,0%  | 0,0%  |
| EL    | 2,7%   | 0,6%   | 0,5%    | 0,8%    | 0,8%  | 0,0% | 1,2%    | 12,2%   | 2,7%     | 0,0% | 0,0% | 0,0%  | 1,9%  | 5,1%  |
| ES    | 4,3%   | 0,7%   | 0,4%    | 0,1%    | 1,3%  | 0,2% | 0,2%    | 3,1%    | 3,8%     | 0,4% | 1,8% | 0,0%  | 0,0%  | 9,4%  |
| FR    | 4,4%   | 1,6%   | 0,3%    | 0,4%    | 2,5%  | 0,0% | 1,1%    | 2,5%    | 1,8%     | 1,3% | 1,1% | 0,0%  | 0,0%  | 48,1% |
| HR    | 1,1%   | 0,0%   | 0,0%    | 0,0%    | 2,9%  | 6,1% | 0,2%    | 0,8%    | 2,3%     | 0,0% | 0,8% | 0,0%  | 0,0%  | 9,1%  |
| IT    | 1,4%   | 1,6%   | 0,3%    | 0,3%    | 2,3%  | 0,4% | 0,4%    | 4,3%    | 3,4%     | 1,7% | 0,4% | 0,0%  | 0,0%  | 59,1% |
| CY    | 1,0%   | 0,4%   | 0,4%    | 0,2%    | 1,2%  | 1,2% | 0,2%    | 4,2%    | 3,7%     | 0,0% | 0,0% | 0,0%  | 0,0%  | 8,3%  |
| LV    | 11,4%  | 1,6%   | 0,5%    | 1,3%    | 13,4% | 3,4% | 1,1%    | 11,6%   | 5,6%     | 0,0% | 4,3% | 0,0%  | 0,0%  | 20,0% |
| LT    | 5,0%   | 5,1%   | 0,7%    | 1,8%    | 6,7%  | 1,8% | 0,7%    | 4,2%    | 1,9%     | 1,8% | 5,4% | 0,0%  | 0,0%  | 9,8%  |
| LU    | 6,2%   | 4,4%   | 1,2%    | 0,6%    | 0,5%  | 0,5% | 3,0%    | 7,3%    | 5,9%     | 0,9% | 0,0% | 0,0%  | 0,0%  | 1,8%  |
| HU    | 1,2%   | 0,4%   | 0,3%    | 1,1%    | 4,6%  | 0,5% | 2,2%    | 2,2%    | 5,3%     | 0,0% | 0,4% | 0,0%  | 0,0%  | 4,6%  |
| MT    | 0,7%   | 1,6%   | 0,0%    | 0,0%    | 3,1%  | 3,2% | 0,3%    | 8,5%    | 2,9%     | 0,0% | 0,0% | 0,0%  | 0,0%  | 33,3% |
| NL    | 5,0%   | 1,2%   | 0,2%    | 0,3%    | 4,0%  | 0,0% | 0,5%    | 2,3%    | 1,2%     | 0,4% | 1,0% | 2,2%  | 2,9%  | 13,6% |

| Items | CONJOB | EHIERA | FTEAMEX | FTEASIN | Q27   | Q30  | DDEPTYP | EINFSYS | IINIMWPP | Q11   | Q23  | Q32_a | Q32_b | Q12   |
|-------|--------|--------|---------|---------|-------|------|---------|---------|----------|-------|------|-------|-------|-------|
| AT    | 4,0%   | 1,1%   | 0,2%    | 0,9%    | 0,0%  | 0,0% | 0,3%    | 4,3%    | 0,9%     | 0,0%  | 0,0% | 0,0%  | 0,0%  | 1,3%  |
| PL    | 2,9%   | 1,1%   | 1,0%    | 1,3%    | 5,9%  | 1,4% | 1,8%    | 6,5%    | 3,6%     | 1,6%  | 1,6% | 0,0%  | 0,0%  | 4,8%  |
| PT    | 2,5%   | 1,7%   | 0,1%    | 0,3%    | 0,0%  | 1,2% | 0,9%    | 5,3%    | 6,0%     | 0,0%  | 1,6% | 0,0%  | 0,0%  | 13,3% |
| RO    | 3,4%   | 7,8%   | 0,4%    | 2,2%    | 8,9%  | 1,4% | 2,4%    | 8,9%    | 1,5%     | 0,8%  | 5,2% | 0,0%  | 0,0%  | 3,4%  |
| SI    | 3,2%   | 0,4%   | 0,2%    | 0,9%    | 0,0%  | 3,4% | 0,2%    | 1,8%    | 1,4%     | 1,2%  | 0,0% | 1,9%  | 1,9%  | 5,7%  |
| SK    | 1,1%   | 0,2%   | 0,2%    | 0,3%    | 0,0%  | 4,2% | 0,2%    | 1,1%    | 1,0%     | 0,5%  | 0,6% | 0,0%  | 0,0%  | 16,7% |
| FI    | 2,7%   | 0,5%   | 0,3%    | 1,3%    | 2,1%  | 1,7% | 0,7%    | 3,8%    | 1,0%     | 0,5%  | 0,5% | 1,8%  | 3,6%  | 2,7%  |
| SE    | 9,2%   | 1,0%   | 0,9%    | 1,3%    | 1,8%  | 1,5% | 1,5%    | 5,6%    | 0,9%     | 0,7%  | 1,0% | 2,6%  | 3,1%  | 8,2%  |
| UK    | 7,7%   | 2,2%   | 0,5%    | 0,6%    | 1,9%  | 0,6% | 0,7%    | 7,1%    | 3,1%     | 0,5%  | 1,1% | 0,0%  | 1,4%  | 2,5%  |
| IS    | 5,4%   | 0,6%   | 0,0%    | 3,0%    | 5,7%  | 2,2% | 0,0%    | 6,2%    | 14,9%    | 10,1% | 1,1% | 4,3%  | 2,1%  | 50,0% |
| ME    | 7,3%   | 4,6%   | 0,7%    | 0,4%    | 4,9%  | 1,3% | 0,7%    | 10,2%   | 4,2%     | 1,0%  | 3,0% | 0,0%  | 5,9%  | 13,5% |
| MK    | 4,2%   | 1,4%   | 0,4%    | 1,0%    | 18,9% | 5,8% | 1,0%    | 6,0%    | 5,4%     | 1,5%  | 2,2% | 0,0%  | 4,0%  | 16,7% |
| TR    | 5,3%   | 6,8%   | 0,5%    | 0,5%    | 0,0%  | 0,0% | 0,9%    | 1,7%    | 4,2%     | 0,0%  | 0,0% | 0,0%  | 0,0%  | 5,5%  |

