3rd European Company Survey

Technical Report

Working document for The European Foundation for the Improvement of Living and Working Conditions prepared by Gallup Europe

Contents

1. Introduction

The European Company Survey (ECS) is a telephone survey which has been conducted every three years since 2004. It examines a range of workplace practices and social dialogue in establishments in the European Union. The third European Company Survey focuses on work organisation, employee participation, workplace innovation and social dialogue in workplaces. It was conducted in a total of 32 countries (all European Union Member States and FYROM, Iceland, Montenegro and Turkey), between 4 February and 19 June 2013.

The survey accumulated a total of **39,207** interviews in 32 countries (28 European Union Member States, the Former Yugoslav Republic of Macedonia, Iceland, Montenegro and Turkey) **in** establishments employing at least 10 persons, covering the whole non-agricultural economy and the public sector. At each establishment, a senior decision-maker responsible for the staff (HR manager, general manager, owner, or similar) was interviewed. Additionally, where formal employee representation was present, an interview with a senior employee representative was also conducted, to harness the employee perspective on some of the matters covered by the management questionnaire. In total 30,112 management interviews and **9,094** employee representative interviews were completed.

The survey was carried out in collaboration with national fieldwork institutes, as follows:

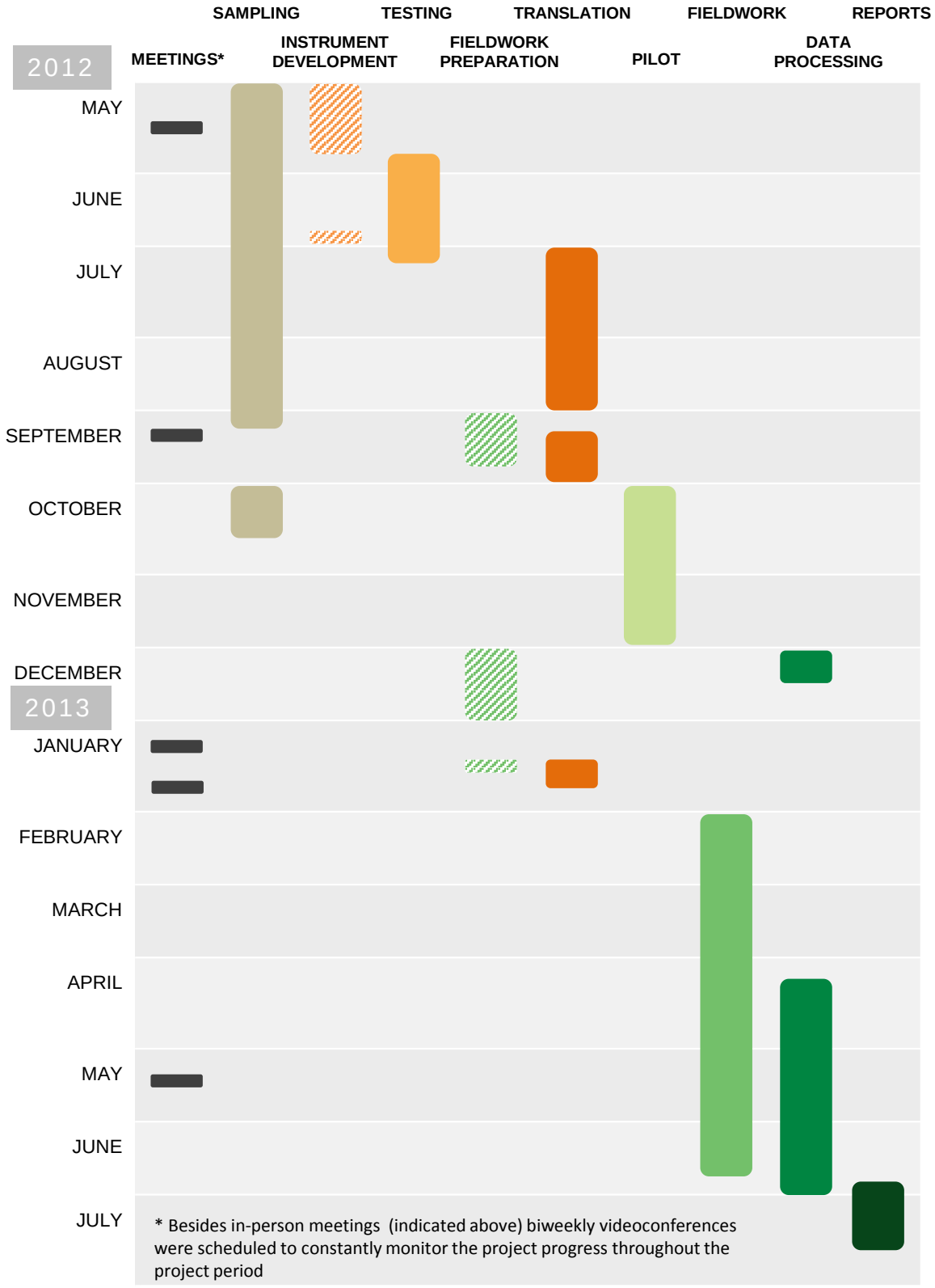
COUNTRY	**NATIONAL INSTITUTE**
Belgium	The Gallup Organization Europe
Bulgaria	Vitosha Research
Czech Republic	FOCUS – Centrum pro sociální a marketingovou analýzu, spol. s r.o.
Denmark	Norstat Danmark A/S
Germany	IFAK Institut GmbH & Co. KG Markt- und Sozialforschung
Estonia	Saar Poll LLC
Greece	Metron Analysis Stratos Fanaras & Co SA
Spain	Simple Lógica Investigación S.A.
France	INFRAFORCE
Ireland	The Gallup Organization UK
Italy	DEMOSKOPEA S.P.A
Cyprus	CYMAR Market Research Ltd.
Latvia	“Latvian Facts”
Lithuania	UAB “Baltilos tyrimai”
Luxembourg	The Gallup Organization Europe
Hungary	The Gallup Organization Hungary
Malta	MISCO International Ltd.
Netherlands	MSR
Austria	SPECTRA MarktforschungsgesmbH
Poland	The Gallup Organization Poland Sp. z o.o
Portugal	Consulmark 2
Romania	The Gallup Organization Romania
Slovenia	VALICON

COUNTRY	NATIONAL INSTITUTE
Slovakia	FOCUS
Finland	NORSTAT Finland
Sweden	Sinitor Research Ab
United Kingdom	The Gallup Organization UK
Croatia	Target Ltd Market and Public Opinion Research Agency
Montenegro	Source
FYROM	Macedonian Center for International Cooperation (MCIC)
Iceland	Capacent
Turkey	Konsensus Reserch and Consultancy

The below sections points out the survey progress, and selected quality indicators, that also briefly cover quality control activities. Note that further on, the **management interviews are abbreviated as MM, while ER stands for employee representative queries**.

1.1 Project overview

The below graph provides an overview of the approximate timing of the various project components and steps, combined into larger work packages, so as to illustrate the complexity and the time frame of the project execution.



2. Sampling

The 3rd ECS aimed at a full representation of businesses and other organisations – including the public sector – with 10 or more employees, in each of the countries covered by the survey. The sampling approach responded to some important challenges, both in terms of the coverage criteria and in providing coherence in the sampling approach across all countries.

2.1 Statistical population (the Universe)

The **universe** represented in the 3rd ECS, was the population of establishments with 10 or more employees.

All establishments in the NACE rev. 2 categories B to S were represented in the survey. Establishments in the NACE rev. 2 categories A (Agriculture, forestry and fishing), T (Activities of households) and U (Activities of extraterritorial organisations and bodies) were excluded from the universe.

The unit of enquiry was the establishment; establishments are considered to be the local company itself (if a single-site), or in case of a multi-site company, a site, branch office or other outlet of the company.

2.2 Country sample sizes

The target sample sizes (i.e. the number of the minimum completed interviews for each country) for the 3rd ECS, are shown in the table below.

Target sample size per country

COUNTRY	COUNTRY CODE	TARGET SAMPLE SIZE
Belgium	BE	1,100
Bulgaria	BG	550
Czech Republic	CZ	1,100
Denmark	DK	1,100
Germany	DE	1,650
Estonia	EE	550
Greece	EL	1,100
Spain	ES	1,650
France	FR	1,650
Ireland	IE	550
Italy	IT	1,650
Cyprus	CY	500
Latvia	LV	550
Lithuania	LT	550
Luxembourg	LU	550
Hungary	HU	1,100
Malta	MT	300
Netherlands	NL	1,100
Austria	AT	1,100
Poland	PL	1,650

COUNTRY	COUNTRY CODE	TARGET SAMPLE SIZE
Portugal	PT	1,100
Romania	RO	550
Slovenia	SI	550
Slovakia	SK	550
Finland	FI	1,100
Sweden	SE	1,100
United Kingdom	UK	1,650
Croatia	HR	500
Iceland	IS	500
FYROM	MK	500
Montenegro	ME	300
Turkey	TR	1,500
TOTAL		29,650

2.2.1 Gross sample issued

Eurofound expected the 3rd ECS to use a gross sample of that which did not exceed twice the number of the minimum net sample size in each country. This predicted that a total success rate of the ECS (taking into account the combined effects of sample loss due to frame error and nonresponse) would remain at 50% or higher in each country.

Gallup committed to comply with the criteria laid out for the gross sample size, however, preparations were made for the likely eventuality that the initial gross sample would not yield the required number of interviews.

In order to remain flexible with a possible extension of the gross sample, Gallup handled the *gross sample* in increments, where one unit was 50% of the required *net sample* size. These sampling increments are called "*replicates*" and each of these were a smaller version of the national sample, using the same stratification matrix that controls the size of the strata, according to type of industry and size of establishment (see below 2.5.1).

The number of replicates opened at the start of the survey (advance letter sent and made available for interviewers to contact) was four, that is, **twice the expected net sample size**. National fieldwork teams were instructed to complete the study – using response boosting techniques – on these original four replicates, i.e. the initial gross sample.

Based on the evaluation of the outcomes from the original gross sample issued, EF and Gallup concluded, after the **first 7 weeks of slow progress**, that further replicates were to be opened, to maintain a pace that allowed timely completion of the study. Nevertheless, further replicates were only opened after the previous ones were exhausted; hence, the number of *available* addresses was always kept at a level that would put strong pressure on local teams to achieve contacts and cooperation with the sampled establishments. This approach increased the fieldwork length, but ensured a relatively high response rate (at least compared to the nature of the universe) at the end.

2.3 Sampling frames

The greatest challenge of pan-European comparative business surveys has been (and continues to be) the lack of an appropriate, harmonised sample frame for businesses and organisations across Europe. Gallup – in cooperation with the national institutes – mapped the available resources that complied best with the below criteria:

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

Based on the assessment of the frames, the following resources (databases) were used, from which the sample of the 3rd ECS was drawn.

Sampling frames

COUNTRY	SAMPLING FRAME+	COMPANY / ESTABLISHMENT-LEVEL	PUBLIC SECTOR COVERED BY SAMPLE PROVIDER
Belgium	Infobel	establishment	yes
Bulgaria	Bulgarian National Statistical institute+	company	yes
Czech Rep.	Albertina+	company	yes
Denmark	Solidet	establishment	yes
Germany	D&B	establishment	yes
Estonia	Kreddiinfo	company	yes
Greece	ICAP+	company	no or only partly
Spain	Shober+	establishment	no or only partly
France	LBM Direct	establishment	yes
Ireland	Bill Moss+	establishment0	yes
Italy	D&B+	company	no or only partly
Cyprus	Statistical Services is Statistical Business Registry+	company	yes
Latvia	Business register of CentralStatistical Bureau+	company	no or only partly
Lithuania	JSC “Creditinfo Lietuva”	company	yes
Luxembourg	EDITUS+	establishment	yes
Hungary	KSH	company	no or only partly
Malta	Employment &Training Corporation	company	no or only partly
Netherlands	Chamber of Commerce Establishment Register	establishment	no or only partly
Austria	D&B+	establishment	no or only partly
Poland	PCM (Polskie Centrum Marketingowa) +	establishment	yes
Portugal	INFORMA	company	yes
Romania	Listafirme+	company	no or only partly
Slovenia	Ipis+	establishment	yes
Slovakia	Albertina+	company	yes

COUNTRY	SAMPLING FRAME+	COMPANY / ESTABLISHMENT-LEVEL	PUBLIC SECTOR COVERED BY SAMPLE PROVIDER
Finland	Fonecta+	establishment	yes
Sweden	PARAD	establishment	yes
UK	D&B+	establishment	no or only partly
Croatia	FINA (Financial Agency), 2011	company	yes
Iceland	The Icelandic register of companies	company	yes
FYROM	Central Register of Macedonia+	company	yes
Montenegro	Statistical office/Central Registry of the Commercial Court - MNE	company	no or only partly
Turkey	D&B	company	no or only partly

+ frames retained from the 2nd ECS
* data concern 10+ firms in all sectors
** data concern 11+ firms in required sectors
*** establishments / companies with 10 employees or more, sectors B-S
0 sample frame type has been set from company to establishment level at the beginning of the framework, due to an initial misclassification based on the information first given by the provider

2.4 Covering the public service sector

For studies such as the ECS, covering the public service sector (i.e. O - Public Administration and Defence and Compulsory Social Security; P - Education; Q - Health and Social Work) can present challenges which might have an impact the quality and coherence of the sampling activities across countries. Business registries (both commercial and official ones) do not always properly cover sectors P (Education) and Q (Health and social work); additionally, in these registries the coverage of sector O (the Public Administration sector) can sometimes be problematic. The table at the end of the previous section provides the information about the sufficiency of the master sampling frame in covering the public service sectors.

The below list provides the resources identified in each country, where the sampling frame did not cover the public sector (any of the O, P, Q NACE sectors). As shown, alternative resources were used to make up for the existing coverage gaps in a number of countries:

COUNTRY	ADDITIONAL RESOURCES USED TO COVER THE PUBLIC SECTOR
Belgium	No additional resources were necessary
Bulgaria	No additional resources were necessary
Czech Rep.	No additional resources were necessary
Denmark	No additional resources were necessary
Germany	No additional resources were necessary
Estonia	No additional resources were necessary
Greece	Additional source was needed for public part of health and education sector via Internet based lists: For Education: http://www.ekp.gr/index.php,

COUNTRY	ADDITIONAL RESOURCES USED TO COVER THE PUBLIC SECTOR
	And for Hospitals: http://www.yyka.gov.gr/ (Ministry of Health site)
Spain	Additional source needed for Public sector O sector covered by Fichero de Altos Cargos (FAC) –High officers File- by FAC-FICESA (updated by Simplelogica) P sector covered by the following sources: List of University centres and National list of Non-University educational centres http://www.educacion.gob.es/educacion/que-estudiar-y-donde.html Q sector covered by: List of primary health care centres 2011, and National list of hospitals 2011 by Ministry of Health http://www.msc.es/estadisticas/microdatos.do
France	No additional resources were necessary
Ireland	No additional resources were necessary
Italy	Additional source needed for public administration: provider: Consodata
Cyprus	No additional resources were necessary
Latvia	For public administration additional source needed, internet search
Lithuania	No additional resources were necessary
Luxembourg	No additional resources were necessary
Hungary	Additional source needed for public administration Phonebook /internet will used for Public Administration reference listings used: http://kormanyzat.lap.hu/ http://onkormanyzat.lap.hu/ http://korhaz.lap.hu/ http://www.kfki.hu/education/iskola.alt.html http://www.kfki.hu/education/iskola.koz.html http://egyetem.lap.hu/magyar_egyetemek/11231993
Malta	Additional source needed for public Sector, internet lists utilised: https://secure2.gov.mt/localgovernment/local-councils-data?l=1 http://skola.gov.mt/skola/primary/priSchools.aspx http://www.searchmalta.com/dir/Education/Schools/Secondary/index.shtml http://www.4icu.org/mt/maltese-universities.htm http://www.ezilon.com/regional/malta/health/hospitals/index.shtml
Netherlands	Additional source needed for the Public administration: Marktselect
Austria	Additional source needed for the Public administration Provider: Österreichisches Gemeindeverzeichnis"
Poland	No additional resources were necessary
Portugal	No additional resources were necessary
Romania	Additional source needed for Public sector internet, phone book will be used to complete the sample For public administration: www.ghidulprimariilor.ro (most of the town halls in Romania).

COUNTRY	ADDITIONAL RESOURCES USED TO COVER THE PUBLIC SECTOR
	For decentralized units of ministries we can access the websites of each ministry from www.gov.ro For justice (if needed): http://www.csm1909.ro/csm/index.php?cmd=9402 (contact data for each court and prosecutor offices) For education: http://admitere.edu.ro/2012/staticPre/j/ (for each county there is a list with all the kindergartens, schools, high schools etc.) For health: http://www.util21.ro/sanatate/spitale-clinice-universitare-Romania.htm
Slovenia	No additional resources were necessary
Slovakia	No additional resources were necessary
Finland	No additional resources were necessary
Sweden	No additional resources were necessary
UK	Public sector Database of Oscar Research
Croatia	No additional resources were necessary
Iceland	No additional resources were necessary
FYROM	No additional resources were necessary
Montenegro	Additional source needed for the whole public sector internet, phone book will be used to complete the sample
Turkey	Additional source needed for the whole public sector internet, phone book will be used to complete the sample

2.4.1 Construction of proxy sampling frames for the public sector

In countries where no reasonable database resource could be established for covering the public sector, national institutes had to construct a quasi-frame for the non-covered sectors, using the resources outlined in the table above. In each sector, representative segments were identified, and for each of them (if not covered by the sampling frame, or an equivalent alternative resource) a sample was created.

The representative segments were as follows, for each of the O, P, Q sectors:

O Central government
Municipal offices
Courts
Decentralised government institutions, regional governments

P P85.2 - Primary education
P85.3 - Secondary education
P85.4 - Higher education

Q Q86.1 - Hospital activities
Q87 - Residential care activities
Q88 - Social work activities without accommodation

This process was carried out by the national institutes, with the help of a detailed manual, reviewed and approved by Eurofound.

2.5 Sampling designs

Keeping the general design uniform across all countries covered, individual sampling plans were created for each country. The (un)availability of establishment-level frames, required variations in the sampling process. In countries where only company-level frames were available, the final stage of the sampling (establishment selection) commenced via an initial screener interview, as discussed in detail in section 2.7 below.

The sampling design of a given country was realized with one of the two following sampling designs, based on the availability of information, in the selected national sampling frame(s).

- Design (A): Stratified Simple Random Sampling Without Replacement (SSRSWR) of *establishments*. This design is adopted in countries that had a sampling frame at establishment-level.
- Design (B): Stratified Multi Stages Random Sampling Without Replacement (SMRSWR) in which the *companies* are the Primary Sampling Units (PSUs) and the establishments are the Ultimate Sampling Units (USUs). This design is adopted in countries that had a company-level sampling frame.

2.5.1 Stratification of the sample

National samples were explicitly stratified by size of the establishment, defined by the number of persons employed (three categories; 10-49, 50-249, 250+9) and by broad industry sector (producing industries, service industries, public services) comprised by top-level NACE codes, while they were implicitly stratified by top-level NACE codes. The samples were unit-proportional, in terms of NACE 1st digit sectors, within each size category in each country, however, sample size quotas were subsequently only controlled for the three broad categories.

In an attempt to strike a balance between the unit-proportional and employee proportional representation of the sample, the size categories were represented disproportionally compared to their numbers in the universe: large categories were overrepresented and the small segments were underrepresented, compared to how many such companies / establishments were available in any national statistical universe.

The general proportion of the different size categories in national samples, was as follows:

10-49: 45%

50-249: 27%

250+: 28%[1]

Within the size segments, the broad industry categories, as well as top-level (1-digit) NACE categories, were represented in a proportional manner.

This final composition of samples was the result of a change during the course of the preparations: EF requested Gallup to add a **10% booster sample** to the reference sample sizes initially specified (300, 500, 1,000 and 1,500 depending on country size) in the largest enterprise segment (those employing 250 or more persons). Such booster samples were only added in the EU countries, with the primary aim of increasing the number of establishments where formal employee representation was present (the previous ECS found that these were much more likely to be available in larger companies / establishments than in smaller ones), thereby increasing the number of ER interviews.

Stratification of the overall sample at the country level: The 3rd ECS accumulates into an overall EU-wide, or even broader sample – i.e. the aggregation of all the national samples drawn. The relative size of the national economies (both in terms of establishment and employee representative set-up) is however vastly different. Hence, the overall sample of the ECS – and any aggregation of the national samples, such as to the EU average – is a disproportionate sample, explicitly stratified according to the country.

[1] In countries where the number of large companies/establishments was smaller than the target sample size x the allocation goal, the proportions were modified accordingly.

2.5.2 Statistical resources used for sample stratification

During the preparation stage, Gallup has, in cooperation with the national institutes, collected the most recent national statistics (or equivalent) to describe the universe. These statistics are only available for the number of companies or establishments by NACE sectors and size categories.

The below table summarises the resources used in each country for universe statistics, indicating if the information (the number of units in each sampling cell) was available on company, or establishment-level.

