Quality matrix for the European Social Survey, round 7

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List of Tables

List of Figures

Contents

1 Introduction

1.1 Purpose of this report

This report seeks to provide a comprehensive overview of the quality of the European Social Survey (ESS), round 7. This includes (almost) all elements of the survey lifecycle and comprises an assessment of both the process and the output quality of the survey. From the perspective of continually improving the ESS, this report may therefore be considered as input for later rounds of the ESS, not only regarding the ESS as a whole, but also, and more specifically, regarding the participating countries.

Under first ERIC, a similar quality report was delivered for round 6 of the ESS[2]. That report was restricted to the monitoring of fieldwork, its outcomes, and a quality assessment of the obtained answers from the interviews. Special attention has been given to the interviewers and important quality contributors.

This current quality report focusing on ESS7 (under the second ERIC) will elaborate on the first report, by reporting on other important elements of the survey lifecycle. Most of the extensions can be situated in the preparatory phase of the ESS round 7, including sampling, questionnaire design and translation, SQP, pretesting, fieldwork preparation, data dissemination and the collection of media claims.

1.2 The ESS

The ESS is an academically driven social survey designed to capture the interaction between the changing institutions, attitudes, beliefs and behavioural patterns of Europe's diverse populations. As stipulated in the ESS 'Specification for participating countries', the overall objective of the ESS is 'to chart and explain the interaction between Europe's changing institutions, its political and economic structures, and the attitudes, beliefs and behavioural patterns of its diverse populations' (European Social Survey, 2013). The ESS started in 2002 and has collected data for core and round-specific modules every two years, and has now conducted 7th round. From its inception, the ESS prioritized the equivalence of measurement in the context of cross-national and cross-cultural survey research (Jowell, Roberts, Fitzgerald, & Eva, 2007) assigning the highest priority to the production, and dissemination to the scientific and user communities, of survey results and survey documentation. More specifically, there are three ESS core objectives (Jowell et al., 2007, p. 9):

- To produce rigorous data about trends over time in people's values within and between European nations;

- To rectify long-standing deficits in the rigour and equivalence of comparative quantitative research especially in attitude studies; and

- To develop and gain acceptance for social indicators including attitudinal measures that are able to stand alongside the more familiar economic indicators of societal progress.

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[2]This report can be found online: http://www.europeansocialsurvey.org/docs/ round6/ methods/ESS6_ quality_report.pdf

These core objectives are accompanied by a range of research modalities to be implemented by consortium members including national counterparts (European Science Foundation, year unknown).

- *Population to be surveyed*: The survey will cover people 15 years and older, with no upper age limit, who are resident in the country, regardless of nationality, citizenship or legal status. The inclusion of non-national residents must be ensured the largest susceptive groups being those that do not speak the national language. In countries where a minority language is spoken as a first language by 5% or more of the total population, the corresponding language must be translated to so that the respective population can participate in the survey.

- *Sample*: the sample will be selected by strict random probability methods at every stage. The relative selection probabilities of every sample member will be known and recorded in the data set. Quota sampling will not be used at any stage. The minimum effective size of sampling is set at 1500 aiming for 70 per cent response rates and 3 per cent noncontact rates among eligible units.

- *Continuity*: The survey takes place every two years and it is recommended that the fieldwork period (data collection) is consistently implemented (within a four-month period between 1st September - 31st December of the designated year) in order to ensure a high quality design.

- *Participation*: A country's successive participation in every round is an essential requirement for guaranteeing the implementation of the methodology with respect to the above mentioned issues, which must be supported by continuous national funding.

1.3   Quality control in the ESS

In order to achieve the research objectives and implement the research modalities subject to the highest methodological standards, a wide range of quality control procedures and practices has been implemented under the ESS so far. For every round, the ESS identifies deviations at national level and all deviations identified are documented as much as possible, and this for two purposes: first, to distill lessons for future rounds so that deviations can be avoided or remedied; second, to alert researchers analysing the data. Program activities implemented by both the Core Scientific Team (CST) and the National Co-ordinator (NC) team have paid much attention to this issue so far.

The quality control activities implemented at the central (CST) and national (NC) levels are wide-ranging. They follow the survey lifecycle, which includes the following activities and outputs: developing the source questionnaire in order to end up with a multi-translated questionnaire; identifying the best sampling frame for implementing probability sampling methods; monitoring the contact procedure and interview activities and following up on nonresponse units; editing and producing standardized survey documentation and multiple standardized data sets. Guarantees with respect to the quality of these activities and outputs are obtained through continuous process quality control. For example, the source questionnaire is carefully reviewed to ensure that questions are based on theoretically sound and measurable concepts; the questionnaire is tested multiple times through pilots and advance field tests; the questionnaire is translated into multiple

languages subject to rigorous standardized translation and verification procedures at national level. As for sampling, the realized sample consists of a high quality random sample obtained through the application of rigorous probability sampling procedures. Data collection activities are monitored to ensure careful preparation and execution. This includes the selection of the best qualified survey organization and interviewers, as well as the best possible organization of and training for interviewers, the timely monitoring of fieldwork activities such as response and nonresponse rates and enhanced respondent recruitment procedure among nonrespondents, and quality control backchecks on final contact outcomes. In addition, the quality of interviews is evaluated continuously to ensure that a 'standardized interview' is carried out. Information from the media on national events is also recorded to allow for disentangling temporary response effects from true responses. On the basis of these quality controls and additional research to remove inconsistencies and filter errors, multiple data sets and documentation are standardized and produced and made freely available to the research community.

2 Theoretical framework and operationalisation of quality assessment

The starting point for a quality assessment framework should consist of the mainstream approaches in the survey methodology literature. This means that the framework should take account of:

- The 'fitness for intended use' framework of the European Statistical System and OECD (multidimensional data quality framework).

- The framework on monitoring survey production process quality from Total Quality Management (TQM).

- The Total Survey Error (TSE) framework.

2.1 Main issues with respect to survey quality in a cross-national context: European Statistical System and OECD Data Quality

A broad approach, namely a multi-dimensional data quality framework like the one applied in the European Statistical System (Eurostat, 2000) and the OECD quality framework (OECD, 2011), is needed in the context of cross-national surveys like the ESS. Its focus is on user requirements, in addition to relevance, accuracy, timeliness and punctuality, accessibility and clarity, comparability, coherence, and completeness.

- *Relevance*: This dimension concerns the question whether the statistics produced are relevant for users. The statistical measure is a summary of the individual variable values for the statistical units in a specific sub-population.

- *Accuracy*: This dimension can be assessed by using information on confidence intervals and other statistics. Errors are categorized into sampling and non-sampling errors.

- *Timeliness and punctuality*: This dimension concerns the correspondence of activities and target dates (timing) in the survey production process concluding with the electronic data transmission. Hansen, Benson, and Bowers (n.d.) suggest to operationalise this by asking: How much time has elapsed between the end of the collection of data and the availability of data for analysis? Are the data available when expected, based on client specifications?

- *Accessibility and clarity*: This dimension calls for information on the dissemination of survey data.

- *Comparability*: This relates to statistics that are compared between geographical areas, non-geographical domains or reference periods. It involves measuring the impact of differences in concepts and definitions using applied statistical approaches. For instance, are data from different countries/cultures comparable to each other? Since the ESS is a cross-national survey, this dimension should receive prime attention.

- *Coherence*: This dimension concerns an extension of the comparability dimension but for a wide range of statistics. Coherence is studied between provisional and final statistics; between short- and long-term statistics; within the same socio-economic domain; and coherence of statistics to national accounts.

- *Completeness*: This assesses the suitability and applicability between domains of available statistics and needs/priorities by users. Completeness is studied together with relevance, comparability and coherence.

Cost, burden, and budget affect all seven dimensions of quality.

2.2 Process quality assessment: Total Quality Management (TQM)

Ensuring survey quality means continuous quality control activities of all the different stages in the survey process. Sub-components of the survey process are: defining research objectives, finalizing the questionnaire, specifying the target population, sampling design, and implementation strategy (e.g. data collection and processing), and estimation and analysis (Biemer & Lyberg, 2003, pp. 26-34). These different survey process phases are revisited to ensure final survey quality. Revisiting these processes is important for monitoring purposes. As the 'Continuous Quality Improvement' (CQI) framework (Morganstein & Marker, 1997) states, monitoring processes allows for: i. improving product quality, cost-efficiency; ii. managers to be responsible for problems; iii. objective measuring and monitoring of quality over time; iv. aiding future improvement projects; v. providing effective feedback and training to staff; and vi. providing customers with quality assurance.

Such a perspective is in line with the TQM framework, a framework focused on customer needs and expectations developed for assessing the quality of large-scale interview surveys through central management of survey implementation and quality assessment. In line with the discussion above, this type of quality assurance framework integrates both process and output/product quality. The TQM framework considers the complete process of survey production decomposed into three periods: (1) preparation of fieldwork (training, sample design set-up); (2) data collection; (3) follow-up and feedback on data collection (Loosveldt, Carton, & Billiet, 2004).

Increased attention in the TQM framework highlights measurement of key process variables through selection, observation and analysis of survey data. Process variables can be developed making use of statistics such as control charts, experiments, regression analysis, Pareto diagrams, scatter plots, stratification (Lyberg, 2012), or following a flow chart in survey production. The identification of process variables aims at identifying underlying problem root causes through fishbone diagrams, process flow charts and brainstorming (Aitken, Hörngren, Jones, Lewis, & Zilhão, 2004, Annex 2).

However, currently there is no clear definition of what precisely constitutes process variables at the item level. Even though the existing literature (Biemer & Lyberg, 2003) provides examples (e.g. reinterview results, time or resources used, edit failures, coder error rates, number and type of customer constraints as well as number of cases where disclosure control techniques fail to protect data), such items need to be identified within each survey responding to specific survey designs. A further discussion on this issue falls outside the scope of this paper but it is an important issue to keep in mind when trying to identify key quality indicators on process variables.

2.3 Data quality assessment: Total Survey Error (TSE)

In survey research, data quality is assessed in different ways. The traditional and prevailing approach consists of assessing the statistical error properties of sample survey statistics. This approach is taken by, for instance, the TSE framework (Groves, 1989). The TSE framework defines quality as the estimation and reduction of the Mean Square Error (MSE) of statistics of interest, the MSE equalling the sum of the random (variance) and the squared systematic (bias) errors. The TSE framework takes account of both the measurement (e.g. construct validity, measurement and processing error) and the representation (e.g. coverage, sampling, nonresponse and adjustment) of the target population (Groves & Lyberg, 2010; Groves et al., 2004). By adding process quality into the TSE framework, Biemer and Lyberg (2003) decompose errors into sampling errors (due to selecting a sample instead of the entire population) and non-sampling errors (due to other errors or system deficiencies). The sampling error is due to errors related to the sampling scheme, the sample size and the estimator choice, and the non-sampling error is due to different sources of errors including those related to specification, nonresponse, frame, measurement and data processing, each of which can be broken down: specification (concepts; objectives; data elements); nonresponse (whole & within unit; item; incomplete information); frame (omissions; erroneous inclusions; duplications); measurement (information system; setting; data collection mode; respondent; interview; instrument); processing (editing; data entry; coding; weighting and tabulation) (ibid. p. 39). Still, the TSE framework on data quality is rather narrow in comparison with other frameworks since it focuses on one specific component only: accuracy.

3 The survey lifecycle

The ultimate aim of quality assessment in the ESS is to assist in the detection and correction of problems affecting the efficiency and accuracy of data analysis and its application in comparative social science survey research. An increasing number of actors and stakeholders influence survey data quality dimensions, during all elements of the survey lifecycle. These aspects of the survey lifecycle could include:

- Sampling

  1. Gross, net and effective sample size
  2. Design effects
  3. Exclusions from the target population

- Fieldwork preparation

  1. Date fieldwork questionnaire (FWQ) signed off
  2. Date fieldwork projections received
  3. Name of survey organisation
  4. CAPI vs PAPI
  5. Planned start and end dates fieldwork
  6. Targeted response rate, and non-contact rate
  7. Planned number of interviewers
  8. Number of interviewers to be recruited

- Translation

  1. Correct application of all TRAPD steps
  2. Composition of the team (including linguists and methodologists . . .)
  3. Changes made to translations without confirming with CST
  4. Harmonisation efforts made for shared languages
  5. Number of verifier comments made
  6. Reaction to and engagement with verification comments
  7. Proportion of comments accepted; does the final translated items from the TRAPD process match the questionnaire fielded.

- Pre-test and piloting

  1. Was a national pre-test carried out in each country?
  2. When did this take place?
  3. Was this after translations and SQP had been completed?
  4. How many interviews were carried out?
  5. How were respondents selected?
  6. What (if any) problems were identified as a result of the national pre-test?
  7. What action(s) were taken in response to the problems identified?
  8. Were any others forms of pre-test carried out? (e.g. tape recordings of interviews/ respondent debrief/ Interviewer debrief/ cognitive interviewing)

- SQP coding

  1. Was SQP carried out in each country?
  2. Did that lead to corrections in the questionnaire/showcards?

3. Where these suggestions implemented? Why not?

4. Was all this within the expected time-frame?

- Fieldwork monitoring

  1. Were fieldwork projection received in time?

  2. Timeliness of the projection/actual fieldwork?

  3. Regular progress report available?

  4. Sufficient content of the fieldwork progress reports?

  5. Did the fieldwork met the gross and net sample size projections?

- Fieldwork results

  1. Ineligibility

  2. Response/refusal/noncontact rates

  3. Other reasons for nonresponse

  4. Indications of nonresponse bias

- Obtained answers

  1. Interviewer effects

  2. Item nonresponse

  3. Interview length

  4. Straight-lining

  5. Third party presence and interviewer evaluations of respondents' role.

  6. Interview language

- Archiving

  1. Timeliness of deposit (e.g. number of days from official deadline); number of days between fieldwork end and data deposit

  2. Time between the first processing report and the response to all queries

  3. Completeness of the contact form data

  4. Consistency across all data files

  5. Comparison between the main file deposited (not raw) and the main file ready for release

  6. Number of edits (excluding edits for missing values)

  7. Deviations where variables thrown out / systematic error (reported as deviations in the Documentation Reports today today)

  8. Completeness of deposit.

- Media claims

  1. Titles of newspapers selected

  2. Position (left/right, political)

3. Number of claims

4. Where claims sourced from

5. Number of claims per category

6. Any incomplete fields.

4   Data sources

The analyses included in this report are based of information from a number of data sets and other sources that are publicly available from the ESS website (www.europeansocialsurvey.org). These are:

- Data sets

  - Data from the main questionnaire
  - Data from the supplementary questionnaire
  - Data from the interviewer questionnaire
  - Contact file data

- Other publicly available sources

  - Main questionnaire (source/translated)
  - All versions of the supplementary questionnaire
  - Contact form
  - Showcards (main/supplementary)
  - The ESS documentation report
  - The ESS data protocol
  - Interviewer and fieldwork instructions
  - Advance letters
  - Brochures
  - Translation TVFF

In addition to the publicly available data sources, correspondence has been archived between NC's and the CST (predominantly e-mails, fieldwork log), as well as internal reports from CST experts in their specific domains (sampling, translation, ...). This intranet information is only available for CST and NC members.