*Those cells where item non-response is higher than 5% are highlighted in red*

## Annex 2: Effect of design for selected variables<sup>37</sup>

| Items                  | BE | BG  | CZ | DK  | DE  | EE | IE  | GR | ES  | FR  | HR | IT  | CY | LV | LT | LU | HU  | MT | NL  | AT  | PL  | PT  | RO  | SI | SK  | FI  | SE  | UK  | IS | ME | MK | TR  |
|------------------------|----|-----|----|-----|-----|----|-----|----|-----|-----|----|-----|----|----|----|----|-----|----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|----|----|----|-----|
| <b>BINNOORG</b>        |    |     |    |     |     |    |     |    |     |     |    |     |    |    |    |    |     |    |     |     |     |     |     |    |     |     |     |     |    |    |    |     |
| Yes                    | ,6 | 1,9 | ,9 | 1,1 | 5,0 | ,4 | 1,0 | ,7 | 2,9 | 3,6 | ,4 | 4,3 | ,1 | ,7 | ,6 | ,2 | 1,1 | ,1 | 1,0 | 1,0 | 2,5 | 1,1 | 2,3 | ,3 | 1,0 | 1,8 | 1,1 | 7,6 | ,1 | ,1 | ,2 | 2,3 |
| <b>HVPBRES [H23_A]</b> |    |     |    |     |     |    |     |    |     |     |    |     |    |    |    |    |     |    |     |     |     |     |     |    |     |     |     |     |    |    |    |     |
| Yes                    | ,5 | 1,2 | ,9 | ,9  | 4,3 | ,3 | ,8  | ,6 | 2,4 | 3,0 | ,4 | 4,2 | ,1 | ,5 | ,6 | ,2 | ,9  | ,1 | 1,0 | ,9  | 2,2 | 1,0 | 2,2 | ,3 | 1,0 | 1,3 | ,8  | 6,2 | ,1 | ,1 | ,2 | 2,4 |
| <b>HVPGRPE [H23_C]</b> |    |     |    |     |     |    |     |    |     |     |    |     |    |    |    |    |     |    |     |     |     |     |     |    |     |     |     |     |    |    |    |     |
| Yes                    | ,5 | 1,7 | ,8 | 1,1 | 4,3 | ,3 | 1,0 | ,5 | 2,7 | 3,2 | ,4 | 4,1 | ,1 | ,6 | ,6 | ,2 | ,9  | ,1 | 1,0 | 1,0 | 2,4 | 1,1 | 2,1 | ,3 | 1,0 | 1,6 | ,8  | 6,2 | ,1 | ,1 | ,2 | 2,3 |
| <b>HVPPRSH [H23_D]</b> |    |     |    |     |     |    |     |    |     |     |    |     |    |    |    |    |     |    |     |     |     |     |     |    |     |     |     |     |    |    |    |     |
| Yes                    | ,5 | 1,5 | ,8 | ,8  | 4,2 | ,3 | ,9  | ,5 | 2,4 | 3,1 | ,4 | 3,9 | ,1 | ,4 | ,6 | ,2 | ,8  | ,1 | 1,0 | ,9  | 2,1 | ,9  | 2,1 | ,3 | 1,0 | 1,8 | ,8  | 5,6 | ,1 | ,1 | ,2 | 2,3 |
| <b>ICAEST [ER12_A]</b> |    |     |    |     |     |    |     |    |     |     |    |     |    |    |    |    |     |    |     |     |     |     |     |    |     |     |     |     |    |    |    |     |
| Yes                    | ,5 | 2,9 | ,8 | 1,1 | 4,8 | ,3 | 1,1 | ,6 | 2,8 | 3,5 | ,4 | 4,4 | ,1 | ,8 | ,6 | ,2 | ,8  | ,1 | 1,0 | 1,0 | 2,3 | 1,1 | 2,4 | ,3 | 1,0 | 2,4 | 1,1 | 7,2 | ,1 | ,1 | ,2 | 2,7 |
| <b>JREGMEE [E1_A]</b>  |    |     |    |     |     |    |     |    |     |     |    |     |    |    |    |    |     |    |     |     |     |     |     |    |     |     |     |     |    |    |    |     |
| Yes                    | ,6 | 2,0 | ,8 | ,8  | 4,7 | ,3 | 1,2 | ,7 | 2,8 | 3,6 | ,4 | 3,7 | ,1 | ,5 | ,6 | ,2 | ,8  | ,1 | 1,1 | ,8  | 2,4 | ,9  | 2,1 | ,3 | ,8  | ,7  | ,8  | 4,7 | ,1 | ,1 | ,2 | 2,5 |
| <b>JDISSINF [E1_D]</b> |    |     |    |     |     |    |     |    |     |     |    |     |    |    |    |    |     |    |     |     |     |     |     |    |     |     |     |     |    |    |    |     |

<sup>37</sup> To facilitate the interpretation of this table, cells are coloured in relation to the value of the effect of design, from light green (for the lowest values) to dark red (for the highest values).

| Items                         | BE | BG  | CZ | DK  | DE  | EE | IE  | GR  | ES  | FR  | HR | IT  | CY | LV | LT | LU | HU  | MT | NL  | AT  | PL  | PT  | RO  | SI | SK  | FI  | SE  | UK  | IS | ME | MK | TR  |
|-------------------------------|----|-----|----|-----|-----|----|-----|-----|-----|-----|----|-----|----|----|----|----|-----|----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|----|----|----|-----|
| Yes                           | ,6 | 1,7 | ,9 | ,9  | 4,5 | ,3 | 1,0 | ,6  | 2,7 | 3,6 | ,5 | 4,0 | ,1 | ,6 | ,6 | ,2 | 1,0 | ,1 | 1,1 | 1,1 | 2,4 | 1,1 | 2,4 | ,3 | ,9  | 2,2 | 1,2 | 5,8 | ,1 | ,1 | ,2 | 2,5 |
| <b>JSUGGS<br/>[E1_F]</b>      |    |     |    |     |     |    |     |     |     |     |    |     |    |    |    |    |     |    |     |     |     |     |     |    |     |     |     |     |    |    |    |     |
| Yes                           | ,5 | 2,2 | ,8 | 1,0 | 5,0 | ,3 | 1,1 | ,7  | 2,8 | 3,6 | ,4 | 4,4 | ,1 | ,7 | ,6 | ,2 | 1,0 | ,1 | 1,1 | 1,0 | 2,5 | 1,2 | 2,4 | ,3 | 1,0 | 1,8 | 1,1 | 7,4 | ,1 | ,2 | ,2 | 2,5 |
| <b>KOSICK<br/>[P1_A]</b>      |    |     |    |     |     |    |     |     |     |     |    |     |    |    |    |    |     |    |     |     |     |     |     |    |     |     |     |     |    |    |    |     |
| Yes                           | ,5 | 2,3 | ,8 | 1,2 | 5,0 | ,2 | 1,0 | 1,0 | 3,3 | 3,7 | ,4 | 2,9 | ,1 | ,7 | ,6 | ,2 | 1,0 | ,1 | 1,0 | ,8  | 2,3 | 1,3 | 2,2 | ,3 | 1,1 | ,7  | 1,0 | 9,0 | ,1 | ,1 | ,1 | 2,2 |
| <b>KOLOMOT<br/>[P1_E]</b>     |    |     |    |     |     |    |     |     |     |     |    |     |    |    |    |    |     |    |     |     |     |     |     |    |     |     |     |     |    |    |    |     |
| Yes                           | ,6 | 2,1 | ,9 | 1,0 | 5,1 | ,4 | 1,1 | ,7  | 3,1 | 3,2 | ,4 | 4,1 | ,1 | ,4 | ,6 | ,2 | ,9  | ,1 | 1,0 | ,9  | 2,4 | 1,1 | 2,9 | ,3 | 1,1 | 1,6 | 1,0 | 6,4 | ,1 | ,2 | ,2 | 2,5 |
| <b>KCLIMATE<br/>[P2]</b>      |    |     |    |     |     |    |     |     |     |     |    |     |    |    |    |    |     |    |     |     |     |     |     |    |     |     |     |     |    |    |    |     |
| Very good                     | ,6 | 1,9 | ,9 | 1,1 | 5,6 | ,3 | 1,1 | ,8  | 3,3 | 3,7 | ,4 | 3,6 | ,1 | ,9 | ,6 | ,2 | 1,1 | ,1 | 1,1 | 1,0 | 2,8 | 1,2 | 2,6 | ,3 | 1,0 | 2,2 | 1,1 | 7,0 | ,1 | ,2 | ,2 | 2,5 |
| Good                          | ,6 | 1,8 | ,9 | 1,1 | 5,3 | ,4 | 1,1 | ,7  | 2,9 | 3,6 | ,4 | 4,0 | ,1 | ,7 | ,6 | ,2 | 1,0 | ,1 | 1,1 | 1,0 | 2,6 | 1,1 | 2,5 | ,3 | 1,0 | 2,0 | 1,1 | 7,0 | ,1 | ,1 | ,2 | 2,5 |
| Neither good<br>nor bad       | ,5 | 1,0 | ,8 | 1,2 | 4,9 | ,5 | ,9  | ,7  | 3,0 | 3,3 | ,4 | 4,1 | ,1 | ,5 | ,6 | ,2 | ,9  | ,1 | ,9  | 1,0 | 2,3 | ,9  | 1,8 | ,3 | 1,0 | ,7  | ,8  | 7,5 | ,1 | ,1 | ,2 | 2,4 |
| Bad                           | ,5 | ,7  | ,7 | ,7  | 6,9 | ,5 | 1,2 | ,4  | 1,8 | 3,5 | ,4 | 6,1 | ,1 | ,4 | ,5 | ,1 | 1,1 | ,1 | 1,2 | ,7  | 2,4 | ,7  | 1,6 | ,2 | 1,1 | 5,2 | ,7  | 4,1 | ,0 | ,1 | ,2 | 3,0 |
| Very bad                      | ,4 | ,9  | ,8 | ,0  | ,0  | ,0 | ,2  | ,0  | 3,8 | 4,0 | ,4 | 1,6 | ,1 | ,0 | ,0 | ,0 | ,6  | ,0 | ,0  | ,9  | 2,2 | 2,4 | ,1  | ,3 | ,0  | ,1  | ,0  | 3,3 | ,0 | ,3 | ,1 | 1,9 |
| <b>KCLIMACH<br/>[P2_1]</b>    |    |     |    |     |     |    |     |     |     |     |    |     |    |    |    |    |     |    |     |     |     |     |     |    |     |     |     |     |    |    |    |     |
| Improved                      | ,6 | 1,9 | ,9 | 1,1 | 5,3 | ,3 | 1,1 | ,7  | 3,0 | 3,8 | ,4 | 4,4 | ,1 | ,7 | ,6 | ,2 | 1,0 | ,1 | 1,1 | 1,0 | 2,6 | 1,2 | 2,3 | ,3 | 1,0 | 1,9 | 1,1 | 6,8 | ,1 | ,1 | ,2 | 2,4 |
| Remained<br>about the<br>same | ,6 | 1,8 | ,9 | 1,1 | 5,2 | ,3 | 1,1 | ,7  | 2,9 | 3,7 | ,4 | 4,0 | ,1 | ,7 | ,6 | ,2 | 1,0 | ,1 | 1,1 | 1,0 | 2,5 | 1,1 | 2,4 | ,3 | 1,0 | 1,8 | 1,1 | 7,0 | ,1 | ,1 | ,2 | 2,4 |
| Worsened                      | ,5 | 1,0 | ,8 | 1,0 | 5,3 | ,3 | 1,2 | ,7  | 3,0 | 3,6 | ,4 | 3,5 | ,1 | ,4 | ,8 | ,2 | 1,0 | ,1 | ,9  | 1,0 | 2,4 | 1,1 | 2,7 | ,3 | 1,0 | 3,2 | ,9  | 7,5 | ,1 | ,2 | ,2 | 2,5 |