COUNTRY	SOURCE OF UNIVERSE STATISTICS	YEAR	UNIT-LEVEL
Belgium	Office National de la Sécurité Sociale - Data from the analysis of "Bilan Social des Entreprises"	2010	establishment
Bulgaria	National Statistical Institute	2010	company
Czech Republic	Czech Statistical Office	2011	company
Denmark	Danish Statistics, www.dst.dk	2010	establishment
Germany	Statistisches Bundesamt-Statistical Yearbook	2011	establishment
Estonia	www.stat.ee	2010	company
Greece	HELLENIC STATISTICAL AUTHORITY	2008	company
Spain	INE (Spanish Statistical Office)	2011	establishment
France	INSEE	2012	establishment
Ireland	Central Statistics Office Ireland	2009	company
Italy	ISTAT (Italian statistical Institute)	2007	company
Cyprus	Business Register, Statistical Services	2010	company
Latvia	Central Statistical Bureau	2010	company
Lithuania	State Social Insurance Fund Board Under the Ministry of Social Security and Labour	2012	company
Luxembourg	STATEC, EU and OCDE	2011	company
Hungary	KSH	2011	company
Malta	Statistical office	2011	company
Netherlands	The Dutch Central Bureau of Statistics (CBS)	2010	establishment
Austria	Structural Business Statistics, Statistics Austria (In case of O, P, Q, R: source: Arbeitsstättenzählung, Statistics Austria; Year: 2001)	2010	establishment
Poland	Central Statistical Office	2011	company
Portugal	Sistema de contas integradas das empresas (SCIE) e Estatísticas monetárias e financeiras (EMF)	2010	company
Romania	NIS, Tempo Online database	2010	company
Slovenia	Statistical Office of the Republic of Slovenia	2010	company
Slovakia	Statistical Office of the Slovak Republic	2011	company
Finland	www.stat.fi	2010	company
Sweden	Parad	2011	establishment

COUNTRY	SOURCE OF UNIVERSE STATISTICS	YEAR	UNIT-LEVEL
United Kingdom	Office for National Statistics	2011	establishment
Croatia	FINA (Financial Agency)	2011	company
Montenegro	Statistical office	2012	company
FYROM	Central Register of Macedonia	2010	company
Iceland	The Icelandic Register of Companies	2012	company
Turkey	Turkish Statistical Institute	2010	company

2.5.3 Stratification of the public sector

Some national statistical resources were problematic in covering the public sector organisations (in the O, P, Q NACE Rev. 2. sectors).

Hence, the allocation of the public sector organisations could not be carried out proportionally, in the absence of information of their proportion in the universe.

In order to cope with the circumstance, Eurofound and Gallup agreed, that universally, 10% of the originally assigned sample would be allocated to organisations belonging to these sectors. As to the internal composition of these subsamples, a similar uniform approach was adopted, using the following relative allocation scheme in each country.

		proportion within the Public service subsample	internal distribution of the units in the sector
O	PUBLIC ADMINISTRATION AND DEFENCE, COMPULSORY SOCIAL SECURITY	0.333	
	Central government (15%, at least 5 units)		0.15
	Municipal offices (50%)		0.5
	Courts (15%)		0.15
	Decentralised government institutions, regional governments (20%)		0.2
P	EDUCATION	0.333	
	P85.2 - Primary education		0.333
	P85.3 - Secondary education		0.333
	P85.4 - Higher education		0.333
Q	HUMAN HEALTH AND SOCIAL WORK ACTIVITIES	0.333	
	Q86.1 - Hospital activities		0.333
	Q87 - Residential care activities		0.333
	Q88 - Social work activities without accommodation		0.333

Furthermore, as for a large number of countries there was no information on the number of persons employed with the organisations in these categories, the survey adopted an approach where no size-based stratification was performed in this broad sector.

Finally, due to inconsistencies with the definition of company / establishment in those instances (what is the "company level" of a municipal school: the totality of all municipal institutions? etc.), each of the public sector organisations sampled, were considered as establishments – regardless of the unit-level of the sample source (if it was identifiable). That is, no establishment screening was performed within sampled units in the public service sector, and the selection probability of each unit within this stratum was considered to be 1.

In summary, the public sector subsample of the 3rd ECS may not be representative in a unit proportional sense in any country, but the subsamples were designed to be comparable across the countries that participated in the survey.

2.6 Respondent identification and selection

The primary goal of the final stage in the sampling activity was to identify and interview a person who is "in charge of the personnel" at the given establishment. Furthermore, if the establishment had a formal organisation of employee representation, a leading formal employee representative was identified (he/she could be a chairperson, secretary or a spokesperson of the body, charged with representing employee interests and negotiating working conditions with the local management) and invited to participate in the survey.

Respondent for the management (MM) interviews: the ideal respondent for the MM interview was the person who is at or near the top of the hierarchy and directly responsible for all staff, working conditions, contract, work organisation, etc. *at the local establishment*. However, the fieldwork emphasized a non-deterministic selection: that is, more than one person was considered eligible at each establishment. Job titles that corresponded to the selection criteria were: general managers, owners, human resource managers and their designated deputies.

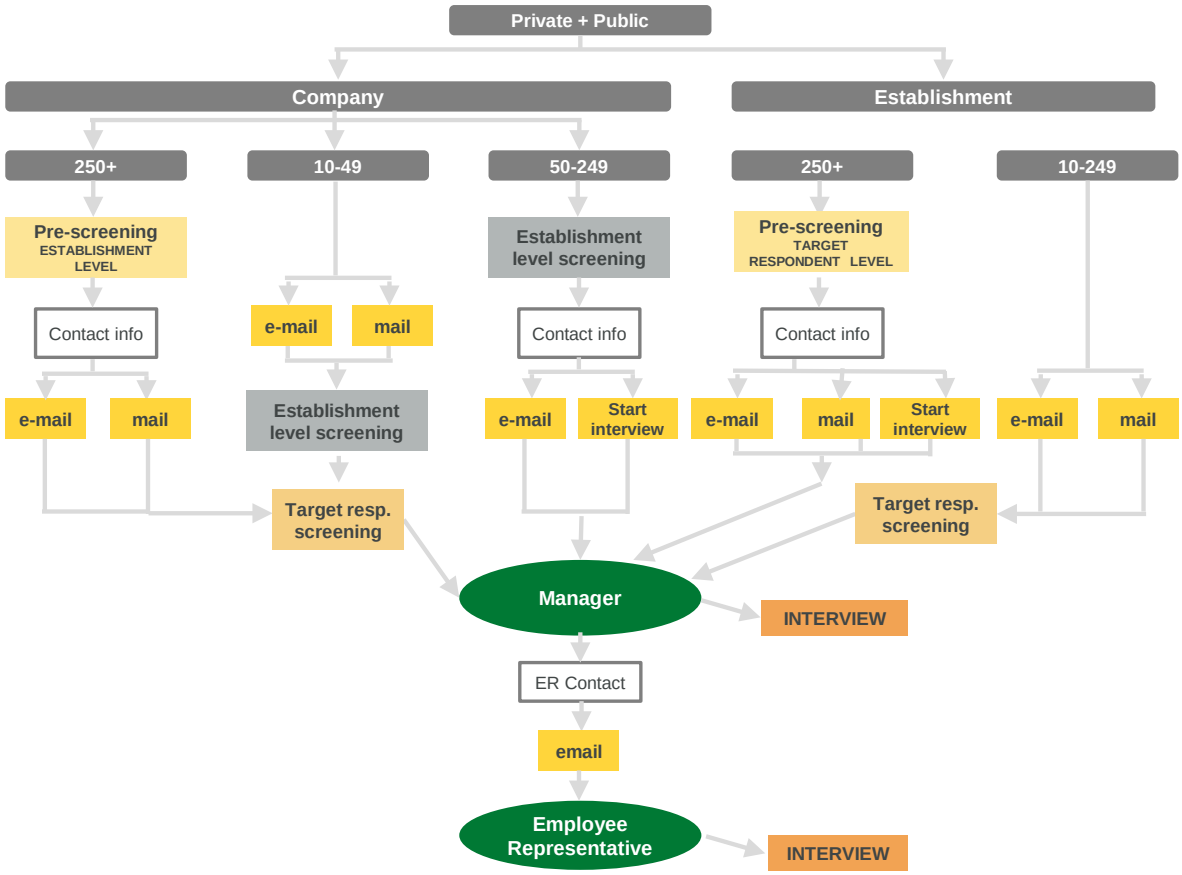
Respondent for the employee representative (ER) interviews: the designated respondent for the ER interview was any of the following persons: chairperson (the person at the top of the hierarchy), secretary (the person responsible for the local operation of the body) or the spokesperson (a person other than the two aforementioned ones, who is entitled to represent the opinions of the employee representation body) of the (largest) employee representation body.

2.7 Sampling procedures

In order to support the ambitious response rate goals and to reflect the different unit-level in the available sampling frames and its consequences to the sampling design, multiple variants, "routes" were created for the various sample segments prior to starting the main interviews. These were called "pre-screening" interviews, nevertheless the main purpose of this activity was to identify the appropriate establishment (in case of company-level frames) and identify the eligible respondent within each establishment, together with their appropriate personal contact information, so the survey materials (information brochure, invitation letter) could be sent prior to commencing the main interview. Of course, in this stage, establishments that were not eligible (i.e. employing less than 10 persons) were also screened out. The below table shows which settings the pre-screening interview (detached from the main interview) was carried out in:

SIZE BAND	COMPANY-LEVEL FRAME	ESTABLISHMENT-LEVEL FRAME
10-49	ONE STAGE, MULTI-STEP PROCESS	ONE STAGE, MULTI-STEP PROCESS
50-249	PRE-SCREENING MULTI-STAGE, MULTI-STEP PROCESS	ONE STAGE, MULTI-STEP PROCESS
250+	PRE-SCREENING MULTI-STAGE, MULTI-STEP PROCESS	PRE-SCREENING MULTI-STAGE, MULTI-STEP PROCESS

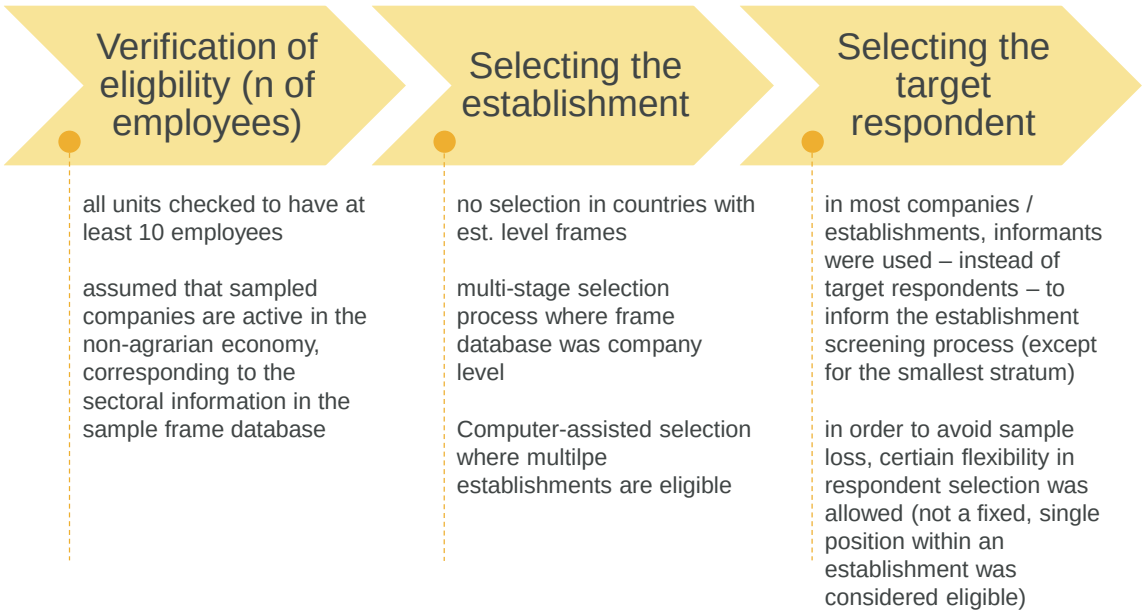
The below graph provides an overview of the selection steps – each controlled and facilitated by the CATI programme, provided for the fieldwork by Gallup – relevant for each segment:



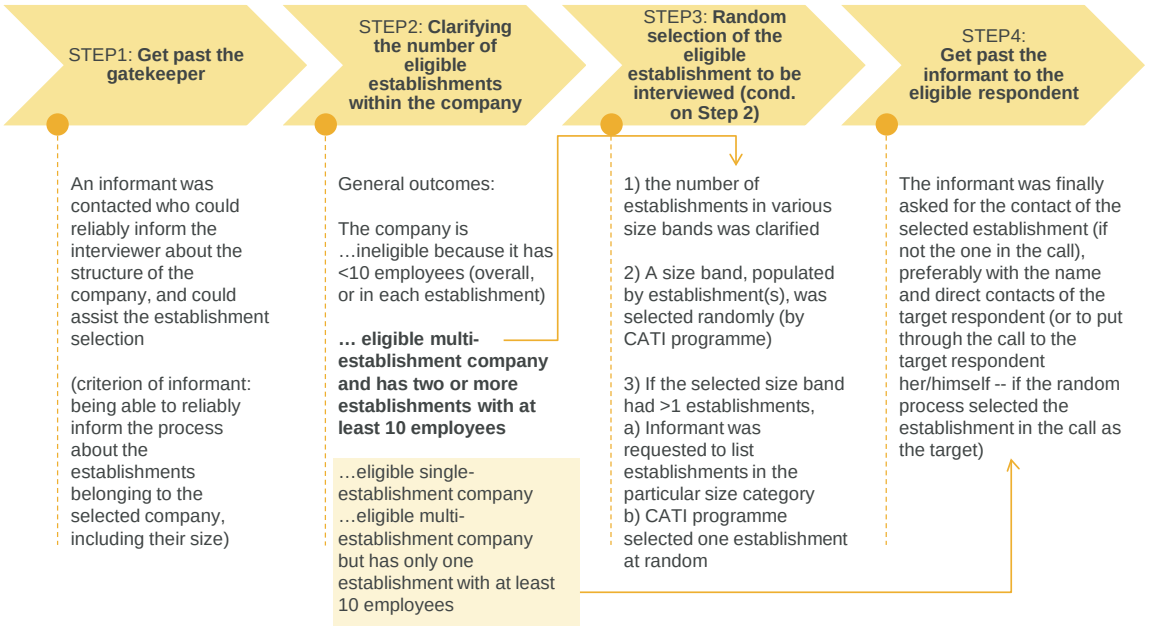
To summarise the steps outlined above, the following actions were implemented in the final stage of sampling:

- A pre-screening, separated from the main interviewing, to identify the sampled establishment (where necessary) and the responsible manager in the *large (250+) segment*. The 250+ segment received a differential treatment in order to avoid nonresponse –a very detailed contacting script was developed and a designated "elite" group of interviewers were assigned to this segment, to ensure minimum sample loss due to the various opportunities of refusal in a multi-stage, usually iterative contacting process, involving potentially several gatekeepers, and informants.
- In the *medium size segment*, this separation was not mandatory when and if the appropriate manager was immediately available for the interview.
- No establishment-level independent screening was performed in the *smallest segment* where company-level frames were used (nevertheless, the selection took place if it was necessary, preceding the main interview), given that an overwhelming majority of these were single-site companies.
- Depending on the set-up, at various stages of the process – but always at a stage when the eligible establishment, and as much as possible the name and the contacts of the appropriate manager was established – notification letters and a survey brochure to the sampled units, were sent out, either in print, or email format (depending on the availability of the email address). This was directed to the company / establishment address (in small segments, where there was a reasonable belief that they would reach the target respondents) or, after establishing the identity of the responsible manager (in larger companies / establishments).

The selection scheme of the target respondent involved inquiries at various levels ("gatekeeper", informant, and then the target respondent).



The below scheme was applied in the final stage of sampling, with steps 2 and 3 only carried out in countries with company-level samples:



2.8 Sampling outcome

As the tables below show, the outcome of the sampling – taking into account the self-reported activity sector instead of the one stated in the sample frame database, if any (for company-level samples the activity sector of the particular establishment surveyed was not available, here the basis of the comparison is the activity sector of the mother company) – introduced a shift from the producing sectors, towards the service sectors. Both in the company-level and the establishment-level frames, the final composition of the samples deviated somewhat from the sampling targets.

Company-level samples

		SAMPLING TARGET					COMPLETED			
NACE rev2 Sectors		N of employees			Total		N of employees			Total
		10-49	50-249	250+			10-49	50-249	250+	
1	PRODUCING INDUSTRIES TOTAL	2257	1827	1323	5407		2545	1925	1308	5778
2	SERVICE INDUSTRIES TOTAL	3414	1950	1415	6779		3328	2025	1129	6482
3	PUBLIC SERVICES TOTAL	-	-	-	1260		577	483	220	1280
	TOTAL				13446					13540

Establishment-level samples

		SAMPLING TARGET					COMPLETED			
NACE rev2 Sectors		N of employees			Total		N of employees			Total
		10-49	50-249	250+			10-49	50-249	250+	
1	PRODUCING INDUSTRIES TOTAL	2064	1604	1573	5241		2311	1964	1500	5775
2	SERVICE INDUSTRIES TOTAL	4686	2746	2327	9759		4424	2851	1701	8976
3	PUBLIC SERVICES TOTAL	-	-	-	1500		683	603	535	1821
	TOTAL				16500					16572

3. Instrument development

For the 3rd ECS, Eurofound provided source questionnaires (one for the company management and one for the employee representatives) and Gallup participated in the finalisation of the instruments into pre-final drafts. These pre-final drafts were pre-tested with quantitative as well as qualitative (cognitive interviewing) methods, in terms of fitness-to-purpose and general applicability. The objective of the pre-test was to ensure that the survey questions were understood by respondents as intended and to verify that the terminology used in the source questionnaires was suitable for a cross-national survey. Although the pre-test **focussed primarily on anticipated problematic questions**, it also covered the whole questionnaire, in order to test for contextual effects.

Pre-test interviews were conducted **in English** in Ireland, **in French** in France and **in German** in Germany. Pre-testing was carried out using two distinct methodologies: (1) a predominantly qualitative approach with cognitive interviews, and then, with an updated questionnaire (2) a quantitative, structured-interview approach. In each country, the sample size was planned to be 20 structured management and 20 structured employee representative interviews, and 15 cognitive management and 15 cognitive employee representative interviews – with the actual MM sample being drawn from the sample frames intended to be used for the main study.

In order to facilitate ER interviewing, help from various employee representation umbrella organizations were sought, to provide contacts to persons who could source Gallup with a broader list of employee representatives and whom Gallup could directly approach for the ER interviews. This strategy worked well in Germany and France, in both countries an appropriate list of direct contacts were obtained. From this initial frame, ER representatives were selected for the conducting of the cognitive interviews, and from the remainder, for the conducting of the structured interviews. It was not so successful in Ireland with 15 cognitive interviews achieved, therefore the remaining Irish sample was reallocated to Germany and France, where – instead of the originally planned 20 – 34 and 27 interviews were carried out, respectively. Since the goals of the pre-test was to ensure that the questions were understood conceptually and that the terminology used was appropriate and easily translatable, switching the outstanding ER interviews from Ireland to Germany and France did not have any negative impact on the objectives of the pre-test.

Pre-tests for the structured interviews were carried out by experienced interviewers; and by trained moderators in the case of cognitive pre-test interviews. The interviewers and moderators were trained directly by the national project managers, based on Gallup's instructions and using Gallup's template for providing observations and respondent reflections after the completion of each interview. Gallup collected detailed documentation of respondent reactions, as well as general feedback from interviewers / moderators about their impressions.

On the basis of these pre-tests, Gallup formulated several recommendations regarding the question wording and exclusion of some questions with ambiguous meanings, and the instrument was finalised by Eurofound.

In a next step the questionnaires were translated into all the national languages used in the countries covered:

COUNTRY	LANGUAGES
Belgium	Dutch, French
Bulgaria	Bulgarian
Czech Republic	Czech
Denmark	Danish
Germany	German
Estonia	Estonian, Russian
Greece	Greek
Spain	Spanish (Castilian), Catalan

COUNTRY	LANGUAGES
France	French
Ireland	English
Italy	Italian
Cyprus	Greek
Latvia	Latvian, Russian
Lithuania	Lithuanian, Russian
Luxembourg	French, German, Luxemburgish
Hungary	Hungarian,
Malta	Maltese, English
Netherlands	Dutch
Austria	German
Poland	Polish
Portugal	Portuguese
Romania	Romanian
Slovenia	Slovene
Slovakia	Slovak, Hungarian
Finland	Finnish, Swedish
Sweden	Swedish
United Kingdom	English
Croatia	Croatian
FYROM	Macedonian, Albanian
Montenegro	Montenegrin, Serbian
Iceland	Icelandic
Turkey	Turkish

Finally, the translated instruments were piloted in each country before being released to the main study. Since the pilot interviews did not reveal any significant problems with the instruments, the interviews conducted in this stage were accepted as main interviews.

Gallup prepared comprehensive reports covering the pre-testing, the translation as well as the pilot stage of the project, outlining all parameters and presenting the key conclusions, for Eurofound.

3.1 Translation procedure

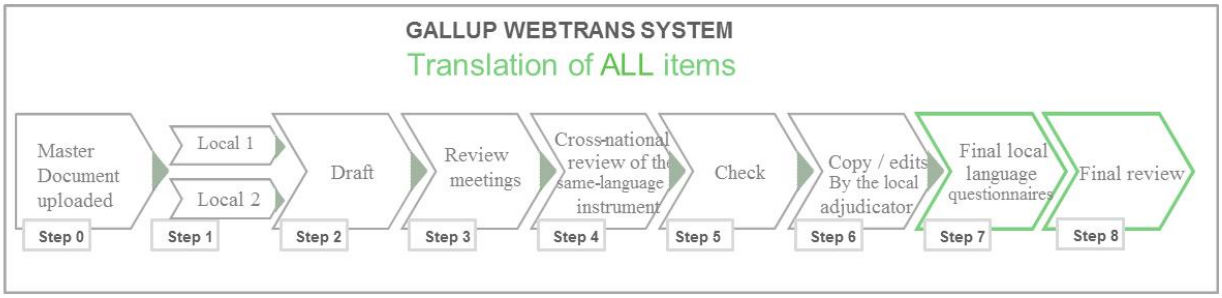
While the 3rd ECS is part of a series, the actual questionnaire has been significantly redesigned (also covering new domains) compared to the previous versions, hence, previous translations were not available. The model adopted for the translation – developed by Janet Harkness – is called TRAPD, which is an acronym for Translation, Review, Adjudication, Pre-testing and Documentation. Gallup used national translation teams involving seasoned professionals, whose credentials were submitted to Eurofound for prior approval.