5   Survey and fieldwork preparation

In this section, the preparatory procedures that took place prior to the fieldwork will be assessed. The emphasis of this evaluation will predominantly be on whether procedures and recommendations were followed by NC's within the projected time-frame. This makes this chapter predominantly an evaluation of the decision making process preceding the fieldwork.

Most elements of this preparatory phase within the survey lifecycle will be covered. The cost aspect (including tender) will not be discussed.

Figure 1 gives the timelines of the countries that participated in ESS7. Important milestones such as the sample design sign-off, the translation sign-off, the fieldwork sign-off and the data upload are all indicated. Also, the grey bars in the timeline overview indicate the planned fieldwork, while the black bars represent the actual course of the fieldwork. The period in which the pretests took place are indicated by brown bars. The countries are ordered based on the date when the sampling design was signed off. Section 5.7 will discuss the planning and timing of ESS7 in more detail.

5.1 Sampling

The ESS seeks to target all residents of participating countries, age 15 or older, sticking to the principles of probability sampling. Nevertheless, the multi-country context in which the ESS operates leaves some leeway for individual countries to develop their own sampling strategy. This flexibility is required as countries do not have similar sampling resources (Kish, 1994). Some countries have access to individual-based registers, others need to rely on sampling techniques such as random walks. Therefore, an optimal sample design for cross-national surveys follows the line of optimizing the sampling strategy in each country separately. Apart from the availability of sampling frames, cost and experience also play a role in determining the sampling strategy.

In order to make valid inferences from the sample to the population, it is important (1) to have full coverage of the the targeted population, (2) to obtain a reasonably sized sample, and (3) to have an understanding of the complexities of sampling in terms of stratification and clustering of the sampled elements. In Table 1, these key aspects of sampling of the countries participating in the ESS7 are provided.

The first two columns of Table 1 indicate which type of sampling frame the ESS7 participating countries used. In principal, an individual-based frame is preferable. This has the advantage that target persons can be better located and gives more control over who is to be called for at the doorstep. Also, registers provide background information on the individuals such as age and gender. These variables might be used for stratification purposes or non-response bias assessment and/or adjustment. Address- or household-based frames do not provide such auxiliary variables on a individual level and therefore it is not possible to target an individual per household or address as easily as compared to individual-based frames. Here interviewers have to apply techniques such as *Kish Grids* or birthday selection methods in order to select an individual at the doorstep. As the ESS specifications indicate that individuals living in institutions (e.g. prisoners) are not supposed to be interviewed, individual-based frames can included a number of ineligible persons that need to exclude during the fieldwork. The columns **Excluded** of Table 1 state whether certain groups are included/excluded in the sample frames.

In the countries in ESS7, the majority of the countries use individual-based frames. All of these sampling frames are official (governmental) registers. They are believed to contain all residents in the countries, except illegally residing people. Because the birth dates are available, the samples can be easily drawn respecting the age requirements (all individuals aged 15 or older as per September 1). Eight countries need to rely on address- or household-based frames. Ireland, the UK and the Netherlands used a sample
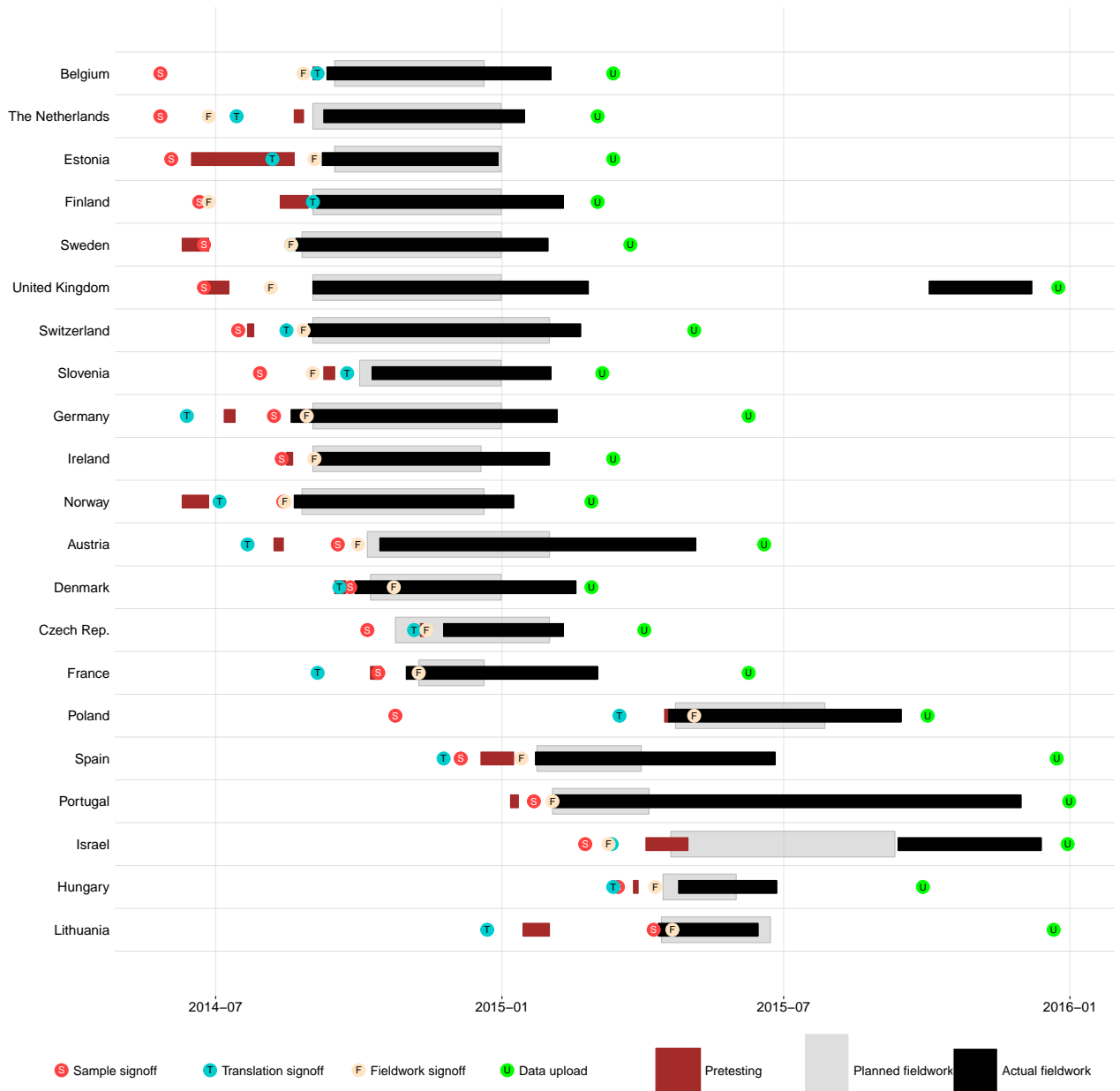
Figure 1: Fieldwork & fieldwork preparation timelines, ESS7, 15 countries[3]

Table 1: Overview of sampling, ESS7[a]

Country	Frame Type[a]	Frame Source	Frame Institutions	Excluded Region	Excluded Other	Design # stages	Design Strata	Design $\bar{b}$	Design ρ	$deff_c$	$deff_b$	Resp. rate exp.	Resp. rate obt.	Inelig. rate[b] exp.	Inelig. rate obt.	Sample size Gross	Sample size Net exp	Sample size Net.obt	Opt-out
Austria	IND	Official	No[c]	No	No	3	Region	5	0,05	1,2	1,04	0,52	0,52	0,03	0,05	3600	1800	1795	yes (0)
Belgium	IND	Official	Yes	German community	No	2	Region	5	0,05	1,19	1	0,58	0,57	0,03	0,04	3200	1800	1769	No
Czech Republic	ADD	Official	Yes	No	Homeless, abroad	4	No	4,1	0,06	1,19	1,25	0,70	0,68	0,02	0,03	3257	2225	2148	No
Denmark	IND	Official	Yes	N/A	stay < 3 months	1	No	1	0	1	1	0,53	0,52	0,02	0,01	2900	1500	1502	No
Estonia	IND	Official	Yes	No	No	1	Region, age, gender	1	0	1	1	0,65	0,60	0,15	0,05	3620	2000	2051	No
Finland	IND	Official	Yes	No	temp. Abroad, recently sampled, opt-out	1	No	1	0	1	1	0,70	0,63	0,01	0,02	3400	2358	2087	No
France	ADD	Random walk	Yes	Islands	No	4	Urbanization	10,44	0,04	1,40	1,20	0,53	0,51	0,10	0,11	4203+851	2000	1917	No
Germany	IND	Official	Yes	No	unregistered immigrants	2	Region	15,5	0,04	1,58	1,1	0,40	0,31	0,12	0,02	7415+2435[d]	2610	3045	Yes
Hungary	IND	Official	Yes	No	No	1 / 2	Region	1 / 6	0 / 0.1	1 / 1.5	1 / 1	0,60	0,53	0,02	0,035	3339	1957	1698	No
Ireland	ADD	Postal	Yes	No	No	3	Region	9,87	0,03	1,32	1,21	0,60	0,61	0,10	0,11	4400	2385	2390	No
Israel	ADD	Official		No	Homeless, away from residence	3	No	10,30	0,1	1,931	1,3	0,74	0,74	0,03	0,02	3500	2500	2562	No
Lithuania	ADD	Official	Yes	No	Intra-murals, Sailing, trucking	3 / 4	Region	1 / 5	0 / 0.2	1 / 1.8	1.2 / 1.5	0,70	0,69	0,10	0,11	3634	2273	2250	No
The Netherlands	ADD	Postal	Yes	No	No	3	No	1	0	1	1,21	0,59	0,59	0,06	0,05	3252+200	1811	1919	No
Norway	IND	Official	No[c]	No	Illegals	2	Region, age, gender	N/A	N/A	1,04	1	0,60	0,54	0,04	0,04	2750	1584	1436	No
Poland	IND	Official	No[c]	No	Unregistered immigrants	2	Urbanization	N/A	N/A	1,15	1,01	0,70	0,66	0,07	0,10	2715	1756	1615	No
Portugal	HH	Municipalities / random walk	Yes	Small Munic.	Homeless, out of cntry	3 / 2	Region	10.5 / 1	0.065 / 0	1.6 / 1	1,25	0,70	0,43	0,04	0,05	3100	2070	1265	No
Slovenia	IND	Official	N/A	N/A	N/A	2	Region	6,8	0,06	1,348	1	0,60	0,52	0,06	0,03	2400[e]	1354	1224	Yes(321)
Spain	IND	Official	Yes	Islands		2	Region / density	4	0,04	1,132	1	0,60	0,68	0,06	0,06	3010	1698	1925	No
Sweden	IND	Official	N/A	No	Illegals	1	No	1	0	1	1	0,52	0,50	0,06	0,05	3750	1500	1791	No
Switzerland	IND	Official	Yes	No	Recently sampled	2	No	1	0	1	1	0,54	0,53	0,05	0,01	2900	1520	1532	No
UK	ADD	Postal	No	N Caledonian Canal, Man, Channel Islands	No	5	No	10,1	0,043	1,391	1,27	0,55	0,44	0,08	0,07	5600	2651	2264	No

[a] IND: individual based sample, ADD: address based sample, HH: household based sample

[b] Considered as ineligible: Address not traceable, not residential, not occupied, other ineligible, emigrated, deceased

[c] Could not be excluded due to sample frame. These cases are considered ineligible during fieldwork

[d] In Germany, an reserve sample was drawn in order to anticipate that the the number of achieved interviews would be lower than expected.

[e] In Slovenia, the gross sample anticipated a large amount of opt-out cases.

[a]Source: Sign-off forms, ESS Documentation report e01_1, country contacts

frame provided by the postal agency, France follows a random walk strategy[4] and the Czech republic, Israel, Lithuania have an official list of addresses. For Ireland, this postal register has the disadvantage that also vacant addresses are included in the frame, so that more ineligible cases are to be expected during the fieldwork (up to 10%). Portugal uses a household sample.

In some countries, some groups are excluded due to practical/cost considerations. In Belgium, the small German speaking community is not sampled, and in France and Spain the Islands (Corsica or the Balearic Islands) are not selected.

As a general comment, it might be worthwhile in the future to more precisely indicate which groups are specifically included or excluded. This particularly applies to homeless people, illegal immigrants, people residing abroad, people residing in rest homes, prisoners, sailors, truckers or students. Usually, sampling sign-off forms mention these issues, but not in standardized way. Therefore, there is a risk that these inclusion/exclusion issues cannot be reported on with certainty. Usually, these categories of included or excluded groups only represent a relatively small proportion of the population (usually < 5%), nevertheless, because of an increasing trend (for example, ageing of the population, leading to more people in institutions) this issue may become more important.

There seems to be a considerable variety of sampling designs. Usually, the number of stages is somewhat longer for address- and household-based samples as the last selection stage consists of the selection of the target individual in the household or address. This can even become more complicated in the case of a multi-unit dwelling. Apart from Denmark, Estonia, Finland, and Sweden, all countries apply some form of multi-stage sampling. Amongst the countries that use individual-based samples, the first stage of sampling usually consists of selecting municipalities or other local clusters of persons as PSU's. Within these PSU's, individuals are often selected by simple random sampling. In all countries, deviating from the one-stage simple random sampling, the design effect needs to be taken into account. The four columns **Design effects** of Table 1 indicate this anticipated effect that the complex (e.g. multi-stage) sampling design will have on the accuracy of the eventual survey estimates. $deff_c$ and $deff_p$ reflect the variance inflation that needs to be accounted for due to (spatial) clustering of the sample data and unequal inclusion probabilities, respectively. The design effects due to clustering $deff_c$ consist of the the so-called intra-class correlation coefficient ρ (degree of heterogeneity of persons within the same PSU) on the one hand, and $\bar{b}$ the average number of selected sample elements per PSU; The more elements per cluster (or the less clusters) or the higher the intra-class correlation, the more the precision of estimates, in terms of sampling variance, will decrease.