| Items                       | BE  | BG  | CZ  | DK  | DE   | EE | IE  | GR  | ES  | FR  | HR | IT   | CY | LV  | LT  | LU | HU  | MT | NL  | AT  | PL  | PT  | RO  | SI | SK  | FI  | SE  | UK   | IS | ME | MK | TR  |     |
|-----------------------------|-----|-----|-----|-----|------|----|-----|-----|-----|-----|----|------|----|-----|-----|----|-----|----|-----|-----|-----|-----|-----|----|-----|-----|-----|------|----|----|----|-----|-----|
| <b>Q10</b>                  |     |     |     |     |      |    |     |     |     |     |    |      |    |     |     |    |     |    |     |     |     |     |     |    |     |     |     |      |    |    |    |     |     |
| The entire workforce        | 1,0 |     | ,5  |     |      |    |     |     | 1,3 | 4,4 | ,7 | 6,9  | ,3 |     |     | ,1 |     | ,2 | ,6  |     |     | ,3  |     | ,7 |     | 1,1 | 2,5 | 40,6 | ,1 |    |    |     | 4,0 |
| Part of the workforce       | 1,0 |     | ,5  |     |      |    |     |     | 1,3 | 4,4 | ,7 | 6,9  | ,3 |     |     | ,1 |     | ,2 | ,6  |     |     | ,3  |     | ,7 |     | 1,1 | 2,5 | 40,6 | ,1 |    |    |     | 4,0 |
| <b>Q19</b>                  |     |     |     |     |      |    |     |     |     |     |    |      |    |     |     |    |     |    |     |     |     |     |     |    |     |     |     |      |    |    |    |     |     |
| At least once a week        | ,8  | 4,4 | ,9  | 1,7 | 9,8  | ,5 | 1,2 | 1,1 | 4,6 | 4,9 | ,7 | 6,8  | ,2 | 2,3 | ,9  | ,4 | 1,7 | ,1 | 1,5 | 1,8 | 2,2 | 1,0 | 3,3 | ,5 | 1,7 | ,9  | 1,2 | 18,2 | ,1 | ,2 | ,3 | 3,6 |     |
| At least once a month       | ,8  | 5,1 | 1,2 | 2,1 | 9,6  | ,4 | 2,1 | ,8  | 4,1 | 5,8 | ,6 | 6,9  | ,2 | 2,4 | ,8  | ,4 | 1,7 | ,1 | 1,4 | 1,7 | 3,4 | ,8  | 3,9 | ,4 | 1,7 | 4,2 | 1,6 | 19,1 | ,1 | ,2 | ,3 | 3,6 |     |
| At least once every quarter | ,8  | 6,2 | 1,1 | 1,9 | 9,6  | ,5 | 2,0 | 1,2 | 3,8 | 6,1 | ,6 | 7,8  | ,2 | 2,1 | ,9  | ,3 | 1,5 | ,2 | 1,4 | 1,6 | 3,6 | 1,0 | 3,9 | ,4 | 1,6 | 3,9 | 1,4 | 13,6 | ,1 | ,2 | ,3 | 3,3 |     |
| At least once a year        | 1,0 | ,8  | 1,3 | 1,8 | 11,0 | ,5 | 2,1 | ,9  | 3,1 | 6,1 | ,5 | 10,7 | ,2 | ,3  | ,8  | ,4 | ,9  | ,1 | 1,2 | 2,3 | 3,5 | 1,8 | 2,7 | ,4 | 1,9 | 1,4 | 1,6 | 18,8 | ,1 | ,3 | ,3 | 4,1 |     |
| Less than once a year       | ,7  | ,4  | 1,2 | 1,1 | 1,8  | ,2 | 2,2 | ,7  | 3,0 | 7,3 | ,7 | 9,6  | ,1 | ,2  | ,9  | ,2 | 1,9 | ,2 | 1,6 |     | 4,3 | 1,9 | 2,9 | ,4 | 2,2 | 5,5 | 1,7 | 22,1 | ,1 | ,0 | ,3 | 4,0 |     |
| <b>Q26_B</b>                |     |     |     |     |      |    |     |     |     |     |    |      |    |     |     |    |     |    |     |     |     |     |     |    |     |     |     |      |    |    |    |     |     |
| Yes                         | ,7  | 5,0 | ,9  | 2,0 | 9,8  | ,4 | 1,0 | 1,0 | 3,9 | 5,6 | ,5 | 5,7  | ,2 | ,6  | ,9  | ,4 | 1,6 | ,1 | 1,4 | 2,3 | 3,4 | 1,6 | 3,3 | ,4 | 2,0 | 3,2 | 1,4 | 17,2 | ,1 | ,2 | ,3 | 3,6 |     |
| <b>Q26_F</b>                |     |     |     |     |      |    |     |     |     |     |    |      |    |     |     |    |     |    |     |     |     |     |     |    |     |     |     |      |    |    |    |     |     |
| Yes                         | ,7  | 4,9 | 1,0 | 1,9 | 9,1  | ,5 | 1,0 | 1,0 | 3,9 | 5,4 | ,5 | 5,6  | ,2 | 2,3 | 1,0 | ,4 | 1,6 | ,1 | 1,4 | 1,8 | 3,4 | 1,7 | 3,5 | ,4 | 2,1 | 2,7 | 1,5 | 17,0 | ,1 | ,2 | ,3 | 3,6 |     |
| <b>Q44</b>                  |     |     |     |     |      |    |     |     |     |     |    |      |    |     |     |    |     |    |     |     |     |     |     |    |     |     |     |      |    |    |    |     |     |
| Very good                   | ,8  | 4,5 | 1,2 | 2,1 | 8,0  | ,5 | 1,9 | ,7  | 3,8 | 4,8 | ,7 | 8,0  | ,2 | 2,5 | ,8  | ,4 | 2,3 | ,2 | 1,8 | 2,1 | 4,7 | 1,2 | 4,4 | ,5 | 1,6 | 1,2 | 2,0 | 17,2 | ,1 | ,2 | ,3 | 3,6 |     |
| Good                        | ,7  | 4,9 | 1,1 | 2,0 | 9,6  | ,5 | 1,9 | 1,0 | 3,8 | 5,7 | ,6 | 8,2  | ,2 | 2,3 | ,9  | ,4 | 1,6 | ,1 | 1,5 | 1,7 | 3,5 | 1,7 | 4,1 | ,4 | 1,7 | 3,3 | 1,6 | 17,6 | ,1 | ,2 | ,3 | 3,5 |     |