Main characteristics of the procedure were:

- Working in teams: Two translators (specifically trained for the task) + an adjudicator (a senior survey research professional at the national institute with substantial experience in similar tasks, also attending the formal translator training) created national translations in a collaborative, fully documented manner
- Careful selection of translators and online, group-based translator trainings were held. Online meetings, undertaken by the local translation teams (monitored and guided by Gallup and Eurofound staff) were also held as part of the translation process, both the translator training and the monitored online team meetings contributed to providing quality assurance to the translation procedure.
- Completely independent translations produced for the same target languages, if used in different countries, with post-hoc cross-national harmonisation
- Gallup's online translation support system (WebTrans) was used as an authoring and documentation tool. WebTrans features a central interface accessible online and background database structure linked to the programmed instrument, so that approved translations were immediately available – without further programming - for the national questionnaire variants.
- In most languages Eurofound staff provided a final verification layer, by inspecting the final translations, comparing them with the source version, and providing recommendations for possible improvements

It is noteworthy that the instrument development (prior to creating the pre-final drafts) also involved translations (into German and French) to verify the translatability of individual questions in these two languages.

The process of the translation was as follows:



Step 1-2: Forward translations

- Translators translated the questionnaire item-by-item in WebTrans.
- Translators recorded any concerns, questions or comments when translating each item.
- These notes were used in the team-based review meeting(s).
- WebTrans automatically ensured that items included multiple times in the questionnaire (i.e. identical response scales, or the same expressions) appeared only once, so that these items were translated identically.

Step 3: Review meeting for reconciliation of the two initial forward translations

- Based on the two forward translations, a third, synthesized version was created in collaboration with the two forward translators and the adjudicator.
- The forward translators and adjudicator participated in a "review meeting" to decide on questions where the two translations were not in agreement. The adjudicator was ultimately responsible for the national translation of the research documents, including the questionnaire.
- These meetings involved the consideration of the definition of the original term and attempt to agree on a target language wording that was the most relevant translation.
- Documentation: comments were provided by the team for each question and item, including how a final solution was reached and why one option was preferred over another. These comments were stored in WebTrans.

- Gallup management and translation team were available within this process, to clarify any concepts with the translators
- In most cases this team meeting phase proved valuable to all translators as many appreciated the opportunity to be able to discuss items that they had found problematic (a stage not normally offered in the standard translation process). The variation in level of involvement and dynamics within each language team depending on the team members and adjudicator and the he level of discussion for each team was also dependent on how many 'problematic' items and how divergent the translator's opinions were, on any given item. Therefore some translation teams ran meetings that were quite dynamic and 'alive' with discussion and others did not.

Step 4: Cross-national review of the same-language instrument

- The questionnaire was translated into the target language as many times as was needed for the different countries that shared a particular target language. In order to maintain coherence across country variants of the questionnaires in the same language, national adjudicators, once their "final" translation was completed, were required to share their national translations, and discuss possibilities of harmonisation with like-language countries' adjudicators.
- This process was decentralised, and took place online / via a scheduled Webex meeting.
- Documentation: The final modifications that were based on this cross-country harmonisation effort were also commented on in the WebTrans database, with clear indication that the change was the result of this effort. Documentation needs were stipulated in the initial translator training and reiterated throughout the entire translation process, Step 5: Verification by Eurofound
- The harmonized final draft target language questionnaire was sent to Eurofound / experts, together with the documentation of the translation process.
- Most language questionnaires were quality checked by Eurofound experts. All questionnaires went through a rigorous final checking procedure, the final checking often involving multiple correspondences between the Gallup translation team and adjudicators, sometimes requiring further enquiry and research, so as to determine the most accurate translations. Gallup and national adjudicators evaluated suggestions received and adapted the national questionnaire versions, as appropriate.

Step 6-7-8: Final edits based on pilot interviews

- Pilot interviews were held in order to reveal problems with any given language variant of the questionnaire: translations may have contained grammatical errors, typos or formulations that are difficult to read to respondents.
- Final edits in the language variants were made on the basis of interviewer feedback.
- These edits were proposed by national institutes / Gallup, and approved by Eurofound.

4. Interviewers and their training

The interviewing teams at the national institutes, used by Gallup for various projects in the past, complied with some minimum criteria laid out for the 3rd ECS, including the following:

- At least 6 months of experience with CATI interviewing and participation in at least 6 prior CATI projects (2 of which must have been business-to-business studies).
- Subject to past and on-going individual mentoring and quality monitoring.
- Being a native speaker of the interviewing language used in the country (or one of the languages used in the country).
- Undergoing general interviewer training – using Gallup-defined curricular elements. Gallup has developed high-quality, tested interviewer training programs, that cover computer-assisted telephone interviewing (CATI) as well as other interviewing modes.
- Having demonstrated a good understanding of his/her role as interviewer and of general conduct in a telephone interviewing setup.
- Participated in the project-specific training before fieldwork

Gallup collected and provided detailed information for Eurofound ,on the exact composition in each country, of the field force to be used for the 3rd ECS, therefore demonstrating that field force requirements were met, based on the parameters of the interviewers selected.

Prior to the start of the data collection, Gallup and the national coordinators, conducted in-depth training sessions with local field staff and their interviewing teams. Topics covered in training, included a detailed review of the questionnaire and field procedures. Weekly fieldwork reports documented how many interviewers were working in the field on an on-going basis. This information was directly available via an online monitoring interface as well.

4.1 Briefing method

Prior to the fieldwork of the 3rd ECS, specific training was provided to all interviewers in each country. The Gallup coordination team assisted national agencies, by suggesting and providing strategies and templates for the training as well as instruction of interviewers for the 3rd ECS. In order to minimise interviewer-related error and to assure a maximal standardisation of the work of the interviewers; a uniformed project-specific interviewer training curriculum / slides were used, to ensure consistent application of the 3rd ECS questionnaire.

4.2 Briefing events

Training activities kicked-off with a one-day **central briefing seminar** for representatives of the national agencies (in Budapest, on 10 January, 2013). Representatives from Eurofound also attended the seminar, gave a presentation and joined in the discussion. During this seminar a thorough walkthrough of all project parameters was performed, including a familiarisation with the curriculum of the interviewer training.

The central event was followed up by **national training events** provided to all interviewers in each country, before commencing fieldwork. National agencies used the centrally defined training curriculum for national interviewer training. These training sessions were attended by interviewers and supervisors; allowing for transparency of their respective responsibilities in ensuring good quality of data.

To support these events, the training materials were translated to the national interviewing languages.

Training was mandatory: Gallup requested a formal confirmation of completion of the necessary training for each participating interviewer. No interviewer was allowed to carry out the survey unless he or she had participated in face-to-face training with the supervisor.

5. Survey fieldwork

The survey reached the target number of management interviews in each country, as shown below.

COUNTRY	TARGET SAMPLE SIZE (MM)	COMPLETES (MM)	COMPLETES (ER)	ALL COMPLETES
Belgium	1,100	1,107	412	1,519
Bulgaria	550	557	118	675
Czech Republic	1,100	1,111	207	1,318
Denmark	1,100	1,100	580	1,680
Germany	1,650	1,673	345	2,018
Estonia	550	550	146	696
Greece	1,100	1,101	144	1,245
Spain	1,650	1,651	506	2,157
France	1,650	1,657	475	2,132
Ireland	550	551	105	656
Italy	1,650	1,652	343	1,995
Cyprus	500	500	159	659
Latvia	550	558	91	649
Lithuania	550	550	168	718
Luxembourg	550	563	224	787
Hungary	1,100	1,135	304	1,439
Malta	300	306	46	352
Netherlands	1,100	1,108	453	1,561
Austria	1,100	1,100	385	1,485
Poland	1,650	1,655	618	2,273
Portugal	1,100	1,103	133	1,236
Romania	550	551	260	811
Slovenia	550	550	255	805
Slovakia	550	550	191	741
Finland	1,100	1,100	643	1,743
Sweden	1,100	1,105	583	1,688
United Kingdom	1,650	1,653	218	1,871
Croatia	500	503	180	683
Iceland	500	501	326	827
FYROM	500	502	135	637
Montenegro	300	305	104	409
Turkey	1,500	1,505	237	1,742
TOTAL	29,950	30,113	9,094	39,207

5.1 Fieldwork period

In most of the countries (23 of the 32) the fieldwork started on the 4th of February. In 9 countries the fieldwork started in the following week, as detailed below. This was due to various reasons, like smaller delays in the logistics of the brochures and the available time slots for national trainings. Trainings were organised to be as close as possible to the start of interviewing. Most countries started interviewing with sample segments that received the notification about the survey via email (and not via postal mail, for which a delay was maintained to make sure that the post arrived to the eligible respondents), or did not receive any preliminary notification (i.e. those where the process started with a pre-screening to identify the eligible establishment / target respondent).

COUNTRY	FIELDWORK START (MM)	FIELDWORK COMPLETION (MM)	FIELDWORK START (ER)	FIELDWORK COMPLETION (ER)
Belgium	2013.02.05	2013.05.28.	2013.02.21	2013.06.26
Bulgaria	2013.02.07	2013.05.15.	2013.02.18	2013.05.15
Czech Republic	2013.02.06	2013.05.14.	2013.02.20	2013.06.26
Denmark	2013.02.08	2013.05.24.	2013.02.18	2013.06.14
Germany	2013.02.05	2013.05.31.	2013.02.21	2013.06.07
Estonia	2013.02.12	2013.04.22.	2013.02.19	2013.05.10
Greece	2013.02.06	2013.05.21.	2013.02.18	2013.06.17
Spain	2013.02.12	2013.05.21.	2013.02.15	2013.06.21
France	2013.02.08	2013.05.28.	2013.02.18	2013.06.24
Ireland	2013.02.14	2013.05.16.	2013.02.22	2013.06.24
Italy	2013.02.07	2013.05.17.	2013.02.18	2013.06.24
Cyprus	2013.02.05	2013.05.08.	2013.02.18	2013 06.28
Latvia	2013.02.11	2013.04.30.	2013.02.20	2013.05.07
Lithuania	2013.02.08	2013.05.10.	2013.02.19	2013.05.31
Luxembourg	2013.02.13	2013.04.23.	2013.02.26	2013.06.04
Hungary	2013.02.05	2013.05.07.	2013.02.18	2013.05.21
Malta	2013.02.13	2013.05.10.	2013.02.21	2013.05.24
Netherlands	2013.02.13	2013.05.27.	2013.03.04	2013.06.27
Austria	2013.02.07	2013.05.27.	2013.02.18	2013.06.06
Poland	2013.02.06	2013.05.16.	2013.02.19	2013.06.27
Portugal	2013.02.07	2013.05.27.	2013.02.19	2013.06.12
Romania	2013.02.05	2013.04.17.	2013.02.18	2013.06.27
Slovenia	2013.02.11	2013.05.14.	2013.02.19	2013.06.03
Slovakia	2013.02.06	2013.04.30.	2013.02.19	2013.06.20
Finland	2013.02.05	2013.05.24.	2013.02.18	2013.06.24
Sweden	2013.02.05	2013.05.31.	2013.02.19	2013.06.28
United Kingdom	2012.02.06	2012.05.16.	2013.02.18	2013.06.24
Croatia	2013.02.07	2013.04.23.	2013.02.18	2013.05.14

COUNTRY	FIELDWORK START (MM)	FIELDWORK COMPLETION (MM)	FIELDWORK START (ER)	FIELDWORK COMPLETION (ER)
Iceland	2013.02.07	2013.05.13.	2013.03.05	2013.06.25
FYROM	2013.02.05	2013.05.14.	2013.03.04	2013.06.04
Montenegro	2013.02.06	2013.05.09.	2013.02.18	2013.06.24
Turkey	2013.02.12	2013.05.17.	2013.03.04	2013.06.13

The data collection for the MM interviews was finished on 31 May. Following-up available ER contacts was prolonged until 19 June, in order to maximise the response rate in that segment.

5.2 Fieldwork progress

The weekly number of completed interviews was reported in detail (by size type, and by broad industry category) for each country in the weekly progress reports. The below table provides a summary for the total number of weekly completes:

Management (MM) interviews progress

	TOTAL	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18
BE	1107	10	26	26	40	16	27	124	92	108	100	69	155	83	103	85	25	18	0
BG	557	27	87	31	56	31	55	62	61	71	19	39	11	0	0	7	0	0	0
CZ	1111	10	43	27	56	37	38	51	119	112	95	96	135	121	121	50	0	0	0
DK	1100	0	13	3	32	42	40	81	55	120	144	133	124	127	73	54	59	0	0
DE	1673	20	15	26	26	44	58	67	103	181	267	179	183	137	92	68	105	102	0
EE	550	0	44	70	81	94	99	97	45	1	0	7	12	0	0	0	0	0	0
EL	1101	23	24	40	94	109	97	89	106	96	114	109	122	9	13	39	17	0	0
ES	1651	0	35	25	14	111	112	124	66	190	264	290	275	51	43	29	22	0	0
FR	1657	9	10	16	56	76	67	84	208	242	239	85	134	84	12	138	137	60	0
IE	551	0	0	19	24	23	47	63	59	37	50	69	96	36	10	18	0	0	0
IT	1652	5	40	23	50	40	34	119	207	247	258	151	141	122	146	69	0	0	0
CY	500	26	22	27	37	84	72	65	76	34	4	5	34	12	2	0	0	0	0
LV	558	0	21	62	21	21	33	35	64	23	52	54	149	23	0	0	0	0	0
LT	550	2	29	26	36	50	47	62	40	24	35	15	52	52	80	0	0	0	0
LU	563	0	4	6	6	10	36	15	62	233	169	14	8	0	0	0	0	0	0
HU	1135	28	61	62	57	131	95	101	105	91	114	80	125	72	13	0	0	0	0
MT	306	0	12	13	22	24	35	37	33	42	41	2	20	19	6	0	0	0	0
NL	1108	0	0	9	17	28	47	54	29	68	94	93	173	154	148	103	81	10	0
AT	1100	1	12	10	35	64	60	82	124	85	125	99	118	81	71	89	42	2	0
PL	1655	14	36	30	60	46	87	99	116	136	174	155	191	90	249	172	0	0	0
PT	1103	4	34	58	44	63	80	71	71	79	97	63	88	134	127	59	29	2	0
RO	551	20	24	15	29	62	94	73	70	93	55	16	0	0	0	0	0	0	0
SI	550	0	2	8	21	41	71	108	97	87	59	40	11	0	4	1	0	0	0
SK	550	13	24	19	24	24	26	34	38	72	72	77	104	23	0	0	0	0	0
FI	1100	14	15	10	38	67	81	96	91	93	103	91	105	77	78	64	77	0	0
SE	1105	11	17	20	58	58	62	58	76	71	121	132	98	39	52	101	78	53	0
UK	1653	10	9	8	25	40	86	76	115	353	395	77	143	153	88	75	0	0	0
HR	503	23	51	45	59	37	50	60	58	42	22	44	12	0	0	0	0	0	0
IS	501	3	31	26	55	41	30	29	34	38	57	60	29	33	34	1	0	0	0
MK	502	47	31	33	101	83	72	100	6	1	0	25	0	0	0	3	0	0	0
ME	305	9	31	15	51	49	48	32	27	4	2	7	26	0	4	0	0	0	0
TR	1505	0	3	8	2	10	23	143	97	224	277	212	222	215	44	25	0	0	0
TOTAL	30113	329	806	816	1327	1656	1909	2391	2550	3298	3618	2588	3096	1947	1613	1250	672	247	0

Employee representative interviewing started after some time allocated for the accumulation of contacts (as provided by the MM respondents), and prolonged after the completion of the MM fieldwork in order to follow up all available contacts, that were received towards the end of the MM fieldwork. The number of completed ER interviews, broken down by country and weeks, is as follows:

Employee representative (ER) interviews progress

	TOTAL	W1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	W22
BE	412	0	0	5	4	5	9	21	23	36	59	30	25	46	36	28	6	59	5	2	7	6	1
BG	118	0	0	23	4	10	10	14	22	5	16	2	2	2	5	3	0	0	0	0	0	0	0
CZ	207	0	0	2	1	6	4	7	9	9	39	20	12	6	23	47	14	2	0	0	2	4	0
DK	580	0	0	5	0	23	24	35	1	33	48	78	41	89	52	17	17	67	30	20	0	0	0
DE	345	0	0	2	12	13	8	19	11	16	26	29	51	42	34	16	20	25	21	0	0	0	0
EE	146	0	0	9	15	19	30	21	15	10	0	5	13	2	7	0	0	0	0	0	0	0	0
EL	144	0	0	2	6	8	8	3	0	7	9	18	24	12	17	15	10	1	2	1	1	0	0
ES	506	0	0	8	7	0	20	16	13	25	19	26	85	96	72	45	38	9	0	0	22	5	0
FR	475	0	0	4	12	19	16	15	23	36	69	39	28	61	9	26	18	32	35	12	13	8	0
IE	105	0	0	1	3	1	0	7	4	1	4	6	11	23	11	8	10	8	2	3	0	1	0
IT	343	0	0	6	4	10	11	17	21	18	22	23	30	36	52	35	34	19	3	1	0	1	0
CY	159	0	0	5	6	15	22	16	14	14	20	11	14	10	3	0	7	1	0	0	0	1	0
LV	91	0	0	1	5	0	0	0	0	0	6	40	20	15	4	0	0	0	0	0	0	0	0
LT	168	0	0	3	2	0	8	0	4	35	12	12	12	11	13	31	3	22	0	0	0	0	0
LU	224	0	0	0	4	1	13	7	2	3	2	28	40	38	30	6	36	12	2	0	0	0	1
HU	304	0	0	25	1	30	20	22	17	17	44	8	35	36	42	6	1	0	0	0	0	0	0
MT	46	0	0	2	1	7	3	3	7	2	13	1	3	1	1	0	2	0	0	0	0	0	0
NL	453	0	0	0	0	11	13	9	17	15	28	38	60	32	22	43	75	63	17	7	0	3	0
AT	385	0	0	12	6	11	26	21	17	21	53	57	32	34	18	24	25	19	9	0	0	0	0
PL	618	0	0	13	6	16	26	18	12	0	0	9	24	17	85	245	119	8	3	0	0	16	1
PT	133	0	0	6	0	4	5	9	2	11	14	9	8	2	2	23	12	20	1	5	0	0	0
RO	260	0	0	7	4	1	0	11	6	10	71	97	28	1	4	2	0	4	10	2	0	2	0
SI	255	0	0	2	3	17	27	27	50	25	54	23	9	3	7	5	0	0	3	0	0	0	0
SK	191	0	0	7	7	7	7	5	5	0	35	14	33	24	7	18	16	3	0	0	2	0	0
FI	643	0	0	4	8	20	29	26	19	20	22	27	66	56	36	40	52	111	85	18	2	1	0
SE	583	0	0	1	8	8	11	16	30	38	50	72	89	56	41	46	62	32	7	7	3	4	0
UK	218	0	0	6	6	4	7	9	7	4	24	20	12	9	13	22	13	5	20	20	11	1	0
HR	180	0	0	21	6	15	4	17	17	22	30	23	22	0	1	2	0	0	0	0	0	0	0
IS	326	0	0	0	0	8	27	30	21	25	15	14	33	28	14	44	51	9	3	0	0	4	0
MK	135	0	0	0	0	44	11	11	14	0	8	7	11	2	5	1	0	7	14	0	0	0	0
ME	104	0	0	4	0	3	2	31	7	8	26	8	10	1	2	0	0	0	0	0	0	2	0
TR	237	0	0	0	0	0	0	0	0	0	2	36	14	5	22	141	2	3	6	6	0	0	0
TOTAL	9094	0	0	186	141	336	401	463	410	466	840	830	897	796	690	939	643	541	278	104	63	59	1

5.3 Availability of formal employee representation

The availability of formal employee representation at the establishments varied greatly across the countries, as summarised by the table below. Overall, a formal employee representation body was reported to exist at 42% of all establishments interviewed, ranging from 17% in Portugal to 86% in Iceland:

COUNTRY	MM COMPLETES	ER PRESENT	ER PRESENT (%)
Belgium	1107	577	52%
Bulgaria	557	164	29%
Czech Republic	1111	262	24%
Denmark	1100	828	75%
Germany	1673	542	32%
Estonia	550	181	33%
Greece	1101	202	18%
Spain	1651	861	52%
France	1657	891	54%
Ireland	551	168	30%
Italy	1652	526	32%
Cyprus	500	192	38%
Latvia	558	116	21%
Lithuania	550	312	57%
Luxembourg	563	312	55%
Hungary	1135	351	31%
Malta	306	59	19%
Netherlands	1108	647	58%
Austria	1100	515	47%
Poland	1655	718	43%
Portugal	1103	192	17%
Romania	551	345	63%
Slovenia	550	318	58%
Slovakia	550	269	49%
Finland	1100	920	84%
Sweden	1105	727	66%
United Kingdom	1653	380	23%
Croatia	503	205	41%
Iceland	501	429	86%
FYROM	502	160	32%
Montenegro	305	115	38%

COUNTRY	MM COMPLETES	ER PRESENT	ER PRESENT (%)
Turkey	1505	297	20%
TOTAL	30113	12781	42%

5.4 Adapting protocols to support fieldwork progress

Eurofound requested, in the call for tenders, that the contractor for the 3rd ECS should consider no more than 200% of the target net sample in order to achieve the target number of interviews in each country (aiming for a 50% response rate in each country.)