In most countries, either because of clustering or unequal selection probabilities, the design effects are considerable. In France, Germany, Ireland, Israel, Lithuania, Portugal, Slovenia and the UK sizeable design effects due to clustering have been anticipated in the planning phase of the sampling designs. Selecting more PSUs can reduce the measurable design effect. However, this might increase the (travel) cost for interviewers. Regarding this clustering phenomenon, it should also be mentioned that the estimated intra-class correlation within PSUs and interviewer effects may be (partially) confounded and might even be the predominant force compared to spatial clustering that is present in the population. Interviewer effects will be discussed in more detail in Section 8.1.

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[4]Prior to the actual fieldwork, addresses were selected by a random route technique, not conducted by the interviewers

Regarding the design effect $deff_p$ that is due to unequal selection probabilities, the countries that do not use individual-based frames are most affected. Both factors of the design effect are multiplied in order to obtain the overall design effects. Particularly in the Czech Republic (1.48), France (1.68), Germany (1.74) and Ireland (1.59), the design effects are assumed to be the strongest. The implication is that countries need to augment the number of obtained interviews in order to obtain the desired *effective sample size* of 1500 (or 800 for smaller countries such as Slovenia).

Countries also need to set their gross sample (respondents and nonrespondents) as a function of the expected response rate. Previous rounds of the ESS can be used to estimate the expected response rate. Also, the expected proportion of ineligible cases need to be taken into account. In the columns **Sample size** of Table 1 the planned gross (*Gross*) and net (*Net exp*) sample sizes are reported in order to obtain the effective sample size that is required by the ESS specification. Only in France, the planned net sample size of 2000 is not enough to obtain the effective sample size requirement of 1500. Column *Net exp* contains the actual achieved net samples sizes. In most countries, the objectives are met with minor deviations (less than 100 cases short). Finland , Norway, Poland, and Slovenia show the highest deviations. However the estimated effective sample size for Finland is above the required level.

Column **Opt-out** of Table 1 deals with opt-out issues during sampling. In some countries, sampling frames include individuals who do not wish to be included in survey samples. Especially in Slovenia, this has led to the exclusion of 321 cases, although this was less than anticipated, resulting an a larger net sample than initially planned. In some other countries, opt-out took place during the fieldwork. This particularly occurred in the Netherlands were 232 cases were lost because of this reason.

In sum, Sampling in ESS7 is characterized by strong country-specific elements. These differences originate from many different aspects of the local sampling context. In some countries, an individual-based frame is not available, thus complex multi-level sampling design have to be used that often have relatively high design effects. Furthermore, the expected response rate and ineligibility rates force some countries (more than others) to augment their gross sample size in order to obtain a satisfactory effective sample size.

5.2 Questionnaire design

Although the core questionnaire in the ESS is relatively stable, minor changes may be proposed in order to improve the questionnaire in the different participating countries. This particularly applies to categorical variables that are very country specific, and may be prone the (minor) changes over time, such as religion, level of education, partnership and the income deciles. Table 2 provides an overview of whether these variables have changed since the last ESS round in which the countries participated.

Regarding the categories about religion, only Austria introduced some changes in its questionnaire. New categories were added (Polish Orthodox church, Evangelical church and Hindu), some rewording was introduced for Muslim/Jewish religions, and some specific categories were dropped (Syrian Orthodox Church and Moravian Church). Also, 'Ritus' was changed into 'Kirche'.

Also in Austria, a few changes took place in the showcard categories and the way the national categories were bridged to the harmonized variable, related to the level of education. In Germany, the 'other' showcard category in level of education was removed

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[5]Source: country contacts

Table 2: Overview of questionnaire changes, ESS7[5]

	Religion		Education		Partnership		Income		
	Sign-off	Changes	Sign-off	Changes	Sign-off	Changes	Sign-off	Deciles	Last round
Austria	Yes	categories	Yes	categories	Yes	categories	Yes	2012	5
Belgium	Yes	No	Yes	No	Yes	No	Yes	ESS6	6
Switzerland	Yes	No	Yes	No	Yes	wording	Yes	ESS6	6
Czech Republic	Yes	No	Yes	No	Yes	No	Yes	2014	6
Germany	Yes	No	Yes	wording - category	Yes	No	Yes	ESS6	6
Denmark	Yes	No	Yes	No	Yes	No	Yes	2013	6
Estonia	Yes	No	Yes	No	Yes	No	Yes	No	6
Finland	Yes	No	Yes	No	Yes	No	Yes	2014	6
France	Yes	No	Yes	No	Yes	No	Yes	N/A	6
Hungary	Yes	No	Yes	No	Yes	No	Yes	2014	6
Ireland	Yes	No	Yes	category	Yes	No	Yes	ESS6	6
Israel	Yes	No	Yes	Labels combined	?	?	?	?	6
Lithuania	No		No		Yes	No	Yes	2014	6
The Netherlands	Yes	No	Yes	category	Yes	No	Yes	ESS6	6
Norway	Yes	No	Yes	wording	Yes	No	Yes	2014	6
Poland	Yes	No	Yes	No	Yes	No	Yes	ESS6	6
Portugal	Yes	No	Yes	No	Yes	No	Yes	ESS6	6
Spain	Yes	No	Yes	No	Yes	No	Yes	Most recent	6
Sweden	Yes	No	Yes	No	Yes	No	Yes	N/A	6
Slovenia	Yes	No	Yes	No	Yes	No	Yes	ESS6	6
UK	No	No	Yes	Wording	Yes	Same sex mar.	Yes	Inflation updated	6

and the wording of the category 'Grundschule beendet' was slightly changed to make it more consistent with other categories. Ireland introduced a small change regarding the 'apprenticeship' category. In the Netherlands, small changes were passed through related to the wording of the level of education categories and in Norway, two trivial changes in the description of 'siviløkonom' were fed through.

Regarding the categorization of partnership, Austria changed 'eingetragene Lebenspartnerschaft' into 'eingetragene Partnerschaft' to make consistent with legislative texts. It is the more familiar term also used in sources such as the media. In Switzerland, wording was added to confirm that 'In a legally registered civil union' also applies to same-sex couples.

The income variable should be divided in 10 equally sized deciles, based on an external data source. The limits of these deciles should therefore be regularly updated. Table 2 shows when the last update took place. Half of the countries simply copied the decile limits from ESS6 (Belgium, Switzerland, Germany, Ireland, the Netherlands, Poland and Slovenia). Other countries updated these bounds to a more recent year. In Austria, the bounds were only updated based on EU-SILC 2012 data.

For the rotating modules, participating countries also needed to have their questions / showcards signed off by HQ/CST. This applies to the questions about alcohol (E7-E9), ancestry (F61) and migration (D31-D34). The result of this approval process is documented in Table 3.

The supplementary questionnaire is a separate questionnaire that make up part of the core module. It is administered after the socio-demographic questions and the rotating modules. It has two purposes:

- It serves as a vehicle for a well-established 21-item measure of human values.

- It helps evaluate the reliability and validity of items in the main questionnaire using the Multi-Trait Multi-Method (MTMM) approach.

The supplementary questionnaire may be a continuation of the face-to-face interview, but may also be self-administered, possibly while the interviewer remains present. Table 4 reports about the use of the supplementary questionnaire in ESS7.

All countries except the Netherlands and Lithuania simply continued the face-to-face administration of the questionnaire into the supplementary questionnaire. The Netherlands and Lithuania might therefore be interesting cases in order to assess interviewer effects. In most countries, it seems that the assignment of the respondent to an experimental condition took place based on an algorithm built into the CAPI software. In only a few countries, country-specific questions were added in the supplementary questionnaire.

5.3   Translation

Since the ESS is a multi-lingual survey, correct translations from the English source questionnaire are an important prerequisite for obtaining comparability between countries and languages. The ESS specification require participating countries to follow a set of directives in order to obtain such comparability[8]. The most important of these requirements are:

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[6]Source: country contacts

[7]Source: country contacts

[8]For more details, see e.g. 'ESS_R7_Translation_Guidelines_FINAL.pdf' that can be found on the ESS website www.europeansocialsurvey.org.

Table 3: Sign-off process of rotating modules, ESS7[6]

	Alcohol	Ancestry	Migration
Austria	Yes	Yes	Yes
Belgium	Yes	Yes	Yes
Switzerland	Yes	Yes	Yes
Czech Republic	Yes	Yes	Yes
Germany	Yes	Yes	Yes
Denmark	Yes[a]	Yes	Yes
Estonia	Yes	Yes	Yes[b]
Finland	Yes	Yes	Yes[c]
France	Yes	Yes	Yes
Hungary	Yes	Yes	Yes
Ireland	Yes	Yes	Yes
Israel	Yes	Yes	?
Lithuania	Yes	Yes	?
The Netherlands	Yes	Yes	Yes
Norway	Yes	Yes	Yes
Poland	Yes	Yes	Yes[d]
Portugal	Yes	Yes	Yes
Spain	Yes	Yes	Yes
Sweden	Yes	Yes	Yes
Slovenia	Yes	Yes	Yes
UK	Yes	Yes	?

[a] Alcohol showcards deposited with archive differ from those signed off (mismatch on cards 47a and 47b).
[b] Used 5 other countries instead of Russia as reference country
[c] Used Serbia instead of Russia as reference country
[d] Used Ukraine instead of Russia as reference country

Table 4: Details about supplementary questionnaire, ESS7[7]

	Mode	Randomization	Additional questions
Austria	F2F continuation	CAPI algorithm	Yes[d]
Belgium	F2F continuation	CAPI algorithm	No
Switzerland	F2F continuation	CAPI algorithm	No
Czech Republic	F2F continuation	CAPI algorithm[a]	No
Germany	F2F continuation	CAPI algorithm	Yes[e]
Denmark	F2F continuation	CAPI algorithm	No
Estonia	F2F continuation	CAPI algorithm	Yes[f]
Finland	F2F continuation	CAPI algorithm[b]	No
France	F2F continuation	CAPI algorithm	Yes[g]
Hungary	Self completion	ABABAB...	No
Ireland	F2F continuation	CAPI algorithm	Not confirmed
Israel	F2F continuation	?	Yes
Lithuania	Self completion	No	Yes
The Netherlands	Self completion	CAPI algorithm	No
Norway	F2F continuation	CAPI algorithm	Not discernible
Poland	F2F continuation	CAPI algorithm[c]	No
Portugal	F2F continuation	Yes	Yes
Spain	F2F continuation	$\sim$ month of birth	Yes[h]
Sweden	F2F continuation	CAPI algorithm	No
Slovenia	F2F continuation	A=2,4,..., B=1,3,...	No
UK	F2F continuation		

[a] 1/2 randomly sampled interviews will use A-B order, 1/2 B-A order.

[b] ($\sim$ age and gender)

[c] ($\sim$ population density)

[d] 11 items on income and welfare.

[e] Question in Section J asking whether the respondent was reluctant to answer any questions (motivated by concerns about some of immigration items). Also 6 items (as in previous rounds) asking about which part of Germany (East/West) the respondent and their parents lived in prior to 1990.

[f] Additional questions on migration

[g] 4 additional questions on last (presidential) elections.

[h] 6 additional items about Internet usage, landline/mobile phone/email, and where the interview took place

- Translations are required for each language used as a first language by 5% or more of the population.

- Each country translates its own version(s) of the source questionnaire.

- Countries sharing languages will prepare their own draft version and will then consult each other about appropriate translation and possible harmonization of question wording. Each country will be responsible for ensuring the functional equivalence of its own translation(s).

- NCs are required to find suitable individuals to fulfil the three key roles in the translation process: translators, reviewer, and adjudicator.

- All translated language versions are subject to linguistic quality checking (verification) by an external service provider (cApStAn).

Subsequently, SQP coding is used in order to assess the comparability of questions based on formal characteristics of the questions. Thereafter, pretesting is mandatory in the participating countries in order to check question routing, lay-out and whether questions and answers need additional clarification. Finally, a formal sign-off of the translation procedure is required.

Each of these steps is documented per country. This section will report about each of them.

The national translation team consists of the following members:

- *Translators* should be skilled practitioners who have received some training or briefing on translating questionnaires. The ESS calls for two translators per questionnaire. Translators have to translate out of English into their strongest language.

- *Reviewers* need to have very good translation skills and must be familiar with questionnaire design principles, as well as the study design and topic. One reviewing person with linguistic expertise, experience in translating, and survey knowledge is sufficient. If one person cannot be found with these skills, two could cover the different aspects.

- The *adjudicator* is responsible for the final decisions about which translation options to adopt, preferably in co-operation with translators and reviewers, but at least after discussion with a reviewer. Adjudicators must a) understand the research subject b) know about the survey design, and c) be proficient in the languages involved. The adjudicator may often be the NC or someone of senior standing who works closely with the NC. The roles of adjudicator and reviewer may also be fulfilled by the same person ('reviewer-cum-adjudicator').

The following list[9] provides an overview of the teams that have been responsible for the **T**ranslation, **R**eviewing and **A**djudication, per language version. The list is ordered so that languages are grouped, rather than countries. For each combination, the number of interviews eventually realized during the fieldwork are also provided.