| Items                | BE | BG  | CZ  | DK  | DE   | EE | IE  | GR  | ES  | FR  | HR | IT  | CY | LV  | LT  | LU | HU  | MT | NL  | AT  | PL  | PT  | RO  | SI | SK  | FI  | SE  | UK   | IS | ME | MK | TR  |
|----------------------|----|-----|-----|-----|------|----|-----|-----|-----|-----|----|-----|----|-----|-----|----|-----|----|-----|-----|-----|-----|-----|----|-----|-----|-----|------|----|----|----|-----|
| Neither good nor bad | ,6 | 1,1 | ,9  | ,8  | 9,7  | ,4 | 1,2 | 1,2 | 4,1 | 5,7 | ,6 | 8,9 | ,2 | 1,9 | ,9  | ,3 | 1,5 | ,1 | 1,4 | 1,6 | 2,8 | 1,1 | 2,4 | ,4 | 1,8 | 3,8 | 1,4 | 16,3 | ,1 | ,2 | ,3 | 3,4 |
| Bad                  | ,4 | 9,2 | ,8  | 1,9 | 8,9  | ,7 | ,9  | 1,5 | 3,9 | 5,4 | ,6 | 3,2 | ,1 | 2,8 | ,2  | ,2 | 1,0 | ,0 | 1,7 | 1,4 | 4,0 | 1,1 | 2,0 | ,4 | 1,8 | ,9  | 1,6 | 20,9 | ,1 | ,3 | ,3 | 1,7 |
| Very bad             | ,4 | ,0  | ,1  | 1,1 | 4,4  | ,0 | 1,2 | ,1  | 2,7 | 5,6 | ,2 | 3,8 | ,0 | ,1  | ,0  | ,2 | ,3  | ,0 | ,1  | ,2  | 1,5 | 3,6 | ,9  | ,3 | 2,3 | 1,0 | 1,2 | 6,2  | ,1 | ,1 | ,3 | ,0  |
| <b>Q46_C</b>         |    |     |     |     |      |    |     |     |     |     |    |     |    |     |     |    |     |    |     |     |     |     |     |    |     |     |     |      |    |    |    |     |
| Yes                  | ,6 | 1,2 | 1,4 | 2,6 | 12,8 | ,6 | 3,1 | 1,0 | ,7  | ,7  | ,7 | 7,8 | ,2 |     |     |    | ,0  |    | 1,8 | ,2  | 1,6 | 1,3 | 7,5 | ,5 | 2,4 | ,9  | 3,0 | 14,9 | ,1 | ,2 | ,3 | 3,2 |
| <b>HFLEXI [H14]</b>  | ,6 | 1,7 | ,9  | 1,1 | 5,4  | ,3 | 1,1 | ,7  | 2,7 | 3,7 | ,4 | 4,2 | ,1 | ,7  | ,6  | ,2 | 1,0 | ,1 | 1,1 | 1,0 | 2,4 | 1,1 | 2,1 | ,3 | 1,0 | 1,8 | 1,1 | 7,5  | ,1 | ,1 | ,2 | 2,3 |
| <b>Q1</b>            | ,9 | 3,0 | ,8  | 2,0 | 7,5  |    | ,3  | ,2  | 2,5 | 7,3 | ,7 | 4,6 | ,1 | ,5  | ,2  | ,7 | ,8  | ,1 | ,8  | 1,2 | ,8  | ,9  | 1,7 | ,5 | 1,0 | 1,3 | ,7  | 14,3 | ,1 | ,1 | ,1 | 2,1 |
| <b>Q4</b>            | ,8 | 6,2 | 1,4 | 2,2 | 6,0  | ,3 | 2,0 | 1,0 | 4,1 | 4,5 | ,7 | 6,2 | ,2 | ,8  | 1,0 | ,3 | 1,8 | ,2 | 1,7 | 1,8 | 4,3 | 2,0 | 4,6 | ,5 | 2,0 | 2,0 | 1,4 | 19,1 | ,1 | ,2 | ,3 | 4,5 |

### Annex 3: Comparison of the MM and ER questionnaires in the second and third waves of the ECS

| Common questions in MM questionnaire  |   |
|---|---|
| Second ECS  | Third ECS   |
| <b>MM101:</b> Is it headquarters or is it a subsidiary site?  | <b>B2:</b> Same question, same answers.   |
| <b>MM102:</b> Approximately, how many employees are working in this establishment?  | <b>Q5:</b> Same question, same answers.   |
| <b>MM103:</b> Has the total number of employees in your establishment increased, decreased or stayed about the same over the past 3 years?  | <b>Q7:</b> Same question, same answers.   |
| <b>MM104:</b> Does this establishment belong to the public sector?  | <b>Q2:</b> Same question, same answers.<br><b>Remark:</b> Definition of 'public sector' added.  |
| <b>MM250:</b> Approximately, what proportion of your employees work part-time?  | <b>Q33E:</b> Same question, same answers.   |
| <b>MM550:</b> About what proportion of your employees is female?  | <b>Q33B:</b> Same question, same answers.   |
| <b>MM402:</b> About what proportion of your employees is holding fixed-term contracts?  | <b>Q33A:</b> Number or percentage of employees who have permanent contracts.<br><b>Remark:</b> Question is backwards.   |
| <b>M559:</b> Do the team members decide among themselves how and by whom the tasks have to be performed, or is there usually a superior distributing the tasks within the team?   | <b>T3:</b> Same question, same answers.<br><b>Remark</b><br>Second ECS: is the team an important characteristic of your enterprise? = qualitative question.<br>Third ECS: one or several teams exist in your enterprise? = quantitative question. |
| <b>Remark:</b> Concerning time off for training accorded to employees, the third ECS is more precise than the second.<br>Second ECS, MM563: Have you given time off for training to your employees?<br>third ECS, H3: Which percentage of your employees received paid time off for training? |   |
| <b>MM403:</b> How many of your temporary staff whose fixed-term contracts expired in past 12 months got a further contract in the establishment immediately afterwards?<br><b>Remark:</b> Question considerably different but same results.   | <b>H11:</b> Do you agree or disagree with the following statements about the HR management strategy in this establishment?<br><b>H11A:</b> The majority of employees who had a temporary contract got a further contract afterwards.              |
| <b>MM300:</b> Does your establishment offer employees the possibility to adapt – within certain limits – the time when they begin or finish their daily work according to their personal needs or wishes?   | <b>H14, H15:</b> Same question, but estimated percentages requested on the basis of predefined classes.<br><b>Remark:</b> third ECS more precise than the second.   |
| <b>MM304:</b> It is possible for employees to use accumulated hours for <u>full</u> days off?   | <b>H16:</b> Is it possible for employees to use accumulated overtime for days off? This could be <u>full or half</u> days off.<br><b>Remark:</b> third ECS more precise than the second but with more flexible answers.                           |
| <b>Variable elements of pay consistency</b>   |   |

