



**Report on quality assessment of
contact data files in Round 5:
Final report 27 countries**

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1. Introduction

The European Social Survey (ESS) is an academically driven survey designed to study the interaction between the changing institutions, attitudes, beliefs and behavioural patterns of Europe's diverse population. ESS was first initiated in 2002 and entered its 5th round, covering 28 countries, in 2010-2012. From its inception, ESS has assigned high priority to equivalent measurement within the context of a cross-national and cross-cultural survey (Jowell et al., 2007).

From its very start, ESS has paid much attention to ensuring the data quality of the realised (obtained) sample by working with high quality random samples obtained through careful sampling procedures, developing questionnaires including multi-language translations, ensuring an appropriate fieldwork set-up, specifying the contact procedure including response-enhancement measures and making quality control back-checks. In addition, the data quality of the responses themselves is assessed to evaluate the measurement error of registered responses (interview data). Furthermore, contextual information including auxiliary statistics and information on national events is also collected at the country level. In addition to a number of data files (main, contact, sampling and interviewer data files), all survey documents are made publicly available. For the assessment of data quality, the Total Survey Error perspective is of critical importance (Groves, 1989; Groves et al., 2004; Groves and Lyberg, 2010; Biemer, 2010). Applying this perspective to cross-national survey research remains a challenge.

ESS survey documents constitute important sources of information for the evaluation of multiple aspects of data quality. These documents explain the difficulties experienced by countries with respect to the implementation of activities in line with the specifications, and resulting deviations. Users of ESS data need to be aware of these issues. This quality assessment report sheds lights on universal factors hampering cross-national survey research.

Since its inception, ESS has paid attention to the quality assessment of the realised (obtained) sample and of registered responses. This report focuses on the former. In line with the research objectives stipulated in the DACE programme¹ WP12 ("missing non-sampling errors in cross-national data"), the focus of this report is mainly on non-response.

In ESS Round 5, one new element was introduced with respect to the quality control of the contact data files. Under the DACE programme, the management responsibility for communicating with the National Coordinator (NC) teams on the editing of the contact data files was assigned to the staff of the Norwegian Social Science Data Services (NSD). Documentation on NSD-NC communication by item of the contact form/data file exists in the form of country processing reports discussing inconsistencies and missing information. Once preliminary contact data files were produced by NSD, additional consultation took place between NSD and KULEuven on the pre-release file, specifically

¹ ESS DACE project: The ESS-Data for a changing Europe, FP7 infrastructure project.

on the minimization of inconsistencies and on missing items for a restricted number of countries (17). The first public release of contact data files took place in May 2012 and included 23 countries. The second public release of contact data files took place in January 2013 and data are now publicly available for 26 countries.² This final report is on all participating countries except Austria (27 countries). The German data file is based on the country specific contact data file.

Outline of the study

Building on ESS' past experience with quality assessment work, accumulated over 4 rounds of ESS, this report assesses the pattern and quality of fieldwork strategies and response-enhancement efforts in ESS Round 5 (27 countries). On the basis of a theoretical framework described below, this report assesses the quality of the realised (obtained) sample taking account of fieldwork preparation, fieldwork implementation and subsequent follow-up. The purpose of this report is as follows:

- Assessment of the activities preparing data collection;
- Assessment of the general contact procedure (timing, number of contact attempts (total and by fieldwork duration and response status));
- Assessment of response and non-response situations;
- Assessment of different types of non-response in relation to observable data;
- Assessment of compliance with respect to non-contacts and refusal conversion activities;
- Assessment of follow-up activities including quality control back-checks before the fieldwork is finalized; and
- Discussion on tailored and country specific issues.

Section 2 presents TQM (Total Quality Management), a theoretical framework for the study of two types of error (non-response and measurement), the focus of this report being on the former, and operationalizes this framework through the concepts of process and output evaluation. Section 3 discusses data sources, methods and measures. Section 4 discusses results. Section 4.1 presents the results of the process evaluation. Sub-section 4.1.1 begins with a brief discussion on fieldwork inputs: interviewer training, interviewer work situation such as number employed for ESS, workload and payments and respondent recruitment mode. Sub-section 4.1.2 presents the general pattern of fieldwork activities from the perspective of the contact procedure, interviewer performance ratios and compliance issues in relation to contactability (non-contact outcomes) and refusal conversion activities. Section 4.1.3 briefly discusses the follow-up to fieldwork activities, namely quality control through back-checks. Section 4.2 discusses the results of the output evaluation (ineligibles, response vs. non-response rates, different types of non-response units) and discusses non-response bias identified through a comparison of response and

²The first quality assessment report was prepared on the basis of the first release of contact data files. This final report makes use of the third release (Dec. 2012) of the main file and the interviewer data file as well as the second release (Jan. 2013) of contact data files. ESS Website is <http://ess.nsd.uib.no/>.

non-response units with respect to observable data. Section 5 summarises and concludes. The appendix presents a description of country specific issues that arise from the data quality assessment.

2. Theoretical framework and operationalization of research

This section briefly discusses the Total Quality Management (TQM) framework (Loosveldt et al., 2004), which constitutes the basis for the data quality assessment. This framework has also been described in Billiet and Matsuo (2012).

2.1. Assessment of survey data quality: 'Total Quality Management' framework

The 'Total Quality Management' (TQM) framework (Loosveldt et al., 2004) is a framework for the assessment of data quality in the context of face-to-face surveys. TQM was developed to assess large-scale interview surveys involving central management teams and is thus appropriate for ESS. TQM is consistent with and builds on the strengths of existing frameworks such as '*Total Survey Error*' (Groves, 1989; Groves et al., 2004), '*Continuous Quality Improvement*' (CQI) (Biemer and Caspar, 1994) and the '*Total Design Method*' (TDM) (Dillman, 1978, 2001). TQM considers the complete process of survey production, which it decomposes into three phases: before, during and after the fieldwork (e.g. training and fieldwork preparation, contact procedure, and follow-up and feedback³).

Most importantly, TQM deals with two crucial issues in survey research: non-response and measurement error. The starting point of TQM, which is presented in Table 1, is the distinction between two kinds of interviewer tasks: non-interview-related tasks (contacting the target respondent and soliciting survey cooperation) and interview-related tasks (conducting standardized interviews). Upon completion, each of these two kinds of tasks produces a particular result that can be evaluated: non-interview-related tasks produce the 'realised (obtained) sample' while interview-related tasks produce 'registered responses'. Each of these results can be subjected to two kinds of evaluation: 'process evaluation' and 'output evaluation'.

The process evaluation assesses the entire survey production process with the objective of upgrading, managing and monitoring each implemented aspect in line with the specification document. With respect to the realised (obtained) sample, the process evaluation focuses on the fieldwork training and preparation, the contact procedure, and follow-up through quality control back-checks as well as feedback through country periodic fieldwork reports. The output evaluation of the realised (obtained) sample concerns the evaluation of non-response errors while the output evaluation of the registered responses concerns the evaluation of measurement errors. We would like to emphasize once more that the focus of this report is mainly on non-response.

³ This can, for instance, referred to country periodic fieldwork reports. National Co-ordinators (NCs) report fieldwork outputs periodically where CST responds to the progress of fieldwork.

Table 1: 'Total Quality Management' conceptual framework

	Interviewer tasks	
	To contact respondents and obtain their co-operation	The interview in the narrow sense
Result on completion	Obtained sample	Registered responses
Process evaluation	-Training and preparation -Evaluation of contact procedure -Follow-up and feedback	-Training and preparation -Evaluation of interviewer behaviour -Follow-up and feedback
Output evaluation	Evaluation of non-response errors	Evaluation of measurement errors

Source: Loosveldt et al., 2004.

2.2. Application of TQM: Approaches for process and output evaluation

In this section, we operationalize the TQM framework for the study of the realised (obtained) sample and discuss concrete methods for its process and output evaluations. The focus of this process and output evaluation is on one type of survey error, namely, non-response error.

2.2.1. Evaluation of the realised (obtained) sample

Process evaluation

The process evaluation of the realised (obtained) sample considers a number of issues including *training and preparation, the contact procedure, and follow-up and feedback*. Given the type of information available for each country, the focus of the evaluation is more particularly on the type and duration of the training provided to interviewers (e.g. whether the training covers refusal conversion and conversion techniques, whether interviewers are trained in filling out contact forms including interviewer observation data through interviewer instruction notes and/or country-specific photos), on the systematic application of a standardized fieldwork contact procedure to each sample unit in the sample frame, and on the implementation of follow-up visits or quality control back-checks to confirm the final outcome of the contact procedure. It also studies the impact of the type of sampling frame and respondent selection procedure on output rates.

Most important for the process evaluation of the systematic application of a standardized contact procedure to each sample unit in the sample frame is *assessing whether the contact procedure has been implemented in accordance with survey specifications*. This assessment focuses, for instance, on those sample units declared non-contact and assesses whether for these cases, the "4 golden rules" (on the number of contact attempts, the number of contact attempts made in evenings and weekends, and the period of time to be left between different contact attempts) have indeed been followed. It also focuses, for instance, on the coverage of refusal conversion efforts among initial refusals and resulting conversion

rates.⁴ The assessment of respondent recruitment methods also looks at whether ESS-specific introduction letters and brochures were provided and at whether initial contacts took place through face-to-face contacts. The use of incentives during the contact procedure and their nature is also looked at.

Another useful approach is fieldwork monitoring on a real-time basis. Such real-time monitoring concerns the response outcome at the sample unit level by fieldwork duration (weeks) and response status. The response status is distinguished by as to whether contact is achieved or not (contactability) and in the case of the former, the final outcome (either response or non-response). These fieldwork activities are affected by country-level organisational features including the number of interviewers employed in ESS and their performance. Interviewer workloads, the duration of interviewer activities and interviewer level response outcomes are additional areas to consider. Interviewer non-response rates can be divided into non-contact, refusal and other type of non-response (neither non-contact nor refusal).

Output evaluation

The output evaluation of the obtained/realised sample is achieved through an analysis of response and non-response rates and through an assessment of differences between respondents and non-respondents.

Proportion non-response

The consideration of response and non-response rates is important since high non-response rates increase the *likelihood* of non-response bias (Groves, 2006). The starting point for the calculation of response and non-response rates is the basic distinction at the sample unit level between 'completed interview' (I); 'partial interview' (P); 'refusal' (R); 'non-contact' (NC); 'other (neither non-contact nor refusal)' (O); and 'ineligible' (IE). Following established method by American Association for Public Opinion Research (AAPOR), the response rate is calculated by dividing the number of achieved valid and complete interviews by the number of eligible sample units: $[I/(I+P+R+NC+O)]^5$. Ineligible cases (deceased, having left the country, not residing at the identified address, residing in institution, demolished house, second home) are excluded.

Response and non-response rates are useful indicators for a quick study of the quality of the realised (obtained) sample. Since its inception, ESS has set the common targets of a

⁴ ESS formulated 8 clear fieldwork guidelines for participating countries: (1) Fieldwork period of at least one month between September – December; (2) Face-to-face briefing and training of all interviewers; (3) Limited interviewer workload (maximum of 48 assignments); (4) Face-to-face interviews must be conducted; (5) At least 4 visits/calls on different days – at least one in the evening and one during the weekend; (6) Visits spread over at least 2 different weeks; (7) No substitution at any stage; (8) The use of refusal conversion efforts is permitted (ESS, 2010) (Koch, et al., 2010).

⁵ ESS document (2010) 'Algorithm for computing final response codes by ESS National Coordinators: information from contact forms and/or keyed contact forms file'. *Document*, Katholieke Universiteit Leuven.

(minimum) 70 percent response rate and a (maximum) 3 percent non-contact rate. In addition, the quality of the realised (obtained) sample can also be assessed through an examination of the number and proportion of ineligibles in the gross sample.

Contact data files constitute the primary source of information for the study of response and non-response rates. Contact forms record observable data (housing and neighbourhood characteristics) and contact procedure information: the date, day, time, mode and outcome of each contact attempt for every sample unit, additional information on the type of non-response, and additional information on the outcome 'ineligible' for all types of sample frame. In the case of address-based and household-based sample frames, the household and respondent selection procedure is noted in the contact form (paper). For initial refusers, the interviewer notes in the contact form, the age and the gender and makes an assessment of the reason for refusal and of the likelihood of future cooperation. This information is crucial for the selection of candidates for refusal conversion activities.

The quality of the contact data file is of crucial importance for the evaluation of the quality of fieldwork implementation. In other words, if quality standards are not met, the evaluation objective cannot be met. The main quality requirements for contact forms are: (i) Contact forms should exist for all sample units; (ii) The information concerning final response codes and timing should be consistent between the main file and the contact data file; (iii) The contact forms should contain full details: 4 timing variables (date, month, hour, minute), mode, and 2 contact outcome variables ('resulb'/'outnib') for each of up to 10 or more contact attempts. All items must be properly recorded and recorded in a chronological order; (iv) Additional information must be present on initial refusers (refusal proxy) for up to the third refusal which includes the order of the visit; age; gender; refuser proxy; interviewer's assessment of future cooperation; and as many as 5 reasons for refusal; (v) Additional information for some variables e.g. number of telephone calls prior to first face to face visit (NUMTEL) and number of refusal conversion visits (RECONV) should be present; (vi) The interviewer number should be filled in for all sample units including those units where subsequently visits were made by different interviewers; (vii) information on the type of housing and neighbourhood characteristics should be collected for all sample units based on the interviewer's assessment of each variable⁶.

Information from the contact data files must be analysed together with information from other sources including reports from national coordinators and fieldwork managers (e.g. ESS documentation report, fieldwork questionnaire report) and data files (e.g. main file (registered response file), sampling data file, interviewer data file). The examination of (in)consistencies across the whole set of documentation and data is crucial for arriving at correct output rates. Let us take the total number of sample units as an example. The number of sample units included in the contact data files must equal the number of gross sample units including ineligibles, opt out list cases, and reserve sample units effectively

⁶ The quality assessment of observable data is documented in another ESS-DACE deliverable report 12.2.

used during the contact procedure. It should be noted that for the purpose of response rate calculations, 'interview' only refers to a valid and complete interview. When the response rate is calculated on the basis of the contact data files, the outcome of the last contact attempt is taken as the final response code. Refusals are constituted as exceptions and receive a code of a refusal even though the final response code may be other than refusal. If the last contact attempt results in non-contact or another outcome but the previous contact attempt had resulted in refusal, refusal is recorded.

Differences between respondents and non-respondents

Another way to evaluate the output of the realised sample consists of assessing differences between respondents and non-respondents. This can be done through comparing the realised (obtained) sample with the population or with information gathered from the contact data files or from interviews with refusals through follow-up surveys among non-respondents. Within the context of joint research activities (JRA) carried out in previous ESS rounds (ESS infrastructure project (ESSi)), such assessments focused on studying post-stratification weights⁷, reluctant respondents, the use of observable data, and the estimation of bias and adjustment through non-response surveys in selected countries. These specified four approaches in ESS research are consistent with different approaches dealing with non-response bias proposed by Groves (2006) and discussed extensively in Billiet et al. (2009) and Stoop et al (2010). The reader can also refer to the ESSi report (Alanya et al. 2011), which contains a comprehensive and critical review of the aforementioned approaches within JRA towards bias detection and estimation.

In this assessment report, non-response bias is studied on the basis of interviewer observable data concerning type of housing and neighbourhood characteristics.

3. Data source, methods and measures

3.1. Data source

The data used for the analyses included in this paper consist of information from national coordinators (ESS, 2012)⁸ and several data files including contact data files, interviewer data files, and main data files from Round 5.

3.2. Methods

In line with the research objective, the assessment is divided into two parts: process and output evaluation (Table 2).

Process evaluation

The process evaluation is mostly descriptive. It focuses on the assessment of compliance with protocol specifications on final non-contact and refusal conversion cases. This report

⁷ ESS DACE WP 12 includes this activity in task 3.

⁸ ESS Website is (<http://ess.nsd.uib.no/>).

also sheds lights on other areas, including fieldwork preparation activities, interviewer performance and follow-up activities, areas that were not particularly documented and analysed in previous ESS rounds.

Output evaluation

For the assessment of response and non-response rates, the same methods are applied as in previous ESS rounds (Matsuo et al., 2010a; Stoop et al., 2010)⁹. Differences between respondents and non-respondents are assessed on the basis of observable data (type of house, neighbourhood characteristics).

3.3. Measures

In accordance with the study framework and the information available in the datasets, the following variables were included in the analyses:

- *Process evaluation*: interviewer information (ID number); for each contact attempt, two response outcome variables ('resulb': result of visit; and 'outnib': result outcome when there was no interview), mode ('mode'), timing ('day', 'date', 'hour' and 'minute'); for initial refusal, interviewer assessments of future survey cooperation ('coop') and reason(s) for refusal ('rersb').
- *Output evaluation*: for each contact attempt, two response outcome variables ('resulb': result of visit and 'outnib': result outcome when there was no interview); interviewer observation data on type of housing ('type' of house respondent lives in) and neighbourhood characteristics ('access': entry phone or locked gate before reaching respondent's individual door; 'physa': assessment overall physical condition building/house; 'litteraa': amount of litter and rubbish in the immediate vicinity; 'vandaa': amount of vandalism and graffiti in the immediate vicinity).