Gallup committed to not releasing more than 200% of the target net sample size (completed interviews) as a gross sample, to be contacted by the interviewers. With this initial gross sample, intense efforts were made to minimise non-contact (by manually verifying unproductive telephone numbers – i.e. those that were not answered, or were "wrong numbers" of some kind). Furthermore, the fieldwork adopted a no-call-limit strategy to re-contact sample units, where no final status (completed interview or a final refusal) was reached.

As a result, during the first four to five weeks of the survey, national institutes were working at a very low intensity, due primarily to the following reasons (all geared towards achieving the highest possible response rates):

- Scheduled call backs:
- Very often, the initial contact with the issued gross sample resulted in no immediate result, hence they were scheduled to call back (mostly automatically, with a reasonably long lag between the initial call and the follow-up, and some scheduled with the informant / target respondent). These numbers were offered by the CATI system for being called only at their scheduled dates. The fieldwork proceeded with a very high number of scheduled call-backs (where no final status to the sample unit could be resolved yet), which restricted the number of available units (companies and establishments interviewers could call) during the interviewing window.
- Call status treatment:
- New addresses were only offered in the cases of an explicit final refusal, or clear ineligibility (i.e. due to language barrier, or similar). Attempting to improve response rates, Gallup considered some of the outcomes that are normally treated as final, (such as wrong number, non-contacts, and part of the refusals) as temporary statuses, and at the same time, instructed national institutes to clarify any possible alternative avenues to contact the company / establishment and/or the target respondent, such as, by looking up correct contact information, trying different routes within the organisation to the decision maker, etc. This prevented such outcomes as being considered as final, hence in these cases, no substitute number was offered (for an indefinite time) until receiving confirmation of a possible alternative contact, or confirmation that the company ceased to exist, or that there was no other way to successfully approach the target respondent.

Reviewing the survey progress after the first five weeks, Gallup, together with Eurofound, proposed to remove some of the sample restrictions to enable a timely implementation of the project. The proposal included the following key measures:

- 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 former open replicates were exhausted in a manner that enabled a continuous workload for only a small interviewing team. Decreasing the lag between sending out physical notification letters and the follow up call, to 5 working days (which was initially set for 10 calendar days).

This proposal was accepted by Eurofound, and the above practices were adopted to start in Week 7 of the fieldwork. Four additional replicates (2x the target sample size[2]) were opened up after week 6. This affected all countries, which means that the total sample provided for the study in each segment,

[2] The size of a replicate was defined in each country as half of the respective target sample size for MM interviews.

was, as a result, 4 times the target sample size(except for the countries where fewer sample units were available).

Opening up new replicates was undertaken after careful case-by-case examination, verifying a near-complete exhaustion of the available gross sample. Practically, replicates were handled and opened separately for seven sample segments (defined by the various screening strategies and sectors). This differentiated replicate handling, allowed for adapting the available sample for the uneven response rates across sample segments, and prevented opening up unnecessary samples, for those segments where it was not (yet) required.

The segments where further replicates were considered separately, were as follows:

- Industry 10-49
- Industry 50-249
- Industry 250+
- Service 10-49
- Service 50-249
- Service 250+
- Public sector

From the 6th week onwards, new replicates were only opened if and when:

- There was 0 open/workable addresses left for the particular country, in a particular segment (of the above 7),
- the interviewing quota in the particular country, in a particular segment, was not yet reached, and
- sample units that were auto-scheduled for later call-backs, were opened up and worked again for a couple of days (respondent-scheduled call backs were allowed to remain pending before opening up a new replicate).

5.5 Fieldwork intensity

5.5.1 Number of establishments contacted

The weekly number of completed interviews is only a proxy of the efforts made by the fieldwork team each week, to collect the required number of interviews – dependent on various factors external to the fieldwork teams (sample replacement regime, etc.). The number of contacts made every week provides a better indication of the fieldwork intensity, summing up the efforts of the national interviewing teams to carry out the European Company Survey. The table below provides a weekly breakdown of the contact attempts.

Note, that contacting an establishment could be attempted over several weeks, hence the sum of each row of this table is not informative in regard to the total number of establishments contacted in a particular country, for this information please refer to section 4., discussing the outcome rates. Also, this table does not include information about the number of calls made to the same company / establishment in the same week. Overall, 1,033,124 calls were made during the 3rd ECS (947,000 for MM respondents, and 86,124 for ER respondents).

Establishments / companies contacted, weekly breakdown

	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18
BE	96	102	166	252	165	400	978	880	1024	730	405	1278	860	1209	1287	416	245	0
BG	50	353	268	303	171	398	285	347	414	92	211	57	0	9	85	0	0	0
CZ	132	350	304	299	296	292	681	1230	1298	922	1080	1168	821	1172	311	0	0	0
DK	18	98	240	632	495	1043	866	2260	2392	1834	1255	1695	943	1430	840	675	0	0
DE	87	120	294	560	619	927	1090	2246	2052	2521	2003	2154	1054	1043	693	657	641	0
EE	0	230	154	306	350	446	509	240	4	1	32	41	0	0	0	0	0	0
EL	113	303	455	747	821	773	917	849	995	872	983	785	112	239	388	242	0	0
ES	0	152	133	144	1025	1006	1354	1187	2138	2762	2810	2999	870	696	319	335	0	0

	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18
FR	20	189	352	735	1334	1111	2577	3943	4035	3479	2339	3416	2190	1306	2529	1451	802	0
IE	0	0	136	279	340	511	730	690	706	658	1150	1243	687	182	429	0	0	0
IT	31	539	490	578	560	483	1959	3389	3170	2663	2583	1941	2279	2248	1038	0	0	0
CY	76	132	237	274	356	384	450	663	466	22	133	217	92	21	0	0	0	0
LV	0	150	228	72	71	161	168	280	83	236	303	518	146	0	0	0	0	0
LT	11	212	129	287	318	378	404	465	257	321	255	429	359	469	5	0	0	0
LU	0	45	40	42	156	155	79	325	585	480	51	22	0	0	0	0	0	0
HU	199	419	673	494	503	675	824	848	873	938	512	903	574	59	0	0	0	0
MT	0	71	87	150	168	231	267	352	303	269	33	150	214	84	0	0	0	0
NL	0	75	345	451	733	1080	1045	967	1183	1223	1295	2195	1699	2604	1754	1039	83	0
AT	32	103	125	875	785	1369	1190	1540	1339	1264	1236	1436	900	1182	1088	662	87	0
PL	24	140	300	472	454	630	960	1194	1422	1739	1584	1801	1126	2489	1257	0	0	0
PT	20	296	488	558	591	756	709	731	734	813	1014	1041	986	1204	540	459	2	0
RO	73	104	91	178	266	450	337	415	449	361	114	0	0	0	0	0	0	0
SI	0	18	42	93	360	475	732	647	689	537	427	349	2	18	13	0	0	0
SK	99	191	195	337	288	305	415	789	766	624	686	709	267	0	0	0	0	0
FI	82	65	39	572	666	709	935	1247	858	851	633	740	543	596	1001	941	0	0
SE	34	87	642	743	755	729	952	1179	1284	1939	1548	1316	577	1415	1515	1556	835	0
UK	44	131	147	487	525	1191	1625	1799	3123	3714	1289	2177	2223	1966	1386	5	0	0
HR	53	130	191	215	164	202	261	227	173	94	126	47	0	0	0	0	0	0
IS	13	153	162	291	201	223	159	356	254	404	429	249	170	243	1	0	0	0
MK	109	120	271	362	287	280	392	91	14	10	115	0	0	29	30	0	0	0
ME	16	82	72	200	152	193	169	122	22	13	38	95	0	13	0	0	0	0
TR	0	350	359	120	298	402	1411	892	2150	2067	1442	1302	826	277	111	0	0	0
TOTAL	1432	5510	7855	12108	14273	18368	25430	32390	35255	34453	28114	32473	20520	22203	16620	8438	2695	0

As the table above shows, the weekly number of establishments (or companies, in countries with company-level samples) contacted, had consistently improved week-after-week during the fieldwork implementation. The number of contacted units improved significantly after Week 7 – with some country specific temporary anomalies reflecting national holidays, or momentary efforts to exhaust a sample replicate before opening a new one.

Contacting potential ER respondents was dependent on the availability of such bodies in the interviewed establishments. The accelerated accumulation of interviews from Week 7 onwards, consequently also produced an increasing number of contact attempts to reach out to ER respondents. The high success rates in this segment (see below in section 4.), resulted however, in overall, a much more moderate number of contacts performed in this regard (about 3,500, during the first seven weeks). ER respondents were easier to reach (as a direct contact was often provided for them) and they made themselves much more easily available for an interview.

Employee representatives contacted, weekly breakdown

	W1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	W22
BE	0	0	19	16	19	17	66	86	95	167	110	60	155	184	139	13	143	20	5	21	17	0
BG	0	0	30	5	16	17	25	34	12	55	14	7	0	16	9	9	0	0	0	0	0	0
CZ	0	0	4	5	16	10	17	19	20	73	48	35	45	79	84	33	5	1	0	5	6	2
DK	0	0	13	1	60	47	74	9	88	155	264	126	264	194	112	70	254	99	44	0	14	0
DE	0	0	30	31	28	20	67	36	49	120	106	138	141	112	78	85	127	95	0	0	4	0
EE	0	0	14	31	30	40	21	22	16	0	26	40	15	29	18	0	0	0	0	0	0	0
EL	0	0	7	15	19	15	16	0	20	34	63	73	86	64	52	32	15	9	3	2	0	0
ES	0	0	16	9	0	38	61	62	82	70	111	334	414	255	361	256	38	0	0	190	43	0
FR	0	0	12	20	28	30	44	66	95	240	211	113	94	108	176	192	365	266	70	99	26	0
IE	0	0	3	4	5	2	18	15	4	10	22	78	101	59	71	56	71	59	47	21	9	0
IT	0	0	17	4	24	22	45	90	63	87	115	146	130	178	200	183	73	30	6	4	7	0
CY	0	0	10	11	27	35	33	38	30	54	33	29	20	17	0	12	3	0	0	0	1	0
LV	0	0	3	10	5	0	0	0	0	30	68	33	24	6	0	7	0	0	0	0	0	0
LT	0	0	18	17	0	37	3	31	100	111	112	117	136	173	157	21	145	0	0	6	0	0
LU	0	0	4	6	5	22	14	3	7	3	145	119	102	59	27	47	16	7	2	0	0	0
HU	0	0	27	5	35	31	50	35	23	87	35	70	79	68	10	2	0	0	0	0	0	0
MT	0	0	4	5	8	5	8	10	6	25	14	16	12	12	0	11	8	0	0	0	0	0
NL	0	0	0	0	19	24	20	46	29	96	105	164	113	226	214	242	177	37	16	0	5	0
AT	0	0	19	19	36	50	43	48	54	120	123	81	100	64	91	40	145	39	10	0	0	0
PL	0	0	26	31	50	58	77	61	0	0	118	197	97	248	411	151	17	5	0	0	30	4
PT	0	0	11	7	15	25	31	23	34	56	54	62	81	53	99	70	69	44	40	1	0	0
RO	0	0	17	17	7	0	38	46	37	166	197	60	1	33	17	0	84	58	33	0	15	0
SI	0	0	6	14	28	54	52	119	43	98	64	41	33	49	38	0	32	32	0	0	3	0
SK	0	0	13	15	16	16	21	26	0	120	89	108	68	56	53	28	13	0	0	8	4	2
FI	0	0	13	25	41	59	71	76	55	90	87	188	248	147	200	99	274	192	105	86	14	0
SE	0	0	9	28	29	50	84	86	83	121	204	195	111	115	128	119	85	36	16	13	7	0
UK	0	0	16	13	12	18	31	23	30	109	95	84	72	111	118	63	89	199	103	53	14	0
HR	0	0	24	14	22	13	38	39	25	61	49	26	0	10	7	3	0	0	0	3	3	0
IS	0	0	0	0	15	51	57	53	42	21	30	54	80	62	90	92	46	96	3	0	103	0
MK	0	0	0	0	72	20	31	28	9	40	25	29	3	19	11	0	45	34	0	0	0	0
ME	0	0	5	2	7	2	43	11	13	40	16	18	2	7	3	3	3	0	0	0	5	0
TR	0	0	0	0	1	1	4	18	0	47	166	83	17	190	145	2	23	17	6	0	2	0
TOTAL	0	0	390	380	695	829	1203	1259	1164	2506	2919	2924	2844	3003	3119	1941	2365	1375	509	512	332	8

5.5.2 Interviewers assigned

The table below shows the size of the active field force during each week (the total number of interviewers working on the project, cumulative for the five working days). As shown, the number of active interviewers almost doubled between the second (when fieldwork in all countries has started) and the seventh7th week of the fieldwork and was constantly increasing until Week 10-12. As

fieldwork has been completed in several countries by this time, the number of total interviewers assigned to the project started to decrease from that point onwards.

Active interviewers, weekly breakdown

	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15	W16	W17	W18	W19	W20
BE	5	4	5	3	3	4	12	11	14	13	11	14	13	14	14	6	6	1	2	1
BG	3	3	7	6	5	7	6	5	5	5	3	3	1	3	4	1				
CZ	10	9	5	7	5	5	9	18	14	12	14	16	29	24	19	1	2	1		1
DK	4	6	6	11	9	9	13	20	23	22	23	19	19	16	16	12	7	2	4	
DE	12	11	14	11	10	12	17	27	27	30	31	34	29	21	16	14	13	3		
EE		10	10	11	13	10	10	9	2	1	2	3	1	2	1					
EL	9	9	8	9	9	9	9	9	9	9	8	8	4	4	4	4	4	3	3	1
ES		6	6	4	11	14	14	13	18	23	25	32	22	19	11	12	2			4
FR	1	12	3	5	8	6	16	24	21	21	16	22	23	12	29	23	16	6	5	3
IE		1	8	5	5	8	9	10	9	9	12	16	12	6	11	4	3	3	3	2
IT	5	16	7	8	7	6	14	16	19	23	19	19	18	15	9	2	1	2	2	1
CY	3	2	3	2	3	4	3	4	3	1	2	2	2	1		1	1			
LV		4	5	4	3	3	3	5	2	5	6	7	6	1		1				
LT	5	6	9	11	8	9	7	8	7	6	7	9	10	9	9	4	5			2
LU		1	4	5	5	4	4	14	12	14	8	5	4	4	2	1	1	1	1	
HU	3	7	13	8	8	8	7	8	9	9	9	8	9	4	1	1				
MT			7	6	7	8	8	6	6	7	4	6	5	1		3	1			
NL		9	17	12	13	18	15	17	19	21	20	39	35	41	38	35	19	4	2	
AT	4	4	5	6	10	11	10	10	10	9	10	10	10	8	9	8	2	2	1	
PL	2	2	7	7	7	8	13	13	17	20	23	24	27	32	32	12	4	1		
PT	6	8	8	15	18	14	13	13	14	15	19	24	24	22	21	15	3	3	4	1
RO	7	3	2	4	3	7	6	5	6	5	4	1	1	1	1		2	1	2	
SI		2	1	1	4	4	7	6	5	5	5	3	1	2	3		1			
SK	7	7	6	5	5	4	8	12	10	10	11	9	10	2	3	1	1			1
FI	5	4	2	9	7	11	11	14	12	13	14	15	13	12	11	8	6	4	5	2
SE	4	3	9	14	18	18	16	25	22	27	26	22	22	22	23	25	12	4	3	2
UK	4	4	7	9	7	13	13	15	26	32	18	28	29	23	18	4	2	5	4	3
HR	12	8	8	7	4	5	5	5	6	3	4	4		2	1	1				
IS	3	7	7	6	6	5	4	6	5	6	5	7	5	6	5	8	4	1	1	
MK	11	11	5	7	5	4	6	5	3	2	4	2	1	2	1		2	1		
ME	2	3	2	3	3	3	3	3	2	2	2	3	2	1	1	1	1			
TR		8	12	4	5	8	26	14	28	30	26	23	18	14	17	1	4	3	2	
TOTAL	127	190	218	225	234	259	317	370	385	410	391	437	405	346	330	209	125	51	44	24

6. Quality framework

Quality monitoring of the European Company Survey fieldwork was performed from the outset, primarily by national supervisors and in a systematic manner. Additionally, Gallup as well as Eurofound, performed quality monitoring activities to ensure that the fieldwork and the data collection systems worked according to the plan.

The quality monitoring framework of the survey, was created in the preparatory stage, and was formulated in a detailed Quality Control Plan. The fieldwork implementation related indicators specified in the Quality Control Plan, are presented later in this section, related to key quality criteria of the fieldwork.

Before discussing these indicators, we shortly present the general quality control scheme of the interviewing.

6.1 Activities to monitor interviewing

Initially, national institutes performed listen-ins to any on-going respondent interactions, with an aim that on average, about 10% of all contact attempts or calls, were subjected to quality controls – regardless of their outcome. After the closure of the Pilot stage (after March 3), this protocol changed slightly, to performing controls on *screeners* and *main interviews* (MM and ER) *only*, each corresponding to 10% of the target sample size. In total, the controls performed on screeners and interviews totalled to 20% of the target sample size.

During the quality checks, national supervisors performed spot-checks in the form of short live listen-ins, to calls made by interviewers. During the listen-ins, supervisors assessed interviewer conduct considering the following aspects:

- General verification: that a conversation that is being recorded into the database (screening or main interview) actually takes place
- Adherence to protocols: supervisors assessed interviewer conduct according to the protocol, including interviewer behaviour, such as posing the questions, using the provided clarifications as necessary, probing, etc.
- General conduct: tone, speed, politeness, etc. of the interviewers.

After each spot-check, supervisors evaluated the outcome. If any *major problems* (that relate to the actual administration of the questionnaire) or *minor problems* (primarily related to the interviewer behaviour, such as rushing questions, etc.) were discovered during the spot-check, they were immediately fed back to interviewers to improve the quality of their work.

6.1.1 Fieldwork visits

The Eurofound staff performed a series of site visits to get first-hand experience of the functioning of the survey instruments and to monitor the local implementation of the survey by the national fieldwork teams. Eurofound provided Gallup with memos of these visits. The overall indication of these reports was positive; a small number of clarifications were made on the basis of feedback to improve the fieldwork activities of the national teams.

The table below lists the fieldwork visits performed:

COUNTRY	DATE OF VISIT
Austria	14-Feb
France	21-Feb
Portugal	19-Feb
Netherlands	21-Feb
Czech Republic	22-Feb
Slovakia	22-Feb
Luxembourg	7-Mar

COUNTRY	DATE OF VISIT
Poland	1-Mar
United Kingdom and Ireland	7-Mar

6.2 Quality indicators related to the fieldwork implementation

Gallup focused its coordination efforts on monitoring compliance with the survey design, and – wherever possible – centralising processes, so that monitoring by the national institutes became unnecessary. Gallup, however, closely monitored the fieldwork implementation, with a series of indicators (available for Eurofound on the WebCATI monitoring interface and reported in the weekly progress reports) related to the fieldwork execution on a national and sub-sample level. This section offers a recap of the quality indicators related to the fieldwork implementation, as specified in the Quality Control Plan.

6.2.1 Relevance

INDICATOR	VALUE
Key indicator 1: Number of advance letters sent	30,854[3]
Key indicator 2: Number of sampled units in 250+ segment where prior screening of appropriate establishment did not take place (target = 0)	0
Key indicator 3: Ratio of interviews completed via CAWI	indicator scrapped, CAWI as a generic fall-back approach was eliminated from the design (due to comparability and quality concerns)
Key indicator 4: Ratio of successful contacts to total number of establishments/ employee representatives contacted **(crude Contact Rate)**	MM: 91% ER: 94% (country by country results below)

Key indicator 1: Number of advance letters sent

Depending on the segment, notification about the survey was sent via email or postal mail, to the selected establishment / target person either prior to the screening, or after it was completed. Additionally, email notifications were sent to managers / establishments upon request (for those who were not aware of having received such a notification before. For the cases where notifications were foreseen in the post-screening phase, however screening was not yet completed or failed (due to non-contact, immediate strong refusal or evident ineligibility), no notification was sent out. The table below shows the number of notifications sent out to sample units up until week 5 (pilot phase). Overall, a notification was sent out to 74% of the worked sample, typically in electronic format (depending on email availability, country variations are significant in this regard, see below).

[3] Note the pre-notification was only targeting the initial gross sample, which was twice the target sample size. In some segments, notifications were only sent out after the completion of the screening and identifying the eligible respondent, unless they could be immediately interviewed.