| <b>Common questions in MM questionnaire</b>   |   |
|---|---|
| <b>Second ECS</b>   | <b>Third ECS</b>  |
| <p><b>MM455:</b> Approximately, what proportion of your workforce receives specific elements of pay that depend on the individual performance?</p> <p><b>MM456:</b> Approximately, what proportion of your workforce receives specific elements of pay that depend on the performance of the team, WGs, department?</p> <p><b>MM460:</b> Is there any profit sharing scheme offered in this establishment?</p> <p><b>MM463:</b> Is there any share ownership scheme offered in this establishment?</p> <p><b>Remark:</b> third ECS more precise than the second.</p>  | <p><b>H23:</b> Could you please tell me for each of these options whether or not they are available to at least some employees?</p> <p><b>H23A (not in second ECS):</b> Payment by results, for example piece rates, provisions, brokerages or commissions.</p> <p><b>H23B:</b> Variable extra pay linked to individual performance.</p> <p><b>H23C:</b> Variable extra pay linked to the performance of the team, WG or department.</p> <p><b>H23D:</b> Variable extra pay linked to the results of the company or establishment (profit sharing schemes).</p> <p><b>H23E:</b> Variable extra pay in form of share ownership scheme.</p> |
| <p><b>MM650:</b> Which of the following forms of formal employee representation currently exist in your establishment?</p>  | <p><b>ER1:</b> Same question, same answers.</p>   |
| <p><b>MM651a:</b> Is there one employee representation body or are there several bodies representing different types of employees in your establishment?</p>  | <p><b>ER2:</b> Same question, same answers.</p>   |
| <p><b>MM653:</b> Are the members of employee representation bodies designated by the management or are they chosen by the employees?</p> <p><b>Remark:</b> third ECS more precise than the second.</p>  | <p><b>ER8_6:</b> Are the members of the employee representation bodies...</p> <ul style="list-style-type: none"> <li>- Elected by the entire workforce</li> <li>- Elected by a specific category of the staff</li> <li>- Elected or appointed by a trade union or elected by its members</li> <li>- Appointed by management?</li> <li>- Don't know</li> <li>- No answer</li> </ul>  |
| <p><b>MM654:</b> Is there an employee representation body at the company level which also represents the employees working on this site?</p>  | <p><b>ER8:</b> Which of the following types of employee representation bodies exist at the company level that also represent the employees working on this site?</p> <p><b>Remark:</b> third ECS ask for the type of representation and not only its existence, so it is more precise than the second ECS.</p>  |
| <p><b>MM702:</b> Please tell me - based on your experiences with the employee representation at this establishment - whether you agree or not with the following statements:</p> <ul style="list-style-type: none"> <li>- The employee representation helps us in a constructive manner to find ways to improve workplace performance.</li> <li>- The involvement of the employee representation often leads to considerable delays in important management decisions.</li> <li>- We would prefer to consult directly with our employees.</li> <li>- Consulting the employee representation in important changes leads to more commitment of the staff in the implementation of changes.</li> </ul> | <p><b>ER15:</b> Same question, same list of answers.</p>  |
| <b>Collective wage agreements (CWA) consistency</b>   |   |



| <b>Common questions in MM questionnaire</b>  |  |
|--|--|
| <b>Second ECS</b>  | <b>Third ECS</b>   |
| <p><b>MM450:</b> What proportion of your employees is covered by a CWA - be it on the level of the establishment or on any higher level?</p> <p><b>MM451:</b> Is this CWA negotiated at the establishment or company level or at a higher level than the company?</p> <p><b>Remark:</b> More information on the internal structure in the second ECS, more information on the determination of CWA in the third ECS.</p>   | <p><b>ER12:</b> Are employees in this establishment covered by any of the following CWA?</p> <p><b>ER12A:</b> A CWA negotiated at establishment or company level.</p> <p><b>ER12B:</b> A CWA negotiated at sectorial or regional level.</p> <p><b>ER12C:</b> A CWA negotiated for given occupation.</p> <p><b>ER12D:</b> A national cross-sectorial CWA.</p>   |
| <b>Internal changes and social dialogue consistency</b>  |  |
| <p><b>MM602:</b> Please tell me for each of the following measures whether or not you have taken it in your establishment in the past 3 years.</p> <ul style="list-style-type: none"> <li>- Major changes in remuneration system (1)</li> <li>- Changes in the organisation of work process (2)</li> <li>- Changes in work time arrangements (3)</li> <li>- Restructuring measures (4)</li> </ul>  | <p><b>E0.a:</b> Please tell me, whether any of the following changes have been made since 3 years (2010).</p> <p><b>E0.aA:</b> = (1)</p> <p><b>E0.aB:</b> Changes in the use of technology</p> <p><b>E0.aC:</b> Changes in the way to coordinate and allocate work [= (2) more or less]</p> <p><b>E0.aD:</b> Changes in recruitment policies</p> <p><b>E0.aE:</b> = (3)</p>  |
| <p><b>Remark:</b> Then, while in the second ECS it is asked if employees have been consulted on every changes, in the third ECS it is asked to choose the change with major impact on employees and then several details on its implementation.</p>  |  |
| <p><b>MM701:</b> How would you rate the current general work climate in your establishment?</p>  | <p><b>P2:</b> Same question, same answers.</p>   |
| <p><b>MM500:</b> How would you rate the economic situation of this establishment?</p>  | <p><b>P3:</b> How would you rate the financial situation of this establishment?</p> <p><b>Remark:</b> Precision of definitions improved between second and third ECS.</p>  |
| <p><b>MM157:</b> Does your establishment encounter any of the following problems related to personnel?</p> <ul style="list-style-type: none"> <li>- High absenteeism and/or sickness rate (1).</li> <li>- Difficulties in finding staff for skilled jobs (2).</li> <li>- Difficulties in finding staff for low skilled or unskilled jobs (3).</li> <li>- Difficulties in retaining staff (4).</li> <li>- A need to reduce staff level (5).</li> <li>- Low motivation of staff (6).</li> <li>- Other problems (7).</li> </ul> | <p><b>P1:</b> Does the management encounter any of the following problems at this establishment currently?</p> <p><b>P1A:</b> High level of sickness rate [part of (1)].</p> <p><b>P1B:</b> Difficulties in finding employees with required skills [(2) + (3)].</p> <p><b>P1C:</b> Difficulties in retaining employees [= (4)].</p> <p><b>P1D:</b> Need to reduce staff [= (5)].</p> <p><b>P1E:</b> Low motivation of staff [= (6)].</p> |
| <p><b>MM502:</b> In the last 3 years, has the labour productivity...</p> <ul style="list-style-type: none"> <li>- Increased considerably</li> <li>- Increased slightly</li> <li>- Remained about the same</li> <li>- Decreased</li> <li>- Don't know</li> <li>- No answer</li> </ul>   | <p><b>P7:</b> Same question, list of answers slightly different (less detail in increasing information).</p>   |