⁹ See section 4.2.2. under output evaluation.

Table 2: Measures from the Total Quality Management conceptual framework on non-response errors

	Concepts	Measures
Process evaluation	Training and preparation	<ul style="list-style-type: none"> • Length & contents of training
	Evaluation of contact procedure	<ul style="list-style-type: none"> • Fieldwork period • Number of contact attempts and completed sample units by fieldwork weeks and response status • Sampling frame and proportion of ineligibles • Respondent recruitment methods • Interviewer workload • Interviewer performances on response/non-response outcomes
	Follow-up and feedback	<ul style="list-style-type: none"> • Quality control back-checks on response and non-response
Output evaluation	Evaluation of non-response errors	<ul style="list-style-type: none"> • Response and non-response rates • Studying different types of non-response through interviewer collected observable data

4. Results

In accordance with the aforementioned operationalisation, we present our analysis in this section starting with the process evaluation.

4.1. Evaluation of realised (obtained) sample: process evaluation

4.1.1. Fieldwork preparation: training, interviewers and recruitment mode

Taking a process evaluation perspective, Table 3 and 4 present on the basis of the contact data files, a number of country-level administration and survey design characteristics including the type of sampling frame, the extent of interviewer training, the interviewer employment status, the interviewer remuneration mode, the use of bonuses, the type of survey organisation, and the fieldwork period based on contact data files. All of this information is extracted from the ESS documentation report (ESS, 2012).

A number of trends can be observed with respect to administrative and survey characteristics. As for the type of sampling frame, the individual-based one accounts for the largest share, followed by the address-based and household-based ones accounting for almost equal shares. Most participating countries (20) provided between half a day and a full day of training; five countries (the Czech Republic, Hungary, Slovenia, Sweden, Ukraine) provided less than half a day of training; Portugal provided more than one day of training; and Germany provided no training at all. All countries except Switzerland provided written instructions to interviewers. All countries except Germany, Latvia and Ukraine provided training on refusal conversion activities. In many countries, the collection of data was undertaken by private survey organizations though in some countries (Finland, Norway, Sweden), this was done by the national statistical agency. In all but eight countries (Belgium, Bulgaria, Germany, Estonia, Greece, Ireland, Lithuania, United Kingdom), the same data collection organization was used as in previous rounds.¹⁰

¹⁰ See Round 4 information in European Social Survey (2011) ESS-4 Documentation Report.

Table 3: Country characteristics concerning administration and survey design factors

	Data collector	Type of sampling frame	Length of briefing	Use of instruction notes	Training on refusal conversion	Training on contact form	Training on observable data	Fieldwork duration (days)
BE	Significant GfK	Individual	Half to full day	Y	Y	Y	Y with photos	207
BG	ASA	Address	Half to full day	Y	Y	Y	Y but no materials	101
CH	MIS Trend	Individual	Half to full day	N	Y	Y	Y with photos	172
CY	European University Cyprus	Household	Half to full day	Y	Y	Y	Y with other materials	171
CZ	Factum Invenio, s.r.o.	Address	Less than half day	Y	Y	Y	Y with photos	47
DE	TNS Infratest Sozialforschung GmbH	Individual	No interview	Y	N	Y	Y with photos	141
DK	SFI-survey	Individual	Half to full day	Y	Y	Y	Y with photos	133
EE	GfK Custom	Individual	Half to full day	Y	Y	Y	Y with photos	230
ES	Metroscopia	Individual	Half to full day	Y	Y	Y	Y with photos	104
FI	Statistics Finland	Individual	Half to full day	Y	Y	Y	Y with photos	108
FR	GfK ISL	Household	Half to full day	Y	Y	Y	Y but no materials	173
GB	Ipsos MORI	Address	Half to full day	Y	Y	Y	Y with photos	181
GR	Opinion & Metron analysis	Household	Half to full day	Y	Y	Y	Y but no materials	60
HR	Ivo Pilar, Institute	Household	Half to full day	Y	Y	Y	Y but no materials	86
HU	Gallup Hungary	Individual	Less than half day	Y	Y	Y	Y with photos	52
IE	Ama(')rach Research	Address	Half to full day	Y	Y	Y	Y with photos + others	133
IL	B.I.&Lucille Cohen Institute	Household	Half to full day	Y	Y	Y	Y with photos + others	155
LT	UAB RAIT	Address	Half to full day	Y	N	Y	Y with photos	121

NL	GfK Panel Services Benelux	Household	Half to full day	Y	Y	Y	Y with no materials	187
NO	Statistics Norway	Individual	Half to full day	Y	Y	Y	N	159
PL	Centre of Sociologic/al Research at the Institute of Philosophy & Sociology Polish Academy of Sciences	Individual	Half to full day	Y	Y	Y	Y with photos	128
PT	TNS Praca Jose Queiros	Household	One day or more	Y	Y	Y	Y with photos	163
RU	CESSI	Address	Half to full day	Y	Y	Y	Y with photos	141
SE	SCB	Individual	Less than half day	Y	Y	Y	N	155
SI	Univ. Ljubljana, Public Opinion and Mass Communication Research Center	Individual	Less than half day	Y	Y	Y	N	103
SK	Institute of social sciences	Address	Half to full day	Y	Y	Y	Y with no materials	122
UA	Centre for Social & Marketing Research	Address	Less than half day	Y	N	Y	Y with photos	78

Source: European Social Survey (2012). *ESS-5 2010 Documentation Report*. Edition 3.0. Bergen, European Social Survey Data Archive, Norwegian Social Science Data Services.

Differences also exist with respect to the timing and the duration of the fieldwork. The project specification requires the data collection to take place in a specific period (September-December 2010) but only a few countries observed this requirement.¹¹ The average duration of the fieldwork among 27 countries was 134 days, approximately 5 months, ranging from below 47 days in the Czech Republic to 230 days in Estonia (ESS, 2012).¹² In other words, some countries finalized their fieldwork in 2 months while other countries needed more than 8 months.

Interviewer working conditions differ across countries although some common trends can be observed. Interviewers work mostly freelance or freelance in combination with other types of employment status, although some countries (e.g. Finland, Ireland, Israel, Lithuania, Norway, Sweden) work exclusively as survey organisation employees. Most countries make use of interview-based or some extension of interview-based remuneration modes. This can mean additional payments for correctly filled out contact forms (e.g. Croatia) or for good performance (high interview rates or good progress rates, e.g. Poland). In some countries, the remuneration of employee-interviewers was exclusively hourly-based (Finland, Norway), salary-based (Sweden), interview-based (Ireland, Israel) or an extension of salary-based (Lithuania). In many countries making use of interview-based or some extension of interview-based remuneration modes, bonuses were used. The average number of interviewers occupied with initial and reissued assignments in 26 countries was 148 in Round 5¹³. This number ranged from 49 in Cyprus to 493 in the Czech Republic.

¹¹ Finland and Hungary finalized their fieldwork in the specific period (September/October – December, 2010). Denmark and Slovenia finalized their fieldwork by January 2011 (ESS, 2012).

¹² According to the contact data file, the fieldwork duration is longer for some countries: 291 days for Denmark, 354 days for Germany and 364 days for Great Britain. These figures are however unlikely and are likely due to coding errors in the data set.

¹³ Slovakia is excluded from this calculation as the missing item on interviewer number is extremely high.

Table 4: Interviewer related attributes: type of employment, payments, use of bonus, number used for ESS data collection

	Type of employment	Type of payment	Use of bonus	Number of interviewers based on contact data file
BE	Freelance	Per interview	Y	127
BG	Freelance	Per interview & assignments	N	234
CH	Freelance & employees	Per interview & hourly	Y	75
CY	Freelance	Per interview	N	49
CZ	Freelance	Per interview	N	494
DE	Freelance	Per interview	Y	205
DK	Freelance	Per interview & assignments	N	91
EE	Freelance	Per interview	N	92
ES	Freelance & employees	Hourly & salary & other	Y	67
FI	Employees	Hourly	N	128
FR	Freelance & employees	Per interview	Y	159
GB	Freelance	Per interview	N	172
GR	Freelance	Per interview	N	139
HR	Freelance	Per interview & other	N	79
HU	Freelance	Per interview	N	184
IE	Employees	Per interview	N	119
IL	Employees	Per interview	Y	94
LT	Employees	Per interview & salary	N	110
NL	Freelance	Per interview & hourly	Y	162
NO	Employees	Hourly	N	109
PL	Freelance	Per interview & other	Y	178
PT	Freelance	Per interview	N	76
RU	Freelance	Per interview	Y	356
SE	Employees	Salary	N	127
SI	Freelance	Per interview	Y	65
SK	Freelance	Per interview	Y	N.A.
UA	Freelance	Per interview	N	209

Source: European Social Survey (2012). *ESS-5 2010 Documentation Report*. Edition 3.0. Bergen, European Social Survey Data Archive, Norwegian Social Science Data Services.

Table 5: Interviewer workload and performance ratios on response and non-response units

	Workload				Response (Interview) ratio				Non-contact ratio				Refusal ratio			
	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD
BE	3	169	31.39	24.20	0	100	44.56	16.89	0	7.14	0.58	1.45	0	55.56	21.87	13.8
BG	8	32	13.68	4.52	0	100	76.15	21.8	N.A.	N.A.	N.A.	N.A.	0	75.0	10.79	14.22
CH	1	1211	116.78	201.79	0	100	30.72	21.4	0	22.22	4.48	5.81	0	36.0	9.4	8.03
CY	1	78	32.92	21.47	0	100	56.06	36.12	0	43.59	5.07	9.72	0	73.53	8.95	13.50
CZ	1	8	7.19	1.83	0	100	67.24	19.98	N.A.	N.A.	N.A.	N.A.	0	100	26.0	19.20
DK	1	97	31.95	13.33	0	81.48	53.91	14.16	0	38.46	3.37	6.65	5.13	100	30.50	13.21
EE	1	108	38.38	22.72	0	100	47.32	25.48	0	80.0	10.58	13.85	0	56.25	15.65	12.11
ES	10	137	47.34	16.86	10.0	93.75	58.32	18.94	0	8.11	1.23	2.15	0	32.35	12.63	7.37
FI	5	59	27.79	9.84	18.18	83.33	52.88	13.11	0	27.27	1.69	3.97	0	55.56	23.29	9.96
FR	1	387	32.21	33.85	0	100	40.30	20.07	0	34.48	6.75	7.73	0	96.47	18.22	16.49
GB	10	89	33.19	15.19	7.50	85.0	44.07	16.18	0	25.0	3.71	5.34	0	58.70	20.65	11.83
GR	8	48	30.53	11.72	18.18	100	64.63	13.27	0	30.43	2.58	5.68	0	78.26	24.48	13.69
HR	8	88	40.70	15.84	0	100	50.99	22.72	0	44.44	6.56	10.11	0	96.88	31.47	19.61
HU	1	58	16.64	10.49	0	100	54.99	22.73	0	42.86	2.03	5.57	0	100	19.46	17.08
IE	1	86	38.33	13.95	0	100	57.04	23.65	0	70.0	20.11	15.90	0	66.67	12.59	12.63
IL	3	70	34.36	14.21	0	90.32	69.98	15.96	0	52.94	12.79	52.94	0	100	13.00	13.18
LT	1	136	49.49	30.16	0	100	32.13	20.80	0	50.0	8.4	11.40	0	89.80	22.82	19.11
NL	5	60	28.61	12.47	0	86.36	39.09	16.25	0	11.67	1.51	2.66	0	53.33	21.48	9.84
NO	1	136	35.57	26.67	0	100	44.37	20.46	0	6.45	0.62	1.54	0	63.64	16.73	13.14
PL	1	107	16.88	12.82	0	100	57.93	23.02	0	66.67	1.26	6.11	0	100	15.48	17.13
PT	8	95	42.96	22.37	0	100	64.46	16.71	0	37.5	3.74	6.76	0	75.0	21.26	15.21
RU	1	83	11.66	10.10	0	100	67.61	27.33	0	100	6.78	14.65	0	100	19.28	20.18
SE	1	115	31.94	18.05	0	100	40.03	18.28	0	8.33	0.59	1.67	0	80.49	21.37	15.13
SI	15	90	35.95	17.04	13.33	86.67	59.39	18.19	0	86.67	4.03	11.54	0	18.78	60.00	11.57
UA	1	54	14.56	8.51	0	100	63.47	20.41	0	80.0	7.99	12.54	0	100	23.96	18.17

Note: Germany and Slovakia are not included due to insufficient data quality to carry out analysis. Switzerland make use of extensive telephone contacts and these information are recorded in the contact data file.

The aforementioned Table 4 and 5 present some important trends with respect to interviewer-related attributes. According to the specification, interviewer workloads should not exceed 48 assignments. In some countries, the interviewer workload associated with the number of registered responses is already high (Halbherr and Koch, 2012). This workload increases further when, in addition to initial assignments, reassignments are also taken account of. In practice, all countries except Bulgaria, the Czech Republic and Greece allocated more than 48 assignments to one interviewer.

Before evaluating the contact procedure itself, Table 6 presents additional information of interest to us from a process control perspective during the fieldwork preparation time: advance letters, survey brochure and respondent incentive modes.

Most countries (exceptions being Bulgaria, France, Croatia and Ukraine) sent out letters in advance of an interviewer visit. Fewer countries (14) sent out survey brochures calling for survey cooperation, however. Various kinds of respondent incentives (conditional/non-conditional, monetary/non-monetary) were prepared. Some countries (e.g. Norway, Spain, United Kingdom) provided non-conditional monetary incentives while other countries (e.g. Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Greece, Hungary, Israel, Slovenia, Ukraine) provided no incentives at all.

Table 6: Items on respondent recruitment: advance letters, survey brochure, respondent incentives modes

	Use of advanced letter	Use of survey brochure	Use & type of respondent incentives
BE	Y	Y	Conditional non-monetary incentive, upon completion of the interview
BG	N	N	No respondent incentive
CH	Y	Y	Multiple kinds (un/conditional) and timing (before/upon completion of interview) of incentives were used
CY	Y	N	No respondent incentive
CZ	Y	N	No respondent incentives
DE	Y	Y	Conditional monetary incentive upon completion of interview
DK	Y	Y	No respondent incentive
EE	Y	N	Conditional monetary incentive upon completion of the interview
ES	Y	Y	Unconditional monetary incentive paid before the interview
FI	Y	Y	Conditional non-monetary incentive, upon completion of the interview
FR	N	Y	Conditional monetary incentive upon completion of the interview
GB	Y	Y	Unconditional monetary incentive paid before the interview
GR	Y	N	No respondent incentive
HR	N	N	No respondent incentive
HU	Y	N	No respondent incentive
IE	Y	N	Conditional monetary incentive upon completion of interview
IL	Y	Y	No respondent incentive
LT	Y	N	Conditional non-monetary incentive upon completion of interview
NL	Y	Y	Conditional monetary incentive, upon completion of the interview
NO	Y	Y	Unconditional monetary incentive paid before the interview

PL	Y	N	Unconditional non-monetary incentive provided before interview
PT	Y	Y	Unconditional non-monetary incentive provided before interview
RU	Y	N	Conditional non-monetary incentive, upon completion of the interview
SE	Y	Y	Conditional monetary incentive upon completion of the interview
SI	Y	Y	No respondent incentive
SK	Y	N	Conditional monetary incentive upon completion of the interview
UA	N	N	No respondent incentive

Source: European Social Survey (2012). *ESS-5 2010 Documentation Report*. Edition 3.0. Bergen, European Social Survey Data Archive, Norwegian Social Science Data Services.