ECS advance letters / info-packs sent out to sample units prior to contacting, by type

COUNTRY	EMAIL SENT IN ADVANCE	POSTAL LETTER IN ADVANCE	NO LETTER WAS SENT IN ADVANCE[4]	TOTAL		EXTRA EMAIL SENT[5]
Belgium	346	1032	4788	6166		539
Bulgaria	365	131	1378	1874		259
Czech Republic	905	103	5045	6053		1076
Denmark	1178	272	6061	7511		1474
Germany	630	401	6832	7863		829
Estonia	641	0	736	1377		155
Greece	995	40	2596	3631		1831
Spain	0	1349	7995	9344		1402
France	1072	565	12646	14283		1045
Ireland	259	198	1953	2410		1013
Italy	0	1324	9030	10354		3794
Cyprus	0	450	1225	1675		11
Latvia	198	196	1158	1552		34
Lithuania	557	22	1342	1921		213
Luxembourg	395	77	946	1418		157
Hungary	68	892	4035	4995		632
Malta	3	270	897	1170		157
Netherlands	0	1437	7130	8567		3499
Austria	1550	0	5999	7549		1186
Poland	136	1916	5384	7436		1294
Portugal	791	314	3758	4863		1554
Romania	529	0	1008	1537		245
Slovenia	317	396	1164	1877		125
Slovakia	450	127	2393	2970		935
Finland	881	635	4195	5711		339
Sweden	704	648	6395	7747		695
UK	456	1585	6556	8597		3017
Croatia	0	358	829	1187		495

[4] In the largest company segment, info-packs were mailed after the screening was completed, to the selected establishment

[5] Upon request, after the initial contact, the notification package was sent out once again to managers who lost, deleted or did not personally receive the initial mail / email that provided information about the project. These extra information packages were sent digitally (via email).

COUNTRY	EMAIL SENT IN ADVANCE	POSTAL LETTER IN ADVANCE	NO LETTER WAS SENT IN ADVANCE[4]	TOTAL		EXTRA EMAIL SENT[5]
Iceland	300	203	1259	1762		341
FYROM	514	19	592	1125		144
Montenegro	135	139	353	627		155
Turkey	32	1348	5801	7181		642
Total	14407	16447	121479	152333		29287
Total %	9%	11%	80%	100%		19%

Key indicator 4: Ratio of successful contacts to total number of establishments/ employee representatives contacted

The fieldwork made significant efforts to establish a contact with the sampled units as much as possible. This crude contact rate indication shows that about 1 in 10 sampled establishments could not be contacted by interviewers. (The research regime allowed unlimited recalls for establishing contact with the sampled establishments / companies). This rate varies as a function of the address list accuracy, ranging from 81% in Malta to 99% in Austria for the MM segment.

This crude contact rate for the ER segment is higher, on average 96% of the ER representatives could be contacted (see section 4.2.1.4 for the AAPOR-type standard outcome rates, adjusted with estimated eligibility of the non-contacts).

COUNTRY	Ratio of successful contacts to total number of establishments/ERs contacted	
	MM	ER
Belgium	95.98%	94.47%
Bulgaria	91.08%	95.36%
Czech Republic	89.08%	97.78%
Denmark	90.35%	97.33%
Germany	95.69%	98.23%
Estonia	94.10%	99.57%
Greece	93.66%	96.55%
Spain	91.17%	96.61%
France	88.75%	94.73%
Ireland	85.49%	97.77%
Italy	83.21%	97.27%
Cyprus	91.28%	99.54%
Latvia	91.62%	96.09%
Lithuania	82.72%	95.11%
Luxembourg	90.75%	97.64%
Hungary	92.35%	98.59%
Malta	80.68%	100.00%

COUNTRY	Ratio of successful contacts to total number of establishments/ERs contacted	
	MM	ER
Netherlands	97.23%	99.38%
Austria	98.77%	99.28%
Poland	92.51%	90.31%
Portugal	85.75%	91.30%
Romania	90.17%	99.48%
Slovenia	86.79%	96.11%
Slovakia	91.45%	95.42%
Finland	94.92%	96.10%
Sweden	92.87%	95.84%
United Kingdom	88.58%	94.46%
Croatia	92.33%	96.73%
Iceland	92.68%	79.32%
FYROM	89.07%	90.70%
Montenegro	86.92%	98.33%
Turkey	92.59%	98.41%
All	91.25%	95.92%

6.2.2 Accuracy - Sampling

INDICATOR	VALUE
Key indicator 1: Sampling design that reflects country specific issues in selecting a telephone sample of companies/establishments in given country	yes, as provided in the Sampling Report
Key indicator 2: Number of contacts per number out of range due to screening (by country)	4.6% country by country results below
Key indicator 3: Number of follow-ups needed to get the right respondent after the first successful contact	4.1 country by country results below
Key indicator 4: Number of successful first contacts per number of successful interviews (separately for MM and ER, by country)	4.6 (MM) 1.6 (ER) country by country results below
Key indicator 5: Refusal rates (separately for MM and ER, by country)	MM: 0.53 ER: 0.36
Key indicator 6: Cooperation rates (separately for MM and ER, by country)	MM: 0.40 ER: 0.62
Key indicator 7: Response rates (separately for MM and ER, by country)	MM: 0.35 ER: 0.58

Key indicator 2: Number of contacts per number out of range due to screening

This indicator shows the percentage of cases that were screened out due to ineligibility (employing less than 10 employees) from the eligible cases, during the screening interview.

This proportion was dependent on the quality of the national sampling frames (in the case of establishment-level samples) and the original information given by the informant, in segments where establishment screening involved an informant to select a random establishment within the company.

In several countries the ineligibility rate was in fact minimal. Nevertheless, partly due to the outstanding figures in Hungary, Malta, Iceland, and especially Poland (the ineligibility rate in each country was over 10%), the overall rate of ineligibility was over 4% for the total survey.

Note that this indicator is only applicable for the MM segment, as in principle, the eligibility was not an issue in the ER segment of the survey.

COUNTRY	ALL CONTACTED	LESS THAN 10 EMPLOYEES (NR)	LESS THAN 10 EMPLOYEES / ALL CONTACTED (%)
Belgium	6166	334	5.42%
Bulgaria	1868	110	5.89%
Czech Republic	6034	263	4.36%
Denmark	7511	139	1.85%
Germany	7862	579	7.36%
Estonia	1373	61	4.44%
Greece	3618	274	7.57%

COUNTRY	ALL CONTACTED	LESS THAN 10 EMPLOYEES (NR)	LESS THAN 10 EMPLOYEES / ALL CONTACTED (%)
Spain	9363	497	5.31%
France	13891	548	3.95%
Ireland	2406	137	5.69%
Italy	10349	120	1.16%
Cyprus	1674	100	5.97%
Latvia	1522	52	3.42%
Lithuania	1921	79	4.11%
Luxembourg	1416	45	3.18%
Hungary	4992	522	10.46%
Malta	1170	118	10.09%
Netherlands	8566	216	2.52%
Austria	7549	70	0.93%
Poland	7436	851	11.44%
Portugal	4853	290	5.98%
Romania	1536	52	3.39%
Slovenia	1877	119	6.34%
Slovakia	2961	88	2.97%
Finland	5711	211	3.69%
Sweden	7747	167	2.16%
United Kingdom	8596	407	4.73%
Croatia	1187	29	2.44%
Iceland	1762	212	12.03%
FYROM	1129	74	6.55%
Montenegro	627	54	8.61%
Turkey	7173	147	2.05%
All	151846	6965	4.59%

Key indicator 3: Number of follow-ups needed to get the right respondent after the first successful contact

This indicator shows the contacting activities involved in identifying and in fact, contacting the target respondent *after* an initial successful contact was made with the company / establishment. This indicator only makes sense for the MM segment, where multi-step selection was implemented.

The overall indication is that about 4 more calls - after the initial contact - was necessary to reach a target MM respondent. This rate varied between 1.4 in Luxembourg to 6.8 in Austria.

COUNTRY	ADDITIONAL CONTACT ATTEMPTS TO REACH FINAL RESPONDENT, AFTER INITIAL CONTACT WAS ESTABLISHED
Belgium	3.5
Bulgaria	1.7
Czech Republic	3.4
Denmark	6.7
Germany	3.3
Estonia	2.9
Greece	5.6
Spain	4.2
France	3.3
Ireland	7.2
Italy	6.1
Cyprus	5.1
Latvia	2.1
Lithuania	3.3
Luxembourg	1.4
Hungary	3.7
Malta	4
Netherlands	4.4
Austria	6.8
Poland	4.8
Portugal	4.8
Romania	3.6
Slovenia	4.1
Slovakia	3.3
Finland	5
Sweden	5.6
United Kingdom	5.2
Croatia	3.3
Iceland	3.2
FYROM	2.7
Montenegro	3.8
Turkey	2.6
Total	4.1

Key indicator 4: Number of successful first contacts per number of successful interviews

On average, in the MM segment, 4.6 establishments / companies were necessary to successfully contact, in order to achieve a single interview. This ratio varied remarkably, with huge outliers, especially in low response rate countries such as the Netherlands, Austria, Denmark, etc. (In France, the high number of contacts were due to a large number of non-existing companies / contacts in the provided sample).

For the ER segment, as one would expect, much fewer initial contacts were necessary for a completed interview (due to a higher cooperation rate as well as fewer access problems to the sample unit). The rate of successful contacts per completed interviews, was 1.6 in the ER segment.

COUNTRY	Ratio of successful contacts to total number of establishments/ERs attempted	
	MM	ER
Belgium	5.3	1.7
Bulgaria	3.1	1.9
Czech Republic	4.9	1.5
Denmark	6.2	1.6
Germany	4.5	2.1
Estonia	2.4	1.5
Greece	3.1	1.7
Spain	5.2	2.2
France	7.6	2.3
Ireland	3.7	2.5
Italy	5.2	2.3
Cyprus	3.1	1.4
Latvia	2.5	1.3
Lithuania	2.9	2.1
Luxembourg	2.3	1.4
Hungary	4.1	1.4
Malta	3.1	1.5
Netherlands	7.5	1.7
Austria	6.8	1.4
Poland	4.2	1.2
Portugal	3.8	1.3
Romania	2.5	1.5
Slovenia	3.0	1.3
Slovakia	4.9	1.4
Finland	4.9	1.4
Sweden	6.5	1.2
United Kingdom	4.6	2.1

Croatia	2.2	1.2
Iceland	3.3	1.2
FYROM	2.0	1.1
Montenegro	1.8	1.1
Turkey	4.4	2.3
Total	4.6	1.6

Key indicators 5-6-7: AAPOR outcome rates

Management interviews

The below table provides the calculated AAPOR outcome rates, using the agreed allocation methods of the cases with unknown eligibility (which make up the vast majority of the non-interviews, where a screener interview could not yet confirm that the company / establishment is indeed eligible for the survey). The overall response rate of the 3rd ECS (for the management interviews) was 35%; ranging from 18% in Austria to 71% in Montenegro.

COUNTRY	RESPONSE RATE (RR3)[6]	ESTIMATED REFUSAL RATE[7]	ESTIMATED CONTACT RATE[8]	ESTIMATED COOPERATION RATE[9]
Belgium	0.34	0.60	0.94	0.36
Bulgaria	0.45	0.44	0.89	0.51
Czech Republic	0.33	0.51	0.85	0.39
Denmark	0.22	0.66	0.88	0.25
Germany	0.33	0.62	0.95	0.35
Estonia	0.52	0.41	0.93	0.56
Greece	0.52	0.39	0.91	0.57
Spain	0.34	0.53	0.88	0.39
France	0.26	0.55	0.82	0.32
Ireland	0.46	0.31	0.77	0.59
Italy	0.25	0.53	0.78	0.32
Cyprus	0.53	0.34	0.88	0.61
Latvia	0.51	0.39	0.90	0.57
Lithuania	0.42	0.37	0.78	0.53
Luxembourg	0.56	0.32	0.88	0.63
Hungary	0.56	0.34	0.89	0.62
Malta	0.44	0.34	0.78	0.57

[6] = I/[I+R+NC+e(nsR+nsNC+nsO+nsUE)]

[7] = [R+e(nsR)]/[I+R+NC+e(nsR+nsNC+nsO+nsUE)]

[8] = [I+R+e(nsR)+e(nsO)]/[I+R+NC+e(nsR+nsNC+nsO+nsUE)]

[9] = I/[I+R+e(nsR)+e(nsO)]

COUNTRY	RESPONSE RATE (RR3)[6]	ESTIMATED REFUSAL RATE[7]	ESTIMATED CONTACT RATE[8]	ESTIMATED COOPERATION RATE[9]
Netherlands	0.25	0.71	0.96	0.26
Austria	0.18	0.81	0.99	0.18
Poland	0.53	0.34	0.87	0.61
Portugal	0.44	0.35	0.79	0.56
Romania	0.56	0.30	0.86	0.65
Slovenia	0.62	0.17	0.78	0.79
Slovakia	0.35	0.51	0.87	0.41
Finland	0.29	0.66	0.94	0.30
Sweden	0.22	0.70	0.91	0.24
United Kingdom	0.35	0.49	0.84	0.41
Croatia	0.58	0.33	0.90	0.64
Iceland	0.54	0.37	0.92	0.59
FYROM	0.62	0.25	0.87	0.71
Montenegro	0.71	0.13	0.84	0.84
Turkey	0.43	0.45	0.87	0.49
TOTAL	0.35	0.53	0.88	0.40

Employee representative interviews

The outcome calculation for the ER segment does not consider the concept of eligibility (all potential respondents at establishments where the manager indicated that a formal employee representation was active, an interview as attempted with a senior representative, and the unit was considered as eligible). However, refusals in this calculation include both the respondent-level refusals as well as cases where the interviewed managers explicitly forbade making an interview with a representative of the ER body. In some cases, interviewers clarified that no formal employee representation / representative existed in places where managers claimed these to be existing; these cases were eventually deducted from the base total (n of interviewed establishments where ER existed).

The general indication, is that the ER segment of interviewing concluded with a 58% response rate, with refusals (by the management or the eligible respondent) accounting for most of the nonresponse (This rate applies to the ER interviewing stage only, and does not include original nonresponse at the MM stage). As one would expect, contact rates were very high in this stage of interviewing.

COUNTRY	RESPONSE RATE (RR3)[10]	REFUSAL RATE[11]	CONTACT RATE[12]	COOPERATION RATE[13]
Belgium	0.53	0.37	0.91	0.59
Bulgaria	0.50	0.46	0.95	0.52

[10] = I/[I+R+NC]

[11] = [R]/[I+R+NC]

[12] = [I+R]/[I+R+NC]

[13] = I/[I+R]

COUNTRY	RESPONSE RATE (RR3)[10]	REFUSAL RATE[11]	CONTACT RATE[12]	COOPERATION RATE[13]
Czech Republic	0.65	0.32	0.97	0.67
Denmark	0.59	0.35	0.94	0.63
Germany	0.47	0.50	0.97	0.48
Estonia	0.63	0.33	0.96	0.65
Greece	0.55	0.40	0.95	0.58
Spain	0.44	0.52	0.96	0.46
France	0.42	0.52	0.94	0.44
Ireland	0.39	0.57	0.96	0.40
Italy	0.42	0.54	0.96	0.44
Cyprus	0.73	0.26	0.99	0.73
Latvia	0.71	0.24	0.95	0.75
Lithuania	0.46	0.48	0.94	0.49
Luxembourg	0.59	0.23	0.82	0.72
Hungary	0.71	0.27	0.99	0.72
Malta	0.65	0.35	1.00	0.65
Netherlands	0.56	0.41	0.97	0.58
Austria	0.69	0.30	0.99	0.70
Poland	0.77	0.12	0.89	0.86
Portugal	0.58	0.20	0.78	0.74
Romania	0.67	0.31	0.98	0.68
Slovenia	0.76	0.20	0.96	0.79
Slovakia	0.67	0.26	0.94	0.72
Finland	0.66	0.29	0.95	0.69
Sweden	0.75	0.17	0.93	0.81
United Kingdom	0.41	0.47	0.88	0.47
Croatia	0.83	0.13	0.96	0.86
Iceland	0.68	0.12	0.80	0.84
FYROM	0.78	0.05	0.84	0.94
Montenegro	0.85	0.10	0.95	0.90
Turkey	0.42	0.55	0.97	0.43
TOTAL	0.58	0.36	0.94	0.62

6.2.3 Accuracy – General fieldwork paradata

INDICATOR	VALUE
Key indicator 1: Date/time of contact, for each contact attempt for each country) for both samples	[provided in the paradata file]
Key indicator 2: Outcome of contacts attempted, for each contact attempt for each country, for both samples	[provided in the paradata file]
Key indicator 3: Number of attempts per successful interview	see table below
Key indicator 4: Number of spot-checks	not covered here, please refer to section 5.5 below
Key indicator 5: Length of the interviews	MM interviews: 27 minutes overall ER interviews: 18 minutes overall for country-by-country data, see table below
Key indicator 6: Number of cases providing some type of nonresponse (DK, Ref.) for at least 20% of variables	MM: 16 ER: 7
Key indicator 7: Number of *variables* where rate of nonresponse higher than 10%, by country (together with their list)	MM: 24 ER: 28 (see further details below)

Key indicator 3: Number of attempts per successful interview

Overall, a high number of calls within the same company / establishment were necessary to achieve a completed interview, especially in the MM segment. The call logs indicate that, depending on the country, the completion of an interview, on average, required over 3 to 9+ calls to the same establishment / company, with a total average of just over 6 calls to achieve a successful management interview.. For the ER interviews, somewhat fewer calls were necessary, but on average, every completed interview needed over 5 attempts to be carried out, see table below:

COUNTRY	CALLS PRIOR TO COMPLETED INTERVIEW, MM SEGMENT	CALLS PRIOR TO COMPLETED INTERVIEW, ER SEGMENT
Belgium	5.4	4.5
Bulgaria	4	3.6
Czech Republic	5.2	5.5
Denmark	8.1	5.2
Germany	5	4.9
Estonia	4.6	2.8
Greece	9.2	6.5
Spain	6.2	5.2
France	6.2	6.7
Ireland	9.7	5.4
Italy	7.9	6.4

COUNTRY	CALLS PRIOR TO COMPLETED INTERVIEW, MM SEGMENT	CALLS PRIOR TO COMPLETED INTERVIEW, ER SEGMENT
Cyprus	6.8	5.1
Latvia	3.6	3.5
Lithuania	7.4	7.4
Luxembourg	3.3	4.7
Hungary	5.7	4.2
Malta	5.9	5.0
Netherlands	5.9	5.8
Austria	8.1	4.4
Poland	7.5	7.0
Portugal	7.9	7.3
Romania	5.1	5.3
Slovenia	6.5	5.3
Slovakia	6.1	7.7
Finland	6.7	5.5
Sweden	8.3	6.9
United Kingdom	7.3	7.1
Croatia	5	5.0
Iceland	7.3	4.6
FYROM	4.7	4.5
Montenegro	5.8	3.4
Turkey	4.9	6.5
TOTAL	6.3	5.4

Key indicator 5: Length of interviews

The below tables provide an analysis of the questionnaire length with leaving out the top and bottom outliers in each country. The average time of the MM questionnaire was about 27 minutes, while the average duration of the ER questionnaire was about 18 minutes.

Length of MM interviews

COUNTRY	NUMBER OF INTERVIEWS	LENGTH OF INTERVIEWS (minutes)		
		AVERAGE	MINIMUM	MAXIMUM
Belgium	1107	24.5	15.4	96.6
Bulgaria	557	28.0	18.7	64.2
Czech Republic	1111	26.6	17.3	122.8
Denmark	1100	25.3	17.5	74.0

COUNTRY	NUMBER OF INTERVIEWS	LENGTH OF INTERVIEWS (minutes)		
		AVERAGE	MINIMUM	MAXIMUM
Germany	1673	25.6	16.6	85.5
Estonia	550	29.6	18.4	70.3
Greece	1101	26.7	16.8	62.3
Spain	1651	23.6	16.6	60.8
France	1657	25.5	17.1	97.7
Ireland	551	22.9	16.8	48.7
Italy	1652	26.0	17.3	72.7
Cyprus	500	24.2	18.7	39.0
Latvia	558	25.0	16.7	58.4
Lithuania	550	25.8	19.1	65.0
Luxembourg	563	28.5	16.7	84.2
Hungary	1135	25.7	18.4	53.0
Malta	306	25.9	18.1	63.2
Netherlands	1108	28.1	17.9	95.9
Austria	1100	27.5	17.4	63.4
Poland	1655	32.9	19.2	100.8
Portugal	1103	27.8	16.5	84.3
Romania	551	24.9	18.7	50.0
Slovenia	550	26.5	17.4	77.9
Slovakia	550	25.2	19.4	57.6
Finland	1100	26.9	17.5	66.7
Sweden	1105	30.8	19.2	66.7
United Kingdom	1653	27.1	15.9	79.1
Croatia	503	25.1	16.3	57.1
Iceland	501	27.9	18.8	69.4
FYROM	502	26.4	17.6	53.5
Montenegro	305	25.9	18.2	49.3
Turkey	1505	23.1	16.4	114.2
TOTAL	30113	26.5	15.4	122.8

Length of ER interviews

COUNTRY	NUMBER OF INTERVIEWS	LENGTH OF INTERVIEWS (minutes)		
		AVERAGE	MINIMUM	MAXIMUM
Belgium	412	16.9	10.1	50.9
Bulgaria	118	21.4	12.5	47.5
Czech Republic	207	16.1	9.6	36.9
Denmark	580	16.5	9.6	35.3
Germany	345	19.3	9.7	46.6
Estonia	146	16.2	9.6	35.4
Greece	144	18.5	10.0	45.2
Spain	506	17.3	9.7	48.1
France	475	16.5	10.1	34.4
Ireland	105	15.2	9.8	35.2
Italy	343	18.4	10.4	54.1
Cyprus	159	16.0	10.4	32.8
Latvia	91	18.4	10.5	43.9
Lithuania	168	17.3	9.5	56.2
Luxembourg	224	16.9	10.1	39.2
Hungary	304	15.9	10.0	50.4
Malta	46	20.0	11.1	43.0
Netherlands	453	18.8	10.1	44.1
Austria	385	15.5	10.1	43.1
Poland	618	21.7	11.7	60.0
Portugal	133	18.2	11.1	43.6
Romania	260	16.8	9.5	52.4
Slovenia	255	18.1	9.2	47.8
Slovakia	191	17.5	9.5	41.2
Finland	643	17.1	9.9	49.9
Sweden	583	22.5	12.1	53.8
United Kingdom	218	15.8	9.4	25.7
Croatia	180	17.2	10.5	53.2
Iceland	326	16.0	9.5	44.0
FYROM	135	18.8	10.3	53.2
Montenegro	104	17.8	10.4	32.9
Turkey	237	16.3	9.7	70.1
TOTAL	9094	17.8	9.2	70.1

Key indicator 6: Number of cases providing some type of nonresponse (DK, Ref.) for at least 20% of variables

The MM dataset has 206 individual variables, hence the 20% threshold is at 42. The below table shows that this threshold was surpassed by 16 cases (0.05% approximately).