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[9]Source: country contacts

Czech Republic, Czech (n = 2148)

- T1: junior - social scientist
- T2: junior - social scientist
- R: senior - social scientist, also linguist (Czech language)
- A: senior researcher (NC) - social scientist
- Review and adjudication were consulted with 2 other social scientists

Denmark, Danish (n = 1502)

- T1: professional translator
- T2: independent translator
- R & A: ESS NC - Senior researcher at SFI
- P1 & P2: SFI-Survey colleague
- The translation team has expertise in translation, methodology, questionnaire design and substantive expertise

The Netherlands, Dutch (n = 1918)

- T1: Assistant Professor at Sociology Department
- T2: Flemish NC
- R & A: Dutch NC

Belgium, Dutch (n = 982)

- T1: Researcher experienced with ESS translations to Dutch
- T2: Independent professional translator
- R & A: Experienced survey researcher

Belgium, French (n = 787)

- T1: Experienced and qualified (Phd) translator of English
- T2: English teacher, trained translator
- R & A: BE-FR NC, Degree in sociology, senior researcher in sociology, including questionnaire design and development

France, French (n = 1917)

- Professional translator involved in the translation process + Researcher in Sociology, quantitative expert + Research officer, expertise in methodology, background in statistics and sociology + Researcher officer, expertise in methodology, background in statistics applied to social sciences (NC) + Data scientist with translator background + Survey officer

- Specific roles of all these contributors in translation, reviewing and adjudication are unclear

Switzerland, French (n = 344)

- T1: professional freelancer: long experience with translation of the ESS and other social survey questionnaires

- T2: social scientist, member of national ESS team since several years, experience in questionnaire translations

- R & A: professor in sociology, former NC

Switzerland, Italian (n = 72)

- T1: Freelancer: this person has a double education as social scientist and translator

- T2: Self-employed professional translator

- R: Italian speaking Master student for public opinion research

- R & A: NC

Switzerland, German (n = 1116)

- T1: self-employed: university teacher in translation, long experience with the ESS and similar survey questionnaires

- T2: professional, self-employed: long experience with the ESS and similar survey questionnaires

- R: Swiss-German, new national ESS team member

- R & A: NC

Austria, German (n = 1795)

- T1: Researcher, Sociology /PhD

- T2: Researcher, Sociology /PhD

- R: Researcher, Sociology /PhD

- A: Researcher, Political Science /PhD

Germany, German (n = 3045)

- T1: Prof. for Political Science, NCT Germany
- T2: Prof. for Sociology, NCT Germany
- R: Survey Manager ESS Germany
- A: Prof. for Sociology, NC Germany
- Also included in translation team: Senior & Junior Project Managers from the Survey Institute and ESS Translation Expert

Sweden, Swedish (n = 1791)

- T1+2: Professional translator 1+2/specialists Swedish-English translation.
- R: PhD Sociology, Assistant NC ESS Sweden
- A: Professor of Sociology, NC ESS Sweden

Finland, Swedish (n = 98)

- 2 Professional translators - MA, sociologist, Swedish-speaking - Student, Swedish-speaking - Interviewer, former sociology student, Swedish-speaking - Professor
- Specific roles of all these contributors in translation, reviewing and adjudication are unclear

Finland, Finnish (n = 1973)

- Sociology and English language student, bilingual - Sociology/social policy student - Sociology/social policy student - 2 Professional translators - Professional translator - 2 PhD, researchers - 2 professors
- Specific roles of all these contributors in translation, reviewing and adjudication are unclear

Ireland, English (n = 2390)

- *adapted from source questionnaire*

Norway, Norwegian (n = 1408)

- T1: Professor Sociology
- T2: Experienced translator, Statistics Norway
- R & A: Project manager Statistics Norway + NC

Estonia, Estonian (n = 1262)

- T1: Professional translator from translation agency
- T2: Professional translator from translation agency
- R & A: Sociologist, survey methodologist, researcher in ESS project + NC

Estonia, Russian (n = 789)

- 2 translators - survey methodologist, member of ESS team - survey methodologist, member of ESS team - NC
- Specific roles of all these contributors in translation, reviewing and adjudication are unclear

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Poland, Polish (n = 1615)

- T1: Professional interpreter with years of experiences in translation of texts in area of social sciences
- T2: Professional interpreter with years of experiences in translation of texts in area of social sciences
- R & A: Member of the ESS in Poland since 1st Round. Survey methodologist.
- A: 2 NC in ESS Poland since 1st Round + 3 ESS members Poland since round 1

Slovenia, Slovenian (n = 1224)

- 2 senior researchers (PhD social sciences) with extensive experiences in cross national surveying - 1 researcher (MSc social sciences)
- They don't have a linguistic or translation 'training' (nor such type of education). But all of them have more than 20 years of extensive experience in the field of cross-national surveys implementation (including translation).
- Specific roles of all these contributors in translation, reviewing and adjudication are unclear

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In the second released countries, the specific roles of the teams have not been meticulously recorded, however, according to the ESS translation expert, qualified team member have been deployed. Only in Hungary, Lithuania and Spain, the translators were no professional of trained linguists.

In all language versions, the translations have been carried out by a team. This is consistent with the committee-based approach using TRAPD that has been chosen as a deliberate strategy for the ESS. Also, all the countries deploy a team that has professional and/or experienced members regarding questionnaire translation.

However, from the main questionnaire dataset it was observed that in some countries interviews have been conducted in English for which it is not clear whether a translation procedure was initiated. This applies to 11 English interviews in Finland, 24 English interviews in Norway.

Some countries share questionnaires of the same language:

- *Belgium and the Netherlands.* In the Netherlands, the Flemish translation was used as second translation in TRA. In addition: continuous discussion and harmonization efforts between the Dutch and Flemish team took place, during the whole verification phase, until the completed verification they did together. Everything was documented in an excel file which was kept up to date after each meeting. Comparison of the Dutch translation in Flanders with the Dutch translation in the Netherlands was done primarily via e-mail. The last divergences were dealt with via telephone. Only the new questions for round 7 (in module B, D, E, F and I) were discussed. The first comparison showed a lot of similarities and in case of differences, the best translation of the two was kept. The final translation was determined on the basis of a second comparison. At this point the two versions were almost completely identical. Only in a few cases the teams opted for a different word or phrase in accordance with use of words in Flanders. Also, the SQP coding was done together.

- *Belgium, France and Switzerland.* These three countries held a full day in-person meeting with representatives of the three countries and the ESS translation expert. More details about this process are not provided.

- *Switzerland, Austria and Germany.* An in-person meeting was held between the three countries, followed by subsequent email consultations as each country started their translations. Also, the ESS translation expert was involved in this process.

- Sweden and Finland share a Swedish questionnaire. However, there was no shared language harmonization for Swedish between the two countries: both national teams claim that both versions of Swedish are too distant so that harmonization doesn't make sense. The ESS translation team does not agree because of other information from international language services and also from translation experts. Nevertheless, the NC's take the final decision in this matter.

The final versions produced by the national teams (after having completed the 'TRA' steps and, in the case of shared languages, after completion of the entire reconciliation process) were sent to cApStAn for translation verification. Specifically, cApStAn had to:

- ensure linguistic correctness and cross-country equivalence of the different language versions of the ESS instruments;

- check compliance with the translation annotations provided in the source questionnaire;

- achieve the best possible balance between faithfulness and fluency; and

- usefully document interventions for both the countries and the CST.

Nevertheless, the final decision on the implementation of cApStAn's comments lies with the national teams. cApStAn's comments are not binding but should be considered as an additional means of improving the translations and the overall comparability of data throughout the ESS. However, for almost all verification interventions, a follow-up by the national teams was required - that is, they could not just reject a suggestion but

Table 6: cApStAn result for each language version, ESS7[10]

Country, language	# typos[a]	# follow-ups required[b]	not accepted[c]	explanation provided[d]
Czech Republic, Czech	29	81	7	Yes
Denmark, Danish	33	11	8	Yes
The Netherlands, Dutch	2	37	5	Yes
Belgium, Dutch	1	22	7	Yes
Belgium, French	101	12	10	Yes
France, French	37	81	21	Yes
Switzerland, French	42	10		
Switzerland, Italian	5	52	50	Yes
Switzerland, German	6	92		
Austria, German	82	20	3	Yes
Germany, German	73	73	3	Yes
Sweden, Swedish	21	95	0	-
Finland, Swedish	17	40	3	Yes
Finland, Finnish	14	67	1	Yes
Ireland, English		Used source questionnaire		
Norway, Norwegian	6	136	4	Yes
Estonia, Estonian	24	104	0	-
Estonia, Russian	5	103	16	Yes
Israel, Russian	4	104	13	Yes
Israel, Arabic	0	45	0	-
Israel, Hebrew	9	67	3	Yes
Lithuania, Russian	1	69	22	Yes
Lithuania, Lithuanian	5	17	8	Yes
Hungary, Hungarian	43	58	0	-
Portugal, Portugese	2	52	2	Yes
Spain, Spanish	1	57	11	Yes
Spain, Catalan	19	124	9	Yes
Poland, Polish	12	14	3	Yes
Slovenia, Slovenian	35	84	19	Yes

[a] Number of layout/typo corrections suggested by cApStAn
[b] Number of corrections requiring follow-up
[c] Number of suggested corrections not applied by NC
[d] Explanation provided by NC for all corrections not applied

had to justify why. Table 6 provides an overview of the comments made by cApStAn and the NC's compliance with their suggestions.

The first column in Table 6 (typos) comprises easily repairable mistakes, and may be a sign of bad final editing. The second column (follow-ups required), rather refers to more serious translation issues. Still, a sizeable number of each kind of translation issue can be observed in each country, with the serious issues clearly outnumbering the typos.

Most of the suggested corrections as proposed by cApStAn have been accepted by the NC's, although some suggestions have not been. The third column in Table 6 reports about this number of suggested corrections that have not been accepted, out of the number of follow-up corrections, reported in the previous columns. In Belgium (French version), Switzerland, Estonia (Russian version), France, Israel, Lithuania (Russian version), Spain and Slovenia, 10 or more suggestion were not followed by the NC. Nevertheless, each country provided explanations as to why specific suggestions were not accepted.

Although the core questionnaire and its translation into the various languages is supposed to be rather stable throughout the subsequent ESS rounds, some (minor) changes can be proposed by NC's in order to correct errors that have previously been detected. Table 7 reports about the number of requests by the NC and the number of approved requests by GESIS.

In the column '# requested', the number of question for which the NC has asked for modification has been given, the column '# approved' indicates how many of them have been approved by HQ/CST. Only in the Czech Republic, Switzerland, Sweden and Estonia all or some proposed modifications have not been accepted. In Switzerland the proposed modifications have only been partially accepted by HQ/CST. The two remaining columns inform to which blocks of questions the proposed changes belong and what the reasons for change are.

Finally, the verification step of the translation processes need to be signed of by GESIS, particularly before the pretests start, also SQP is not included in this sign-off step. In a few countries, however, this could not be realized. These countries are Switzerland, Sweden, Finland, Norway, Estonia and Slovenia. For a detailed timeline of all the important steps in the preparation of the fieldwork, see Figure 1 on page 14.

A document listing the changes to existing translations made in the ESS Round 7 will be available in the summer 2016 on the ESS website.

5.4 SQP coding

The aim of SQP is twofold:

- Check the equivalence between the formal characteristics of a sample of translated questions and the original wording of the question in British English

- Predict the quality of the items from the rotating modules and to suggest potential improvements to the question wording

Figure 8 presents an overview of the SQP coding process per country. The first column reports whether the procedure was started. Only in Slovenia, no SQP procedure was started up. The next 6 columns are about corrections that are proposed by the Universitat Pompeu Fabra (UPF) and to what extent they are adhered by the NC's. For

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[10]Source: country contacts

[11]Source: country contacts

Table 7: Changes in core question translation in ESS7 compared to ESS6[11]

	# requested	Module	Reason	# approved
Czech Republic, Czech	6	B, C, D	Harmonize	0
Denmark, Danish[a]	0	-	-	-
The Netherlands, Dutch	9	B, D	Harmonize	9
Belgium, Dutch	4	B, D	Harmonize	4
Belgium, French	0	-	-	-
France, French	16	B, D	Harmonize, translation mistakes	16
Switzerland, French	12	B, D	Harmonize, fluency, comprehension, translation mistakes	4
Switzerland, Italian	5	B, D, F	Pretest, Comprehension	4
Switzerland, German	10	B, D	Pretest, translation mistake, fluency	7
Austria, German		No information available		
Germany, German	0	-	-	-
Sweden, Swedish	1	D	Sensitive wording	0
Finland, Swedish	0			
Finland, Finnish	0			
Ireland, English		Used source questionnaire		
Norway, Norwegian	7	C, D, F	Sensitive wording, harmonize[b]	7
Estonia, Estonian	1	B	Harmonize	0
Estonia, Russian	1	B	Harmonize	0
Israel	0			
Lithuania, Russian	> 8[c]			8
Lithuania, Lithuanian	> 8[c]			8
Hungary, Hungarian	0			
Portugal, Portugese	0			
Spain	12	D	Various	12
Poland, Polish	0			
Slovenia, Slovenian	0			

[a] added the word 'race' for the expression 'race and ethnic group' in question D12.

[b] 6 additional questions were changed without approval (Block D). The changes pertain to the problematic translation of labour-related terms such as 'worker', 'employee' or 'labour skills'.

[c] In both languages, some unclear formulations were detected - mostly rejected by CST. however, through the pretest, but also the survey agency, several grammatical errors and also issues of wrong understanding were detected and these were corrected, all in agreement with CST. As Lithuania had not participated in round 1, there were no changes to existing translations in the immigration module.

each of the steps, it is also documented whether the NC's and UPF provided explanations or approval for amendments. The final column tells whether the SPQ process was finished on time.

In most countries, only a few corrections were proposed by UPF, with Finland receiving the most amendments (7). The reasons for corrections vary and apply to inconsistencies in endpoint labels, wording or missing instructions. Except in Poland, all (or almost all) corrections were implemented by the NC's. All amendments that were not followed have been explained by NC's and whenever proposed corrections were not applied by the NC's, UPF gave approval.

5.5 Pretesting

Pretests are recommended in order the check whether the translations of the questionnaire are consistent with the intended meaning, and whether CAPI/PAPI routings work properly. Obviously, the pretests should take place long enough before the actual fieldwork in order to report and repair occasional questionnaire issues. A quota-controlled, demographically-balanced sample of at least 30 people should be used.

In most countries, the pretest only took a few days and were usually applied to about 50 test interviews (see Table 9). Particularly Estonia took significantly more time for pretests (66 days). Finland applied the test interviews to no less than 152 test interviews, while Belgium only tested the questionnaire 15 times and Israel tested 6 cases. It is furthermore remarkable that in Denmark the pretest took place when the fieldwork had already been started (see Figure 1 on p. 14).

Most pretest activities use face-to-face interviewing, whereas cognitive testing, self-completion and audio or video recording are less frequently used. Switzerland, Hungary, Israel, Lithuania, Spain and Slovenia are the only countries that do not use face-to-face interviewing. In Switzerland, the testing is done through cognitive testing (as well as in Estonia) and Slovenia applies self-completion. Recording are only used (supplementary to the face-to-face interviews) in France (audio and video), Lithuania and Portugal, and in Belgium (video only).

As most countries administer the questionnaire by CAPI, pretests are obviously run on CAPI in order to check the CAPI-routing. Also, almost all countries tested the questionnaire in order to check the translation from English. Ireland can use the original English questionnaire and therefore did not test the questionnaire for that purpose. It is less clear why Austria, the Czech Republic, the Netherlands and Norway skipped this part of the pretesting.

5.6 Fieldwork preparation including interviewer training/briefing

Based on the National Technical Summary provided by the ESS NC we have basic information about the interviewers and the interviewer training in each country. Table 10 presents an overview of this information.

Most countries offered interviewer briefings of no longer than 8 hours (except for Austria, Finland, Norway and Switzerland). Only the Netherlands and Lithuania spent less than 4 hours briefing their interviewers.