4.1.2. Evaluation of contact procedure

General contact procedure characteristics

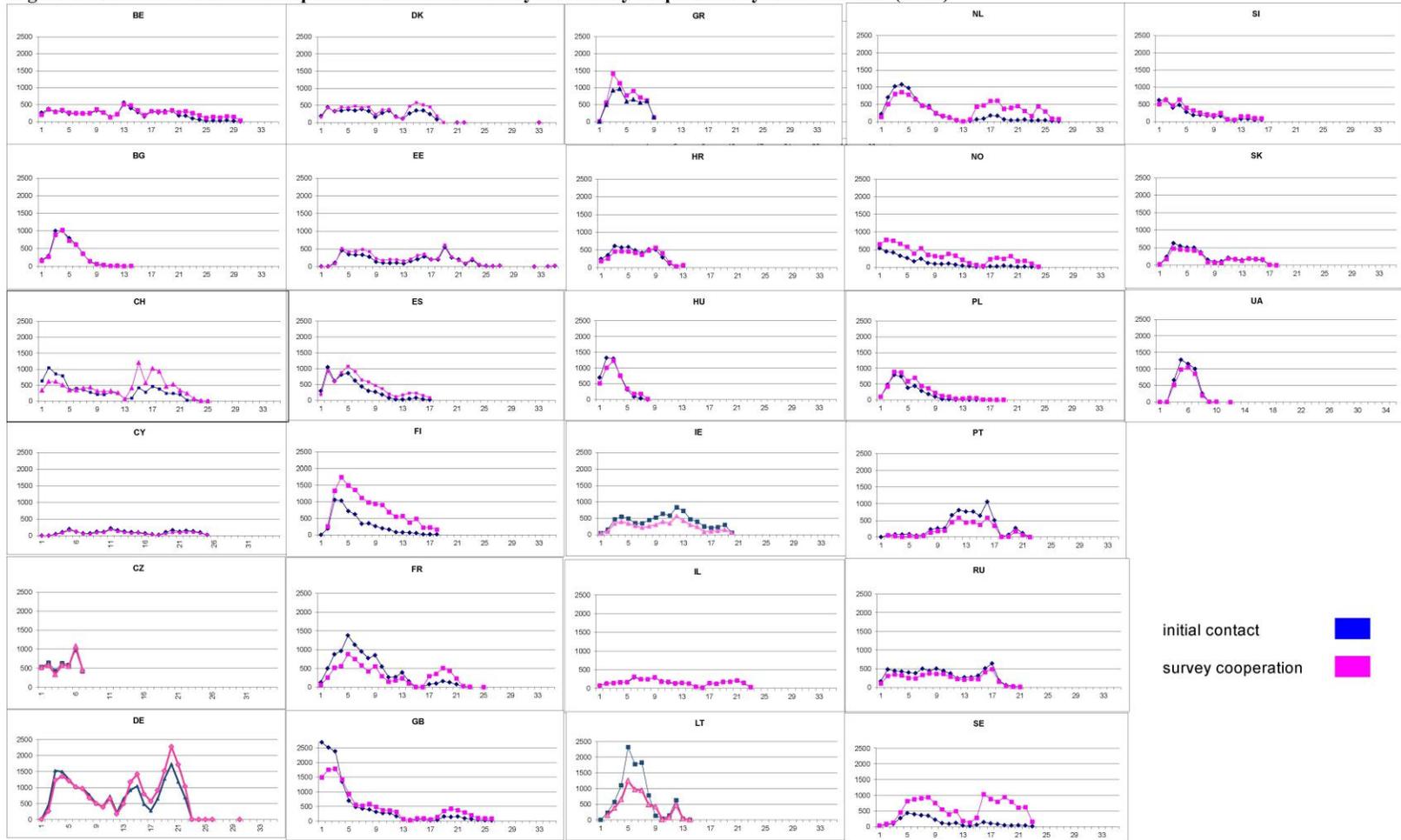
The focus of this subsection is on the evaluation of the contact procedure. It starts with a general discussion on the contact procedure from the perspective of the duration (timing) of the fieldwork expressed in weeks. It then presents an analysis of performance outcome rates at the interviewer level, and moves on to two important issues related to compliance with the specifications: contactability (non-contact) and refusal conversion activities.

We first consider fieldwork efforts and achievements at country level. Figure 1 provides an overview of fieldwork efforts through the number of contact attempts by fieldwork period (week) distinguishing between two types of events (achieving contact; achieving survey cooperation or non-response) thereby replicating the analysis applied in the National Survey of Family Growth (NSFG) (Lepkowski et al., 2010). This figure expresses how efforts are spaced across weeks in order to optimise possible outcomes. Generally speaking, in the first few weeks, more efforts are made to achieve initial contacts with the sample units. These kinds of efforts decrease as the fieldwork proceeds and are replaced by efforts to achieve survey cooperation. The overall spacing of efforts is related to the length of the fieldwork period and the number of interviewers available. The longer the fieldwork period, the more these efforts are spread out; the shorter the fieldwork period, the higher the heaps representing concentrations of efforts. In many countries, more than 1000 contact attempts are observed in particular weeks: Bulgaria; the Czech Republic; Finland; France; Germany; Greece; Hungary; Lithuania; the Netherlands; Portugal; Spain; Sweden; Switzerland; Ukraine, United Kingdom.

Let us take two countries as case studies, Belgium and Bulgaria, as the fieldwork period differs substantially between these two countries: 30 weeks and 14 weeks, respectively. In Belgium, the number of contact attempts to achieve initial contact remains higher than the number of contact attempts made to obtain survey cooperation until week 14. After that, the number of contact attempts made to obtain survey cooperation consistently (except for week 19) surpasses the number of contact attempts made to achieve initial contacts with sample units. This trend is less obvious for Bulgaria. The turning point (the number of contact attempts made to achieve survey cooperation surpasses the number of contact attempts made to achieve initial contacts) occurs much earlier (week 4) and the intensity of contact attempts is much higher (1000+). For Belgium, the highest heap, consisting of about 500 contact attempts, is observed for week 13. For Bulgaria, the highest heap, consisting of about 1000 contact attempts, is already observed for weeks 3 and 4.

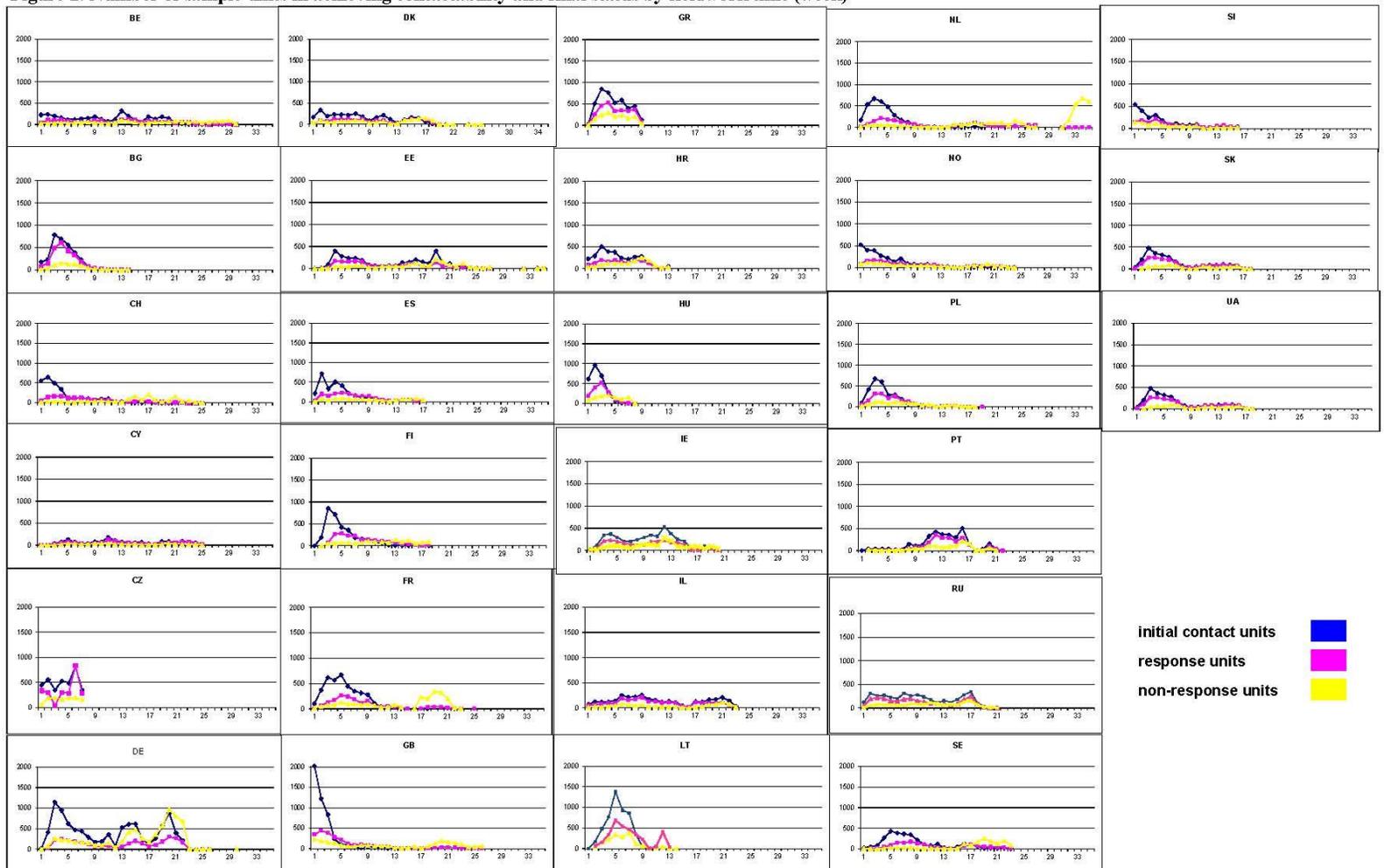
The second figure (2) provides an overview of duration (weeks) for three categories of units: initially contacted units; achieved response units; and achieved non-response units. A high number of sample units are initially contacted in the beginning of the fieldwork period. This is observed for all countries although intensity levels differ across countries. As one would assume, in most countries, a high number of response units in

Figure 1: Number of contact attempts to achieve contactability and survey cooperation by fieldwork time (week)



initial contact ■
 survey cooperation ■

Figure 2: Number of sample units in achieving contactability and final status by fieldwork time (week)



the beginning of the fieldwork period is gradually replaced by an increasing number of non-response units as the fieldwork period progresses. Figure 2 illustrates the number of response and non-response units expressed in weeks. Some countries constitute an exception (Cyprus, the Czech Republic, the Netherlands, Portugal, Russia, Slovakia and Ukraine) as the proportion of response units of the particular week is higher (70%+) than the proportion of non-response units in the last phase of the fieldwork period. One possible explanation for this – for instance, for the Netherlands – are rigorous refusal conversion efforts.

The nature of the contact procedure can also be assessed through an examination by country of the impact of the number of contact attempts on the final response status. The first column of Table 7 presents the mean number of contact attempts. Table 7 also shows mean numbers by response and non-response status. The non-response status category is further divided into three categories: i. refusal; ii. non-contact; iii. other (no refusal, no non-contact) type of non-response. The mean total number of contact attempts differs across countries: high means (4+) are observed for Finland, Germany, Great Britain, the Netherlands, Sweden and Switzerland¹⁴ while low means (<2) are observed for Bulgaria, Croatia, Cyprus, the Czech Republic, Greece, Ireland, Israel and Ukraine. Among non-respondents, means for non-contact cases are high in most countries (exceptions being Finland, Germany, Israel, Norway and Sweden).

The following Table 8 relates for each country the number of contact attempts to the response rate. It presents the cumulative response rate obtained after each contact attempt. Each additional contact attempt produces an increase in the response rate though cross-country differences exist. Like in previous rounds, in some countries (Cyprus, the Czech Republic, Greece, Ireland, Israel and Ukraine), initial contacts produce a response rate exceeding 40 percent, while in another 5 countries (Bulgaria, Croatia, Poland, Russia and Slovakia), initial contacts produce a response rate between 30 and 40 percent. For these countries, the subsequent increases in the response rate are smaller. All of these countries except Poland use non-individual sampling frames (e.g. household- or address- based sampling frames). In a number of countries (9) (Belgium, Denmark, Finland, France, Germany, Netherlands, Norway, Sweden, Switzerland), initial contacts produce low response rates remaining below 10 percent. Not infrequently these countries (Denmark, Finland, Norway and Sweden) pursue their first contact attempt by telephone.

¹⁴ These countries use relatively many telephone contacts as part of the contact procedure.

Table 7: Mean number of contact attempts by response and non-response units

	Total	Response			Non-response		
		All interview	Cooperative	Reluctant	Refusal	Non-contact	Not able & Other
BE	3.32	3.18	3.09	4.86	3.53	7.95	3.03
BG	1.75	1.71	1.68	2.47	1.78	N.A.	1.97
CH	5.68	3.49	3.26	5.2	8.16	10.37	6.6
CY	1.7	1.55	1.55	3	1.53	4.07	1.56
CZ	1.36	1.39	N.A.	N.A.	1.36	N.A.	1.19
DE	5.09	4.47	4.43	5.22	3.11	4.46	9.43
DK	3.07	3.16	3.16	5.5	2.42	4.76	3.86
EE	2.31	2.26	2.25	3.14	2.22	2.85	2.44
ES	3.71	3.48	3.39	5	4.63	7.55	3.67
FI	4.81	4.34	4.27	5.65	5.2	5.06	6.41
FR	3.3	2.85	2.78	4.56	3.48	5.72	2.71
GB	4.56	3.72	3.53	5.53	4.97	8.73	7.43
GR	1.65	1.54	1.5	3.8	1.69	5.47	1.27
HR	1.95	1.64	1.52	3.54	2.16	3.65	1.84
HU	2.32	1.9	1.88	3.11	2.85	6.02	2.66
IE	1.93	1.51	1.51	5.00	1.01	4.02	1.14
IL	1.23	1.23	1.17	2.33	1.35	1.13	1.21
LT	2,10	1,71	1.68	2.87	2.20	5.12	1.55
NL	4.25	3.85	3.35	5.31	4.95	8.28	4.14
NO	3.05	2.92	2.8	4.32	3.51	2.08	2.95
PL	2.26	2.07	1.98	3.78	2.8	3.89	2.73
PT	2.36	2.26	2.26	N.A.	2.37	4.98	2.46
RU	2.10	1.86	1.82	4.1	2.36	3.5	2.08
SE	4.4	3.77	3.56	6.2	5.56	5.1	4.14
SI	2.55	2.5	2.39	4.42	2.68	3.85	2.47
SK	2.14	1.94	1.92	3.45	2.36	3.68	2.85
UA	1.7	1.45	1.45	2.29	1.68	3.60	2.44

- N.A 'not applicable' cases refer to no cases.
- Not able and other type of non-response refers to all other type of non-response rather than non-contact and refusal cases.

Table 8: Obtained cumulative response rates (%) by every contact attempts

	BE	BG	CH	CY	CZ	DE	DK	EE	ES	FI	FR	GB	GR	HR
1	8.51	34.50	6.50	40.22	48,92	5,11	7.25	18.19	12.62	1.42	9.63	10.17	45.41	34.07
2	27.41	66.22	23.19	61.45	64,68	12,65	25.05	38.24	32.39	16.49	23.13	21.68	57.59	45.27
3	38.44	74.31	35.91	67.72	68,26	18,82	37.45	49.87	47.00	28.17	32.03	31.25	61.96	50.19
4	44.34	75.62	43.57	68.68	69,07	22,29	44.67	55.07	56.02	38.08	37.77	38.23	63.87	53.30
4+	53.43	76.06	53.24	71.86	70.19	29,71	54.88	56.19	68.57	59.43	47.05	56.26	65.60	54.23
	HU	IE	IL	NL	NO	LT	PL	PT	RU	SE	SI	SK	UA	
1	29.63	41,78	60.57	3.73	7.59	25,34	32.67	22.51	35.93	0.00	22.08	37.60	44.56	
2	48.21	52,12	69.21	19.34	29.78	31.57	51.35	44.28	48.83	23.85	39.85	56.92	57.56	
3	56.21	55,37	71.38	32.15	43.46	34.34	60.77	56.80	59.18	33.72	51.59	65.50	62.79	
4	59.51	56,94	71.85	41.29	50.41	36.01	65.62	61.90	63.50	39.78	58.14	70.95	64.45	
4+	60.67	59,79	72.25	60.00	58.50	39.42	69.98	67.00	66.64	51.81	64.39	74.66	64.45	

Interviewer performances: response and non-response rates

We now shift our attention to performance at the interviewer level as reflected in outcome rates including non-contact, refusal and interview rates. Performance at the interviewer level is important as the aggregate national performance is composed of individual interviewer level performances (See previous Table 5). Across 25 countries (Slovakia is not included because of too much information missing with respect to the interviewer number; Germany is not included because of high proportion missing information), average interviewer-level non-contact rates were 4.0%; average refusal rates 19.7%; average other types of non-response (neither non-contact nor refusal) 6.6%; and average interview rates 56.3%. Countries where average interviewer-level non-contact rates exceeded 5 percent were Croatia, Cyprus, Estonia, France, Ireland, Israel, Lithuania, Russia, and Ukraine. Countries where they remained below 1 percent were Belgium, Norway and Sweden. Average interviewer-level refusal rates exceeded 30 percent in Denmark, Croatia and Slovenia but remained below 10 percent in Cyprus and Switzerland. Average interviewer-level interview rates were close to 70 percent in countries like Bulgaria, the Czech Republic, Israel and Russia while low rates (<35%) were observed for countries like Lithuania and Switzerland.