MM DATASET NUMBER OF ITEM-NONRESPONSE WITHIN THE SAME RECORD	FREQUENCY	PERCENT
0	12182	40.5
1	6496	21.6
2	3557	11.8
3	2112	7
4	1492	5
5	1013	3.4
6	723	2.4
7	525	1.7
8	397	1.3
9	267	0.9
10	238	0.8
11	184	0.6
12	161	0.5
13	120	0.4
14	91	0.3
15	68	0.2
16	67	0.2
17	54	0.2
18	43	0.1
19	47	0.2
20	31	0.1
21	27	0.1
22	25	0.1
23	15	0
24	24	0.1
25	20	0.1
26	11	0
27	21	0.1
28	11	0

MM DATASET NUMBER OF ITEM-NONRESPONSE WITHIN THE SAME RECORD	FREQUENCY	PERCENT
29	10	0
30	7	0
31	10	0
32	6	0
33	3	0
34	6	0
35	9	0
36	3	0
37	3	0
38	2	0
39	2	0
40	10	0
41	4	0
42	2	0
43	1	0
44	1	0
45	1	0
46	3	0
48	3	0
50	1	0
56	2	0
76	1	0
81	1	0

The 20% item-nonresponse threshold was surpassed in 7 cases in the ER dataset, where the 20% nonresponse limit was 19 out of 91 individual variables.

ER DATASET NUMBER OF ITEM-NONRESPONSE WITHIN THE SAME RECORD	FREQUENCY	PERCENT
0	4197	46.5
1	2124	23.5
2	1201	13.3
3	601	6.7
4	301	3.3
5	205	2.3
6	129	1.4

ER DATASET NUMBER OF ITEM-NONRESPONSE WITHIN THE SAME RECORD	FREQUENCY	PERCENT
7	66	0.7
8	49	0.5
9	35	0.4
10	29	0.3
11	28	0.3
12	9	0.1
13	9	0.1
14	8	0.1
15	11	0.1
16	9	0.1
17	3	0
18	3	0
19	3	0
22	1	0
26	1	0
27	1	0
31	1	0

Key indicator 7: Variables where rate of nonresponse was higher than 10%, by country

MM dataset

The below variables produced a nonresponse of at least 10% in any country. Such a high rate of nonresponse typically occurred only in a few countries, however, some variables (6 overall) had typically, such a high level of nonresponse in all or most countries, as shown below:

VARIABLES	COUNTRIES WHERE NONRESPONSE WAS >=10%
AEMPORG - Q30	MK
ANUMBEMP -Q5	MT
CEMPOLD -Q33C	CY,UK, BG
CEMPHIED- Q33D	BE, FR, IE, CY, LU, FI, UK
ELELEDOC -T9	RO
EEXTEMON - T11	MN
CONJOBPC-Q17	NEARLY ALL COUNTRIES
HTRAIPC- H4	NEARLY ALL COUNTRIES
HONJOBPC- H6	NEARLY ALL COUNTRIES
HAPRAIPC- H9	NEARLY ALL COUNTRIES
HFLEXIPC-H15	NEARLY ALL COUNTRIES
IINIMWPP- ER15A	IC
IINIMPEA -ER15D	HU, IC
IERTRUS- ER15E	IC
ICAEST -ER12A	MK
ICASECT- ER12B	MK
ICAOCC- ER12C	BE, MK
ICANAT- ER12D	BE, UK, MK, MN
JMOIMPCH- E0B	MK
JERCOPR- E0F_A	SE, IC
JEICOMP- E7_C	LU, HU
KFINANCH- P4	RO, BG
KSERPROV -P8B	RO

ER dataset

Quite a few variables in the ER questionnaire recorded item-nonresponses of at least 10% for a particular country, but there were only two questions (Q4 and Q12) where such a high rate of nonresponse was observed in many countries. See details below:

VARIABLES	COUNTRIES WHERE NONRESPONSE WAS >=10%
INFO1	MK
Q1	TR
Q2	BG, LT, RO, HR , MK
Q3	TR
Q4	BE, BG, DK, DE, EE, ES, FR, IT, LV, LU, NL, PT, RO, SI, FI, SE, TR
q10	HR
Q11	IS
Q12	BE, BG, FR IT, LV, MT, NL, PT, SK, MK, MN, IC,
Q14	EE, LT, FI, IS
Q17	IS
Q19	RO, MK, IS
Q20_A	BG, IS
Q20_B	IS
Q27	LV
Q31	MN
Q33_A	EE, PT, IS
Q33_B	EE, PT, IS
Q33_C	PT, IS
Q36_B	BG, LT,
Q36_C	LT,
Q37_A	SK
Q37_B	SK
Q40_B	MN
Q40_F	MT
Q41_F	LV, MT
Q42A_C	FR
Q47	LT
Q48	DE, MT, SK, MK

6.2.4 Accuracy – Real-time quality assessment of the fieldwork

INDICATOR	VALUE
Key indicator 1: Number of problems detected in collected data (per country)	MM dataset: 0 ER dataset: 1
Key indicator 2: Number of corrective actions taken to correct problems detected in dataset after first batch of interviews (per country)	1

Key indicator 1: Number of problems detected in dataset (per country)

Gallup monitored the collected data in each country and collected immediate interviewer feedback from the kick-off of the fieldwork. The central team looked for irregularities and outliers in the dataset, and prompted the national teams to raise attention to problems of the data collection, that may negatively impact the quality of data collected. This included the monitoring of the screener and main datasets, for the MM and ER interviews, as well as a review of the open-ended replies to the economic activity question.

Generally, the inspection of the data file was reassuring, in the sense that the vast majority of variables showed distributions within the anticipated range (however sometimes with large variations across countries).

Gallup's analysis found one issue during this monitoring exercise which needed to be addressed: in the ER questionnaire, the original formulation of the questions related to the composition of the ER body, was misleading for many respondents.

Original wording:

> *Q1. How many members does the [ER-body] have?*

The problem was that several respondents understood the question in a way that it encompassed the whole organisation that delegated the ER body, and not just the representatives on the body. That is, they answered with the total number of – for example – trade union members, instead of the number of people on the Works Council. This issue was discovered after the completion of a few interviews, and the question wording was adapted in each language, to better clarify the intended meaning of these questions. The new wording was as follows:

> *Q1. Besides you, how many representatives are on the [ER-body] that you are a member of?*

In the case of the already completed interviews the respondents were re-contacted and had their reply corrected or reconfirmed using this new formulation.

Apart from this issue, there were no systematic or particular problems with the data collection instruments. Although , in some cases we found very divergent replies across countries it is not possible to establish if they are linked to interpretation differences of the particular questions or if they reflect a different reality across the countries surveyed.

Questions where the results may suggest potential interpretation problems

Some questions in the questionnaire produced unusually high variance, plausibly over the „natural" variability of working conditions / work arrangements across the European nations. Below we highlight these questions that may be considered for a qualitative follow-up, and for a possible eventual suppression from the analytical dataset (unweighted distributions). Please note, that section A.4.5 provides the national institutes' feedback on perceived problems on the basis of interviewer debriefings.

EEXTEMON. [T11] Does this establishment monitor external ideas or technological developments for new or changed products, processes or services?

COUNTRY	NO (Total %)
Belgium	37.9
Bulgaria	15.6
Czech Republic	32.9
Denmark	6
Germany	32.4
Estonia	8.9
Greece	14.8
Spain	28.1
France	39.8
Ireland	20
Italy	32.5
Cyprus	16.6
Latvia	5.9
Lithuania	29.5
Luxembourg	19
Hungary	17.4
Malta	18
Netherlands	23.3
Austria	20.7
Poland	28.1
Portugal	38.3
Romania	19.2
Slovenia	9.3
Slovakia	43.3
Finland	5.7
Sweden	8.5
United Kingdom	17.5
Croatia	6.6
Iceland	5.4

COUNTRY	NO (Total %)
FYROM	5
Montenegro	7.2
Turkey	9.6
TOTAL	21.8

EINFSYS. [T10] Does this establishment use information systems to minimize supplies or work-in-process? (especially the result in Turkey)

COUNTRY	YES (Total %)
Belgium	51.7
Bulgaria	30.5
Czech Republic	35.9
Denmark	42.5
Germany	40.3
Estonia	39.5
Greece	43.3
Spain	43.7
France	40.4
Ireland	55.2
Italy	63.8
Cyprus	58.2
Latvia	48.9
Lithuania	49.6
Luxembourg	54.7
Hungary	41.4
Malta	41.8
Netherlands	60.3
Austria	55.6
Poland	37
Portugal	58.6
Romania	61.9
Slovenia	50.9
Slovakia	51.8
Finland	67.5
Sweden	51.7
United Kingdom	49
Croatia	40

COUNTRY	YES (Total %)
Iceland	35.3
FYROM	38.6
Montenegro	51.5
Turkey	80.5
TOTAL	49.7

HONJOB. [H5] In the past 12 months, what percentage of employees have received on the job training?

COUNTRY	NONE AT ALL (Total %)
Belgium	17.9
Bulgaria	26.2
Czech Republic	24.9
Denmark	53.8
Germany	24.2
Estonia	17.2
Greece	37.7
Spain	11.6
France	26.2
Ireland	5.7
Italy	42.2
Cyprus	31
Latvia	17.5
Lithuania	24.9
Luxembourg	23.4
Hungary	43
Malta	18.1
Netherlands	14.1
Austria	10.8
Poland	11.5
Portugal	17.8
Romania	45.6
Slovenia	11.9
Slovakia	11.2
Finland	2.8
Sweden	5
United Kingdom	7.8

COUNTRY	NONE AT ALL (Total %)
Croatia	29.8
Iceland	9.5
FYROM	25.4
Montenegro	21.1
Turkey	21.9
TOTAL	21.3

HAPRAIS. [H8] Approximately what percentage of employees have a performance appraisal or evaluation interview at least once a year?

COUNTRY	NONE AT ALL (Total %)
Belgium	21
Bulgaria	52.2
Czech Republic	34.6
Denmark	3.9
Germany	15.2
Estonia	41.7
Greece	34.8
Spain	35.9
France	21.3
Ireland	17.4
Italy	32.6
Cyprus	22.9
Latvia	24.5
Lithuania	32.8
Luxembourg	19.6
Hungary	29.1
Malta	36
Netherlands	5.3
Austria	8.4
Poland	27
Portugal	36.7
Romania	7.5
Slovenia	20.1
Slovakia	23.6
Finland	8.3
Sweden	3.1

COUNTRY	NONE AT ALL (Total %)
United Kingdom	17
Croatia	62.9
Iceland	25.5
FYROM	45.7
Montenegro	22.4
Turkey	41.3
TOTAL	24.8

Number of corrective actions taken to correct problems detected in dataset (per country)

The only corrective action that was taken was described in the point above: Q1 of the ER questionnaire was changed, and some of the first respondents (all who were interviewed prior to this change) were re-contacted to collect their answer to the modified question.

6.2.5 Accuracy – Quality of interviewing

INDICATOR	VALUE
Key indicator 1: Number of spot-checks carried out by the supervisors, in total	74,117
Key indicator 2: Number of corrective actions taken	740
Key indicator 3: Number of interviewers terminated	0
Key indicator 4: Documentation of spot-checks	100% documentation, through dedicated web-based interface (form)

Key indicator 1: Number of spot-checks carried out by the supervisors, in total

The table below indicates the number of all spot-checks performed and indicates the number of minor and major issues identified and communicated back to interviewers:

COUNTRY	QUALITY: OK		QUALITY: MINOR PROBLEMS		QUALITY: MAJOR PROBLEMS		TOTAL N OF CONTROLS
	N	%	N	%	N	%	
Belgium	1144	89%	138	11%	0	0.00%	1282
Bulgaria	573	99%	5	1%	0	0.00%	578
Czech Republic	2635	100%	1	0%	0	0.00%	2636
Denmark	3478	100%	0	0%	0	0.00%	3478
Germany	3202	96%	118	4%	0	0.00%	3320
Estonia	1137	100%	2	0%	0	0.00%	1139
Greece	3500	100%	0	0%	0	0.00%	3500
Spain	8727	100%	17	0%	0	0.00%	8744

COUNTRY	QUALITY: OK		QUALITY: MINOR PROBLEMS		QUALITY: MAJOR PROBLEMS		TOTAL N OF CONTROLS
	N	%	N	%	N	%	
France	4551	98%	86	2%	3	0.06%	4640
Ireland	1619	98%	33	2%	0	0.00%	1652
Italy	1762	100%	0	0%	0	0.00%	1762
Cyprus	1480	100%	0	0%	0	0.00%	1480
Latvia	218	100%	0	0%	0	0.00%	218
Lithuania	1673	95%	84	5%	1	0.06%	1758
Luxembourg	151	93%	11	7%	0	0.00%	162
Hungary	2418	100%	0	0%	0	0.00%	2418
Malta	110	95%	6	5%	0	0.00%	116
Netherlands	3808	100%	10	0%	1	0.03%	3819
Austria	6759	100%	2	0%	0	0.00%	6761
Poland	849	94%	50	6%	4	0.44%	903
Portugal	7384	100%	29	0%	0	0.00%	7413
Romania	1122	99%	13	1%	0	0.00%	1135
Slovenia	1547	99%	13	1%	0	0.00%	1560
Slovakia	1897	100%	0	0%	0	0.00%	1897
Finland	3531	100%	0	0%	0	0.00%	3531
Sweden	791	99%	6	1%	0	0.00%	797
UK	2502	96%	90	3%	2	0.08%	2594
Croatia	691	98%	11	2%	1	0.14%	703
Iceland	1025	100%	0	0%	0	0.00%	1025
FYROM	798	100%	3	0%	0	0.00%	801
Montenegro	758	100%	0	0%	0	0.00%	758
Turkey	1537	100%	0	0%	0	0.00%	1537
TOTAL	73377	99%	728	1%	12	0.02%	74117

There were no issues discovered that would have triggered the rejection of completed questionnaire(s) (i.e. fraud, or systematic misconduct on behalf of an interviewer).

Key indicator 2: Number of corrective actions taken

Note that for Key indicator 2 (Corrective actions taken) we provide the total number of issues discovered during spot-checks. In *each case* when a supervisor identified a certain problem, he or she discussed it with the interviewer, in order to correct the behaviour – identified by the supervisor - for the later course of interviewing. Such consultations were performed on a need-basis, throughout the fieldwork implementation, to improve interviewer conduct.

6.2.6 Comparability

INDICATOR	VALUE
Key indicator 1: Does a unified single operation sampling management system exist?	yes
Key indicator 2: Has a unified single operation sampling management system been used in all countries?	yes
Key indicator 3: Has a unified single CATI system been operated for the survey?	yes
Key indicator 4: Is the interviewer staff composition (age, gender, education) similar in each country?	they all complied with the criteria laid out, nevertheless the socio-demographic composition of the fieldwork teams were different across countries, as shown below in detail.
Key indicator 5: Is there any major difference in the three selected indicators (Cooperation rate, Response rate, Refusal rate) due to interviewers' characteristics both for the MM and ER sample?	Unclear as of yet, so far no specific analysis could be performed to this end
Key indicator 6: Number of countries where local field director doesn't have required experience with company surveys (target = 0)	0

Key indicator 4: Composition of interviewing teams

The below table summarises key parameters of the interviewing teams in each country, in terms of their demographic composition as well as their experience. Apparent differences reflect different practices of organising the field force by each national institute – in some countries predominantly students were used for interviewing (Cyprus, Macedonia, Denmark, etc.)

COUNTRY	NUMBER OF ACTIVE INTERVIEWERS	GENDER (%)		AGE (%)		EXPERIENCE (%)	
		MALE	FEMALE	<30 years of age	>=30 years of age	=<1 YEAR	>1 YEAR
Belgium	28	21%	79%	54%	46%	32%	68%
Bulgaria	9	0%	100%	0%	100%	33%	67%
Czech Republic	29	31%	69%	62%	38%	41%	59%
Denmark	32	59%	41%	91%	9%	72%	28%
Germany	41	46%	54%	41%	59%	27%	73%
Estonia	14	21%	79%	7%	93%	21%	79%
Greece	9	44%	56%	56%	44%	11%	89%
Spain	35	11%	89%	11%	89%	6%	94%
France	37	24%	76%	27%	73%	16%	84%
Ireland	18	61%	39%	61%	39%	22%	78%
Italy	25	24%	76%	28%	72%	16%	84%
Cyprus	5	20%	80%	100%	0%	0%	100%

COUNTRY	NUMBER OF ACTIVE INTERVIEWERS	GENDER (%)		AGE (%)		EXPERIENCE (%)	
		MALE	FEMALE	<30 years of age	>=30 years of age	=<1 YEAR	>1 YEAR
Latvia	10	10%	90%	60%	40%	40%	60%
Lithuania	15	20%	80%	87%	13%	87%	13%
Luxembourg	17	59%	41%	41%	59%	12%	88%
Hungary	14	0%	100%	0%	100%	0%	100%
Malta	8	0%	100%	25%	75%	0%	100%
Netherlands	48	35%	65%	27%	73%	19%	81%
Austria	11	18%	82%	36%	64%	0%	100%
Poland	39	33%	67%	28%	72%	26%	74%
Portugal	28	21%	79%	57%	43%	46%	54%
Romania	9	11%	89%	44%	56%	0%	100%
Slovenia	7	14%	86%	57%	43%	14%	86%
Slovakia	19	42%	58%	79%	21%	37%	63%
Finland	19	32%	68%	11%	89%	11%	89%
Sweden	37	43%	57%	24%	76%	14%	86%
United Kingdom	36	56%	44%	64%	36%	14%	86%
Croatia	12	17%	83%	17%	83%	50%	50%
Iceland	10	40%	60%	60%	40%	10%	90%
FYROM	12	0%	100%	100%	0%	58%	42%
Montenegro	3	33%	67%	33%	67%	0%	100%
Turkey	44	39%	61%	86%	14%	52%	48%

6.2.7 Coherence

INDICATOR	VALUE
Key indicator 1: Number of cases in the gross sample without a unique ID number in the WebCATI system (Target = 0)	0
Key indicator 2: Number of interviewers without a permanent, unique ID during the fieldwork (Target = 0)	0
Key indicator 3: Number of supervisors without a permanent, unique ID during the fieldwork (Target = 0)	0

The ECS was carried out, in each country, using the Gallup WebCATI integrated interviewing system. It is therefore impossible that any of the above would occur within the system. Due to the system's logic no case can be entered without an ID, no interviewer without an ID would receive samples, and no supervisors without an ID could access the management / quality control systems related to WebCATI.

6.2.8 Timeliness and Punctuality

INDICATOR	VALUE
Key indicator 1: The delay in number of days in completing the fieldwork compared to foreseen schedule	0[14]

6.2.9 Accessibility

INDICATOR	VALUE
Key indicator 1: All interview and paradata is provided in SPSS .por format, compatible with all popular statistical packages	[datasets provided in SPSS format]
Key indicator 2: Paradata is provided in Excel	[paradata provided in SPSS format – the volume of paradata exceeded the capacities of MS Office software]
Key indicator 3: Paradata is provided in Word	[paradata provided in SPSS format – the volume of paradata exceeded the capacities of MS Office software]

[14] The schedule set up for the fieldwork has been adjusted prior to the fieldwork, as some preparations (the pre-test, production of promotional materials) took more time than foreseen compared to the terms laid out at the beginning of the process.

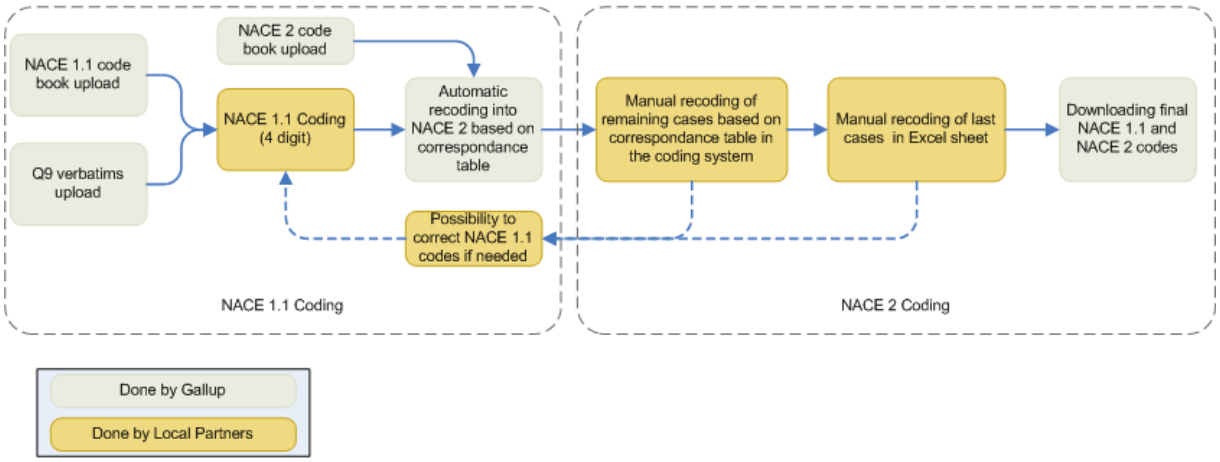
7. Coding

The questionnaires of the 3rd ECS were composed of closed or semi-open questions, that did not require any post-hoc coding of the data. There was, however, a question regarding the economic activity of the establishment interviewed, which required an open-ended response: respondents in the management interview, provided answers to this question, which were recorded verbatim by the interviewers.