| Common questions in ER questionnaire  |  |
|---|--|
| Second ECS  | Third ECS  |
| <b>ER107:</b> Roughly how many employees at this establishment are members of a trade union?  | <b>Q4:</b> Same question, same answers.  |
| <b>ER501:</b> How many years of experience do you have as employee representative in the establishment?   | <b>Q6:</b> Same question, same answers.  |
| <b>ER502:</b> In your function as employee representative: Do you represent the whole workforce in this establishment or a specific part of the staff only?   | <b>Q10:</b> Does this trade union represent the entire workforce or only a part of the workforce, for instance, people in a specific occupational category?<br><br><b>Remark:</b> In third ECS the question refers to the trade union, in the second ECS to the employee representative.   |
| <b>ER300:</b> On a weekly average basis, how many hours of paid time off are you entitled to take to carry out your duties?   | <b>Q12:</b> Same question, same answers.   |
| <b>ER301:</b> Is the available time usually sufficient for fulfilling the representative duties?  | <b>Q13:</b> Same question, same answers.   |
| <b>ER304:</b> Do the employee representatives on a regular basis get training on issues specific to their role as employee representatives?   | <b>Q14:</b> In the last 12 months have you received training related to your role as employee representative?<br><br><b>Remark:</b> Less coverage but more precision in third ECS.   |
| <b>ER151:</b> To what extent do you agree or disagree with the following statements, when you look to the industrial relations climate of your establishment.<br><br><b>01:</b> Employees support the work of the employee representation.<br><b>02:</b> Employees rarely express interest in the outcome of consultations or negotiations.<br><b>05:</b> The relationship between management and employee representation can best be defined as hostile.<br><b>06:</b> Management and employee representation make sincere efforts to solve common problems.<br><br><b>Remark:</b> Two new options in the third ECS questionnaire. | <b>Q20:</b> Do you agree or disagree with the following statements ...?<br><br><b>A:</b> Employees value the work of the employee representation<br><b>B:</b> Employees rarely express interest in the outcome of consultations or negotiations<br><b>C:</b> The relationship between management and employee representation can best be described as hostile.<br><b>D:</b> Management makes sincere efforts to involve the employee representation in the solving of joint problems.<br><b>E:</b> Employee representatives in this establishment are treated worse because of their position as employee representatives.<br><b>F:</b> Employee representatives in this establishment might lose their job because of their work as employee representatives. |
| <b>ER200:</b> Please tell me for each of the following issues whether the employer provides the employee representation with relevant data on it at least once a month (1), several times a year (2), once a year (3), less than once a year (4) or never (5).<br><br><b>01:</b> The economic and financial situation of the establishment.<br><b>02:</b> The employment situation.<br><b>03:</b> The number of overtime hours.<br><br><b>Remark:</b> More questions but less precision on frequency in the third ECS.  | <b>Q21:</b> In the last 12 months, has management provided the [ER-body] with any information on the following issues?<br><br><b>A:</b> The financial situation of the establishment.<br><b>B:</b> The employment situation of the establishment.<br><b>C:</b> The introduction of new or significantly changed products or services in the establishment.<br><b>D:</b> The introduction of new or significantly changed processes to produce goods or provide services in the establishment.<br><b>E:</b> Strategic plans with regard to the establishment (e.g. business targets, plans for investments, plans to expand activities, etcetera).  |

Common questions in ER questionnaire

| Second ECS   | Third ECS   |
|--|---|
| <p><b>ER203:</b> Do you usually receive the information timely and unrequested?</p> <p><b>Remark:</b> Only information on timeliness requested in third ECS.</p>   | <p><b>Q24:</b> Thinking about all the information management has provided you with in the last 12 months, did you usually receive it in good time?</p>  |
| <p><b>ER207:</b> How large is the influence of the employee representation on management decisions in this establishment? How would you rate the influence on ...</p> <ul style="list-style-type: none"> <li><b>01:</b> Employment and human resources planning.</li> <li><b>02:</b> Equal opportunities policies and diversity management.</li> <li><b>03:</b> Changes in working time regulations.</li> <li><b>04:</b> The determination of pay.</li> <li><b>05:</b> Health and safety matters.</li> <li><b>06:</b> Changes in the organisation of work processes and workflow.</li> <li><b>07:</b> The impact of structural changes such as restructurings, relocations or takeovers.</li> <li><b>08:</b> Career management (selection, appraisal, training).</li> <li><b>10:</b> Disciplinary or hierarchical problems.</li> </ul> | <p><b>Q39:</b> And would you say employees had no direct influence, some direct influence or a strong direct influence on the management decision?</p> <p><b>Q40:</b> You identified other areas in which the management of this establishment recently took major decisions. Would you say the [ER-body] had no influence, some influence or a strong influence on the management decisions in the following areas?</p> <ul style="list-style-type: none"> <li><b>A:</b> The organisation of work processes</li> <li><b>B:</b> Recruitment and dismissals</li> <li><b>C:</b> Occupational health and safety</li> <li><b>D:</b> Training and career development</li> <li><b>E:</b> Working time arrangements</li> <li><b>F:</b> Restructuring measures</li> </ul> <p><b>Remark:</b> Lot of changes between second and third ECS on this specific topic, may cause incomparability between the data.</p> |
| <p><b>ER260:</b> In the last 12 months, have there been one or more instances of industrial action in your establishment?</p>  | <p><b>Q46:</b> Same question, same answers.</p>   |
| <p><b>ER262:</b> Which issues were concerned by this/these action(s)?</p>  | <p><b>Q47:</b> Did any of the industrial actions refer to an issue that was specific to your company/organisation?</p>  |

## Annex 4: Common question in third ECS and Meadow survey

| Meadow survey  | Third ECS   |
|--|---|
| <p>MEADOW (APUB) A public sector organisation is either wholly owned by the government or the government has a majority share. Is your establishment part of ...</p> <ul style="list-style-type: none"> <li>- The private sector 1</li> <li>- The public sector? 2</li> </ul>                | <p><i>ECSQ2. (APRIVATE) A public sector organisation is either wholly owned by the public authorities or they own more than 50%. Is your establishment part of ...</i></p> <ul style="list-style-type: none"> <li>- The private sector 1</li> <li>- The public sector? 2</li> <li>- [Don't know] 8</li> <li>- [No answer] 9</li> </ul>  |
| <p>MEADOW (AWPAGE) How many years has your establishment been in operation? Please include time spent at previous locations.</p> <ul style="list-style-type: none"> <li>- Less than 2 years 1</li> <li>- 2 to 9 years 2</li> <li>- 10 to 49 years 4</li> <li>- 50 years or more 6</li> </ul> | <p><i>ECSQ4. (AYEARSOP) How many years has this establishment been in operation, regardless of any changes in the ownership structure?</i></p> <ul style="list-style-type: none"> <li>- Less than 2 years 1</li> <li>- 2 to 9 years 2</li> <li>- 10 to 49 years 3</li> <li>- 50 years or more 4</li> <li>- [Don't know] 8</li> <li>- [No answer] 9</li> </ul>   |
| <p>MEADOW (EINNOVPRD) During the last two years has this establishment introduced any new or significantly improved products or services?</p> <ul style="list-style-type: none"> <li>- Yes 1</li> <li>- No 2</li> </ul>  | <p><i>ECSQ31. Since the beginning of 2010, has this establishment introduced ...</i></p> <p><i>Q22. BINNPRSE ... any new or significantly changed products or services (either internally or externally)?</i></p> <ul style="list-style-type: none"> <li>- Yes 1</li> <li>- No 2</li> <li>- [Don't know] 8</li> <li>- [No answer] 9</li> </ul>  |
| <p>MEADOW (EINNOVPRC) During the last two years, has your establishment introduced any new or significantly improved processes, either for producing goods or supplying services?</p> <ul style="list-style-type: none"> <li>- Yes 1</li> <li>- No 2</li> </ul>                              | <p><i>ECSQ31. Since the beginning of 2010, has this establishment introduced ...</i></p> <p><i>Q23. BINNOPROC ... any new or significantly changed processes, either for producing goods or supplying services?</i></p> <ul style="list-style-type: none"> <li>- Yes 1</li> <li>- No 2</li> <li>- [Don't know] 8</li> <li>- [No answer] 9</li> </ul>  |
| <p>MEADOW (B1HIE) How many organisational levels are there in your establishment, including the highest level (for example, senior management) and the lowest level (for example, production staff)?</p> <p>Number: .....</p>  | <p><i>ECSQ24. EHIERA How many hierarchical levels do you have in this establishment, including the highest and the lowest level? [Flat organisations (ie. all being equal) have 1 level of hierarchy. '0' cannot be accepted as an answer, answer has to be &gt; or = 1.]</i></p> <ul style="list-style-type: none"> <li>- Number of levels: ___ levels</li> <li>- [Don't know] 998</li> <li>- [No answer] 999</li> </ul> |