As expected, country-level outcome/performance rates and average interviewer-level outcome/performance rates are fairly consistent. For example, countries with low non-contact and high response rates in the aggregate were also countries with low average non-contact and high average response rates at the interviewer-level and vice versa. This is also confirmed by moderately significant statistical associations on the basis of Pearson scores between country-level outcomes and interviewer-level performances rates. Israel aggregate country-level rates were 72 percent response rate, 13 percent non-contact rate, and 12 percent refusal rate while Israel average interviewer-level rates were 70 percent, 13 percent and 13 percent respectively.

On the basis of other studies of interviewer satisficing behaviour (e.g. Matsuo and Loosveldt, 2012), it can be said that the aforementioned interviewer-level outcome/performance rates strongly correlate with each other. On the basis of interviewer performance in 25 countries where the interviewers are condensed as one group, Table 9 shows that when the workload (number of total assignments) is added to the picture, small but positive correlations at the interviewer level are found between the workload and the non-contact rate on the one hand, and moderate negative correlations between the workload and the response (interview) rate on the other hand. Moderate negative correlations are found between non-contact rates and response (interview) rates and even stronger ones between refusal rates and response (interview) ones. In other words, the higher the non-contact/refusal rates, the lower the response (interview) rates. Small but negative correlations are also found between non-contact rates and refusal rates.

Table 9: Correlations between workload and response and non-response interviewer performance ratios (N=3694)

	Workload	Response	Non-contact	Refusal
Workload	1.00	-0.21***	0.05**	NS
Response	-0.21***	1.00	-0.25***	-0.47***
Non-contact	0.05**	-0.25***	1.00	-0.07**
Refusal	NS	-0.47***	-0.07**	1.00

*p<.05; **p<.01; ***p<.001

In the next two sub-sections, we take a closer look at two issues pertaining to response enhancement measures described in the specification: namely contactability and refusal conversion activities.

Event specific 1: Contactability

The ESS specification stipulates that the non-contact rate should not exceed 3 percent. However, as will be discussed later with respect to Table 16, more than half (16) of all participating countries achieved higher (3+%) non-contact rates. In order to study in a more detailed manner whether the contact procedure was implemented in full accordance with all specifications and protocols, the compliance with the "4 golden rules" to minimize non-contact is examined. These rules concern: (1) the number of contact attempts, the number of contact attempts made in evenings (2) and (3) weekends, and (4) the period of time left between different contact attempts.

The analysis is restricted to 25 countries as there were no non-contacts in Bulgaria and the Czech Republic. Table 10 presents the number of contact attempts made to final non-contacts in three categories: (1) Fewer than 4 contact attempts; (2) 4 contact attempts; (3) more than 4 contact attempts. Even though many countries made a sufficient number of contact attempts to final non-contacts, some countries including Estonia, Israel, Norway and Russia, made a smaller than required number of contact attempts (e.g. in approximately 50+% of cases, fewer than 4 contact attempts were made). Except for Norway, all countries making fewer than the required number of contact attempts had non-contact rates exceeding 3 percent. With the exception of Finland and Poland, all countries making a larger than required number of contact attempts had non-contact rates below 3 percent. Some countries (France, Switzerland, United Kingdom) made sufficient efforts but even so had non-contact rates above 3 percent.

Table 10: Compliance with four golden rules to minimize non-contacts

	Number of contact attempts (%)			Evening (%)			Weekend (%)			Period (%)		Total efforts (%)
	<4	4	4+	none	once	1+	none	once	1+	< 2 weeks	2 weeks+	
BE	4.76	2.38	92.86	0.00	11.90	88.10	9.52	35.71	54.76	9.52	90.48	83.33
CH	9.71	12.14	78.16	13.59	17.48	68.93	52.43	27.67	19.90	14.08	85.92	35.44
CY	3.81	91.43	4.76	16.19	18.10	65.71	36.19	38.10	25.71	66.67	33.33	18.10
DE	46.83	13.59	39.58	38.65	28.63	32.72	54.62	31.66	13.72	43.27	56.73	23.09
DK	38.68	11.32	50.00	28.30	28.30	43.40	16.98	22.64	60.38	37.74	62.26	49.06
EE	53.75	36.25	10.00	36.25	33.13	30.63	35.31	36.88	27.81	66.25	33.75	20.94
ES	0.00	2.27	97.73	0.00	0.00	100.00	0.00	36.36	63.64	0.00	100.00	100.00
FI	40.74	22.22	37.04	9.26	29.63	61.11	88.89	9.26	1.85	18.52	81.48	7.41
FR	1.76	0.00	98.24	0.88	20.59	78.53	0.00	32.94	67.06	9.71	90.29	88.53
GB	1.18	1.57	97.24	1.97	11.42	86.61	5.91	18.90	75.20	2.36	97.64	90.94
GR	0.00	0.00	100.00	5.50	26.61	67.89	3.67	36.70	59.63	88.07	11.93	11.01
HR	22.01	72.73	5.26	35.89	34.93	29.19	14.83	36.84	48.33	32.06	67.94	39.71
HU	0.00	1.52	98.48	6.06	25.76	68.18	1.52	9.09	89.39	15.15	84.85	80.30
IE	0.00	99.46	0.54	2.58	65.31	32.12	28.68	55.42	15.90	88.29	11.70	8.27
IL	98.80	0.72	0.48	59.86	37.98	2.16	73.32	25.96	0.72	99.28	0.72	0.72
LT	0.21	39.58	60.21	6.25	14.17	79.58	14.17	33.13	52.71	83.75	16.25	12.29
NL	2.47	1.23	96.30	2.47	7.41	90.12	20.99	40.74	38.27	1.23	98.77	79.01
NO	83.33	11.11	5.56	27.78	44.44	27.78	75.00	25.00	0.00	61.11	38.89	8.33
PL	42.86	21.43	35.71	17.86	28.57	53.57	46.43	25.00	28.57	28.57	71.43	39.29
PT	0.00	47.12	52.88	7.69	27.88	64.42	0.96	32.69	66.35	83.65	16.35	14.42
RU	60.40	29.70	9.90	9.90	40.26	49.83	22.11	30.69	47.19	87.79	12.21	6.93
SE	45.00	5.00	50.00	30.00	25.00	45.00	95.00	5.00	0.00	30.00	70.00	5.00
SI	41.89	10.81	47.30	14.86	36.49	48.65	41.89	27.03	31.08	45.95	54.05	32.43
SK	25.49	64.05	10.46	33.99	37.25	28.76	22.88	47.71	29.41	51.63	48.37	27.45
UA	17.12	77.03	5.86	25.23	27.03	47.75	18.47	27.48	54.05	84.68	15.32	13.51

* Bulgaria and the Czech Republic had no non-contacts.

The same table presents the number of contact attempts made on *evenings* and *weekends* divided into three categories: (1) none, (2) one, and (3) more than one. Only Spain complied completely with both specifications and achieved final non-contact rates lower than 3 percent. Like in previous rounds, France complied with both specifications (evenings and weekends) but still achieved high non-contact rates. Countries with high non-contact rates (3%+) and a low number of contact attempts made on evenings (<80 percent) are: Croatia, Denmark and Ukraine. Countries with high non-contact rates (3%+) and a low number of contact attempts made on weekends (<80 percent) are: Cyprus, Ireland, Russia, Slovenia, Switzerland. Countries with high non-contact rates (3%+) and a low number of contact attempts made on both evenings and weekends (both <80 percent) are: Germany, Estonia, Israel and Slovakia. Among high non-contact rate countries (16), six countries did not observe the fourth rule (80%+ observed in less than 2 weeks).

Looking at compliance with the four golden rules (to minimize non-contacts) in the aggregate through comprehensive scores (total efforts %), two groups of high performance respectively low performance countries clearly emerge. High non-contact rate countries generally did not comply well with the four golden rules, the most extreme examples being Israel. France and Great Britain constituted exceptions in the sense that, like in previous rounds, in spite of good compliance (total efforts are nearly 90%), final non-contact rates remained high.

Event specific 2: Refusal conversion process

Refusal conversion activities constitute another crucial part of response enhancement measures. Refusal conversion activities are strongly recommended in the specification and related documents as they can substantially boost the final response rate (See Table 11 for these fieldwork inputs). Table 12 presents two types of response rates: without vs. with refusal conversion activities. While the average increase in the response rate is 2.9%, for several countries, refusal conversion activities affected final response rates to a substantial extent: Great Britain (+5.5%); Netherlands (+15.1%); Norway (4.8%); Spain (+4.1%), Switzerland (+6.3%).

Table 11: Fieldwork inputs in relation to refusal conversion activities

	Training on refusal conversion	Country strategies	Total efforts on refusal conversion among initial refusers	Efforts on cooperative respondents	Efforts on reluctant respondents
BE	Y	Y	4.56	3.09	4.86
BG	Y	Y	2.52	1.68	2.47
CH	Y	Y	8.13	3.26	5.2
CY	Y	N	2.60	1.55	3
CZ	Y	N	2.97	1.39	N.A.
DE	N	N	4.43	4.43	5.23
DK	Y	Y	3.68	3.16	5.5
EE	Y	Y	3.32	2.25	3.14
ES	Y	Y	4.89	3.39	5
FI	Y	Y	5.51	4.27	5.65
FR	Y	Y	3.79	2.78	4.56
GB	Y	Y	5.82	3.53	5.53
GR	Y	Y	3.39	1.5	3.8
HR	Y	N	3.42	1.52	3.54
HU	Y	Y	3.33	1.88	3.11
IE	Y	Y	5.00	1.51	5.0
IL	Y	Y	2.46	1.17	2.33
LT	N	Y	3.24	1.68	2.87
NL	Y	Y	5.36	3.35	5.31
NO	Y	Y	3.93	2.8	4.32
PL	Y	Y	3.59	1.98	3.78
PT	Y	N	N.A.	N.A.	N.A.
RU	Y	Y	3.47	1.82	4.1
SE	Y	Y	5.33	3.56	6.2
SI	Y	Y	3.92	2.39	4.42
SK	Y	N	3.66	1.92	3.45
UA	N	N	2.76	1.45	2.29

- Efforts refer to number of contact attempts
- While strategies do not exist for some countries, refusal conversion activities are defined according to our definition. Portuguese efforts are not included in the table as no efforts are also found in our analysis.
- Source: European Social Survey (2012). *ESS-5 2010 Documentation Report*. Edition 3.0. Bergen, European Social Survey Data Archive, Norwegian Social Science Data Services; and contact data files.

With respect to refusal conversion activities, the extra gains made with respect to the final response rate have to be compared to the extra efforts made: *how much gain for how much effort?*

Refusal conversion consists of re-approaching initial refusals in order to persuade them to reconsider their participation in the survey. Initial refusers are supposed to be assessed by the interviewer and the type of initial refusal (soft/hard), as well as the reason for the initial refusal (bad timing, no time, etc.) are supposed to be well recorded in the contact forms. On this basis, potential respondents can be identified and re-approached. In many cases, initial refusers can become respondents if, for instance, their initial encounter with the interviewer occurred in particular circumstances (e.g. bad timing) or interaction with the first interviewer can be altered through appropriate interviewer tailoring techniques.

As Table 11 shows, all countries except Germany,¹⁵ Lithuania and Ukraine provided training on refusal conversion activities to interviewers although other countries like Croatia, Cyprus, the Czech Republic, Germany, Portugal and Slovakia¹⁶ reported that they did not develop specific refusal conversion strategies. Different kinds of strategies can be developed but they generally consist of selecting promising initial refusers on the basis of interviewer assessments of future survey cooperation (mostly soft refusers) or by region (e.g. regions with relatively low response rates) and sending out experienced interviewers familiar with refusal conversion. Refusal conversion strategies can include additional response enhancement measures such as the use of call centres or web-sites so that selected sample units can acquire additional information about ESS. For some countries, innovative approaches were reported. Finland, for instance, paired its interviewers (teams of interviewers were put together) and when one interviewer was refused the other was sent in. Norway sent additional letters to initial refusers and foresaw lottery tickets for them while interviewers received additional training on refusal conversion and shared their experience thereafter (ESS, 2012). Country details on response enhancement and refusal conversion activities are discussed in section 6.

A first important step in the assessment of refusal conversion activities consists of identifying the scope or coverage of these activities (the proportion of initial refusers targeted) as well as the conversion rates (among those re-approached) associated with these activities. Like in previous rounds of ESS, initial refusers are for these purposes grouped into 4 categories: (1) not re-approached; (2) re-approached but no contact; (3) re-approached but refusal; (4) re-approached and interview completed.

As Table 12 shows, substantial cross-country variation is observed with regard to the scope or coverage of refusal conversion activities. Under Round 5, a high proportion of initial refusers (80+%) were re-approached in the same countries as in the previous

¹⁵ Germany did not provide any interviewer training.

¹⁶ Except for Croatia, Germany and Slovakia, all other countries have minimum refusal conversion activities observed in the analysis of contact data files.

round - Netherlands (83.72%), Switzerland (80.40%) – and some additional ones - Norway (75%) and Sweden (72%). Rather limited efforts (<20% of initial refusers re-approached) are observed in countries like Denmark, Estonia, Greece and Ireland even though refusal conversion strategies were formulated.^{17,18} The conversion rate¹⁹ also differed substantially across countries. This was the result of differences in coverage rates of initial refusers, and differences with respect to the use of experienced interviewers in refusal conversion activities. Conversion rates higher than 20 percent were observed for Bulgaria, Israel, the Netherlands and Spain while lower rates (<5 percent) were observed for countries like Denmark, Estonia, Greece, Ireland and Lithuania.

¹⁷ According to National Co-ordinator, refusal conversion strategies were not formulated in Croatia, Cyprus, the Czech Republic, Germany, Portugal, Slovakia and Ukraine. For several countries including Bulgaria, Denmark, Greece, Ireland, Lithuania and Sweden did not report number of visit when refusal conversion activities started ('reconva' variable in the data set) even though they have formulated strategies at the country level.

¹⁸ This proportion is calculated on the basis of proportion of initial refusers divided by approached cases during refusal contact procedure.

¹⁹ In the corresponding Table 12, figures refer to overall success rates.

Table 12: Process and outcome of refusal conversion attempts

	N				Rates				
	No attempt	Non-contact	Refusal	Interview	Coverage rate	Success rate among reapproched	*Overall success rate	Initial response rate	Final response rate
BE	653	31	352	87	41.89	18.51	7.75	50.71	53.43
BG	338		17	97	25.33	85.09	21.56	73.03	76.06
CH	197	63	571	178	80.40	21.92	17.62	46.94	53.24
CY	167		2	3	2.91	60.00	1.74	71.67	71.86
CZ	896	4	25	0	3,14	0	0	70,19	70,19
DE	2754	110	1257	182	36.72	11.70	4.31	24.02	25.81
DK	771	8	66	4	9.21	5.13	0.47	54.75	54.88
EE	455	13	70	28	19.61	25.23	4.95	55.31	56.19
ES	259	20	143	113	51.59	40.94	21.12	64.46	68.57
FI	389	55	414	98	59.31	17.28	10.25	56.33	59.43
FR	486	148	751	72	70.88	7.42	5.26	45.09	47.05
GB	633	129	511	236	58.40	26.94	15.73	50.78	56.26
GR	971	4	87	45	12.29	33.09	4.07	64.51	65.60
HR	766	42	235	90	32.45	24.52	7.96	51.25	54.23
HU	363	73	246	36	49.44	10.14	5.01	59.27	60.67
IE	568	568	2	1	12.69	12,69	0.18	59,60	59,62
IL	320	13	51	105	34.56	62.13	21.47	68.94	72.25
LT	1132	78	134	39	18.16	15.54	2.82	38.50	39,42
NL	240	61	698	460	83.72	37.74	31.59	44.91	60.01
NO	242	36	560	127	75.08	17.57	13.19	53.69	58.50
PL	297	16	162	87	47.15	32.83	15.48	66.49	69.98
RU	772	46	112	49	21.14	23.67	5.01	65.38	66.64
SE	322	50	663	114	72.04	13.78	9.93	47.88	51.81
SI	399	17	75	79	29.95	46.20	13.84	60.76	64.39
SK	384	6	33	22	13.80	36.07	4.98	73.77	74.66
UA	689	5	37	7	6.70	14.29	0.96	64.22	64.45

*This rate is calculated by multiplying the share of re-approched initial refusals who were successfully converted with the share of initial refusals who were re-approched.

Note that countries including Croatia, Cyprus, Czech Republic, Germany, Portugal, Slovakia and Ukraine report that they did not have any refusal conversion strategies in place. Also in the analysis, Portugal did not show any refusal conversion activities.

Differences across countries in terms of refusal conversion efforts made may be due to differences in the types of and reasons for initial refusals. We take a closer look at the high refusal conversion effort countries: Netherlands, Norway, Switzerland and Sweden. As for the types of initial refusal, a majority of Swiss initial refusers (75 percent) are hard refusers ("will definitely not cooperate in the future"), while for the Netherlands,²⁰ Norway and Sweden, the percentages are about 50 percent, 38 percent and 36 percent respectively. As for the reasons for the initial refusal, in all of these countries, reasons like "not interested in surveys" and "bad timing" are recorded more frequently. For these reasons, scales are rated by interviewers and further analysis is required to study the interviewer effects on these responses as interviewer variance is likely to be present.