The conversion of these open-ended replies into categorical information matching the current (Rev.2) and the previous (Rev1.1) NACE nomenclature, involved coding, on a national level.

This activity was performed by trained coders, with the direct supervision of a dedicated central team at Gallup. Coders – most of whom had previous similar experience with economic activity description conversion into NACE codes – were specifically trained for their task, and fully supervised (by double coding at the local and central level) until they reached a high threshold of inter-coder reliability. This training involved the first 50 cases as a minimum in each country and commenced until the coding reliability reached 0.9 between the central coding team and the national coders.

During this activity the open ended replies, describing the economic activity of the establishment, was matched with 2-digit NACE codes, using the below scheme. The result of this coding was appended to the survey dataset (NACE 2-digit level), and was also used for (re)categorising establishments for weighting purposes (see next section).



The coding was facilitated and documented via Gallup's proprietary internet-based, multi-language, coding application, which allows a direct case-by-case monitoring of coder activities.

8. Weighting

To support analysis, the weighting of the 3rd European Company Survey had to satisfy two criteria for representativity:

- Unit-proportional (to derive estimates of what % of establishments assume a certain property)
- Employee-proportional (to derive estimates as to what % of employees work in establishments that assume a certain property)

When the sample allocation was made, a combination of the two were considered, with over-representing (compared to their unit-proportional rate) the enterprise segments, with a larger number of employees.

8.1 Weighting steps

Step 1: Sampling weights

Each establishment was assigned *a sampling weight* (also called *design weight, base weight* or *direct weight*), which can be roughly interpreted as the number of establishments in the frame population, represented by the establishment itself.

This design weight was calculated as the inverse of the inclusion probability, of the given establishment in the sample. Since the inclusion probability depended on, a combination of the measurement level, the sampling frame unit-level and the population statistics unit-level, the following three methods were used for the design weight calculations, each corresponding to a variation of the sampling design:

Design (A1):

Measurement level: establishment
Sampling frame unit-level: establishment
Population statistics unit-level: establishment

Sampling weight formula:

$d_{chk} = N_{ch} / n_{ch}$

where N_{ch} is the number of establishments that are registered as belonging to the explicit stratum h in the sampling frame of the country c and n_{ch} the corresponding theoretical sample size.

Design (A2):

Measurement level: establishment
Sampling frame unit-level: establishment
Population statistics unit-level: company

Sampling weight formula:

$$d_{chk} = \frac{M_{ch}}{m_{ch}}$$

Same as the A1, except that the sampling interval is calculated on *company* level, with establishments treated as a direct representation of their companies.

Design (B):

Measurement level: establishment
Sampling frame unit-level: company
Population statistics unit-level: company

Sampling weight formula:

$$d_{chk} = \frac{M_{ch}}{m_{ch}} \frac{1}{\pi_{chig}} \frac{N_{chig}}{1}$$

The three factors represent the sampling weight for each of the three sampling stages. M_{ch} denotes the number of the companies that are registered as belonging to the explicit stratum h in the sampling frame of the country c and m_{ch} is the corresponding theoretical sample size; π_{chig} is the probability that generic group g is selected in the sample (equal probability for size groups with non-zero number of establishments) and N_{chig} is the number of establishments of the selected $_{chig}$-th sample group.

The following table groups countries according to the three sampling weight calculation schemes described above:

A1 – EEE (9)	**A2 – EEC (5)**	**B – ECC (18)**
Austria	Finland	Bulgaria
Belgium	Ireland	Croatia
Denmark	Luxembourg	Cyprus
France	Poland	Czech Republic
Germany	Slovenia	Estonia
Netherlands		FYROM
Spain		Greece
Sweden		Hungary
United Kingdom		Iceland
		Italy
		Latvia
		Lithuania
		Malta
		Montenegro
		Portugal
		Romania
		Slovakia
		Turkey

Step 2: Calibration weights

Theoretically, c**alibration weights** w_{chk} are obtained as solution to the following *C*x*H* **calibration problem**:

$$\begin{cases} \sum_{k \in s_{ch}} D(w_{chk}, d_{chk}) = \min & \text{for } h = 1,..., H; c = 1,..., C \\ \sum_{k \in s_{ch}} w_{chk} = \ddot{N}_{ch} & \text{for } h = 1,..., H; c = 1,..., C \\ 0{,}3 \le w_{chk} / d_{chk} \le 3 & \text{for } h = 1,..., H; c = 1,..., C; k \in s_{ch} \end{cases}$$

in which $D(w_{chk}, d_{chk})$ denotes a suitable distance function between w_{chk} and d_{chk} .

While it was initially considered to include a third calibration constant, reflecting the employee proportional probability of selection within the stratum, the decision was made to exclude this, and calculate a unit-proportional calibration weight as the solution of the remaining equations. The reason for this decision was that:

- the information about the number of persons employed in each cell of the 3rd ECS 3x3 explicit stratification matrix, was not universally available for all sectors, if at all.
- Even if this information was available, the joint calibration weights would have remained fundamentally unit proportional, with the number of employees in each establishment (as reported by the respondents) summing up correctly to all employees within the specific stratum / weighting class, within the given country

Assigning specific weights to public sector organisations

Given the difficulties with the sampling of the NACE Rev.2 sectors O, P and Q (as described in section 2.4 earlier), it was impossible to compute design or sampling weights, for the following reasons:

- In quite a few countries the sample was not derived from list-based frames, and more importantly, frames and universe statistics are of dubious quality to estimate a quasi “sampling interval”, similar to what is described in the A1 and A2 design weight solutions.
- In each country, the units in this subsample were treated as „establishments”, without further screening for any local establishment within the organisation (due to the lack of clarity regarding the “whole” organisational unit, lack of consistency of the unit-level of the frames used, and the unreliability of a respondent-assisted establishment selection with larger state- or municipality operated organisations, such as a nursery school belonging to a large school district).

An approximate weighting of the subsample in the public sector was carried out instead, on the basis of the total number of such organisations, relative to the total number of the universe considering all sampled sectors.

Where such information was not available from statistical resources, the relative share of the O, P, Q sectors was estimated, by calculating the average distribution of the countries where the information is available from. The imputed share of public service sectors in these countries, were adjusted by the proportion of the labour force employed by the O, P, Q sectors in these countries compared to the average (that is, where the contribution of the public service sectors to the total employment was above average, a relatively high share of such organisations was imputed in the unit-proportional universe, and vice versa).

In order to select countries for reference in this process, the following checks were performed:

- None of the subsectors uncovered (O, P, Q)
- Plausibly high number of units in each sub-sector
- No positive indications of coverage problems in any of the O, P, Q sectors

The countries that passed this three-fold criteria were used as references to estimate the public sector’s unit-proportional share, in countries that failed this review.

The list of countries where estimation of the public sector’s share was / was not necessary:

COUNTRY	STATUS
Belgium	statistical information used directly
Bulgaria	imputation was performed
Czech Republic	statistical information used directly
Denmark	statistical information used directly
Germany	imputation was performed
Estonia	imputation was performed
Greece	imputation was performed
Spain	imputation was performed
France	statistical information used directly
Ireland	imputation was performed
Italy	imputation was performed
Cyprus	statistical information used directly
Latvia	imputation was performed
Lithuania	statistical information used directly
Luxembourg	imputation was performed
Hungary	imputation was performed
Malta	statistical information used directly
Netherlands	statistical information used directly
Austria	imputation was performed
Poland	statistical information used directly
Portugal	imputation was performed
Romania	imputation was performed
Slovenia	statistical information used directly
Slovakia	statistical information used directly
Finland	imputation was performed
Sweden	imputation was performed
United Kingdom	statistical information used directly
Croatia	statistical information used directly
Iceland	statistical information used directly
FYROM	statistical information used directly
Montenegro	statistical information used directly
Turkey	imputation was performed

Step 3: Employee-proportional weights

The employee-proportional weight was calculated as a strictly analytical weight, unrelated to the survey design. Note, that due to the absence of appropriate reference statistics and non-categorical information for each sampled unit, none of the stages of selection considered the actual number of persons employed at the establishments (for example, as a measure-of-size parameter in a PPS selection scheme). Therefore, no design weight related to the number of persons employed by the individual sample units can be reasonably computed.

The employee proportional analytical weight produced at the weighting stage is a self-referential, derived weight, on the basis of answers to the survey question: How many employees work in this establishment?

The calculation steps:

- Trimming the total employment to a degree that limits the gap between the smallest and largest values – not allowing too large differences (i.e. that one sampling unit has 10 employees, while another had 12,000). The calibration of the trimming limit was performed using the Eurostat SBS tables that provide the distribution of the labour force across size categories and industry sectors, focussing on the "business economy" sectors included Structural Business Statistics publications of Eurostat. Generally, the more we trimmed the upper limit of the possible number of employees considered, the better the distributions – in the comparable sectors – converged to the published labour distribution statistics of the SBS. The 600 limit was set arbitrarily, not to completely wash out the fairly large differences between establishments in terms of employment.
- Creating the employee-proportional analytical weight, by **multiplying the calibration weight by the trimmed empirical employee size** of each establishment.
- Scaling the obtained weights to the total number of persons employed in the given economy (according to most recent Labour Force Survey publication) on country level, to ensure appropriate supranational aggregates.

Step 4: Cross national weights

While the sampling and calibration weights produced weights that reflected the total number of units in each country, in each segment of the 3x3 allocation matrix, the production of a further weight was still necessary to create harmonised cross-country weights in the data set. The reason for this is again linked to the different unit-level of the reference statistics: in countries where the national statistics used were establishment-level, by definition, the number of units were higher than in countries that had company-level reference statistics. Hence, in order to produce harmonised cross-country weight, the unit-level had to be harmonised.

In the latter group, where national statistics are provided on company-level, the total number of establishments can not be retrieved. The total number of companies, however, can be retrieved, where the population statistics are available on establishment-level. For this simple reason, we used the total number of companies, in each country, to produce a multiplier that adjusted the calibration weight, to produce a harmonised cross-national weight for the 3rd ECS.

Step 5: Weight scaling

Scaled weights (weight that summed up to the total number of interviews achieved, rather than to the number of units in the particular segment in the particular country) were computed – in order to simplify certain analyses – on two levels:

- Scaled to sample sizes on country level
- Scaled to the EU28 sample size
- Scaled to the total sample size

for the MM and the ER data separately. For any other aggregations, the non-scaled weights are applicable.

8.2 Set of weighting variables

The following set of weights were created, as a result of the above described process, to support the estimation of weighted results and to perform statistical tests in the 3rd ECS dataset:

FREQUENCY VARIABLE	DESCRIPTION
wt_MM_unit	calibrated unit-proportional establishment weight
wt_MM_unit_crosnat	unit-proportional company-level weight for cross-national aggregations – establishment-level universe totals adjusted to company-level totals to support cross-country harmonization, across the different levels of universe statistics
wt_MM_unit_n	wt_MM_unit scaled to country sample size
wt_MM_unit_EU28_n	wt_MM_unit_crosnat scaled to EU28 sample size
wt_MM_unit_ECS_n	wt_MM_unit_crosnat scaled to ECS total sample size
wt_MM_emp	wt_MM_unit multiplied by the number of employees (upper trimming at 600)
wt_MM_emp_scaled	wt_MM_emp scaled to total number of employees (ECS sectors, 10+) in each country
wt_MM_emp_n	wt_MM_emp scaled scaled to country sample size
wt_MM_emp_EU28_n	wt_MM_emp scaled scaled to EU28 sample size
wt_MM_emp_ECS_n	wt_MM_emp scaled scaled to ECS total sample size
wt_ER_unit_n	wt_MM_unit scaled to country ER sample size (completed interviews)
wt_ER_unit_EU28_n	wt_MM_unit_crosnat scaled to EU28 ER sample size
wt_ER_unit_ECS_n	wt_MM_unit_crosnat scaled to ECS total ER sample size
wt_ER_emp_n	wt_MM_emp scaled scaled to country country ER sample size (completed interviews)
wt_ER_emp_EU28_n	wt_MM_emp scaled scaled EU28 ER sample size
wt_ER_emp_ECS_n	wt_MM_emp scaled scaled to to ECS total ER sample size

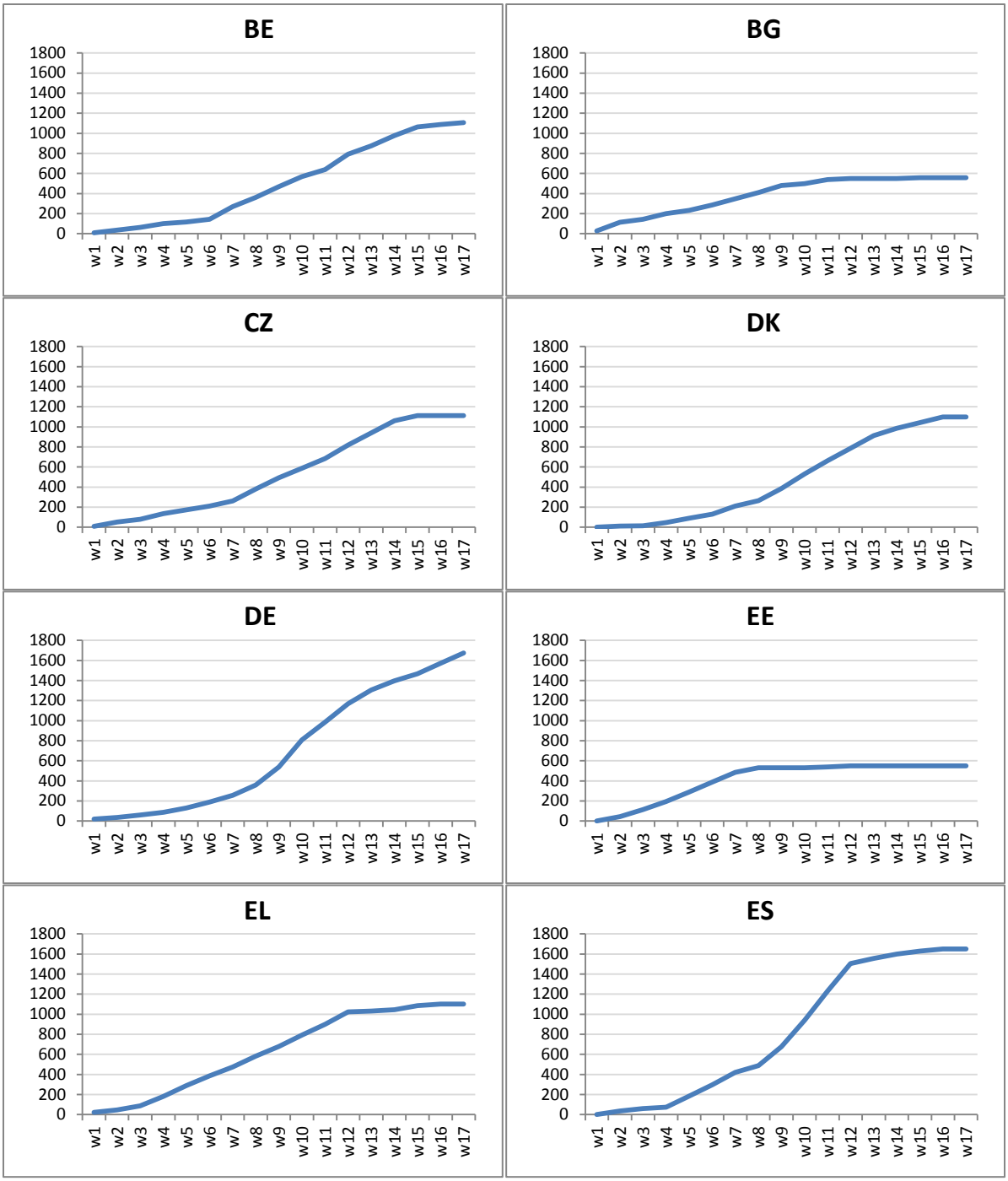
Annexes

A.1. Fieldwork progress charts

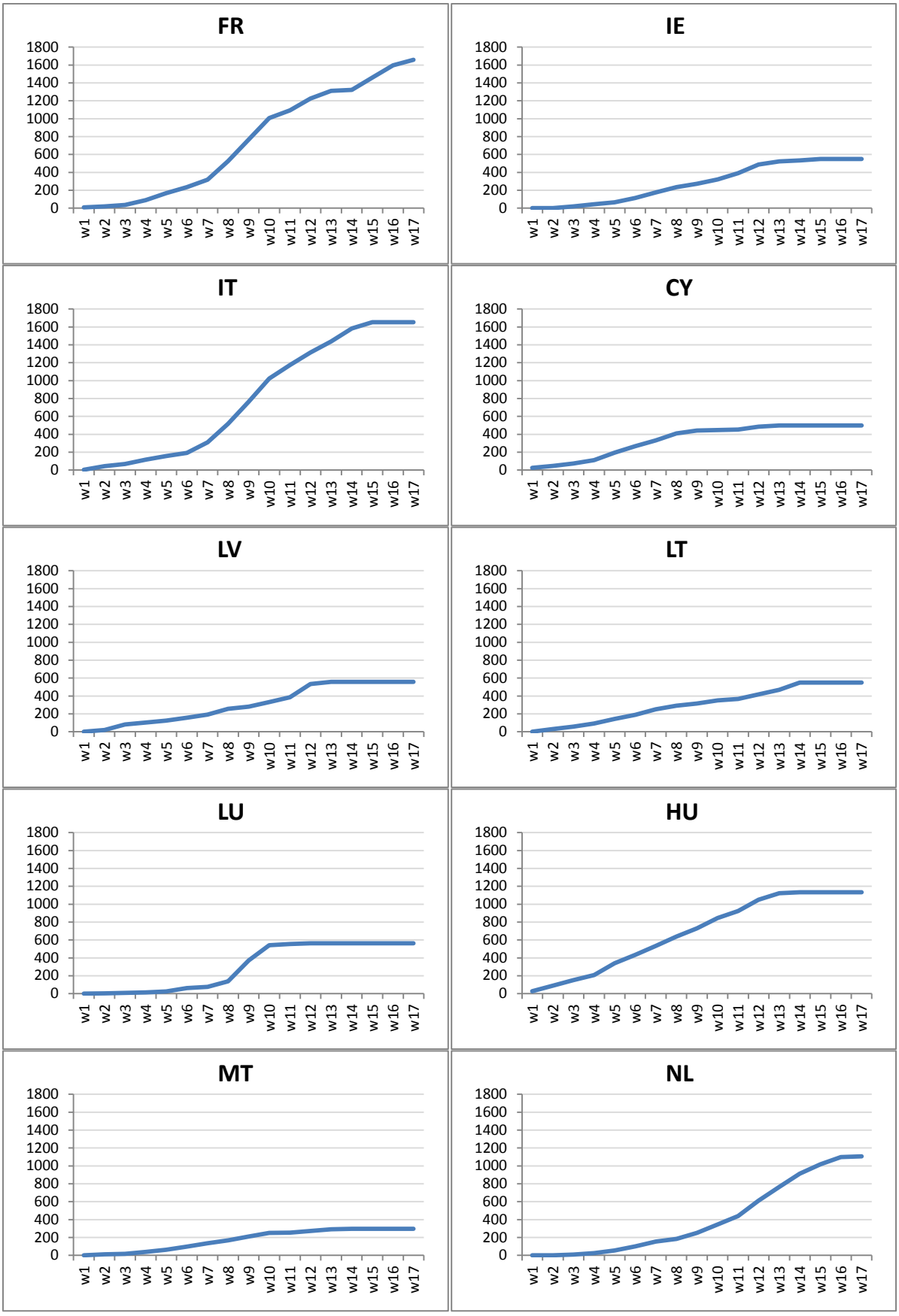
The below charts show the fieldwork progress for the interviews, in graphical format. Most charts have a pattern of accelerating progress, with relatively few interviews being completed in the first few weeks of the fieldwork (when the aim was to fully exhaust the initially assigned gross sample that included sample, twice the size of the interviewing target). From Week 8 onwards, the progress had accelerated and, in each country covered, remained generally steady until completion.