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[12]Source: country contacts
[13]Source: country contacts
[14]source: ESS Documentation report e01_1

	Procedure started	Corrections by UPF	Summary corrections	Corrections made	Explanation of correction not applied	Approved by UPF	Explanation UPF non-approval	SQP in time
Austria	Yes	4	Inconsistencies in endpoint labels	4	-	-	-	No
Belgium (Dutch)	Yes	3	Inconsistent translation labels, slight variation in wording	2	Yes	1	Yes	Yes
Belgium (French)	Yes	Process was stopped without notifying UPF						
Switzerland (German)	Yes	1	Inconsistencies in wording	1	-	-	-	Yes
Czech Republic	Yes	Process was stopped without notifying UPF						
Germany	Yes	0		-	-	0	-	Yes
Denmark	Yes	0		-	-	0	-	No
Estonia	Yes	1	Wording alignment	1	-	-	-	No
Finland	Yes	7	Inconsistencies in items and endpoint labels	7	-	-	-	No
France	Yes	Process was stopped without notifying UPF						
Hungary	Yes	4	Numbers in front of labels. Reversed categories. Inconsistency in scales (D1-D6, IS1-IS3, IS10-IS12). Unipolar end points (IS7-IS9) instead of bipolar	All, except bipolarity	Yes	1	Yes	Yes
Israel	Yes	3	Instructions for respondents / Irrelevant codes on showcards / Inconsistent endpoint (D2-D6, IF1-IF3, IF10-IF12)	2	Yes	0	?	?
Lithuania	Yes	0	-	-	-	-	-	?
The Netherlands	Yes	5	Inconsistencies in endpoint labels, differences in number of words	4	Yes	1	-	Yes
Norway	Yes	2	Missing instructions, inconsistency in scales	2	Yes	-	-	No
Poland	Yes	4	Inconsistency in scales	0	Yes	4	Yes	Yes
Portugal	Yes	Process was stopped without notifying UPF						
Spain	Yes	3	Missing respondents instructions, inconsistent translations across repetitions, full sentences instead of short texts in answer scales	3	-	1	Yes	Yes
Sweden	Yes	1	Inconsistencies in wording in	1	-	-	-	Yes
Slovenia	Yes	Started SQP coding process before fieldwork, after notifying UPF						

[a] Some answers cognitively checked during interview

Table 9: Summary of pretesting, ESS7[13]

	#days	#interviews	Techniques					Purpose		
			F2F	Cognitive	Audio rec.	Video rec.	Self-compl.	Translation	CAPI	PAPI
Austria	6	30	Yes	No	No	No	No	No	Yes	No
Belgium	4	15	Yes	No	No	Yes	No	Yes	Yes	No
Czech Republic	2	52	Yes	No	No	No	No	No	Yes	No
Denmark	7	50	Yes	No	No	No	No	Yes	Yes	No
Estonia	66	35	Yes	Yes	No	No	No	Yes	Yes	No
Finland	18	152	Yes	No	No	No	No	Yes	Yes	No
France	7	50	Yes	No	Yes	Yes	No	Yes	Yes	No
Germany	7	54	Yes	No	No	No	No	Yes	Yes	No
Hungary[a]	4	30	No	No	No	No	No	Yes	No	Yes
Ireland	4	50	Yes	No	No	No	No	No	Yes	No
Israel	28	6	Yes	No	No	No	No	Yes	No	Yes
Lithuania	17	60	Yes	No	Yes	No	No	Yes	No	Yes
The Netherlands	6	50	Yes	No	No	No	No	No	Yes	No
Norway	17	30	Yes	No	No	No	No	No	Yes	No
Poland	2	50	Yes	No	No	No	No	Yes	No	Yes
Portugal	5	20	Yes	No	Yes	No	No	Yes	Yes	No
Spain[b]	20	40	Yes	No	No	No	No	Yes	No	Yes
Slovenia	7	40	No	No	No	No	Yes	Yes	Yes	No
Sweden	17	58	Yes	No	No	No	No	Yes	Yes	Yes
Switzerland	4	50	No	No[c]	No	No	No	Yes	Yes	No
UK	16	6	Yes	No	No	No	No	No	Yes	No

[a] Length of interview and D & E block were particularly assessed
[a] Questionnaire layout and interviewer instructions were particularly assessed
[c] Some answers cognitively checked during interview

Table 10: Summary of interviewer briefing/training, ESS7[14]

	Length	Number of interviewers					Material			Training in		Observables		
		Total	Exp.	Non-exp.	Excl.	Briefed	Written	Best pract.	Dummy	Ref.conv	CF	Training	Photo	Video
Austria	>8	88	0	0	0	88	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Belgium	4-8	151	106	N/A	0	151	Yes	Yes	No[a]	No	Yes	Yes	Yes	No
Czech Republic	4-8	282	145	N/A	0	282	Yes	No	Yes	Yes	Yes	Yes	Yes	No
Denmark	4-8	88	44	5	0	88	Yes[b]	Yes	Yes	Yes	Yes	Yes	Yes	No
Estonia	4-8	137	70	15	0	137	Yes	No	Yes	Yes	Yes	Yes	Yes	No
Finland	>8	137	135	2	0	137	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
France	4-8	137	137	0	0	137	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Germany	4-8	288	74	35	35	288	Yes	No	No	Yes	Yes	Yes	Yes	No
Hungary	4-8	143	Na	0	NA	160	Yes	No	Yes	Yes	Yes	Yes	No	No
Ireland	4-8	112	87	N/A	25	112	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Israel	4-8	159	79	85	74	159	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Lithuania	<4	159	112	0	5	159	Yes	No	No	Yes	Yes	Yes	Yes	No
The Netherlands	<4	115	N/A	0	N/A	115	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Norway	>8	71	63	8	8	71	Yes	Yes	Yes	Yes	Yes	N/A	N/A	N/A
Poland	4-8	149	103	43	3	149	Yes	No	No	Yes	Yes	Yes	Yes	No
Portugal	4-8	107	23	63	33	107	Yes	No	Yes	Yes	Yes	Yes	Yes	No
Spain	4-8	131	21	0	0	131	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Slovenia	4-8	62	36	10	26	62	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Sweden	4-8	105	18	37	43	105	Yes	No	No	Yes	Yes	N/A	N/A	N/A
Switzerland	>8	65	43	22[c]	20	65	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
UK	4-8	209	36	10	0	209	Yes	No	Yes	Yes	Yes	Yes	Yes	No

[a] During the training in Dutch, interviewers listened to recorded real interview and indicated interactively the criteria for good interviewing.
[b] National instruction materials were also used
[c] New interviewers were given extra training in general recruiting, persuasion and interviewing techniques and technical aspects.

The number of interviewers deployed in the countries varies strongly, ranging from 62 in Slovenia and 65 in Switzerland to 282 in the Czech Republic and 288 in Germany. Provided that interviewer effects in some countries are a threat to data quality and that the average number of cases per interviewer acts as a lever (where the more cases per interviewer leads to an amplification of the interviewer effects), it seems important to deploy a rather high number of interviewers. Countries such a Austria, the Czech Republic, Ireland or Poland should therefore be careful not to recruit too few interviewers[15].

Although not all countries provide accurate data on the level of experience of their interviewer, the majority of the interviewers seem to be experienced. Only in Germany, Portugal and Sweden, experienced interviewers seem to be outnumbered by inexperienced interviewers. In some countries, a substantive number of interviewers are exclusively recruited for the ESS (column 'Excl.'). As the ESS specification prescribe, all interviewers received an ESS specific personal briefing.

Three documents have been centrally prepared to support interviewer briefing/training. These include:

- The first document is a 'Note for NC's'. This outlines the importance of interviewer briefings in maximizing cooperation rates and implementing standardized interviewing and presents some findings from research on interviewer effects in previous rounds of the ESS. This note is intended to provide some context to the new interviewer briefing materials, but should not be made available to interviewers.

- The second document is titled 'Best Practice Guidelines' and 'ESS Scenarios', which outlines some best practice guidelines in doorstep interaction and standardized interviewing, and provides some example interview scenarios to be used during interviewer briefings. The scenarios should be presented to interviewers by the researchers leading the briefing sessions. The scenarios should then be discussed with interviewers so that it is clear what the most appropriate outcome of the scenario is. This document should be made available to interviewers once the exercise has been completed.

- The third document is the 'ESS Example Briefing Interview' or dummy interview, which is the ESS Round 7 Source Questionnaire, annotated with example answers and specific notes for researchers to use during the interviewer briefing practice interview. During this exercise, interviewers should take turns to ask questions, using the CAPI or PAPI materials. The researcher should act as a respondent, using the annotated questionnaire as a script. This document should also be made available to interviewers once the exercise has been completed.

Most of these materials were used for the training and briefing, particularly the written 'Note for NC's'. Although not unanimously used, the two latter documents seem to have been given attention too. Except Belgium, all countries focused on refusal conversion training. All countries gave instructions as to how to fill out the contact forms. Similarly, all countries[16] trained their interviewers to collect observational data (type of housing, condition of the dwelling and neighbourhood). Similar as in round 6, photos were generally used for this purpose, unlike videos. Only Hungary, the Netherlands and Slovenia did not use the photos.

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[15]For a discussion of interviewer effects, see section 8.1

[16]Sweden and Norway did not collect such information

As Table 11 suggests, the general approach to deploy interviewers is with a free-lance contract, where interviewers are paid per completed interview. Finland and Norway deviate from this general principle, having interviewers as employees paid per hour (not a fixed salary). It should be noticed that in both countries, the data collectors are national statistical institutes. In Denmark and Ireland, interviewers are employees, paid per completed interview. A few countries combine free-lance and employee formulas.

Six countries provide assignment fees (set fee for working on a set of sample units). In seven countries, a bonus arrangement or other type of additional interviewer incentives was used.

Table 12 provides an overview of the incentives that were given to the respondents. These incentives can be monetary or non-monetary, and conditional or unconditional on participation. Some countries provide a mix of these sorts of incentives. Other countries only use one sort of incentives. In a few countries (e.g. the Netherlands or Germany) the incentives were improved during the course of the fieldwork, in order to try to increase response. Only in Denmark, Hungary, Israel and Lithuania incentives are not being used. Notwithstanding this wide variety of respondent incentives being provided, the impact on response is very hard to assess. There is a tendency that over the different rounds of the ESS, more countries tend to provide respondent incentives.

5.7   Fieldwork planning, timing and interim reports

Figure 1 shows the different timelines of the ESS7 participating countries. The grey strip indicates when the fieldwork should have taken place according to the original intentions. The actual fieldwork period is shown in black. Other fieldwork preparation events as well as the eventual data upload are indicated in the graph.

The start of the actual fieldwork is relatively consistent with the intended fieldwork start, whereas the fieldwork last much longer than planned. This applies to most countries, except the Czech Republic, Estonia and Lithuania. According to the progress reports, in some countries the fieldwork took off relatively well, so that during the first weeks of fieldwork the response projections were met but started to slow down thereafter (e.g. the Netherlands, Sweden, Switzerland, Slovenia or Denmark). Some other countries were behind schedule from the start (e.g. Belgium, Germany, Ireland, Norway or Austria). Finland was always ahead of the fieldwork projection. Only the last handful of interviews were harder to achieve, so that the the closure of the fieldwork was eventually postponed.

Although it was not specifically reported in the fieldwork progress reports, possible (hypothetical) reasons for being behind schedule could be:

- A decrease of response propensities, resulting in more nonrespondents

- Fieldwork capacity problems. Some countries, such as Ireland or Norway reported that some interviewers dropped out

- Not enough efforts are made to stick to the projections

- The projections may not be realistic

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[17]source:ESS Documentation report e01_1

[18]source:ESS Documentation report e01_1

Table 11: Summary of interviewer employment status and payment arrangement, ESS7[17]

	Employment status			Payment arrangement					
	Free-lance	Employee	Other	Hourly	Per interview	Assign.fee	Fixed salary	Bonus	Other
Austria	Yes[a]	Yes	No	No	Yes	Yes	No	Yes	Yes[g]
Belgium	Yes	No	No	No	Yes	No	No	No	No
Czech Republic	Yes	No	No	No	Yes	Yes	No	Yes[c]	No
Denmark	No	Yes	No	No	Yes	Yes	No	No	No
Estonia	Yes	No	No	No	Yes	No	No	No	No
Finland	No	Yes	No	Yes	No	No	No	No	No
France	No	No	Yes[b]	No	Yes	No	No	No	Yes[h]
Germany	Yes	No	No	No	Yes	Yes	No	Yes[d]	No
Hungary	Yes	No	No	No	Yes	No	No	No	No
Ireland	No	Yes	No	No	Yes	No	No	Yes[e]	No
Israel	Yes	No	No	No	Yes	No	No	Yes	No
Lithuania	Yes	No	No	No	Yes	No	No	No	No
The Netherlands	Yes	No	No	No	Yes	Yes	No	No	No
Norway	No	Yes	No	Yes	No	No	No	No	No
Poland	Yes	No	No	No	Yes	No	No	Yes	Yes[i]
Portugal	Yes	No	Yes	No	No	Yes	Yes	No	No
Spain	Yes	No	No	No	Yes	No	No	No	No
Slovenia	Yes	No	No	No	Yes	No	No	No	No
Sweden	Yes	No	No	Yes	Yes	No	No	No	No
Switzerland	Yes	Yes	No	No	Yes	Yes	No	Yes[f]	No
UK	Yes	No	No	No	Yes	No	No	No	No

[a] Majority is free-lance

[b] Short-term contractors dedicated to the project

[c] Payment per completed interview dependent on the number of completed interviews in the PSU (motivation to enhance response rate, using conversion techniques, optimize timing of visits, ...). Additional bonus for proper completion of each PSU (including continuous reporting, full completion of contact forms, ...)

[d] The interviewer pay is split into three elements: (1) A basic pay for processing all addresses and reaching the prescribed number of contacts for each address by the end of fieldwork; (2) separate pay for contacting respondents, depending on number of contacts and distance travelled; (3) additional pay for completed interviews, adjusted for interview length, overall the largest fraction of the interviewer pay. Interviewers received additional bonuses for a) making contacts calls in the first weeks of the fieldwork and b) follow-ups on difficult cases.

[e] 10 € bonus for every interview uploaded to the sever within 48 hours after completion and a 20 € bonus for filling out the contact forms on the CAPI devices at each visit to the address in the cluster

[f] Interviewers are paid per completed interview and compensated with a lump-sum for each contact attempt resp. for travel fees. For contact attempts ONLY, additionally to the 65 CAPI interviewers, the fieldwork agency hired 17 CATI interviewers. These were remunerated on an hourly basis.