²⁰ Interviewer variance on recording this value is expected to be high as interviewer bias is expected to be present.

Table 13: Assessment of initial refusers and their top 3 reasons of refusal

	Prop. hard refuser at initial refusal	Reason of refusal at initial refusal (1)	Reason of refusal at initial refusal (2)	Reason of refusal at initial refusal (3)
BE	57.54	Not interested	Other	Waste of time
BG	70.13*	Not interested	Waste of time	Interferes with my privacy
CH	75.05	Not interested	Other	Waste of time
CY	40.37*	Not interested	Waste of time	Don't know subject/ too difficult for me
CZ	50.80*	Not interested	Never do surveys	Bad timing
DE	80.29*	Not interested	Never do surveys	Bad timing
DK	35.66	Bad timing	Other	Never do surveys
EE	30.22*	Not interested	Bad timing	Waste of time
ES	56.10	Not interested	Waste of time	Other
FI	37.72*	Not interested	Bad timing	Other
FR	55.81*	Not interested	Waste of timing	Never do surveys
GB	29.97	Not interested	Bad timing	Other
GR	77.50*	Not interested	Waste of time	Bad timing
HR	56.64*	Not interested	Waste of time	Bad timing
HU	73.91	Not interested	Bad timing	Waste of time
IE	93.68	Not interested	Waste of time	Never do surveys
IL	35.87*	Bad timing	Not interested	Interferes with my privacy
LT	58.51*	Not interested	Waste of time	Do not trust surveys
NL	50.43	Not interested	Other	Waste of time
NO	38.15	Not interested	Bad timing	Other
PL	60.61*	Not interested	Other	Waste of time
PT	54.21*	Not interested	Waste of time	Do not trust surveys
RU	70.58	Not interested	Waste of time	Do not admit strangers
SE	36.28	Not interested	Bad timing	Other
SI	54.85	Not interested	Bad timing	Waste of time
SK	69.15*	Not interested	Interferes with privacy	Bad timing/never do surveys
UA	76.24	Not interested/waste of time	Interferes with privacy	Do not trust surveys

Note: this proportion (hard refuser) discounts missing items although high missing items (10%+) are noted in *. This proportion missing is likely to be subject to type of sampling frame (eg. household and/or address based sampling frame has higher proportion).

4.1.3. Evaluation of quality control back-checks

A final stage in the process evaluation consists of reviewing the quality control back-checks as stipulated in the survey specifications: whether they were performed face-to-face, by telephone or by post and for at least 10 percent of the respondents, 5 percent of the non-respondents (refusals and non-contacts), and 5 percent of the ineligible (ESS, 2009). For respondents, the back-checks should focus on the verification of responses to the main interview, on whether show cards and a computer were used or not during the interview, on the length of the interview and on the types of questions including the use of supplementary questionnaire. For non-respondents, the back-checks should target every interviewer to verify whether the non-response status recorded as a result of the contact efforts made is in line with the final contact status.

Based on the ESS documentation report, Table 14 presents by country an overview of quality control back-checks by status. It is clear from this table that back-checks are made predominantly for respondents (exceptions being Denmark, Norway and Slovakia). Implementing back-checks for non-respondents appears to be more problematic.²¹ Some countries did not make any checks on non-response units (non-contacts and refusals) (Belgium, Ukraine) or non-contact units (Cyprus, Denmark, Finland and Norway).

In accordance with the process evaluation assessment framework, the quality control back-check process should be monitored much more closely. As the almost complete absence of checks on non-respondents shows, there is a great need for improvement as there is a direct link with response enhancement measures including refusal conversion activities. In other words, back checks can be a useful input into the organisation of refusal conversion activities.

²¹ See corresponding astrix (*) on this in Table 14 in columns on refusals, and non-contacts and ineligible.

Table 14: Performance on quality control back-checks on response and nonresponse units

	Response units		Refusal units		Non-contacts & ineligible		Mode of control		
	Achieved	Confirmed	Achieved	Confirmed	Achieved	Confirmed	Response	Refusal	Non-contacts
BE	314	0	0**	0	0*	0	Tel	N.A.	N.A.
BG	252	213	25*	25	25	25	F2F/Tel	F2F/Tel	F2F
CH	417	413	430	430	259	259	Tel	F2F/Tel	Tel/mail
CY	350	350	10*	10	0*	0	Tel	Tel	N.A.
CZ	228*	228	18**	18	6	6	Tel	Mail	Mail
DE	3105	3031	51**	51	139	139	F2F/Tel	F2F/tel/mail	F2F/tel/mail
DK	99**	96	25**	16	0*	0	Tel	Tel	N.A.
EE	180	171	34*	10	40*	29	F2F/Tel	Tel	Tel
ES	629	629	342	342	216	84	F2F/Tel	F2F/Tel	F2F/Tel
FI	181*	175	29**	28	1*	0	Tel	Tel	Tel
FR	292	292	113*	97	Not known	Not known	Tel	F2F	F2F/Tel
GB	237*	237	340	166	524	188	Tel	F2F	F2F
GR	1129	1092	132	124	14*	13	F2F/Tel	F2F	F2F
HR	131*	131	46	46	52	52	Tel	F2F	F2F
HU	350	337	294	134	52	24	Tel	Tel	Tel
IE	437	437	51*	51	89	89	Tel	F2F	F2F
IL	672	672	19*	19	11*	11	Tel	F2F/Tel	F2F/Tel
LT	350	350	170	170	170	170	Tel	F2F	F2F
NL	902	893	62*	58	16*	14	Tel	Tel/Mail	Tel/mail
NO	67**	67	2**	2	0*	0	Mail	Mail	mail
PL	205	205	55	41	34	29	Tel	F2F/Tel	F2F/Tel
PT	1025	944	166	84	55	45	F2F/Tel	F2F/Tel	F2F/Tel
RU	1115	1115	27**	27	22*	21	F2F/Tel	F2F/Tel	F2F/Tel
SE	145*	145	463	463	20	20	Tel	F2F/Tel	F2F/Tel
SI	925	925	45*	37	59	53	F2F/Tel	F2F	F2F/Tel
SK	111**	111	17*	17	10*	10	F2F/Tel	F2F/Tel	F2F
UA	304	302	0**	0	0*	0	F2F	N.A.	N.A.

(continued)

- *Insufficient number of cases <50; ** insufficient number of cases 50+.
- In Bulgaria non-contact cases refer to self-reported non-contact cases for 105 cases.
- N.A is 'not applicable' cases.
- Source: European Social Survey (2012). *ESS-5 2010 Documentation Report*. Edition 3.0. Bergen, European Social Survey Data Archive, Norwegian Social Science Data Services.

4.2. Evaluation of realised (obtained) sample: output evaluation

4.2.1. *Proportion of ineligibles and type of sampling frame*

Before outcome rates are discussed, an overview of results on the proportion of ineligibles and the type of sampling frame is presented in Table 15. Proportion of ineligibles is related to the type and the quality of the sampling frame. As for the type of sampling frame, individual-based sampling frames are used more often in ESS, followed by address-based and household-based sampling frames. The proportion of ineligibles²² illustrates to some extent the quality of the sampling frame in each country. This proportion is comparable to that observed in previous rounds. Like in the previous round, more than 5 percent ineligibles are observed in 5 countries (Cyprus, France, Lithuania, Poland, United Kingdom). On the other hand, ineligibles are almost absent (less than 1 percent) in four countries (Bulgaria, Slovakia, Switzerland, Ukraine).

²² ESS ineligibles are: dead; moved to outside country; derelict or demolished house; building construction site; second home (not occupied); not in residence due to business; institution (retirement home, hospital, military unit, monastery); other types of ineligibles. Source ESS documentation on ‘Algorithm for computing final response codes’. 10/2010

Table 15: Type of sampling frame, planned and realised (obtained) sample, % ineligible on the basis of contact data files

	Type of sampling frame	Planned sample	Obtained sample	Proportion ineligible
BE	Individual	3267	3189	2.39
BG	Address	3200	3200	0.00
CH	Individual	2850	2827	0.81
CY	Household	1600	1507	5.81
CZ	Address	3536	3401	3.82
DE	Individual	10485	10202	2.70
DK	Individual	2900	2866	1.17
EE	Individual	3336	3191	4.35
ES	Individual	2865	2749	4.05
FI	Individual	3200	3160	1.25
FR	Household	4000	3673	8.18
GB	Address	4640	4305	7.29
GR	Household	4230	4139	2.15
HR	Household	3080	3028	1.69
HU	Individual	2635	2573	2.35
IE	Address	4500	4317	4.07
IL	Household	3230	3175	1.70
LT	Address	4990	4254	14.75
NL	Household	3186	3048	4.33
NO	Individual	2722	2641	2.98
PL	Individual	2661	2492	6.35
PT	Household	3265	3205	1.84
RU	Address	3982	3894	2.21
SE	Individual	2959	2895	2.16
SI	Individual	2249	2179	3.11
SK	Address	2500	2486	0.56
UA	Address	3002	2996	0.20

4.2.2. Response and non-response rates

Performance with respect to target rates is most usefully assessed with regard to a benchmark. The ESS minimum response target rate is 70 percent while the ESS maximum non-contact target rate is 3 percent. In ESS Round 5, these targets were not always reached (Table 16). The number of countries reaching (or almost reaching) the 70 percent minimum response target rate was substantial. However, significant cross-country variation existed as response rates ranged from 29.71 percent in Germany to 76.1 percent in Bulgaria. For 5 out of 27 participating countries, response rates exceeded 70 percent²³ while for another 5 countries, response rates were situated between 65 and 70 percent. Non-contact rates were below 3 percent in 11 countries yet here as well

significant cross-country variation existed as non-contact rates ranged from 0 percent in countries like Bulgaria and the Czech Republic to 21.6 percent in Ireland.

Like in previous rounds, countries with high response rates did not necessarily achieve low non-contact rates. Table 16 shows that only Bulgaria and the Czech Republic respected both target rates.²⁴ Another 3 countries (Cyprus, Israel, Slovakia) reached the minimum response rate but exceeded the maximum non-contact rate. Another 9 countries (Belgium, Finland, Greece, Hungary, Netherlands, Norway, Poland, Spain, Sweden), remained below the maximum non-contact rate but did not achieve the minimum response rate. The remaining 13 countries (Croatia, Denmark, Estonia, Ireland, Lithuania, France, Germany, Portugal, Russia, Slovenia, Switzerland, Ukraine, United Kingdom), reached neither the minimum response rate nor the maximum non-contact rate. Compared to Round 4, all but 11 countries (Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Greece, Israel, Lithuania, Sweden, Poland and Portugal) retained their position in 4 categories distinguished by target response and non-contact rates.

Whether the target rates are achieved or not seems to relate to the type of sampling frame used. Generally speaking, on the basis of Table 16, achieving contact seems more difficult in countries using non-individual sampling frames than in countries using individual-based sampling frames. Only a few countries using address or household sampling frames were able to respect the maximum non-contact rate (e.g. Bulgaria, the Czech Republic²⁵, Greece, the Netherlands); most of those countries ended up with higher than desired non-contact rates (Croatia, Cyprus, France, Ireland, Israel, Lithuania, Portugal, Russia, Slovakia, Ukraine, United Kingdom). In the case of non-individual sampling frames, the respondent and/or the household are selected by the interviewer and some questions remain on how respondents are actually selected during the fieldwork. This is currently difficult to assess as household and/or respondent selection information recorded in contact forms is not included in the contact data file. On the other hand, all countries achieving the minimum response rate were countries using non-individual sampling frames²⁶. The Swiss case in Round 5 deserves attention as response rates have increased but non-contact rates remained almost equal in spite of the sampling frame changing from household-based to individual in Round 5.

²⁴ Poland is at the borderline as their response rate is 69.98%.

²⁵ Bulgaria and the Czech Republic had no non-contacts.

²⁶ All of these countries achieved high 40+/-% response rates after the initial contact attempt.

Table 16: Overview of countries distinguished by target response and non-contact rates in Round 5

	<70% response rates	70%+ response rates
<3% non-contact rates	BE ES FI GR* HU NL* NO PL SE	BG* CZ*
3%+ non-contact rates	CH DE, DK EE FR* GB* HR* IE* LT* PT* RU* SI UA*	CY* IL* SK*

- Note: Countries with non-individual sampling frame countries are marked in *.
- Poland is at the border on response rates: 69.98%.

Figure 3: Response rates (%) of total eligible sample size compared with target response rate in Round 5

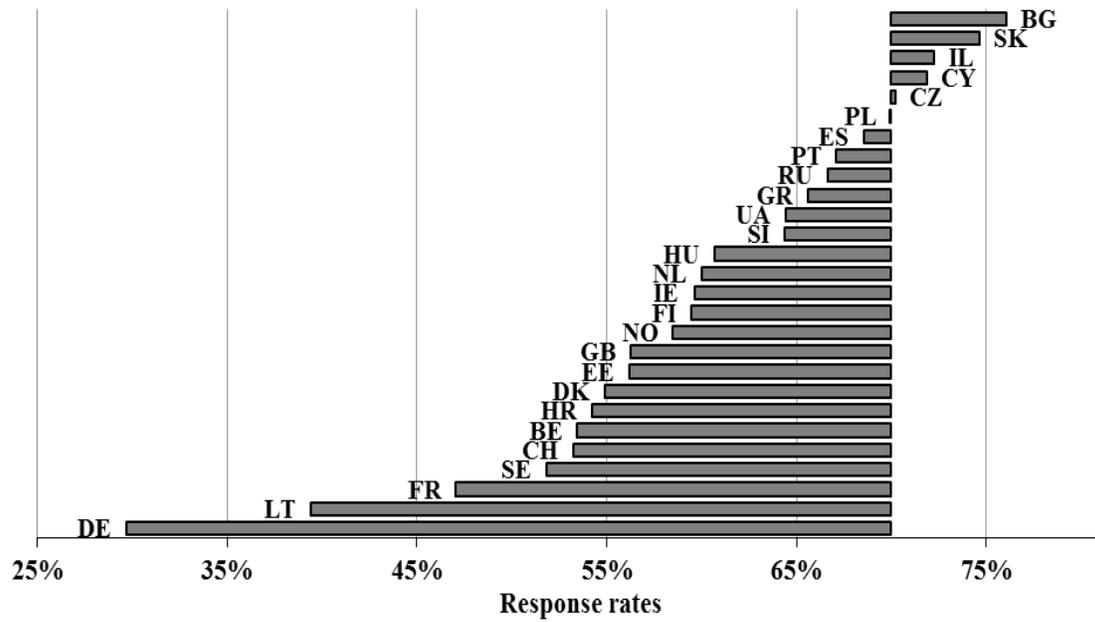
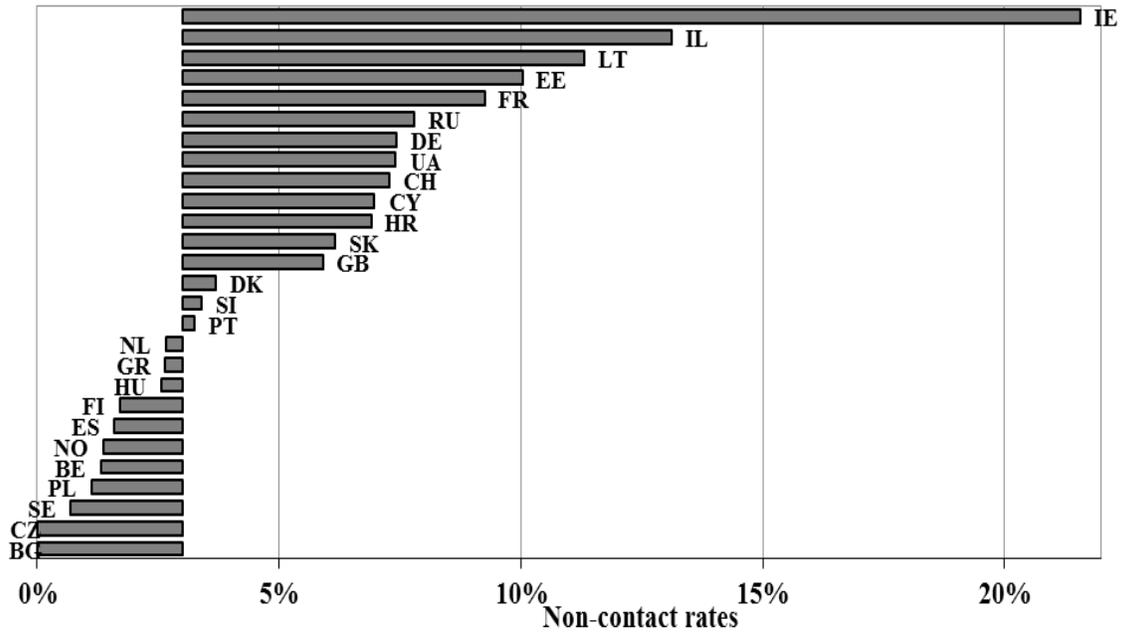


Figure 4: Non-contact rates (%) of total eligible sample size compared with target non-contact rate in Round



Once overall response and non-contact rates have been looked at, it is useful to take a closer look at types of non-respondents including refusals. In ESS Round 5, refusals accounted for the largest share of non-respondents in most countries. Refusal rates were high (30+%) in 8 countries (Belgium, Croatia, France, Germany, Lithuania, Netherlands, Norway and Sweden), medium (20-30%) in 11 countries (the Czech Republic, Denmark, Finland, Greece, Hungary, Portugal, Russia, Slovenia, Switzerland, Ukraine, United Kingdom), and low (<20%) in 8 countries (Bulgaria, Cyprus, Estonia, Ireland, Israel, Poland, Slovakia and Spain). Like for other outcome rates, substantial cross-country variation existed as refusal rates ranged from high (above 35 percent) in Germany, France and Sweden to low (11 percent) in Bulgaria and Cyprus. *A particularity in Round 5 was that all countries had refusal rates of more than 10 percent.*

Countries with low refusal rates generally achieved high response rates and countries with high refusal rates generally achieved low response rates. All countries with high (30+%) refusal rates except the Netherlands and therefore, Belgium, Croatia, France, Germany, Lithuania, Norway and Sweden had response rates lower than 60 percent. On the other hand, most countries with rather low refusal rates (<20%) (Bulgaria, Cyprus, Israel, Poland, Slovakia, Spain) had response rates higher than 65%. Estonia and Ireland were marked by both low (<20%) refusal and low (<60%) response rates though.