A.1.1 MM interviewing progress

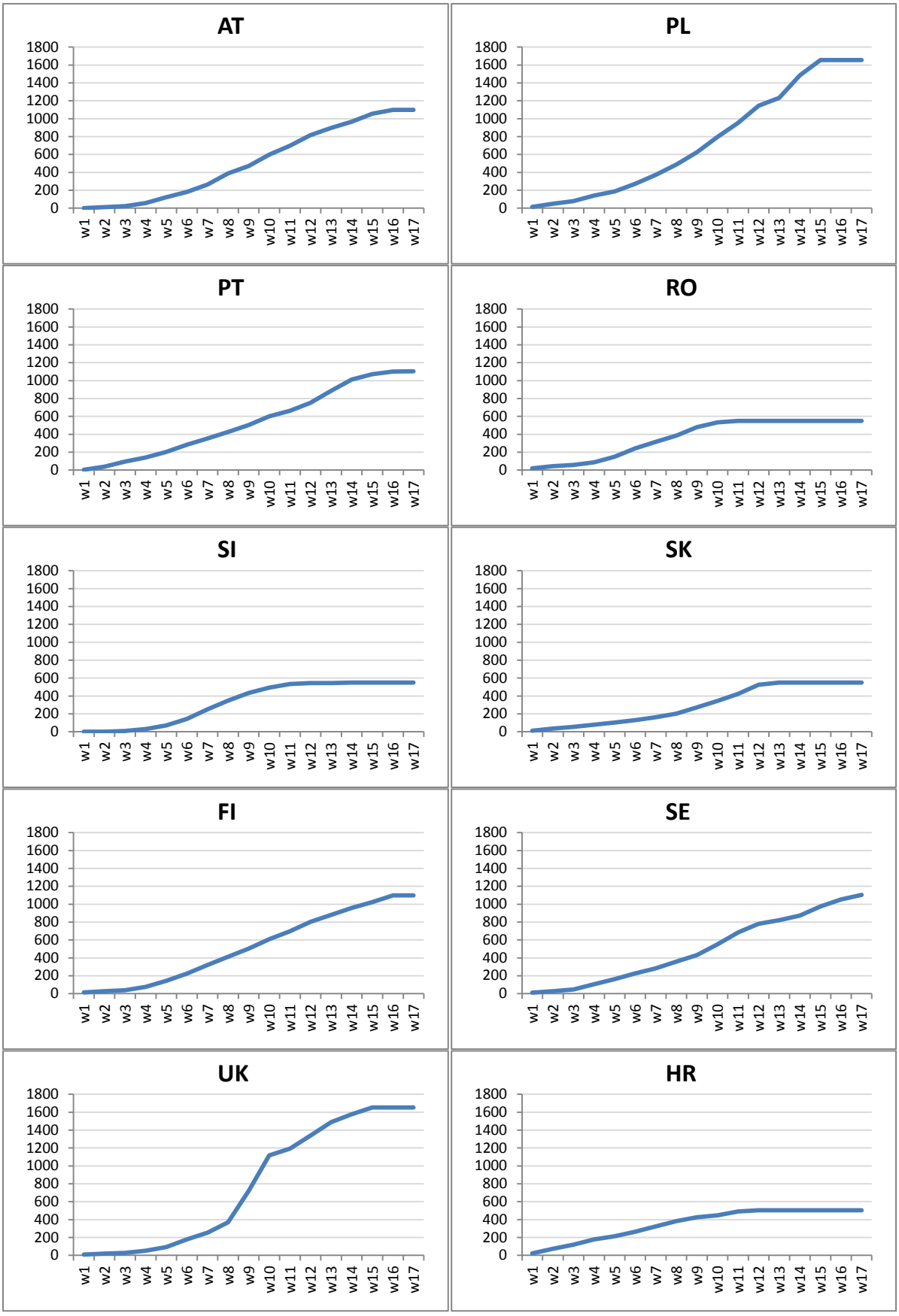
WEEKLY ACCUMULATION OF COMPLETED MM INTERVIEWS, BY COUNTRY



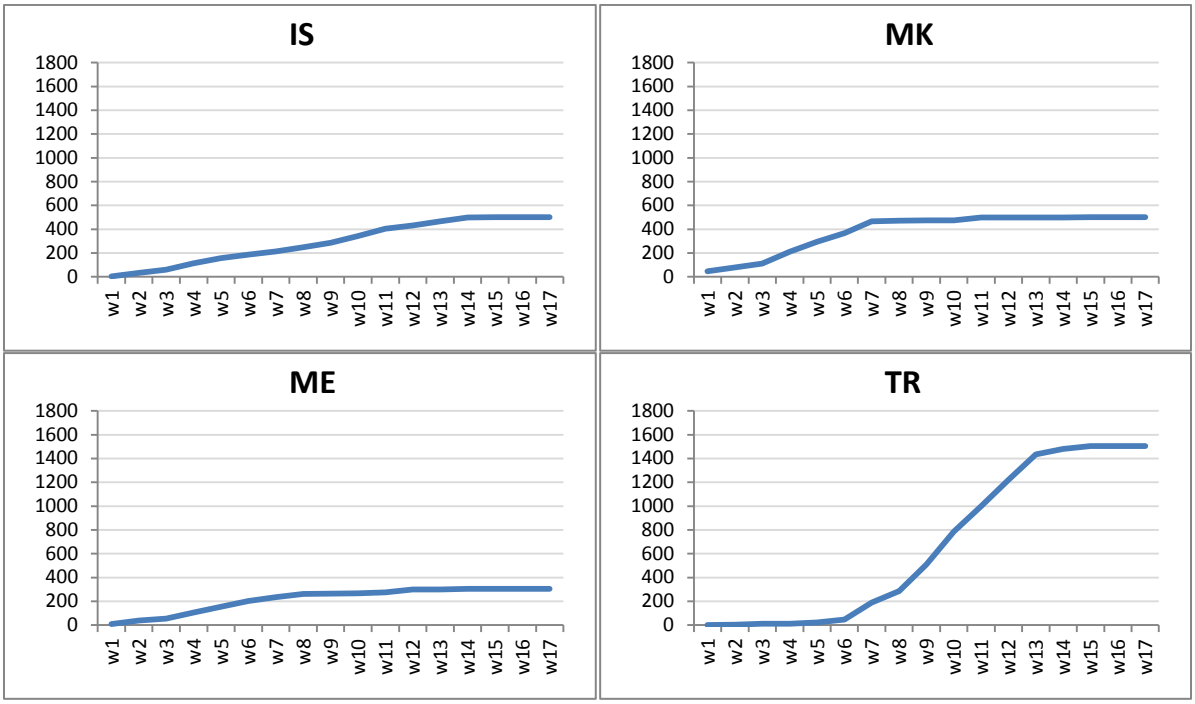
WEEKLY ACCUMULATION OF COMPLETED MM INTERVIEWS, BY COUNTRY



WEEKLY ACCUMULATION OF COMPLETED MM INTERVIEWS, BY COUNTRY

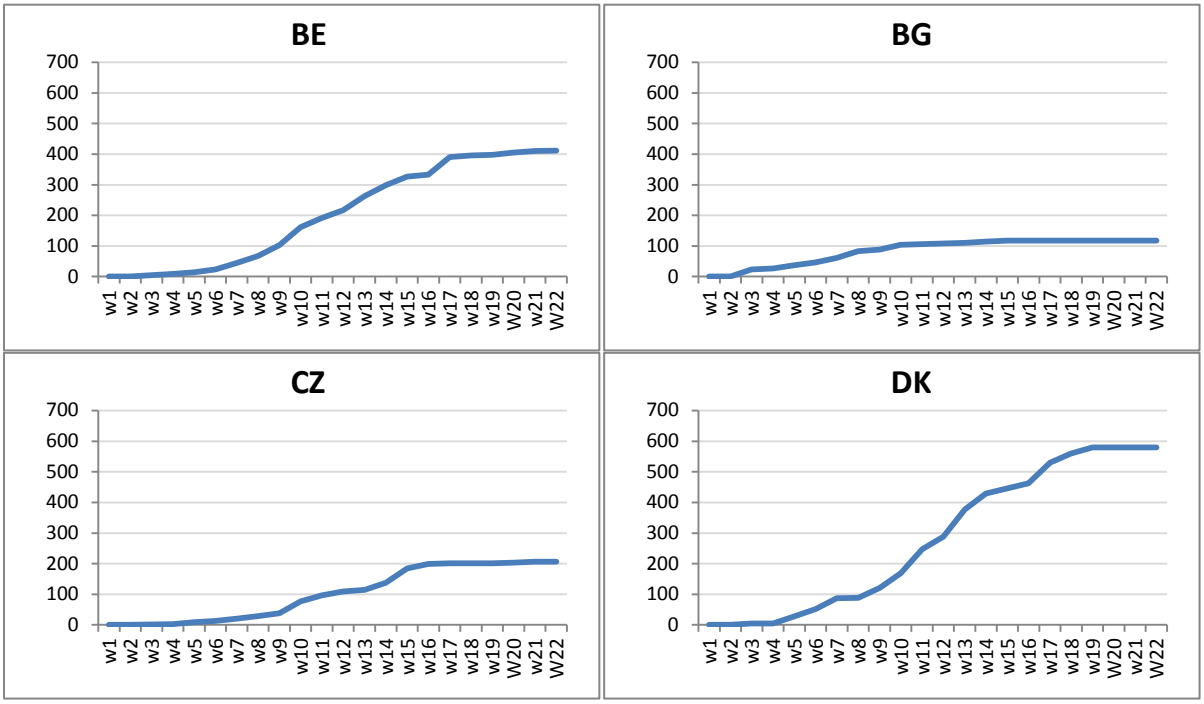


WEEKLY ACCUMULATION OF COMPLETED MM INTERVIEWS, BY COUNTRY

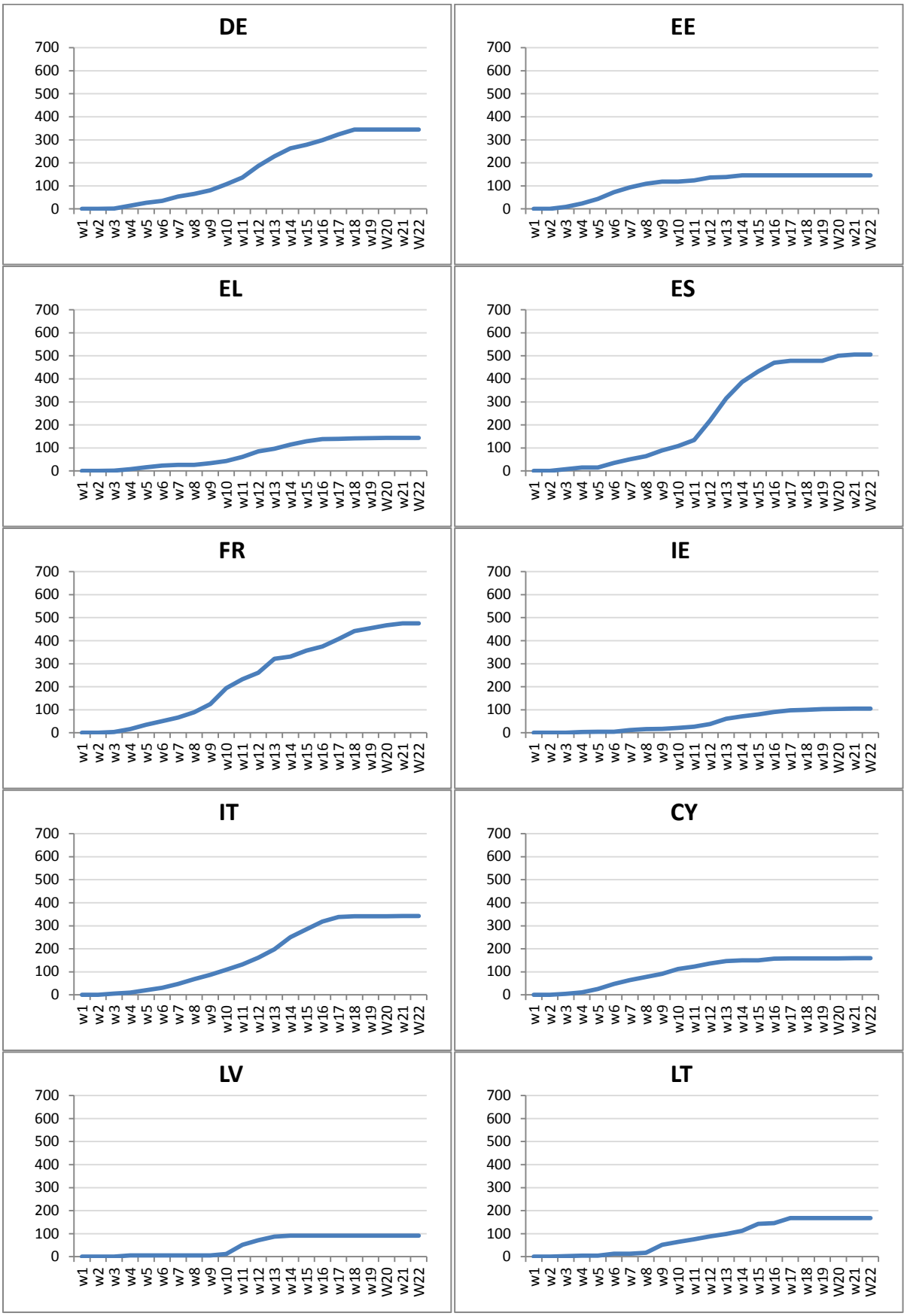


A.1.2 ER interviewing progress

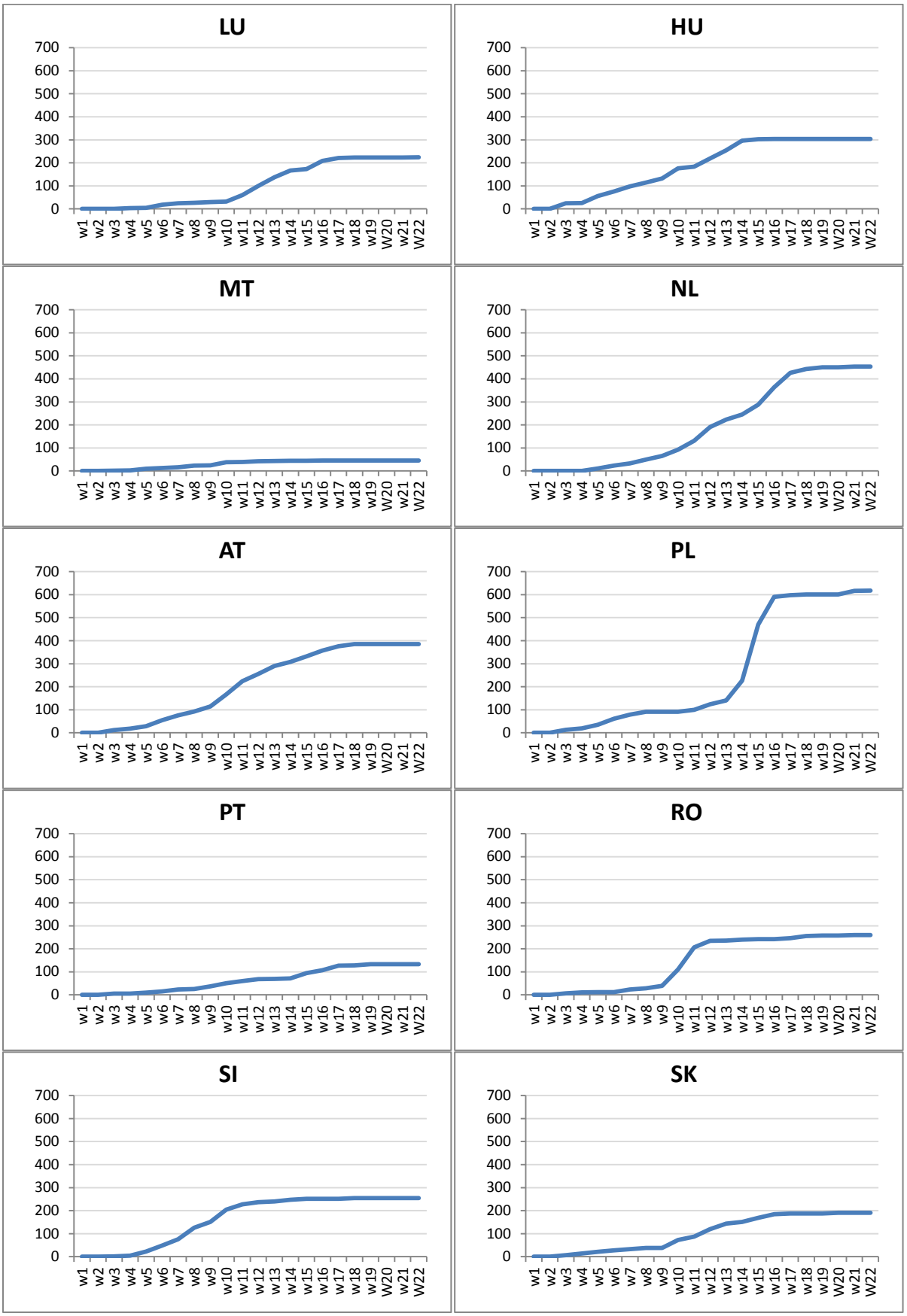
WEEKLY ACCUMULATION OF COMPLETED ER INTERVIEWS, BY COUNTRY



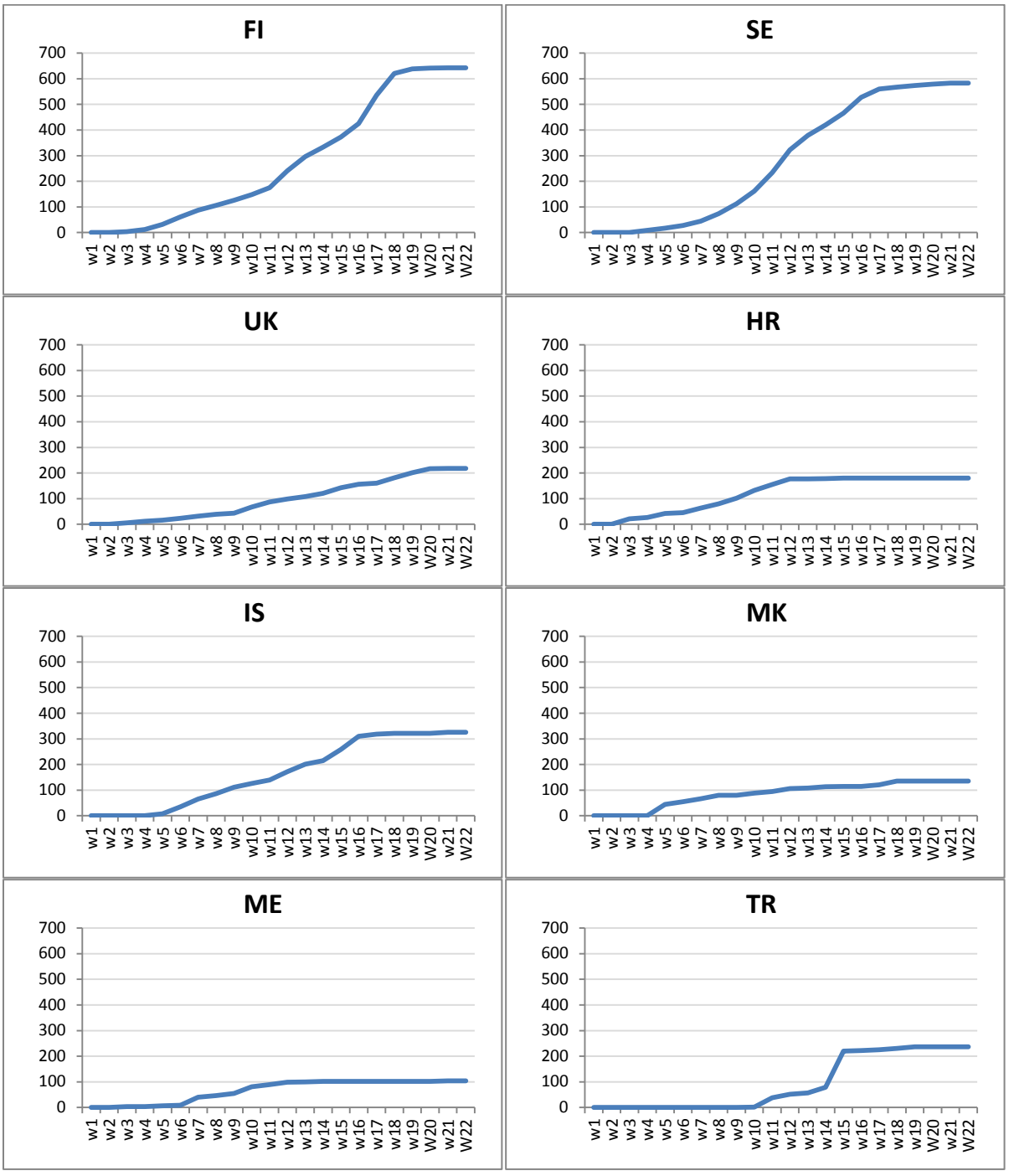
WEEKLY ACCUMULATION OF COMPLETED ER INTERVIEWS, BY COUNTRY



WEEKLY ACCUMULATION OF COMPLETED ER INTERVIEWS, BY COUNTRY



WEEKLY ACCUMULATION OF COMPLETED ER INTERVIEWS, BY COUNTRY



A.2 Assessment of the sampling implementation

As explained in the section about sampling, the survey designed, defined explicit strata in a 3x3 matrix, by broad industry sectors (producing industries, service industries and public services) as well as company size (number of persons employed: 10-49, 50-249, 250+). An allocation of the sample across these cells was prepared at the beginning of the project, and sample units were assigned to each specific stratum accordingly.

The more precise industry sector (NACE top-level sector) was used as an implicit stratification criterion, and was also used when purchasing the samples from the providers, in order to have a

controlled proportional availability of establishments / companies in each of the main sectors in the gross sample.

During fieldwork implementation, explicit stratification criteria (the 3x3 matrix) was monitored and controlled with pre-set quotas.

After the interviews were completed, the activity sector of each establishment was coded (based on an open-ended verbatim reply of the manager) according to NACE sectors. The information received at this stage, could potentially differ from the economic activity sector code assigned by the sample provider, when delivering the sampling frame. This difference may be a result of inaccuracy (most likely of the sampling frame), or simply because the establishment sampled had a different activity, compared to the company that was sampled in the first place, and from which the particular establishment was sampled (this applies only to the countries with establishment-level samples).

In most countries the plan and the actual outcome remained very close to one another, nevertheless in some countries the discrepancies were more pronounced. The differences resulted from nonresponse as well as from frame inaccuracies (i.e. unit misclassification in the sampling frame), that were corrected at the stage of weighting (see sampling report and weighting report).