[g] ∼ high response rates, certain moments to speed up fieldwork, travel expenses

[h] Per contact

[i] ∼ high response rates, difficult cases.

Table 12: Overview of respondent incentives, ESS7[18]

| | Monetary | | Non-monetary | | |
	Unconditional	Conditional	Unconditional	Conditional	remark
Austria	No	No	No	Yes	voucher (10 Euro)
Belgium (Flanders)	No	No	Yes	No	ESS results
Switzerland	Yes	No	No	Yes	10 CHF, memory stick or a paper notepad
Czech Republic	No	No	No	Yes	small electronic device or a kitchenware piece
Germany	No	Yes	No	No	20 Euro but increased during fieldwork
Denmark	No	No	No	No	
Estonia	No	No	Yes	Yes	4 newspaper half-year orders (draw). Every potential respondent received reflector
Finland	No	No	Yes	Yes	Key ring, statistical pocket book, iPhone-lottery (3 pieces): those who participated
France	No	Yes	No	No	Incentives of 10 Euros voucher
Hungary	No	No	No	No	
Ireland	No	Yes	No	No	10 Euro
Israel	No	No	No	No	
Lithuania	No	No	No	No	
The Netherlands	No	Yes	Yes	Yes	5 to 50 Euro
Norway	Yes	No	No	No	Lottery tickets
Poland	No	No	Yes	No	penlight keyring or a high- visibility vest, ESS results
Portugal	No	No	Yes	No	5€ supermarket voucher
Spain	No	No	No	Yes	9€ voucher to be used in many stores.
Sweden	No	No	No	Yes	Lottery ticket of 60 SEK
Slovenia	No	No	No	Yes	?
UK	Yes	Yes	No	No	£5 Post Office Payout. £25 conditional voucher at reissue stage

Table 13: Summary of fieldwork projections and interim reports, ESS7[19]

	Fieldwork projections			Interim fieldwork progress reports		
	Received > month	Gross & net	Corrections	Number	Frequency	Requirements met
Austria	No	Yes	No	21	Weekly / Fortnightly	Yes
Belgium	Yes	Yes	No	10	Fortnightly	Yes
Switzerland	Yes	Yes	No	20	Weekly	Yes
Czech Republic	No	Yes	No	5	Fortnightly	Yes
Germany	No	Y/N	No	22	Weekly	Yes
Denmark	No	Yes	No	6	Ad hoc	Yes
Estonia	No	Yes	???	???	Weekly	Yes
Finland	Yes	Yes	No	6	Fortnightly / monthly	Yes
France	Yes	Yes	Yes	3	Fortnightly	Yes
Hungary	Yes	Yes	No	10	Weekly	Yes
Ireland	Yes	Yes	Yes	?	Weekly / twice a week	Yes
Israel	No	Yes	No	7	Infrequent	No
Lithuania	No	Yes	No	5	Fortnightly	Yes
The Netherlands	No	Yes	No	9	Fortnightly	Yes
Norway	No	Yes	No	9	Fortnightly	Yes
Poland	No	Y/N	No	6	Fortnightly or less	Yes
Portugal	No	Yes	Yes	>12	Variable	Yes
Spain	No	Yes	No	10	Weekly	Yes
Sweden	???	???	???	???	???	???
Slovenia	No	Y/N	Y	5	Monthly	Yes
UK	No	Yes	No	11	Fortnightly/Monthly	Yes

- As in some countries the fieldwork started fairly well, followed by a decline of fieldwork success, some countries might have pursued the low hanging fruit first.

- Ireland also mentioned bad weather conditions and interviewers who did not promptly return successful cases (due to broadband issues)

- It was also mentioned that backchecks slowed down the fieldwork.

According to the ESS7 project specifications, NCs should monitor the progress of fieldwork, including the response rates in different regions, among different subgroups (where possible), and by different interviewers. They should also monitor the average length of interview for each interviewer and investigate interviewers who are outliers in case this indicates quality problems. In addition, fieldwork monitoring includes the submission of fieldwork projections, at least one month prior to the start of fieldwork and the submission of a fortnightly report on fieldwork progress. NC's should also monitor fieldwork to ensure contract compliance and optimum response, and provide reports to the HQ/CST with (a minimum of) fortnightly updates.

Table 13 provides an overview of the extent to which NC's have provided information about the planned or ongoing fieldwork.

The first three columns in Table 13 report about the fieldwork projections that were communicated to HQ/CST. NC's are required to provide these projections at least one month before the start of the (planned) fieldwork. The projections should also be specific regarding the gross and net sample size. Also, occasional corrections should be reported. In many countries, fieldwork projections were not conveyed at least one month prior to the fieldwork start. In most countries, the projections regarding the gross sample and the net sample size that should be achieved were properly communicated. In Germany, some

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[19]source: country contacts

discussion arose as to how to include the reserve sample in the calculations. In Poland, the gross sample size was included, whereas the net sample size was not included. In France, due to a lower than anticipated response and also for budgetary reasons, the net sample size was set to 1900 interviews instead of 2000. In Ireland, there was a discrepancy between two indications for the net sample size. In Slovenia, the estimation of the proportion of opt-outs in the sampling sign-off is 'at least 10%', in the projection it is 13%.

Interim fieldwork reports from the NC to HQ/CST are required so that fieldwork issues can be closely monitored and possibly adjusted. These fieldwork progress reports are required fortnightly. For future rounds, fieldwork specifications will tend to require more regular fieldwork feedback reports (at least weekly if the planned fieldwork duration takes less than 10 weeks, fortnightly otherwise). There seems to be some variation as to how frequently NC's report about their fieldwork progress, ranging from weekly (e.g. Switzerland) to monthly (Slovenia). Also, in some countries, the report frequency increased or decreased during the fieldwork. In Austria, the reports were sent weekly for most of the fieldwork period, but were sent fortnightly for the first and the last few weeks of the fieldwork. The Finnish reports came fortnightly during the beginning of the fieldwork, but were rather monthly near the end. In Ireland, fieldwork reports came weekly initially, but twice a week near the end of the fieldwork and in Poland, the fieldwork progress was reported almost fortnightly at the beginning, but slowed down somewhat near the end of the fieldwork. The country contact for Denmark reported that the reports were requested weekly, but were only received ad hoc after insisting. In the Czech Republic the fortnightly reports were often delayed, even though it would have been better if the fortnightly reports would have been send weekly given the short fieldwork period.

5.8 Collection of media claims

This section will discuss whether ESS7 countries adhered to the requirement of collecting media claims. Whether the claims are well coded or relevant or whether important claims are missing will not be addressed, instead some process steps during the collection will be evaluated. These comprise:

- NC's should select and briefly describe two national newspapers for which the claims will be coded. It is important that these two selected sources are reported to HQ/CST before the coding starts.

- Media claims should be recorded for a minimum of 10 weeks, starting one week before the start of fieldwork (for the first week two coders should do this in parallel, and screen shots should be made of all the pages which should be coded according to the media claims source document). Media claims may be coded for a period longer than ten weeks, but this should not continue once fieldwork has finished.

- The recorded claims should then be delivered as an SPSS-file and is checked for errors.

Table 14 reports whether these requirements are met.
For some countries, the media claim collection is still an ongoing process[21].

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[20]source: country contacts

[21]last update March 4, 2016. Therefore, Table 14 is not completely up-to-date and may be updated in the months after the release of this current quality report.

Table 14: Summary of media claim collection, ESS7[20]

	Sources	Timing			Number	File	
	send before coding	1 week prior to fieldwork	duration (weeks)	covers entire fieldwork	of claims	sent to CST	Errors detected
Austria	Yes	No	29	Yes	403	June 2015	?
Belgium (Flanders)	Yes	Yes	13.5	No	323	Feb 2015	No
Belgium (Wallonia)[a]	No	N/A	11	No	95	Feb 2016	No
Switzerland[b]	Yes	Yes	14	No	516	Feb 2015	?
Czech Republic[b]	Yes	Yes	11	Yes	368	Feb 2015	No
Germany[a]	No	?	?	?	?	?	?
Denmark	Yes	No	12	No	128	May 2015	No
Estonia[c]	Yes	Yes	10	No	228	?	?
Finland	Yes	Yes	27	Yes	544	Mar 2015	?
France	Yes	No	12.5	Yes	84	Oct 2015	?
Hungary	Yes	Yes	10	Yes	539	Sep 2015	Small errors
Ireland	Yes	Yes	10.5	No	203	Dec 2014	?
Israel	Yes	Yes	5	No	185	Feb 2016	?
Lithuania	Yes	Yes	10	Yes	168	Jan 2016	?
The Netherlands	Yes	Yes	9.5	No	67	May 2015	?
Norway	Yes	No	11	No	178	Mar 2015	?
Poland	Yes	Yes	13.5	No	?	?	?
Portugal	Yes	Yes	22	No	980	Feb 2016	?
Spain	No	Yes	10	No	351	Dec 2015	?
Sweden	Yes	Yes	10.5	No	63	Nov 2014	?
Slovenia[b]	Yes	No	18	Yes	32	May 2015	Some dates were wrong
UK	Yes	Yes	10	No	580	Dec 2015	?

[a] More information is expected in February 2016
[b] Newspaper selection changed as compared to ESS6
[c] Opinions section were also coded
[b] Deposit is expected for April 2016

In all countries the period in which the media claim coding took place was minimally 10 weeks (only in the Netherlands this was slightly shorter). In a few countries, the coding was done for the entire fieldwork. Especially in Austria, Finland, and Slovenia this lead to a substantial prolongation of the coding period.

A striking observation is that the number of selected media claims strongly varies across countries. In Slovenia, only 32 claims were reported, that is less than two per week. In Switzerland, almost 37 claims were selected per week. On average, 15.5 claims are selected per week. Whether this variation is related to the real differences in news reports in the different countries or is due to different selection routines of the NC (team) is not clear. This may, however, be an important element for the quality assessment of the media claim collected in the ESS.

5.9   Data processing, dissemination and archiving

Figure 1 on page 14 reports about the dates when the data have been deposited at the Norwegian Social Science Data Services (NSD). In this figure, only the uploads of the main file have been shown. Apart from the main file, more data files need to be uploaded, notably, the contact data, sampling details and the National Technical Summary. In Figure 2, a more detailed picture of the time frame of these uploads is provided. The x-axis of this figure represents time, but instead of calendar time, it counts how many days it took for a country to upload each files after the last day of the countries' fieldwork. For example, in Austria, the National Technical Summary (NTS) has been uploaded first (10 days after the end of the fieldwork), followed by the contact file (CF; 42 days after the fieldwork). The main file (MS) was uploaded after 44 days and the file containing the sampling data (SDDF) was uploaded 93 days after the end of the fieldwork.

Ideally, the uploads should have taken place before March 2015. However, this objective has rarely been realized. Therefore, in the front of each country's time line it is indicated how many days after February 28, 2015 the main file was uploaded.

Most data files are uploaded within the first 100 days after the end of the fieldwork. Germany, France, Switzerland, Spain, Lithuania, Hungary and Estonia were not able to upload at least one file within two months after the fieldwork ended.

In most countries, all files were submitted at the same time, or with only a few days between the uploads. In a few countries, there are significant time differences between the uploads. In Finland, the contact file had about one month of delay as compared to the three other files. In Germany, the sampling details were sent about three weeks before the rest. In Austria, and particularly in Slovenia, there seems to be much time between each of the uploads.

For only a few countries, a reason is provided as to why the files were uploaded too late (although this information was not systematically collected in all countries). Some countries gave specific reasons to explain specifically why the upload could not immediately be done after the end of the fieldwork. However, these reasons for delay were not systematically recorded. In Ireland, the delay was due to discrepancy found in the response rate (agency originally reported 70%, but then this dropped to 60%). Switzerland and France report having difficulties coding the ancestry variables of the main files. According to the Polish NC the end of the fieldwork was particularly late because of financial reasons. Nevertheless, in Poland, the upload could be done within the first three weeks after the fieldwork ended. In Denmark, the uploads of the main file and contact file took place relatively short after the fieldwork (within 10 days), but
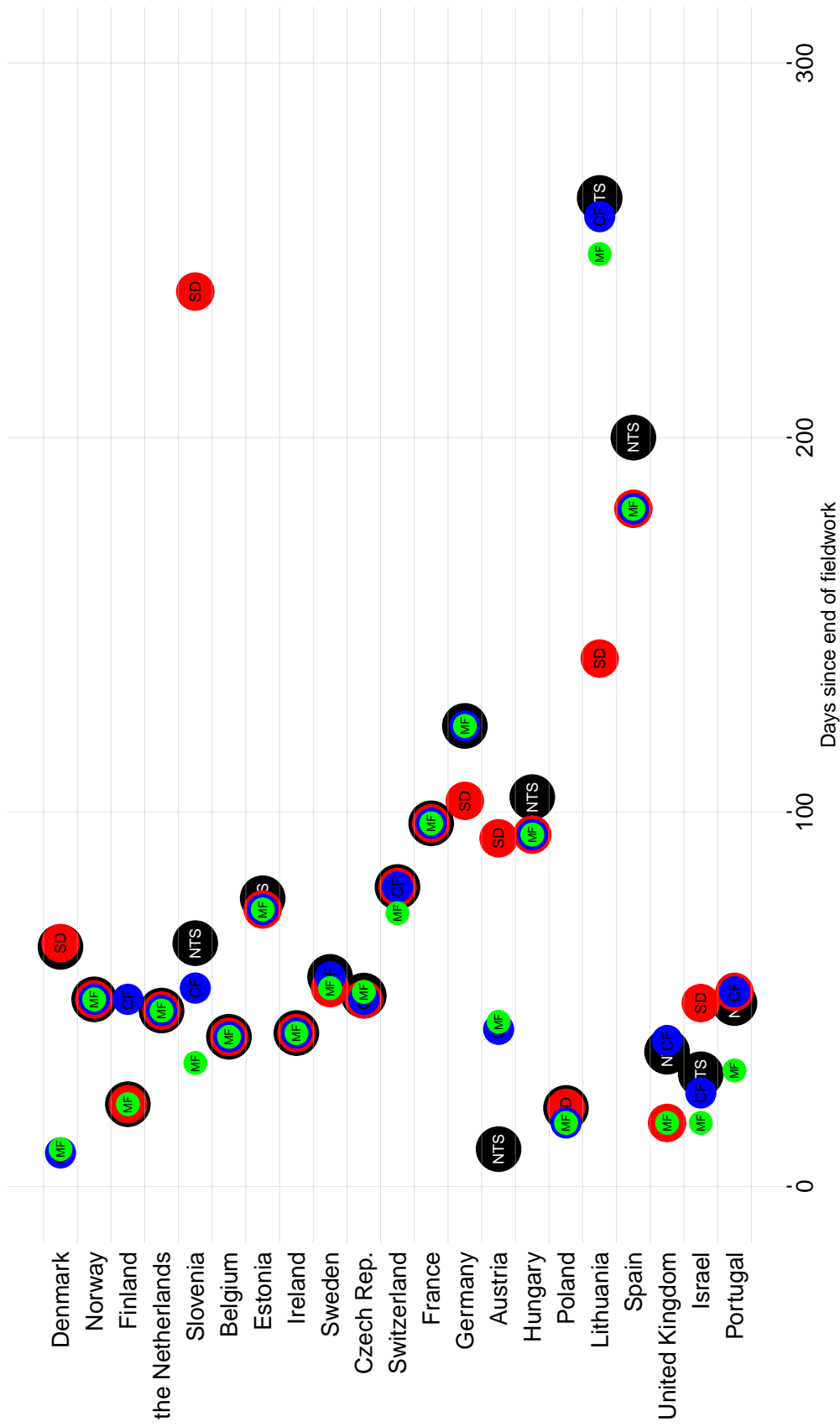
Figure 2: Timing of data file uploads, ESS7[a]

[a]source: country contacts

were not accepted by the data archive. The Danish main and contact file were eventually deposited 111 days after the fieldwork ended (not indicated in Figure 2).