| Meadow survey  | Third ECS   |
|--|---|
| <p>MEADOW (B1HIE2007) How many organisational levels were there 2 years ago?</p> <p>Number: ....</p>   | <p><i>ECSQ25. EHIERACH Since the beginning of 2010, the number of hierarchical levels has ...</i><br/> <i>[ONLY ONE ANSWER IS POSSIBLE]</i></p> <ul style="list-style-type: none"> <li>- Increased 1</li> <li>- Stayed the same 2</li> <li>- Decreased? 3</li> <li>- [Don't know] 8</li> <li>- [No answer] 9</li> </ul>   |
| <p>MEADOW (B1DIVTYPE) Does this establishment have each of the following types of divisions or departments? [Provide separate 'yes or no' response options to each of questions a to c]</p> <p>a. Separate divisions or departments by function: sales, production, administration, research, etc. b. Separate divisions or departments by type of product or service c. Separate divisions or departments by geographical area: sales regions, etc.</p> <ul style="list-style-type: none"> <li>- Yes 1</li> <li>- No 2</li> </ul> | <p><i>ECSQ26. Does this establishment have any of the following types of departments? [The questions refer to departments within the establishment only.]</i></p> <p><i>Q26A DDEPFUN Departments based on function: sales, production, administration, research etc.</i><br/> <i>Q26B DDEPTYP Departments dealing with different types of products or service</i><br/> <i>Q26C DDEPGEO Departments dealing with specific geographical areas, regions etc.</i></p> |
| <p>MEADOW (B1STRUC) Who normally decides on the planning and execution of the daily work tasks of the non-managerial employees at this establishment? [ONLY ONE ANSWER IS POSSIBLE]</p> <ul style="list-style-type: none"> <li>-The employee undertaking the tasks 1</li> <li>- Managers or supervisors 2</li> <li>-Both employees and managers or supervisors 3</li> </ul>  | <p><i>ECSQ27. EPLANN Who normally decides on the planning and execution of the daily work tasks of the employees at this establishment? [ONLY ONE ANSWER IS POSSIBLE]</i></p> <ul style="list-style-type: none"> <li>-The employee undertaking the tasks 1</li> <li>- Managers or supervisors 2</li> <li>- Both employees and managers or supervisors 3</li> <li>- [Don't know] 8</li> <li>- [No answer] 9</li> </ul>   |
| <p>MEADOW (B2qual<sup>38</sup>) Does this establishment monitor the quality of its production processes or service delivery?</p> <ul style="list-style-type: none"> <li>- Yes, on a continuous basis 1</li> <li>- Yes, on an intermittent basis 2</li> <li>- No 3</li> <li>- Not relevant 4</li> </ul>   | <p><i>ECSQ38. EMONQUA Does this establishment monitor the quality of its production processes or service delivery?</i></p> <ul style="list-style-type: none"> <li>- Yes, on a continuous basis 1</li> <li>- Yes, on an intermittent basis 2</li> <li>- No 3</li> <li>- [Don't know] 8</li> <li>- [No answer] 9</li> </ul>   |
| <p>MEAOOW (B1team) Are any of the employees at this establishment currently working in a team, where the members jointly decide how work is done?</p> <ul style="list-style-type: none"> <li>- Yes 1</li> <li>- No 2</li> </ul>  | <p><i>ECS[ASK IF T1 =1] T3.FTAUTON If you think about the tasks to be performed by the teams: Do the team members decide among themselves by whom the tasks are to be performed, or is there usually a superior distributing the tasks within the team?</i></p> <ul style="list-style-type: none"> <li>- Team members decide among themselves 1</li> <li>- Tasks are distributed by a superior 2</li> <li>- [Don't know] 8</li> </ul>                             |

| Meadow survey   | Third ECS   |
|---|---|
|   | - [No answer] 9   |
| <p>MEADOW (B1MULTSK) Are any of the employees at this establishment trained to rotate tasks with other workers? The training could take place either outside or within your establishment.</p> <p>- Yes 1<br/>- No 2<br/>- Not relevant 9</p>   | <p>ECST7. FROTATE Do any of the employees at this establishment rotate tasks with other employees?</p> <p>- Yes, most do 1<br/>- Yes, some do 2<br/>- No, none do 3<br/>- No, the high level of required skills or expertise prevents employees from rotating tasks 4<br/>- [Don't know] 8<br/>- [No answer] 9</p> <p>OR:<br/>[ASK IF (H3 OR H5 ARE NOT 9997/9998/9999) OR (H4 OR H6 ARE NOT 1/8/9)]<br/>H7. Did the training for your staff have any of the following objectives...? H7D HTRTAROT<br/>To enable employees to rotate tasks with colleagues</p> <p>- Yes 1<br/>- No 2<br/>- [Don't know] 8<br/>- [No answer] 9</p> |
| <p>MEADOW (B2KMDBASE) Do employees in this establishment regularly up-date databases that document good work practices or lessons learned?</p> <p>- Yes 1<br/>- No 2</p>  | <p>ECST9. ELELEDOC Do employees in this establishment document and keep records of their good work practices or lessons learned, with the purpose to share these with other employees?</p> <p>- Yes 1<br/>- No 2<br/>- [Don't know] 8<br/>- [No answer] 9</p>   |
| <p>MEADOW (B2JITP) Does this establishment use an automated system to minimize inventories, supplies, or work- in- process? These are sometimes known as just-in-time or lean production systems or as working according to a zero buffer principle.</p> <p>- Yes 1<br/>- No 2</p>  | <p>ECST10. EINFYSYS Does this establishment use information systems to minimize supplies or work-in process? These are sometimes known as just-in-time or lean production systems or as working according to a zero buffer principle.</p> <p>- Yes 1<br/>- No 2<br/>- [Don't know] 8<br/>- [No answer] 9</p>  |
| <p>MEASOW (B2CUSAT) Does this establishment monitor external ideas or technological developments for new or changed products, processes or services?</p> <p>- Yes, using staff assigned specifically to this task 1<br/>- Yes, as part of the responsibilities of general staff 2<br/>- No 3<br/>- [Don't know] 8<br/>- [No answer] 9</p> | <p>ECST11. EEXTEMON Does this establishment monitor external ideas or technological developments for new or changed products, processes or services?</p> <p>- Yes, using staff assigned specifically to this task 1<br/>- Yes, as part of the responsibilities of general staff 2<br/>- No 3<br/>- [Don't know] 8<br/>- [No answer] 9</p>   |
| <p>MEADOW (B4ACTV) Are each of the following activities carried out at this establishment? [Provide separate 'yes and no' response options to each of questions a to e] a. Design or</p>  | <p>ECSO1. Please indicate if any of the following activities are carried out at this establishment?<br/>O1A GACTDEDE Design or development of new products or</p>   |