With respect to the proportion of non-respondents other than non-contact and refusal (classified here as 'not able/other'), three countries (Germany²⁷, Estonia and Lithuania) stand out with proportions of more than 15 percent. For Germany, a large proportion of contact forms are missing and Estonia is marked by a high incidence of the non-response type 'respondent has moved and still in country' while Lithuania is marked by a high incidence of the non-response type 'address is untraceable'. A high (30+% of proportion other type of non-response) incidence of 'respondent not available/away' is found in Slovakia, Ukraine and the United Kingdom, while a high incidence of 'address is untraceable' is found in the Czech Republic, Greece and Lithuania. In addition, a high incidence of sickness is found in Denmark and Sweden, of 'language barriers' in Cyprus and Norway, of 'invalid interviews' in Bulgaria and Portugal, of 'broken appointment' in Ireland and Slovakia and of 'contact but no interview' in Finland and Sweden.

²⁷ Germany had substantial high number of missing contact forms.

Table 17: Achieved response rates, non-contact, refusal and other non response rates on the basis of contact data files (%)

	N				%			
	Interview	Non-contact	Refusal	Not able /other	Interview	Non-contact	Refusal	Not able /other
BE	1704	42	1035	408	53.43	1.32	32.46	12.79
BG	2434	0	353	413	76.06	0.00	11.03	12.91
CH	1505	206	832	284	53.24	7.29	29.43	10.05
CY	1083	105	169	150	71.86	6.97	11.21	9.95
CZ	2387	0	921	93	70.19	0.00	27.08	2.73
DE*	3031	758	4036	2377	29.71	7.43	39.56	23.30
DK	1573	106	845	342	54.88	3.70	29.48	11.93
EE	1793	320	538	540	56.19	10.03	16.86	16.92
ES	1885	44	422	398	68.57	1.60	15.35	14.48
FI	1878	54	858	370	59.43	1.71	27.15	11.71
FR	1728	340	1298	307	47.05	9.26	35.34	8.36
GB	2422	254	1265	360	56.26	5.90	29.38	8.36
GR	2715	109	1062	253	65.60	2.63	25.66	6.11
HR	1642	209	1041	136	54.23	6.90	34.38	4.49
HU*	1561	66	682	264	60.67	2.57	26.51	10.26
IE*	2581	931	570	235	59,79	21,57	13,20	5,44
IL	2294	416	384	81	72.25	13.10	12.09	2.55
LT	1677	480	1343	754	39.42	11.28	31.57	17.72
NL	1829	81	996	142	60.01	2.66	32.68	4.66
NO	1545	36	836	224	58.50	1.36	31.65	8.48
PL	1744	28	475	245	69.98	1.12	19.06	9.83
PT	2150	104	673	278	67.08	3.24	21.00	8.67
RU	2595	303	930	66	66.64	7.78	23.88	1.69
SE	1500	20	1034	341	51.81	0.69	35.72	11.78
SI	1403	74	491	212	64.39	3.40	22.53	9.68
SK	1856	153	423	54	74.66	6.15	17.02	2.17
UA	1931	222	724	119	64.45	7.41	24.17	3.97

* Compared to ESS documentation report, substantial differences in response rates are obtained for the following countries: Bulgaria, Hungary and Ireland. See section 6.

After studying outcome rates for Round 5, it is useful to briefly study them across rounds. Compared to Round 4, more countries decreased their response rates than increased them in Round 5 (2010-12). In Round 4, response rates decreased by over 4 percent in 6 out of 30 participating countries. In Round 5, this was the case for 9 out of 27 countries. In Round 4, non-contact rates increased substantially (4+%) in 5 countries; refusal rates also increased in 5 countries. In Round 5, this was the case for 5 countries and 9 countries respectively (Table 18).

Table 18: Achieved response, non-contact, refusal rates and sample sizes, Round 1-5

	Response rate (%)					Non-contact rate (%)					Refusal rate (%)					Eligible sample size (N)					Total sample size (N)				
	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5
AT	60.4	62.4	64.0			10.1	6.9	9.2			27.0	29.7	24.3			3739	3615	3760			3828	3672	3800		
BE	58.4	61.2	61.0	59.0	53.4	4.5	3.5	2.9	2.3	1.3	25.2	26.4	24.1	26.0	32.5	3252	2906	2947	2983	3189	3340	3018	3249	3060	3267
BG			64.8	75.0	76.1			2.7	5.0	0.0			26.1	16.0	11.0			2162	2974	3200			2357	3200	3200
CH	32.5	48.5	50.0	48.8	53.2	3.8	2.1	2.2	8.7	7.3	51.2	44.0	40.7	33.4	29.4	6283	4600	3601	3726	2827	5086	4863	3710	3801	2850
CY			67.3	81.0	71.9			2.2	1.2	7.0			4.1	9.9	11.2			1479	1500	1507			1481	1600	1600
CZ	43.3	55.3		69.5	70.2	11.6	10.9		0.0	0.0	20.0	11.1		26.8	27.1	3139	5474		2904	3401	3330	5531		3000	3536
DE	51.7	51.0	52.9	42.7	29.7	5.7	7.0	5.0	6.4	7.4	28.2	32.8	25.4	32.6	39.6	5642	5633	5508	6443	10202	5796	5868	5712	6716	10485
DK	68.4	64.2	50.8	53.6	54.9	4.6	4.9	3.3	0.3	3.7	23.0	24.6	37.9	32.9	29.5	2143	2313	2964	2978	2866	2150	2433	3000	3008	2900
EE		79.3	65.0	56.6	56.2		3.4	13.1	6.6	10.0		11.3	18.6	19.7	16.9		2515	2335	2933	3191		2861	2800	3077	3336
ES	51.5	54.9	66.2	66.8	68.6	7.6	7.1	3.3	2.6	1.6	33.9	25.1	21.7	16.1	15.4	3360	3031	2832	3859	2749	3657	3206	3290	3962	2865
FI	73.3	70.7	64.4	68.4	59.4	2.9	2.1	2.7	2.7	1.7	20.8	22.7	23.2	20.9	27.2	2732	2859	2946	3209	3160	2766	2893	3000	3300	3200
FR	43.1	43.6	46.0	49.9	47.1	14.7	8.6	6.6	7.8	9.3	38.5	39.3	40.6	36.3	35.3	3488	4145	4320	4157	3673	3748	4400	4680	4500	4000
GB	55.0	50.6	52.1	54.5	56.3	3.5	7.9	7.2	7.9	5.9	30.6	33.2	26.7	24.4	29.4	3763	3746	4402	4302	4305	4013	4032	4752	4640	4640
GR	79.5	78.8		74.3	65.6	1.7	3.6		6.1	2.6	16.9	16.5		18.0	25.7	3226	3055		2790	4139	3227	3056		2790	4230
HR				45.9	54.2				1.1	6.9				24.1	34.4				3231	3028				3280	3080
HU	69.3	66.6	66.0	61.3	60.7	3.1	5.7	2.9	2.5	2.6	14.9	15.0	26.4	27.5	26.5	2430	2248	2298	2515	2573	2484	2463	2635	2635	2635
IE	64.4	62.0	50.4	49.2	59.8	8.1	10.6	9.1	9.1	21.6	22.9	21.6	13.8	24.2	13.2	3179	3689	3227	3589	4317	3241	3981	3400	3865	4500
IL				76.8	72.3				0.6	13.1				7.8	12.1				3241	3175				3255	3230
LT				56.4	39.4				2.9	11.3				37.9	31.6				3550	4254				3616	4990
LU	42.6	50.1				6.7	7.1				36.5	34.8				3641	3261				3773	3497			
LV				56.7					13.6					11.5					3494					3629	
NL	67.8	64.3	59.8	49.8	60.0	2.5	2.7	2.6	3.0	2.7	26.2	29.1	33.3	40.6	32.7	3486	2924	3159	3568	3048	3570	3009	3254	3701	3186
NO	65.0	66.2	64.4	60.4	58.5	3.0	1.7	0.8	0.9	1.4	24.2	25.9	25.9	30.9	31.7	3131	2657	2718	2563	2641	3215	2750	2750	2650	2722
PL	72.1	73.7	70.1	70.9	70.0	0.8	0.9	1.3	1.6	1.1	19.6	19.1	16.3	18.0	19.1	2927	2329	2451	2278	2492	2978	2392	2574	2428	2661
PT	68.8	71.3	72.7	75.8	67.1	3.2	2.7	3.8	3.0	3.2	26.9	18.2	21.0	20.1	21.0	2196	2879	3054	3124	3205	2366	3079	3135	3258	3265
RO			71.9	68.8				10.0	13.1				17.7	4.6				2975	3120				3210	3210	
RU			69.5	67.4	66.6			5.0	5.1	7.8			23.9	25.0	23.9			3507	3729	3894			3551	3785	3982
SE	69.0	65.4	65.5	62.2	51.8	4.0	2.4	2.0	3.9	0.7	21.0	22.0	22.9	25.3	35.7	2878	2980	2939	2938	2895	3000	2997	3000	3000	2959

SI	70.5	70.2	64.9	58.8	64.4	5.1	10.2	2.9	4.7	3.4	17.3	15.3	15.9	21.8	22.5	2154	2053	2273	2184	2179	2222	2201	2340	2250	2249
SK		62.7	73.2	72.6	74.7		5.9	3.9	8.6	6.2		22.7	14.8	12.9	17.0		2410	2413	2491	2486		2500	2500	2500	2500
TR				63.5					14.1					18.6					3803					3990	
UA		66.6	66.7	61.6	64.5		6.3	5.3	10.5	7.4		16.1	24.2	24.9	24.2		2845	3011	2996	2996		3050	3014	3003	3002

Note: (DE): In R1, there exists discrepancy between reported and contact data files about number of selected sample units that are moved out of the country. ESS documentation report reports 339 cases but no trace of this in contact data file. This is the reason for discrepancy between response rates based on self-reported/NTS (55.7) and on contact data file (51.7%).

(EE): Figures for R3 are based on self-reported/NTS.

(FR): Figures for R1 and R2 are based on self-reported/NTS. Figure for R3 and R4 are based on contact data files.

(GB): Figure for R2 based on self-reported/NTS.

(BG) There exists discrepancy between reported and contact data files for R5.

(HU) There exists discrepancy between reported and contact data files for R5.

(IE) There exists discrepancy between reported and contact data files for R5.

Table 19 presents an overview based primarily on the analysis of contact data files. In Round 1 (20 participating countries), the highest response rate was 79.5 percent, the lowest 32.5 percent, and the mean 60.3 percent. As for non-contact rates, the highest was 14.7 percent, the lowest 0.8 percent, and the mean 5.4 percent. And as far as the refusal rate is concerned, the highest was 51.2 percent, and the lowest 14.9 percent and the mean 26.2 percent. In this initial round, 4 countries achieved the 70 percent minimum response target rate and 5 countries respected the 3 percent maximum non-contact target rate. Mean response rates increased to approximately 62.6 and 62.5 percent in the second and third rounds but decreased to 61.9 percent in Round 4, and decreased again in Round 5 (60.2%). Mean non-contact rates decreased to 4.6 percent in the third round, increased in Round 4, and increased again in Round 5 (5.5%). As far as the mean refusal rates are concern, it decreased to 23.7 percent in the third round, decreased in Round 4, and increased again in Round 5 (25.0%). (see similar discussion on Round 1-Round 4 on response and non-contact rates in Billiet and Matsuo, 2012).

Table 19: ESS Round 1 (2002) – Round 5 (2010): Level of outcome rates and its characteristics at country level

Statistics	Round 1	Round 2	Round 3**	Round 4	Round 5
(Response rate)					
Mean response rate %	60.3	62.6	62.5	61.9	60.2
Lowest response rate %	32.5	43.6	46.0	42.7	29.7
Highest response rate %	79.5	79.3	73.2	81.0	76.1
Range	47	35.7	27.2	38.3	46.4
SD	12.6	9.6	7.9	10.1	10.7
(Non-contact rate)					
Mean non-contact rate%	5.4	5.4	4.6	5.2	5.5
Lowest non-contact rate%	0.8	0.9	0.8	0.0	0.0
Highest non-contact rate%	14.7	10.9	13.1	14.1	21.6
Range	13.9	10.0	12.3	14.1	21.6
SD	3.52	3.01	3.11	4.10	4.8
(Refusal rate)					
Mean refusal rate%	26.2	24.2	23.7	23.0	25.0
Lowest refusal rate%	14.9	11.1	4.1	4.6	11.0
Highest refusal rate%	51.2	44.0	40.7	40.6	39.6
Range	36.3	32.9	36.6	35.9	28.5
SD	8.7	8.7	8.5	8.9	8.2
(Summary)					
N 70%+ response	4	6	4	7	5
N <3% non-contact	5	7	11	13	11
N (countries)	20	23	24	30	27

* Figures based on the analysis of the call record data and/or ESS documentation report (2012).

** Country with largest response rates is missing in round 3.

4.2.3. Differences between respondents and non-respondents

Comparing respondents and non-respondents through interviewer observable data

In this section, differences between response and non-response units are assessed on the basis of interviewer observable data on type of housing and neighbourhood characteristics. Results are presented for two comparisons: (1) cooperative respondents vs. initial refusers, (2) cooperative respondents vs. final non-contacts. *Cooperative respondents* are those sample units who immediately participate in the survey; *initial refusers* are those sample units that initially refuse to participate, whether eventually they end up cooperating or not; and *non-contacts* are those sample units with whom no contact was achieved. Studying the likelihood of being a cooperative respondent and comparing cooperative respondent with each type of non-respondents as the reference group (e.g. initial refusers, non-contacts) is in line with previous ESS research (ESSi-JRA) on measuring non-response.

Because of the introduction of visual materials on observable data in the interviewer training (Matsuo et al., 2010b), some improvements are observed in a number of countries with regard to the completeness of information and measurement. This improved quality of observable data allows better for an initial evaluation of different types of non-respondents.

Before presenting the results of the analysis, a short description is provided of item non-response concerning observable data. Table 20 presents the percentage item non-response for respondents and different types of non-respondents. Item non-response is defined as at least one of the 5 interviewer observable variables (either type of housing or neighbourhood characteristics) being missing. This table shows that the percentage item non-response is much higher for non-respondents than for respondents. A country with a notably high percentage of item non-response (10+) for response units is Germany (due, as noted earlier, to missing contact forms). Countries with notably high percentages of item non-response for all types of non-respondents are Bulgaria, Croatia, Estonia, Germany, Lithuania, Poland, Slovenia and Spain. These proportions are generally much lower in this round as compared to the previous round, although much progress on this issue can still be made.