Once the main/supplementary file is uploaded, the Norwegian Social Science Data Services (NSD) can start checking whether these data meet all specific requirements. Individual records showing item nonresponse >50% are flagged and submitted to NC's who have to decide about the removal or retention of the cases. Furthermore, the cleaning process may detect and remedy numerous issues that might be solved in coordination with the NC. Statistics about how many issues are raised during that process are not provided is this report. However, some issues may remain unsolved. Table 15 summarizes such unsolved issues (flags), as well as the number of cases that are retained in the main data file (MS) although more than 50% item nonresponse has been observed. Seven countries were not flagged at all regarding unsolved or unsolvable cleaning issues. Table 15 gives the number of variables flagged per country as well as the reason why variables deemed to be problematic.

6   Data collection process

This section will predominantly focus on the contact phase which aims to establish contact with the sample units and eventually make them participate in the survey. The contact form dataset is currently the most important data source to explore the ESS fieldwork quality.

6.1   Synoptic picture of fieldwork

We start by showing a set of graphs (see Figure 3) that provide a first overview of the fieldwork of the different ESS7 countries. The graphs indicate when the fieldwork took place, and how extensive the fieldwork was. It also informs about when new address are allotted to the field and the degree to which follow-up contact attempts have been carried out. Although the x-axes for each panel are equally long, they do not represent the same timeframe. For example, in the Czech republic, the entire fieldwork took nearly three months, whereas in Austria, the fieldwork lasted for more than six months (see Figure 1). This explains why the vertical bars in Figure 3 are wider for the Czech Republic as compared to Austria. Also notice that the y-axes are differently scaled for the countries shown in Figure 3. In Sweden, the total number of contact attempts may sometimes be over 1000, whereas in Austria, it hardly exceeds 100.

For each country and for each fieldwork day, a vertical bar is presented, indicating the sum of contact attempts that have been done on that particular day. Red/pink bars indicate Sundays, all other days of the week are in grey/black. The lighter shades of grey/pink represent first contact attempts with sample cases, the darker shades indicate follow-up contact attempts. That way, it can easily be seen when new addresses have been released or first contacted. For example, in Austria, first contacts took place throughout the whole fieldwork period, even during the last days before the end of the fieldwork, although there seems to be a tendency that follow-up contact attempts proportionally increase near the end of the fieldwork.

Except for Austria, the Czech Republic, Estonia, Ireland, the Netherlands, the UK and Norway, most countries have first contact attempts in the beginning (approximately first

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[22]source: country contacts

Table 15: Summary of main file data cleaning, ESS7[22]

	# item nonresponse > 50%	# flag	reason flags
Austria	0	1	coding error (E18 HLPFMR)
Belgium	0	0	
Switzerland	0	0	
Czech Republic	0	2	question not fielded (EIMPCNT), wrong showcard (HLTPRCA)
Germany	2	23	invalid codes (2 main + 21 supplementary),
Denmark	3	2	erroneous showcards
Estonia	0	3	error in the Russian version and HINCTNTA did not use deciles
Finland	1	0	
France	0	3	changes in CAPI screen since ESS6[a] (1), Invalid codes (2)
Hungary	0	3	Use of wrong questionnaire item/showcards regarding level of education
Ireland	1	0	
Israel	0	0	
Lithuania	0	0	
The Netherlands	0	1	coding error
Norway	0	13	edited for anonymity reasons
Poland	0	0	
Portugal	0	5	
Spain	0	0	
Sweden	2	0	
Slovenia	0	0	
UK	0	16	15 due to anonymization, 1 filter issue

[a] Administration of question changed from using one CAPI screen in ESS6-2012, to using two screens - one for LNGHOM1 and one for LNGHOM2 - in ESS7-2014. This may have lead to an increase in respondents providing a second language.
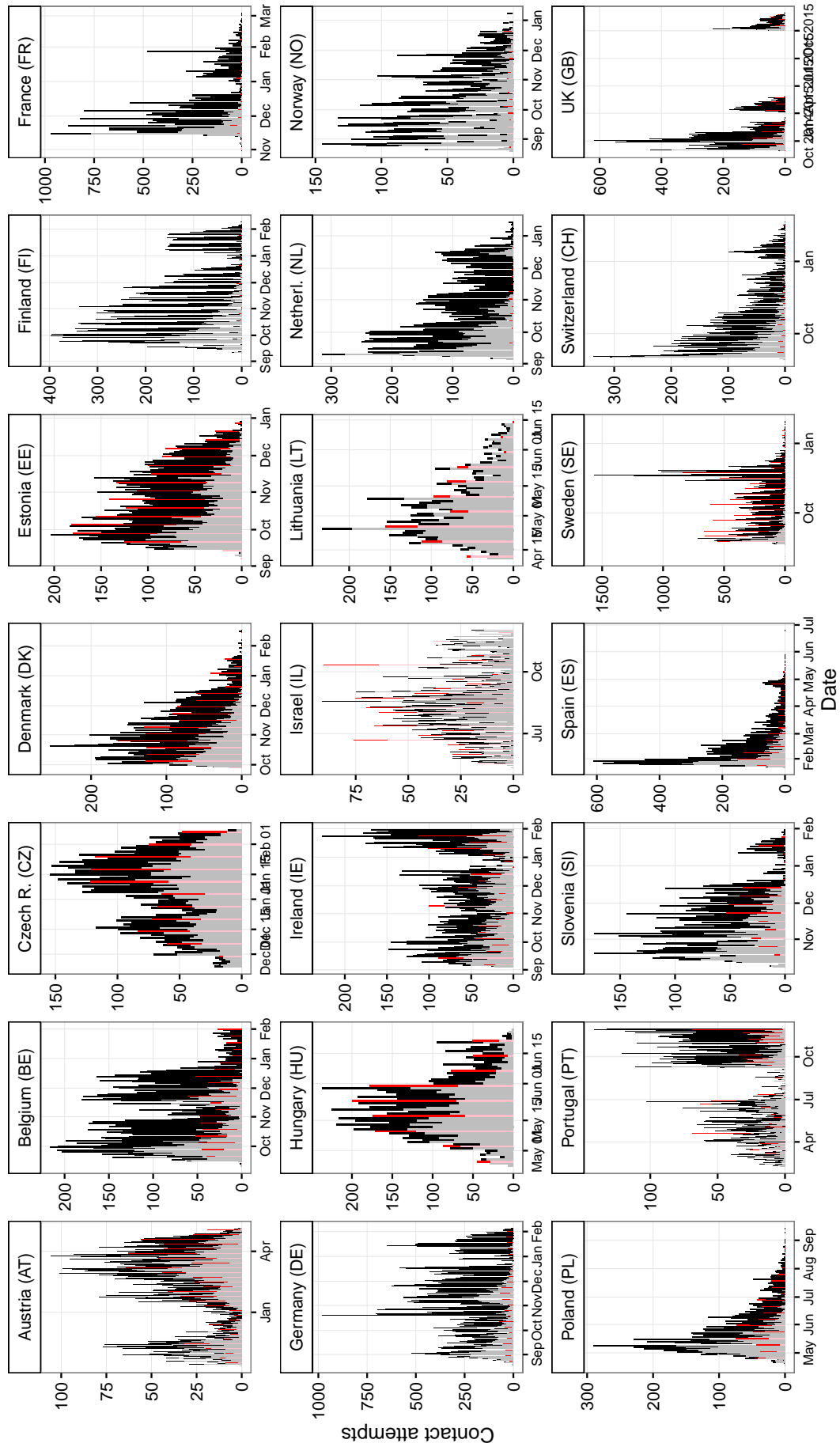
Figure 3: Fieldwork flow per country, ESS7[a]

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[a]source: contact form data

half of the fieldwork), so that roughly the second half of the fieldwork consist exclusively of follow-up attempts. These might consist of refusal or noncontact conversion, as well conversion attempts of other sorts of pending nonrespondents. In some countries, not all sampled cases are assigned to interviewers from the beginning of the fieldwork (for example in Belgium).

The shape of the fieldwork flows differ considerably between the countries. In many countries, the centre of gravity is in the beginning of the fieldwork, after which the efforts slowly decrease. However, in some of these countries, a second wave of efforts can be observed (e.g. Belgium, Estonia, Germany, the Netherlands, Sweden or Switzerland). This might indicate that new addresses have been released or that the conversion programs start or intensify. In some other countries, the end of the fieldwork seems to be the period when most efforts take place (e.g. Austria, Ireland or Sweden). Sometimes, this might be due to a concurrent ongoing survey that requires the same interviewer force, such as in Austria. In other countries, the perspective of the deadline and an unsatisfactory response rate necessitates a considerable increase in the efforts. Also, in most countries, a clear Christmas break can be observed.

In most countries, Sundays are not extensively used for contact attempts (except in the Czech Republic, Denmark, Estonia, Isreal and Sweden). In the Netherlands, France, Finland, Norway and Switzerland, virtually no Sunday visits are observed. A more detailed picture of when interviewers schedule their fieldwork efforts can be found in Figure 4. This Figure provides per country a grid of the week, indicating the relative contact efforts per day and per hour of the day. The darker the segments, the more activity (in terms of contact attempts) was registered. Over all countries, Saturdays, as well as week evenings (Monday to Friday) are more frequently used to attempt. This specifically applies to Belgium, Denmark, Estonia, France, Germany, Poland, Slovenia and Switzerland.

Usually, visits only take place between 8AM or 9AM and 9PM. In Finland, the time of the day to attempt contact is rather between 7AM and 7PM.

Since the ESS is a face-to-face survey, most contact attempts are expected to be in-person attempts. However, Figure 5 illustrates that this is not always the case. In some countries, in-person attempts (grey) are clearly outnumbered by telephone calls (blue). This particularly applies the Finland, Sweden, Norway and to a lesser extent Germany, Denmark and Estonia. It should also be noted that for these particular countries, a substantive number of telephone calls are not included in these graphs, as these calls are recorded in separate variables (`NUMTEL` and `NUMTELA`). All other countries seem to attempt their cases in-person, although a small proportion of follow-up contacts are by telephone. Particularly in France, Portugal, Spain or Slovenia, intercom contacts are recorded relatively frequently (pink). In Denmark, Portugal and Spain, a small proportion of contact attempts is marked as 'contact with survey organization' (green). Such contacts may be thought of as sample cases who call the survey organization to refuse cooperation, even before an interviewer attempted in-person.

Efforts during fieldwork vary strongly between the countries. In Lithuania, Israel, Hungary or the Czech Republic, the total amount of fieldwork efforts is relatively modest, either attributable to (a combination of) short fieldwork courses or relatively few contact attempts per day. In other countries such as Germany, Finland, France or Sweden, fieldwork efforts appear to be higher. These differences might partially be explained by the fact that some countries such as Germany used a larger sample than other coun-
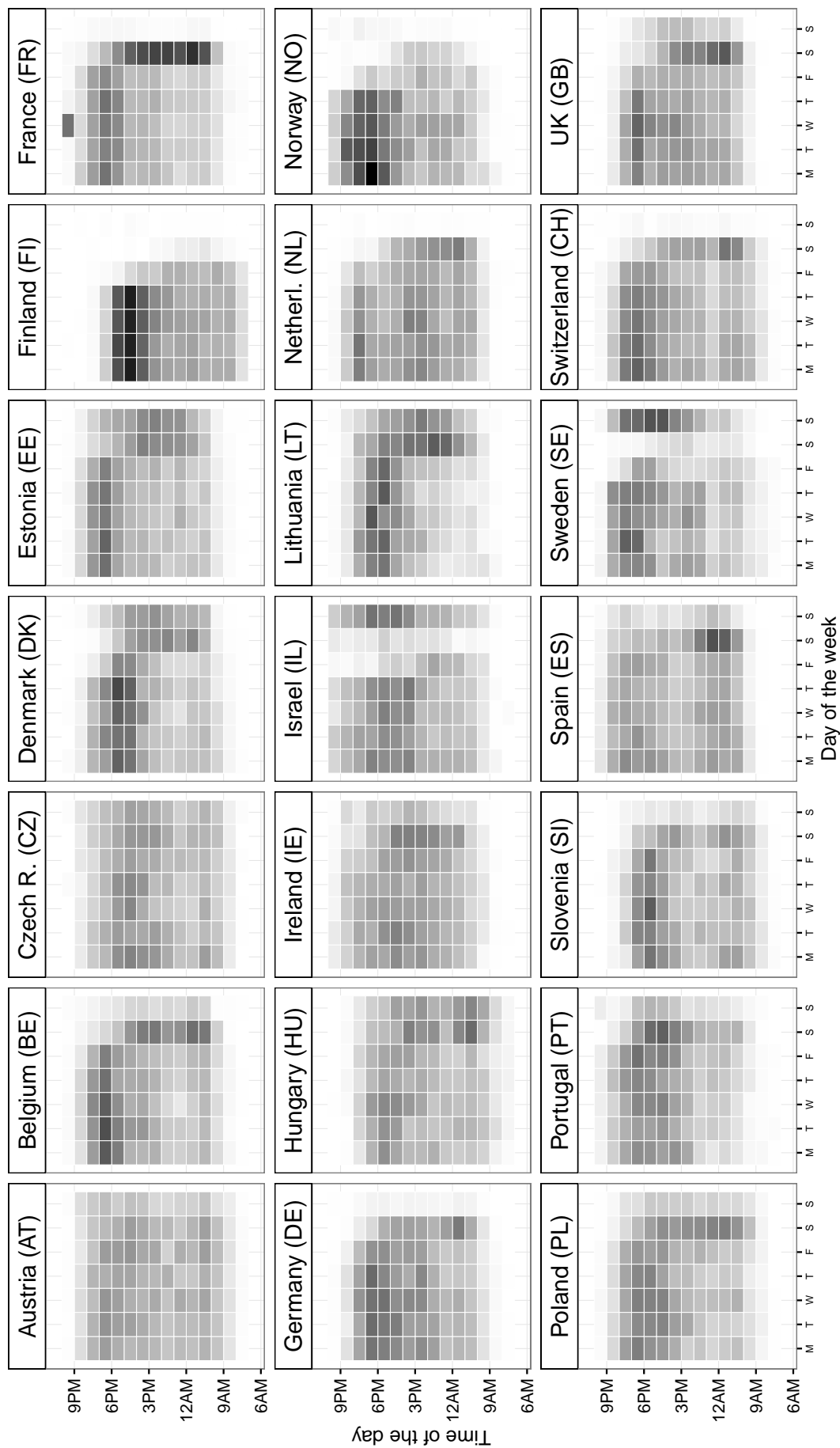
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[23]source: contact form data