| Meadow survey  | Third ECS   |
|--|---|
| <p>development of new products or services b. Production of goods or services c. Procurement of inputs such as materials, parts, components, or services d. Sales or marketing of goods or services e. Administration</p> <p>- Yes 1<br/>- No 2</p>  | <p>services<br/>O1B GACTPROD Production of goods or services<br/>O1C GACTMARK Sales or marketing of goods or services</p> <p>- Yes 1<br/>- No 2<br/>- Not applicable 7<br/>- Don't know 8<br/>- No answer 9</p>   |
| <p>MEADOW (B4COLB) Is this establishment currently collaborating with other establishments or organisations in carrying out each of the following activities [the following activity]? [Provide separate 'yes' and 'no' response options to each of questions a to e] a. Design or development of new products or services b. Production of goods or services c. Procurement of inputs such as materials, parts, components, or services d. Sales or marketing of goods or services e. Administration</p> <p>- Yes 2<br/>- No 1</p>                  | <p>ECISO2. GCOLLAB Is this establishment collaborating with any other establishment or organisation in carrying out any of the following activities ...?<br/>O2A GCOLD EDE Design or development of new products or services<br/>O2B GCOLPROD Production of goods or services<br/>O2C GCOLM ARK Sales or marketing of goods or services</p> <p>- Yes 1<br/>- No 2<br/>- Not applicable 7<br/>- Don't know 8<br/>- No answer 9</p>   |
| <p>MEADOW (B4SUB) Is this establishment partly or entirely outsourcing each of the following activities [this activity] to a third party that is not owned by your establishment or its parent company? [Provide separate 'yes' and 'no' response options to each of questions a to e] a. Design or development of new products or services b. Production of goods or services c. Procurement of inputs such as materials, parts, components, or services d. Sales or marketing of goods or services e. Administration</p> <p>- Yes 1<br/>- No 2</p> | <p>ECISO3. Is this establishment partly or entirely outsourcing each of the following activities (this activity) to a third party that is not owned by your establishment or the company you belong to?<br/>O3A GOUTDEDE Design or development of new products or services<br/>O3B GOUTPROD Production of goods or services<br/>O3C GOUTMARK Sales or marketing of goods or services</p> <p>- Yes 1<br/>- No 2<br/>- Not applicable 7<br/>- Don't know 8<br/>- No answer 9</p>  |
| <p>MEADOW (ctrnoffpc) What proportion of employees has been given paid time-off from their work to undertake training in the past 12 months?</p> <p>1. Up to 24%<br/>2. 25% to 49%<br/>3. 50% to 74%<br/>4. 75% or more</p>  | <p>ECSSH3. HTRAIN In the past 12 months, what percentage of employees received paid time-off from their normal duties to undertake training, either off or on your premises?</p> <p>- Percentage of employees: ____ % GO TO H5<br/>- Number of employees: ____ GO TO H5<br/>- [All] 9996 GO TO H5<br/>- [None] 9997 GO TO H5<br/>- [Don't know] 9998<br/>- [No answer] 9999</p>   |
| <p>MEADOW (ctrnonpc) What proportion of employees has received on-the-job training in the past 12 months?</p> <p>1. Up to 24%<br/>2. 25% to 49%<br/>3. 50% to 74%<br/>4. 75% or more</p>   | <p>ECSSH5. HONJOB In the past 12 months, what percentage of employees have received on the job training?[Note to interviewer: Training that takes place in the normal working situation, using the actual tools, equipment, documents etc.] [INTERVIEWER: please ask for rough percentages first, in case the respondent could answer by using absolute number, please record the answer in the Number of employees field]</p> <p>- Percentage of employees: ____% GO TO H7A<br/>- Number of employees: ____ GO TO H7A<br/>- [All] 9996 GO TO H7A</p> |

| Meadow survey  | Third ECS   |
|--|---|
|  | <ul style="list-style-type: none"> <li>- [None] 9997 GO TO H7A</li> <li>- [Don't know] 9998</li> <li>- [No answer] 9999</li> </ul>  |
| <p>MEADOW (CAPPPC) Approximately what percentage of your employees has a performance appraisal or evaluation interview at least once a year?</p> <ol style="list-style-type: none"> <li>1. None</li> <li>2. 1% to 24%</li> <li>3. 25% to 49%</li> <li>4. 50% or more</li> </ol>  | <p><i>ECSH8. HAPRAIS</i> Approximately what percentage of employees have a performance appraisal or evaluation interview at least once a year? [INTERVIEWER: please ask for rough percentages first, in case the respondent could answer by using absolute number, please record the answer in the Number of employees field]</p> <ul style="list-style-type: none"> <li>- Percentage of employees: ____ % GO TO H11A</li> <li>- Number of employees: _____ GO TO H11A</li> <li>- [All] 9995 GO TO H11A</li> <li>- [None] 9997 GO TO H11A</li> <li>- [Don't know] 9998</li> <li>- [No answer] 9999</li> </ul> |
| <p>MEADOW (DMKTCHNG) Since the beginning of 2010, has the amount of goods and services produced by this establishment ...</p>  | <p><i>ECS[IF COMPANY IN FONEFILE: PRIVATE] P8. KGOSEPR</i> Since the beginning of 2010, has the amount of goods and services produced by this establishment ...</p> <ul style="list-style-type: none"> <li>- Increased 1 GO TO SECTION L</li> <li>- Decreased 3 GO TO SECTION L</li> <li>- [Remained about the same] 2 GO TO SECTION L</li> <li>- [Not applicable] 7 GO TO SECTION L</li> <li>- [Don't know] 8 GO TO SECTION L</li> <li>- [No answer] 9 GO TO SECTION L</li> </ul>  |
| <p>MEADOW (ATITLE) What job do you do at this establishment? Record verbatim response (interviewer note: Verbatim response to be coded using the following code, refused is not allowed)</p> <ol style="list-style-type: none"> <li>1. General Manager</li> <li>2. Owner / proprietor</li> <li>3. Human Resource Manager / Personnel Manager</li> <li>4. Other (please specify)</li> </ol> | <p><i>ECSR2. LPOSIT</i> What position do you hold?</p> <ul style="list-style-type: none"> <li>- Manager 1</li> <li>- Owner/proprietor 2</li> <li>- Human Resource Manager / Personnel manager 3</li> <li>- Other 4</li> <li>- [No answer] 9</li> </ul>  |
| <p>MEADOW (ATENURE) How long have you been doing this job at this establishment? (interviewer note: code to the nearest year. Use '0' if less than 6 months) Range: 0..50</p>  | <p><i>ECSR3. LTENURE</i> How long have you been working in this establishment?</p> <ul style="list-style-type: none"> <li>- __ years</li> <li>- [No answer] 99</li> </ul>   |
| <p>MEADOW (JADMRECR) Would you give your consent to link the data collected through this survey to other statistical surveys?</p> <ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>  | <p><i>ECSC4. MLINK</i> Can we link the data collected through this survey with other publicly available statistical information related to this establishment?</p> <ul style="list-style-type: none"> <li>- Yes 1</li> <li>- No 2</li> <li>- [Don't know] 8</li> <li>- [No answer] 9</li> </ul>   |

EF/14/33