Table 20: Item non-response: information missing for one of the interviewer observable data (type of house and neighborhood characteristics) variables by final contact status (%)

	Response	Non-response			Eligible sample	All non-response sample
	Interview	Non-contact	Refusal	Not able / other		
BE	0.00	4.76	0.29	9.80	1.41	3.03
BG	0.00	N.A.	0.00	49.15	6.34	26.50
CH	1.33	1.94	4.93	7.04	3.01	4.92
CY	1.20	0.00	1.18	9.33	1.92	3.77
CZ	4.19	N.A.	8.25	10.75	5.47	8.48
DE	15.04	9.76	5.92	45.56	18.15	19.47
DK	0.19	1.89	2.25	8.77	1.88	3.94
EE	0.61	5.63	4.65	40.00	8.46	18.53
ES	0.21	2.27	1.18	22.11	3.56	10.88
FI	1.92	1.85	8.62	11.89	4.91	9.28
FR	3.99	2.65	2.54	20.85	4.76	5.45
GB	2.48	7.87	4.03	6.11	3.55	4.95
GR	0.04	0.00	0.09	0.00	0.05	0.07
HR	4.45	10.53	8.36	35.29	7.60	11.33
HU	0.00	0.00	0.00	3.03	0.31	0.79
IE	0.19	0.21	0.18	2.55	0.32	0.52
IL	0.00	0.00	0.00	0.00	0.00	0.00
LT	0.00	0.21	0.22	65.25	11.66	19.25
NL	2.95	9.88	2.71	9.86	3.38	4.02
PL	2.87	14.29	8.84	45.71	8.35	21.12
PT	0.00	0.00	0.15	0.00	0.03	0.09
RU	0.00	0.00	0.00	0.00	0.00	0.00
SI	1.00	37.84	21.79	29.38	9.68	25.39

Note: Norway and Sweden did not collect this type of information at all; Slovakia and Ukraine did not collect new variable.

This analysis is restricted to those countries with sufficient information for observable data for cooperative respondents and each type of non-response sample units (non-contact and initial refusals) of less than 5 percent. This means that in addition to Norway and Sweden (countries that do not collect this type of information at all because of privacy reasons), Slovakia and Ukraine are excluded from the analysis as they did not adopt the changes proposed for the collection of observable data in Round 5. At the sub-analysis level, six countries (Croatia, the Czech Republic, Germany, Finland, Poland, Slovenia) are excluded from the comparison between initial refusers and cooperative respondents because of a high proportion of missing items (5+%). Also, thirteen countries (Belgium, Bulgaria, Croatia, the Czech Republic, Germany, Estonia, Finland, Hungary, the Netherlands, Poland, Slovenia, Spain, United Kingdom) are excluded from the comparison between final non-contacts and cooperative respondents since either the number of observations is too small (<100) or the proportion of missing items is too high (5+%). All in all, that leaves 17 and 10 countries for each of the two comparisons respectively.

For all items of observable data on the type of house and neighbourhood characteristics (accessibility to the house, physical condition of the house, presence of litter and presence of vandalism in the immediate neighbourhood), the response distributions were compared between different sub-groups using test statistics (χ^2 or differences between means and/or t-test). The analysis shows that cooperative respondents differ substantially from non-respondents (initial refusers, non-contacts). The size of the difference varies by country and type of comparison, however.

As for the comparison²⁸ between cooperative respondents and initial refusers, statistical differences between the two sub-groups are found for all variables in most countries although some countries in limited number of variables: 4 variables (Denmark, Hungary); or 3 variables (Cyprus, Netherlands, United Kingdom). As for the comparison between cooperative respondents and non-contacts, statistical differences are found for all variables in most countries except for Portugal which had 4 variables that are different. In the next section, logistic regression is applied to obtain a deeper understanding of the net effects of each observed variable in the observable data on the non-response status. Variables are selected on the basis of the existing literature on determinants of non-response (Stoop et al., 2010). These variables are based on interviewer observable information and contact procedure information that is present in the contact data file: number of total, non-working hour and weekend contact attempts, and fieldwork duration.

Effects of interviewer observable information on cooperative respondent

On the basis of Table 21, an assessment of access variables (entry phone or locked gate/door before reaching respondent's individual door) shows that accessibility to the sample unit is an important determinant of response outcome (co-operative respondent in contrast to initial refusal). For 11 countries, a significant odds ratio higher than 1 is observed, meaning that having direct access to the sample unit increases the likelihood of the sample unit becoming a cooperative respondent. When housing is of other types of house than multi-units (single unit, farm, house trailer or boat, and other type), the sample unit becoming a cooperative respondent is also more likely as for no less than 4 countries significant ratios higher than 1 are observed: Portugal, Russia, Spain and Switzerland. Housing in good physical condition has a significant increasing effect on the likelihood of the sample unit becoming a cooperative respondent, as observed for 6 countries. The same applies for the absence of litter in some extent since for few countries (2), significant odds ratio lower than 1 are observed.

Shifting our attention to contact procedure variables and more in particular the fieldwork duration, for 13 countries, the odds ratios observed are lower than 1. This means that the longer the fieldwork duration, the lower the likelihood of the sample unit

²⁸ For scale items we note number of countries when either X^2 or t-test has significant differences taking broader thresholds on studying differences between cooperative respondents and different types of non-respondents.

becoming a cooperative respondent. A decreased likelihood is also found for non-working hour and weekend contact variables. However, with respect to the number of contact attempts, for 6 countries, the odds ratios observed are higher than 1. This means that the more effort is made, in terms of higher number of contact attempts, the higher the likelihood of the sample unit becoming a cooperative respondent.

Like for the comparison of co-operative respondents with initial refusers, having access to the sample unit is a significant determinant factor of response outcome (co-operative respondent vs. non-contact) although result of significant odds ratio higher than 1 is observed in Ireland indicating that free access to the sample unit increases response outcome. Among 10 countries that are studied, for two countries, Cyprus and Portugal, significant odds ratios lower than 1 are observed. Achieving cooperative survey cooperation is more likely for sample units living in other types of housing than multi-unit housing. For four countries, the odds ratios for living in other types of housing are higher than 2 and mostly highly significant ($p < .0001$) pointing to strong effects. The housing of the sample unit being in good physical condition increases the likelihood ratio of the sample unit becoming cooperative respondent. A significant and increasing effect is observed for 3 countries (Cyprus, Denmark and France) although a decreasing effect is also found for 2 countries (Portugal and Russia). The absence of litter and/or vandalism is another important factor. A significant and positive effect is observed for Switzerland with respect to both variables, and for Lithuania with respect to vandalism. On contact procedure variables, different results are found for the likelihood of cooperative respondent in contrast to non-contacts compared to the results for the likelihood of cooperative respondent in contrast to initial refusers. On the basis of variables on number of total, non-working hour and weekend contact attempts and fieldwork duration, our analysis shows that the higher the effort, the decreasing effect on co-operative respondent.

Table 21: Logistic regression model (Odds ratio) of type of housing and neighborhood and contact procedure characteristics on cooperative response in contrast to each type of non-response (initial refuser or non-contact)

	Access to the unit Neither entry phone nor locked door/gate Ref: presence of entry phone or locked door/gate		Type of housing All other type than multi- unit Ref: multi-unit		Physical house (high-very good)		Presence of litter (high-not common)		Presence of vandalism (high-not common)	
	Vs. initial refuser	Vs. non- contact	Vs. initial refuser	Vs. non- contact	Vs. initial refuser	Vs. non- contact	Vs. initial refuser	Vs. non- contact	Vs. initial refuser	Vs. non- contact
BE	1.31*	+	1.14	+	1.17**	+	0.80	+	1.12	+
BG	1.47**	+	0.99	+	1.10	+	0.98	+	1.07	+
CH	0.71**	1.09	1.59**	3.27***	1.04	1.12	1.22	1.63*	1.20	1.89*
CY	0.88	0.28**	1.21	4.32**	1.14	1.64*	0.89	0.37*	0.78	1.08
DK	1.15	1.08	1.24	2.93**	1.36***	1.47*	1.32*	1.29	0.57**	1.08
EE	1.94***	+	1.03	+	1.04	+	0.95	+	1.12	+
ES	1.58*	+	1.32*	+	1.05	+	0.98	+	0.91	+
FR	1.46*	1.15	0.52***	1.51	1.17*	1.36**	0.89	1.29	0.82	0.39**
GB	1.10	+	0.90	+	1.09	+	0.85	+	0.92	+
GR	1.39**	0.63	1.01	0.51	1.18**	1.16	1.07	0.64	0.90	1.00
HU	1.51**	+	0.75*	+	1.08	+	0.95	+	1.04	+
IE	1.91**	1.70*	0.71	0.68	1.25**	1.11	0.57**	0.72	0.89	1.40
IL	0.95	0.84	0.55***	0.98	0.90	0.91	1.10	1.28	0.89	0.78
LT	1.49***	1.16	1.12	0.51**	0.94	0.87	1.18*	1.01	0.87	1.88**
NL	1.27	+	0.79	+	1.19*	+	1.05	+	0.91	+
PT	1.89***	0.33**	1.29**	0.73	1.05	0.67*	0.77	0.29	0.80	0.94
RU	2.56***	1.63	2.94***	2.88***	0.92	0.73**	1.12	1.03	1.06	1.12

	N contact attempts		N non-working hours		N weekend contacts		N weeks		R ² / H&L	
	Vs. initial refuser	Vs. non-contact	Vs. initial refuser	Vs. non-contact						
BE	1.15***	+	0.97	+	0.76***	+	0.90***	+	0.15/25.52**	+
BG	0.84*	+	0.61***	+	0.97	+	0.90***	+	0.04/9.07	+
CH	1.06**	0.96	0.86**	1.08	0.83**	0.88	0.73***	0.78***	0.43/103.3	0.28/11.38
CY	1.10	0.04***	0.82	0.75	0.91	0.74	1.04**	0.95	0.01/17.88*	0.36/7.60
DK	1.49***	1.09	0.78**	0.89	0.80***	0.59***	0.98*	0.84***	0.07/28.07**	0.12/6.13
EE	1.10	+	0.87	+	0.83*	+	0.90***	+	0.10/16.68*	+
ES	0.99	+	1.00	+	0.97	+	0.80***	+	0.16/26.98**	+
FR	1.59***	0.67***	0.75	0.66***	0.87*	0.55***	0.72***	0.90***	0.42/125.52***	0.35/119.08***
GB	0.89***	+	1.02	+	1.02	+	0.93***	+	0.11/13.42	+
GR	0.81***	0.19***	1.10	1.78***	0.95	0.74	1.01	0.91	0.02/12.75	0.18/11.11
HU	0.82**	+	0.88	+	0.91	+	0.61***	+	0.19/65.68***	+
IE	12.12***	0.31***	1.04	0.10***	1.20***	0.53***	0.92	0.95**	0.10/47.98***	0.53/176.51***
IL	0.51***	0.93	0.99	1.06	0.80*	0.92	0.99	0.88***	0.06/18.85*	0.08/67.07***
LT	0.95	0.14***	0.95	0.86	1.04	0.99	0.84***	1.40***	0.07/25.93**	0.50/39.01***
NL	1.30***	+	0.96	+	0.93	+	0.75***	+	0.45/49.36***	+
PT	1.07	0.49***	0.71***	0.71**	1.00	0.83*	0.88***	0.66***	0.06/24.52**	0.15/8.4
RU	0.81***	0.55***	0.76***	0.57***	0.93	0.76**	0.95***	0.91***	0.12/22.71**	0.18/17.77*

Note: H&L =Hosmer-Lemeshow; *p<.05; **p<.01; ***p<.001; +: cases <100 cases.

5. Conclusion and discussion

This report assessed the quality of the realised (obtained) sample on the basis of process and output evaluations. It identified a number of key issues that require attention from a fieldwork monitoring point of view.

For the purpose of the assessment, use was made of the Total Quality Management (TQM) conceptual framework. TQM provides a suitable basis for the assessment of data quality in the context of cross-national, face-to-face surveys. TQM treats non-response error and measurement error together and makes a number of useful conceptual distinctions: between non-interview-related tasks and interview-related tasks; between the realised (obtained) sample and the registered responses; and between process and output evaluation.

In this report, the process and output evaluation of the realised (obtained) sample was operationalized through a number of indicators. The focus of the process evaluation was on the type and duration of training provided to interviewers (e.g. whether refusal conversion is covered or not), the systematic application of a standardized contact procedure to each sample unit in the sample frame, and the implementation of post-visit quality control back-checks to confirm the final outcome of the contact procedure. The focus of the output evaluation was on response and non-response rates and on differences between respondents and non-respondents. The documentation of all of these quality issues is important for the proper contextualisation of the survey results.

In Round 5, the management of the contact data file quality control process changed. At the end of the fieldwork period, the contact data files were deposited by each National Co-ordinator (NC) team to the Norwegian Social Science Data Services (NSD). This was followed by substantial bilateral communication between NSD and each National Co-ordinator (NC) on each item of the contact form/file reported in country processing reports discussing inconsistencies and missing information. Subsequently, on the basis of pre-release files, and on the basis of substantial bilateral communication and discussion (NSD-KUL), the contact data file was edited prior to the release of the first edition of the data. The second edition of the public release of contact data files in January 2013 included all countries participating in 2010-2012 except Austria and Germany. In the analysis, the German country specific contact data file was included.

All in all, our process and output evaluation identified a number of important deviations from specifications and protocols, issues that need to be addressed before (e.g. better training) and during (e.g. improved monitoring) the fieldwork periods of future ESS rounds.

The contact data files show that the target minimal response rate of 70% was achieved by 5 countries (Bulgaria, Cyprus, the Czech Republic, Israel, Slovakia²⁹) and the maximum 3% non-contact rate respected by eleven countries (Belgium, Bulgaria, the

²⁹ As noted, Poland is at the border line of minimum response rate requirements.

Czech Republic, Greece, Finland, Hungary, Netherlands, Norway, Spain, Sweden, Poland). Like in previous ESS rounds, response and non-response rates differ substantially between countries, however. Compared to previous rounds, the spread between high and low response rate countries appears to have become slightly larger.

The reasons for ineligibility and for other types of non-response (respondent is temporary away, language, sickness, for instance) also differ substantially between countries. Not all types of other non-response can be minimized during the fieldwork but minimizing non-contacts and refusals are potentially possible. Our analysis on different types of non-response based on observable data indicates that such differences and possibly biases exist. However, it is important to note that the quality of interviewer observable data needs to be upgraded as this hinders further analysis. Country support in enhancing interviewer training is a key to this success. On the basis of these kind of analysis, it is possible to develop tailored fieldwork implementation strategies based on interviewer observable data concerning the type of housing and neighbourhood characteristics.

We consider that both process and output factors constitute important elements in the data quality. Differences in outcome rates can be related to process factors, i.e. to factors relating to the fieldwork preparation, the contact procedure, and the follow-up. As for the fieldwork preparation, each country's administrative and survey design is different in terms of instruments (e.g. sampling frame, number of interviewers, use of different respondent recruitment modes, contents of training) and in terms of focus and way in which the fieldwork is organised (e.g. allocation of interviewers during the timing of fieldwork in contact procedure activities for achieving contactability and survey cooperation). The differences between countries with respect to fieldwork efforts have been demonstrated through our assessment of compliance with the four golden rules to minimize non-contact, of refusal conversion activities, of contact efforts by contact status (contact achieved or not; survey cooperation or not), and of the number of finalized cases by fieldwork week. As average individual interviewer performance ratios almost mirror aggregate country-level fieldwork outcomes, improving the performance of individual interviewer constitutes a key issue for the achievement of better fieldwork outcomes. Changing the organisation of fieldwork activities with respect to time and effort (timing of fieldwork and number of contact attempts) and monitoring strictly interviewer performance throughout the fieldwork period is likely to lead to substantial improvements in outcome rates for some countries. One must however be equally aware that interviewer performance is subject to interviewer attributes and country interviewer conditions, such as interviewer employment status and remuneration modes. As our analysis indicates, a strong negative correlation exists between interviewer workload and interviewer performance. The higher the workload, the higher the non-response ratios and the lower the response ratios. It is then possible that interviewers with high workloads are more likely to produce low quality data as reflected in a high percentage missing items (item non-response) and in the inappropriate measurement of concepts. This is why it is important to monitor interviewer workloads at the country level.

There is no doubt that quality control back check efforts need to be stepped up at both the national and the central levels although some countries may not be able to fully comply because of local constraints such as privacy issues. While the back check process essentially differs from the refusal conversion process, the findings of the former can feed into the latter, as is the case already in some countries. The current process is centred on country-level self-documentation leaving the central management team less possibility of direct intervention.

Finally, the assessment once again highlights the importance of taking into account both process and output evaluation items. From our theoretical perspective, countries should demonstrate both good process and output indicators, although in reality, countries performing well in terms of output are not always countries performing well in terms of process. On the other hand, countries not performing well in terms of output are not always countries not performing well in terms of process. For instance, Bulgaria and the Czech Republic performed well in terms of output but processes (e.g. with respect to training, respondent recruitment procedure and quality control back-checks) were not always well implemented completely. Spain, on the other hand, achieved only one target output rate although processes were implemented satisfactorily. Switzerland is another country that could not achieve both target output rates but paid much attention to implementing processes correctly. A number of countries did not achieve both target rates but also did not implement processes in accordance with specifications.

The results of this assessment call for the development of a set of comprehensive indicators for the evaluation of quality of the data set. The current TQM framework identified broad items in relation with fieldwork preparation, contact procedure and quality control back checks. Through the analysis of the sources of non-response errors, problematic areas in the implementation of the fieldwork can be identified which can constitute a useful basis for the development of such detailed indicators. The said assessment also covered a number of interviewer level items, for instance, interviewer workload and performance. The further specification and development of these indicators will be a great asset for the evaluation of country performance in cross-national research.

6. Country description

A detailed discussion country-by-country is not possible in the main text. This section therefore summarizes important issues related to inconsistencies/deviations in the contact data file and context-specific contact procedure in relation to specification, respondent recruitment and refusal conversion activities.

Belgium

No substantial issues on data quality are to be noted except two. First, like in Round 4, the proportion of sample units recorded as "ill throughout the fieldwork period" is high. Second, high numbers (N=790) are also recorded for other types of non-response. The

latter is due to an imprecise measurement of the second response code (the second contact outcome variable 'OUTNIB'). As part of the response enhancement measures, the respondent received after the interview a brochure detailing results from previous rounds and use was made of a call-centre and web-pages. As for refusal conversion activities, other interviewers than the initial one visited both initial refusers and non-contacts and at least two additional contact attempts were made for both cases. Compared to other countries, the scope and conversion rates of refusal conversion activities are situated high for the former but slightly low for the latter. Due to privacy law, quality control back checks were not performed for non-response units.

Bulgaria

Most importantly, large differences are observed between the self-reported outcome rates (ESS, 2012) and the outcome rates calculated on the basis of the contact data files. According to the contact data files, there are no non-contact cases. As a result, Bulgaria has achieved the two target output (maximum non-contact and minimum response) rates although a high number of invalid interview cases (N=334) should be noted. As for response enhancement measures, more visits were made by the same interviewer as the initial one to soft initial refusers unless this approach remained ineffective. As far as refusal conversion activities are concerned, coverage is low but conversion rates are above average. It is not known on what basis initial refusers to be re-approached were selected since interviewer assessments of the likelihood of future cooperation were missing for 30 percent of the initial refusals. Another concern is that information was also missing on issues like the number of household members and the household composition even though they used address based sampling frame. Bulgaria is also one of the few countries that did not provide an initial letter and brochure as part of the respondent recruitment efforts. Finally, missing items are high among non-response units for 5 variables on observable data.

Cyprus

While several subsequent corrections were made to the contact data file initially submitted, a number of remaining issues need to be documented. The amount of information missing on initial refusals (age, gender, interviewer assessment) is substantial. Cyprus makes use of a household-based sampling frame and the ineligibility rate exceeds 5 percent. The country achieved a 70 percent response rate in spite of using neither respondent incentives nor refusal conversion activities.

Croatia

No substantial issues are to be noted except for a relatively substantial amount of information missing on initial refusers (especially interviewer assessments of future cooperation; to some extent age and gender of the sample unit). Like Bulgaria and Ukraine, Croatia did not provide initial letters and brochures as part of the respondent recruitment efforts. On the other hand, a call-centre was established, dedicated web-pages were created, and the national coordinator announced the start of the fieldwork

on local TV to increase awareness and promote survey participation. During the contact procedure, a letter was left in the case of non-contact informing the sample unit of the timing of a follow-up visit. Croatia reports that no refusal conversion strategies were formulated and that no refusal conversion activities were organized.

Czech Republic

Most importantly, according to the contact data files, the Czech Republic has achieved the two target output (minimum response and maximum non-contact) rates. Like in the previous round, no non-contact cases are observed for the Czech Republic. Most probably because of having achieved the target output rates, no refusal conversion activities have been organised. Response enhancement measures (call centres, web pages) have been used, however. According to our analysis, the Czech Republic is able to achieve high response rates with minimum efforts (e.g. number of contact attempts). The amount of information missing on initial refusals (age, gender, interviewer assessment) is high.

Denmark

Some remaining issues need to be documented. These include the exclusion of 'opt out list' and ineligible cases from the contact data file; incomplete information for initial refusers, notably on the reason of refusal (only the first one is collected); incomplete and inconsistent contact attempt timing information; a high remaining number of 'other non-response' cases in the second contact outcome variable (OUTNIB); a small number of inconsistencies with respect to the timing of interviews across datasets; and a fieldwork period length in the contact data file that differs from the self-reported one (ESS, 2012). No respondent incentives were used to recruit respondents but a call centre was established and a limited number of effective interviewers were asked to conduct refusal conversion activities. Denmark could have organized more extensive refusal conversion activities (both coverage and success rates) and dedicate more efforts to non-contact cases in line with the specification.

Estonia

Several corrections were made to the initially submitted contact data file but some remaining issues need to be documented. These include missing information for interview dates in the main file; incomplete information particularly with respect to the interviewer's assessment of initial refusals' future cooperation; a high number of 'other type of non-response' cases due to incomplete information on the second contact outcome variable (OUTNIB); and a relatively high number of incomplete cases for interviewer observation data particularly among non-response units. As for response enhancement measures, monetary incentives were used to recruit respondents. In addition, a call centre was established and dedicated web-pages were created. In the refusal conversion stage, the same interviewer as the initial one was employed to re-approach soft refusers and different experienced interviewers were used to re-approach

hard refusers. In spite of these efforts, both the coverage and the conversion rates are below the average for all countries.

Finland

Some issues need to be documented here. First, the information on refusals is not fully complete as substantial information is missing for the interviewer assessment of future cooperation and the reason for refusal. Information on the refusal's age and gender is retrieved from the population register. In addition, substantial information for the 2nd response outcome variable is incomplete: the code 'non-response due to other' (12) is prevalent leading to a high incidence of the unspecified type of non-response. Finally, missing items are high (near 10 percent) among non-response units for 5 variables on observable data. As for response enhancement measures, upon completion of the interview, non-monetary incentives (participation in a minicomputer lottery) were provided to respondents. In addition, a call centre was established and dedicated web-pages created. As for refusal conversion activities, interviewers worked in pairs and when one interviewer was unsuccessful in a particular case (non-contact, refusal), the other interviewer re-approached. The refusal conversion coverage is higher than average (around 60%) while the conversion rate is about average (10%).

France

Some remaining issues need to be documented. These include substantial amounts of information missing for refusals (age, gender and in particular interviewer assessment of likelihood of future cooperation) and information being recorded for the first refusal only; missing timing variables such as hour and minute; insufficient codes on the second result outcome (the second contact outcome variable OUTNIB); and inconsistent interviewer identification number between and interviewer and contact data file. Also, partial information is provided with respect to the interviewer's age (10-year age categories). France makes substantial efforts to minimize non-contacts in line with the specification although their non-contact rates remain high. As for response enhancement measures, conditional monetary incentives were provided upon completion of the interview (15 Euros). In addition, a call-centre was established and dedicated web-pages were created. Refusal conversion activities were carried out by more experienced interviewers re-approaching initial refusals through multi-mode contacts including both telephone and face-to-face contacts. Substantial refusal conversion efforts were made as reflected in the high coverage rates (70%) but the conversion rate (5.5%) is below the average for all countries.

Germany

Exceptionally, we counted interviews with missing contact forms as interviews, otherwise the response rate would have dropped substantially in an unjustified manner. A high proportion of missing contact forms has several consequences for data quality and data quality assessment. This means for those cases we have no information on exact non-/response outcome; information on observable data (type of housing and

neighbourhood characteristics) and interviewer's assessment on initial refusers. Due to financial constraints, interviewer training prior to data collection was not organized.

Greece

Some issues need to be documented here concerning the missing information for initial refusals: age, gender and interviewer assessment of likelihood of future cooperation. No respondent incentives were used to recruit respondents but a call-centre was established and dedicated web-pages were created. A press release was also organized, mass mails were sent to information centres at the municipal level. The timing of refusal conversion activities was not recorded in the contact data file. Greece employed experienced interviewers to re-approach initial refusers.

Hungary

The analysis carried out for the purpose of this report is based on the contact data file with 2635 sample units although the gross sample contained 3238 units. This difference produces substantially different response rates: ESS documentation: 49.15%; CF: 60.67%. No respondent incentives were provided for the recruitment of respondents. Different interviewers than the initial ones re-approached the initial refusers selected by researchers at the survey organization. In spite of these strategies including the contacting of 50% of initial refusers, the conversion rate is not high (5%).

Ireland

Several corrections were made to the initially submitted contact data file but some remaining issues need to be documented. The response rate calculated on the basis of the contact data file differs from the self-reported response rates: ESS documentation: 65.17%; contact data file: 59.79%. This difference is mainly due to different proportion of ineligibles and non-contacts being reported in the ESS documentation and the contact data file. According to the contact data file, Ireland has the highest non-contact rate (21.6%). The data set contains information that is inconsistent between the main and contact data files with respect to the occurrence of an interview (N=9) and the interview date (N=49), for some cases the dates of visit are missing. It appears that contact procedure efforts were rather limited: a generally low number of contact attempts are observed, in particular for non-contacts. Limited refusal conversion efforts during the data collection even though specific training on refusal conversion activities had been organised. Ireland has also achieved a high response rate (40+%) after the initial contact attempt.

Israel

Some remaining issues need to be documented. These include a high number of non-contacts due to non-compliance with the 4 golden rules to minimize non-contact and information for refusals missing (particularly age, gender, and also the interviewer assessment of likelihood of future cooperation). No respondent incentives were used for

the recruitment of respondents but a call centre was established and websites were created. The coverage among initial refusers was not high (35%) but the conversion rate among those contacted was considerable (21%).

Lithuania

Lithuania encountered difficulties in achieving the expected outcome rates. A low response rate, a high non-contact rate, a high refusal rate and a high incidence of other types of non-response (neither refusal nor non-contact) are observed. Although non-conditional incentives have been used, fieldwork efforts could have been targeted more to non-respondents. Lithuania has made fewer efforts than required by ESS requirements with respect to non-contacts and initial refusals. Information for initial refusals is missing: particularly age, interviewer assessment of likelihood of future cooperation, and also gender.

Netherlands

Several corrections were made to the initially submitted contact data file but some remaining issues need to be documented. These include much missing information for refusals' age; inaccurate codes on the second contact outcome variable (OUTNIB). As for response enhancement measures, conditional and progressive monetary incentives were used (10 euro voucher initially, 15-20 and then 25 euro when interviewed as a result of 2nd contacts and thereafter). A website and newsletter were developed and a free telephone number was provided. As for refusal conversion activities, all refusers and non-contact cases were re-approached through multi-mode contacts (use of telephone to non-contacted) by the best-performing interviewers. These intensive refusal conversion efforts were reflected in an increase in the response rate by 10 percent as a result of high coverage (84%) and conversion rates (32%).

Norway

Several corrections were made to the initially submitted contact data file but some remaining issues need to be documented. The contact procedure is recorded in a detailed manner including information on the number of automatic telephone calls prior to achieving face-to-face contact. A web page was created for response enhancement purposes. Initial refusals to be re-approached were selected by field staff and re-approached by different interviewers than the initial ones. In addition, 'motivation letters' and 2 lottery tickets were sent out. With respect to difficult refusal conversion cases, additional efforts were made towards the end of fieldwork period including a small number of interviewers receiving additional training consisting of interviewer group discussions sharing fieldwork experiences. These efforts resulted into an additional 50 conversions. Norway contacted a high proportion of initially refused sample units (75%) but the conversion rate was just above the average for all countries (13%). Like in previous rounds, no observable data concerning type of housing and neighbourhood characteristics were collected due to privacy law.

Poland

Several corrections were made to the initially submitted contact data file but some remaining issues need to be documented. These include incomplete information for refusals (in particular the reason for the refusal and the assessment of the likelihood of future survey cooperation) and for observable data (high missing items among non-response units). Poland worked with unconditional incentives (pen, pen-light, wall calendar) provided before the interview and a dedicated ESS website was established. With respect to refusal conversion activities, initial refusals (soft refusers) to be re-approached were selected by the regional coordinators and re-approached to almost the same extent by the same interviewer as the initial one and a different one. Refusal conversion coverage and conversion rates were above average.

Portugal

Like for other countries, a substantial amount of information is missing on refusals' age, gender and interviewer assessment of likelihood of future cooperation. Portugal employed unconditional non-monetary incentives provided before the interview. Neither response enhancement activities nor refusal conversion activities were organized. The high number of invalid interview cases (N=233) should be noted.

Russia

A substantial amount of information is missing for initial refusals, in particular the age. In addition, there are a high number of non-contacts due to non-compliance with the 4 golden rules to minimize non-contact. As for response enhancement measures, conditional non-monetary incentives were provided upon completion of the interview. Response rates were low in the cities. A dedicated website was developed to present results from previous rounds as well as the on-going one. Initial refusers were selected by regional directors and re-approached by more highly paid (30% more) interviewers. Refusal conversion coverage (21%) and conversion rates (5%) were not very high compared to the average for all countries.

Slovakia

Several corrections were made to the initially submitted contact data file but some remaining issues need to be documented. These include a substantial amount of missing information for refusals (age, gender, interviewer assessment of likelihood of future cooperation); *a substantial proportion of interviewer numbers are missing*; and completely missing information for the item 'access to the sample unit' in the observable data. In addition, there are a high number of non-contacts due to non-compliance with the 4 golden rules to minimize non-contact. As for respondent recruitment measures, conditional monetary incentives were provided upon completion of the interview, a call centre was established, and dedicated web-pages were created. However, no specific refusal conversion activities were organized.

Slovenia

Several corrections are also made to the initially submitted contact data file but some issues need to be documented with respect to the quality of the data files. Substantial amounts of information are missing for refusals, in particular on age and gender. The additional information on ineligible cases is incomplete. Observable data information is incomplete. No incentives were provided for the purpose of respondent recruitment but additional letters were sent out to target respondents as part of response enhancement measures. Only the most experienced interviewers were employed for the purpose of refusal conversion activities. Even though the coverage among initial refusers is not high (30%), the conversion rate is above average (13%).

Spain

Only minor issues need to be noted. The information for initial refusals is incomplete with respect to age; and among non-response units, missing items are high for observable data despite extra efforts made during the interviewer training. Unconditional monetary incentives were provided before the interview, a call-centre accessible through a toll-free number was established, and dedicated web-pages were created. In addition, two contact letters (instead of the usual one) were sent out before the contact procedure started including leaflets translated into regional languages. All unsuccessful cases were re-issued and approached by experienced interviewers with different social and ethnic backgrounds. Refusal conversion coverage and conversion rates are high compared to the average for all countries.

Sweden

In spite of substantial efforts made to correct the contact data file after its initial deposit, a number of issues need to be noted. As far as the data quality is concerned, the extent of information missing for the interviewer's assessment of the refusal's age and gender is particularly high. Partial information is provided with respect to the interviewer's age (3 broad categories) and no information is provided on his/her gender. As for respondent recruitment, monetary conditional incentives were used (5 euro, equivalent two lottery tickets) upon completion of the interview. The coverage of refusal conversion activities was wide (72%) including non-contacts in addition to initial soft refusers and different interviewers than the initial ones were used. The conversion rate was around average.

Switzerland

Switzerland recorded very detailed information on the contact procedure (maximum 86+ contact attempts) employing a maximum of 63 interviewers and including information on automatic telephone dialling after the first face-to-face contact. As far as data quality is concerned, no substantial issues are to be noted. Though Switzerland changed the sampling frame from household-based to individual, the non-response rate, particularly the non-contact rate, remained the same as in the previous round. Use was made of a range of respondent incentives including unconditional and conditional monetary and

non-monetary incentives. As for response enhancement measures, a call-centre was established and web-pages were developed. As for refusal conversion activities, all initial refusers were recontacted by specially trained and experienced interviewers. Refusal coverage and conversion rates are high compared to the average for all countries.

Ukraine

Issues to be noted with respect to data quality include the fact that information for the 2nd response outcome is missing (N=612); substantial amounts of information are missing for observable data due to the fact that adaptations made from the 4th to the 5th round (new items introduced, different scales) were not implemented. Like Bulgaria and Croatia, Ukraine did not provide initial letters and brochures as part of respondent recruitment efforts. A high number of non-contacts are observed due to non-compliance with the 4 golden rules to minimize non-contact. As for response enhancement measures, no respondent incentives and conversion techniques/strategies were employed.

United Kingdom

Some issues need to be documented. Some visit dates are not chronologically ordered; information on the second contact outcome variable (OUTNIB) is incomplete. As for response enhancement measures, unconditional monetary incentives (5 pound high street voucher) were included in the initial envelope sent to all sample units. Reissued cases, selected on the basis of team discussions, were assigned to different, more experienced interviewers. Other response enhancing measures such as call-centres and web-pages were also employed. Refusal conversion coverage (58%) and conversion (16%) rates are above average.

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