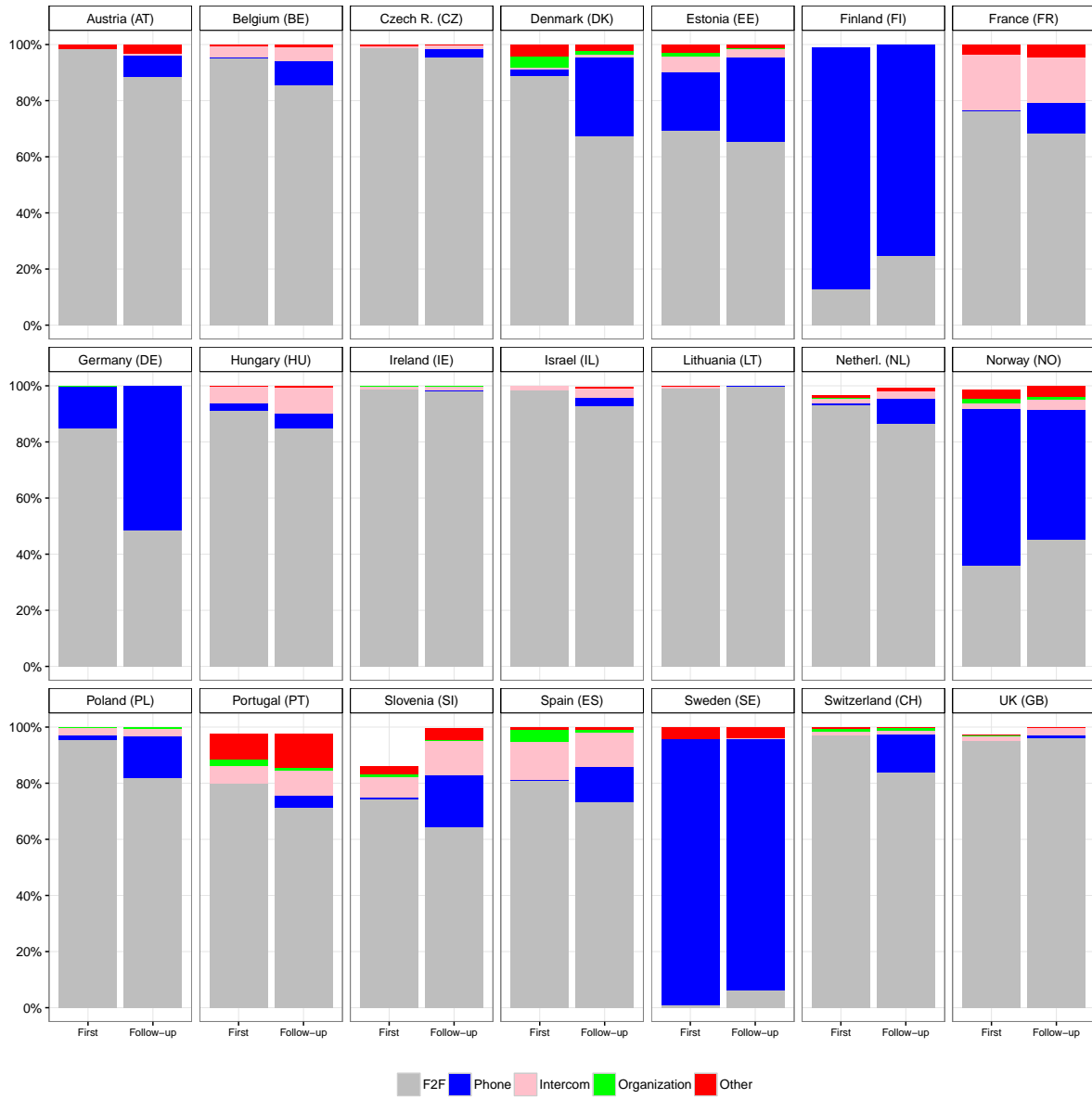**Figure 4:** Fieldwork efforts by weekday and time, ESS7[a]

Figure 5: Contact mode per country, ESS7[23]

tries. Other particular reasons for these differences may relate to the way contact forms are filled out. In some countries, unsuccessful visits may simply not be reported in the contact form dataset. Alternatively, many telephone calls are documented in Sweden, whereas many other countries did not particularly (or not extensively) make use of the telephone as a means to contact the sample units. Another interesting explanation for these differences might pertain to the fact that some countries needed to do much more efforts to attain a satisfactory (or reasonably high) response rate, due to the unfavourable survey climate in their country. Possibly, there is a relationship between extensive field-work efforts (containing a lot of dark grey follow-up contacts), and the level of response rates, where, somewhat counter-intuitive, low response rates relate to much fieldwork effort. An overview of the contact efforts per country can be found in Figure 6.

6.2 Assigning interviewers to the field

Interviewer capacity is not only a matter of how many interviewers are available, but also of how and when they are assigned in the field. In this section, the interviewer workload will be assessed, as well as to what extent the full interviewer capacity is used during fieldwork. This seems to be a(n) (increasingly) relevant matter, as some countries participating in the ESS mention that the lack of availability of the interviewer force is one of the reasons why fieldwork is delayed, threatening timeliness as a crucial aspect of survey quality.

In table 16 an overview of the deployed interviewer force is provided per country. The table gives the total sample size per country, as well as the total number of interviewer per countries. It should be noted that this latter number only comprises the number of interviewers that can be observed in the contact forms. In this respect, Estonia (164 instead of 137), Germany (321 instead of 288) and Switzerland (81 instead of 65) report more interviewers in the contact form dataset as compared to the ESS documentation. Possibly, these countries have added interviewers during or near the end of the fieldwork. Also, interviewer ID's for which no in-person contact attempts could be observed have been excluded[25].

The column 'cases / interviewer (1)' indicates the ratio between the gross sample and the total number of interviewer and is possibly different from the column 'cases / interviewers (2)'[27]. The latter column indicates how many cases, on average, have been assigned to each interviewer. Usually, 'cases / interviewer (2)' is larger than 'cases / interviewers (1)' since some cases may, during the course of the fieldwork, have been passed on from one interviewer to another. Or, the larger the difference between these two columns, the more cases have have been shared between interviewers. 'cases / interviewer (1)' and 'cases / interviewer (2)' should be equal if cases have not shared by interviewers. The standard deviation indicates to what extent the workload has been equally distributed over the interviewers. Small values for the standard deviation implies that interviewers have been given similar workloads. The average interviewer workload and its standard deviation are relevant since they may considerably amplify interviewer effects. The higher the workload of interviewers, the more interviewer effects can lead to

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[24]source: contact form data. The table version of this figure can be found on page 98

[25]This particularly applies to Denmark. This might also include call-center contact attempts.

[26]source: contact form data

[27]In Austria, for 672 out the 3600 cases there was no interviewer ID information available. Therefore 'n per n.int (2)' and 'sd' could not be determined.
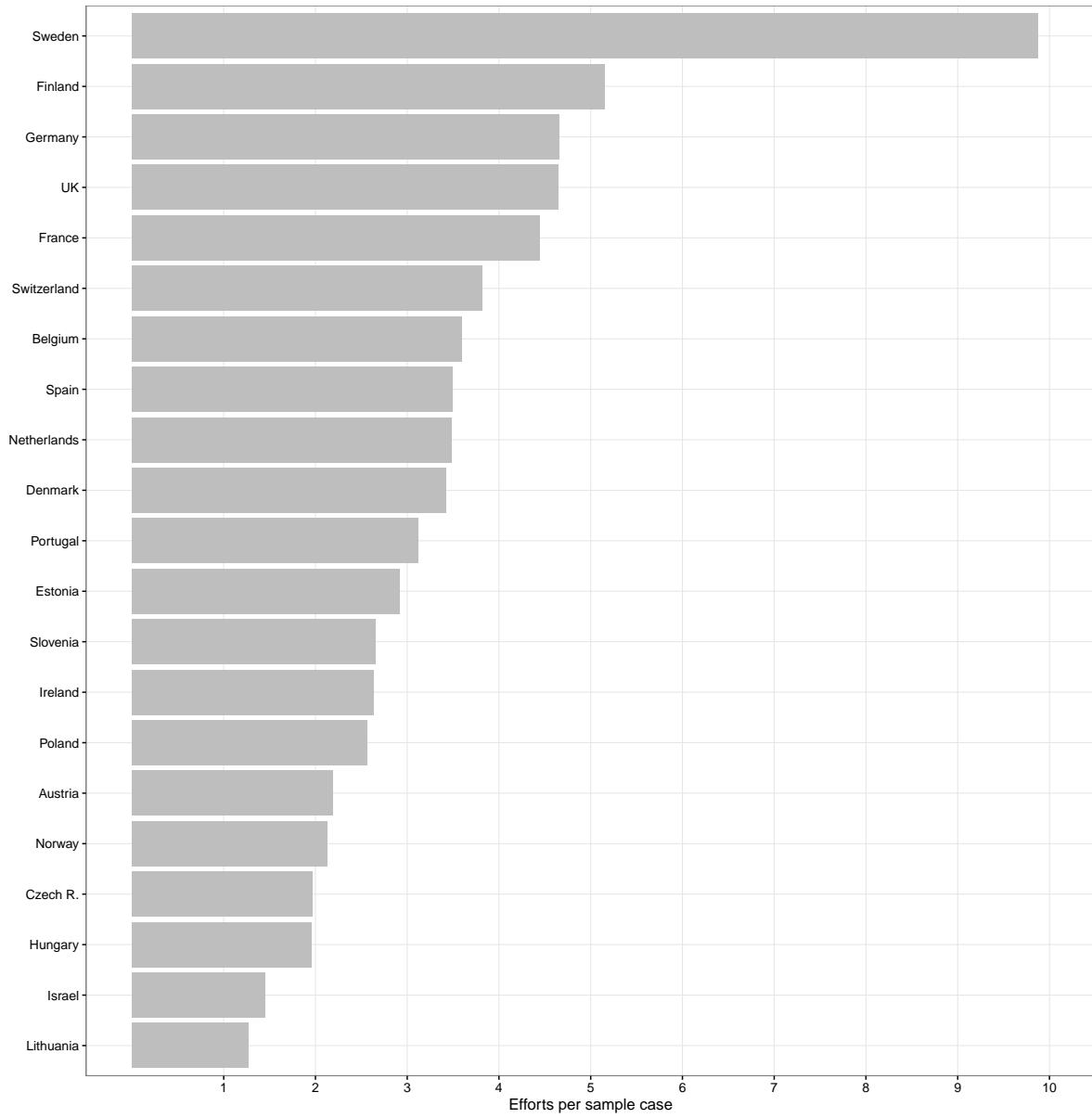
Figure 6: Average number of contact attempts per country, ESS7[24]

Table 16: Number of interviewers per country, ESS7[26]

	n^a	$n.int^b$	Cases / interviewer (1)^c	Cases / interviewer (2)^d	sd^e
Austria (AT)	3600	86	41.86	NA	NA
Belgium (BE)	3204	151	21.22	28.11	17.56
Switzerland (CH)	2941	80	36.76	52.77	36.74
Czech R. (CZ)	3258	282	11.55	11.55	1.73
Germany (DE)	9850	320	30.78	56.32	85.29
Denmark (DK)	2937	88	33.38	34.88	15.70
Estonia (EE)	3620	165	21.94	22.70	18.97
Spain (ES)	3010	133	22.63	24.07	14.24
Finland (FI)	3400	138	24.64	29.32	9.48
France (FR)	4173	137	30.46	32.77	15.39
UK (GB)	5600	213	26.29	31.12	17.38
Hungary (HU)	3339	152	21.97	23.09	16.67
Ireland (IE)	4400	112	39.29	43.62	5.30
Israel (IL)	3500	209	16.75	16.77	10.34
Luthania (LT)	3634	159	22.86	23.25	11.34
Netherl. (NL)	3452	116	29.76	41.91	27.22
Norway (NO)	2747	67	41.00	48.27	26.19
Poland (PL)	2715	151	17.98	20.62	14.80
Portugal (PT)	3100	106	29.25	29.52	22.13
Sweden (SE)	3749	100	37.49	48.74	28.37
Slovenia (SI)	2400	63	38.10	41.00	42.50

[a] Gross sample size
[b] Total number of interviewers in fieldwork, according to contact form dataset
[c] Gross sample size divided by total number of interviewers in fieldwork
[d] Average number of cases assigned to each interviewer
[e] Standard deviation applies to 'cases / interviewer (2)'

variance inflation of estimates. Also, if a few interviewers have very high workloads as compared to other interviewers (usually leading to higher standard deviations in workload), variance inflation may also occur. Therefore, low average workload combined with low standard deviations are preferred.

Austria, Switzerland, Denmark, Germany, France, Ireland, Norway, Sweden and Slovenia deploy relatively few interviewers as their average workload (cases/interviewer (1)) exceeds 30. The Czech Republic and Poland have an extensive interviewer force, as the interviewer workload is on average below 20. Particularly for the Czech Republic or Israel, this is a good indication since this can mitigate the unfavourable impact of the substantial level of interviewer variance in this country.

In the Czech Republic the number of cases divided by the number of interviewers is exactly the same as the average number of cases assigned to each interviewer during the course of the fieldwork. This means that cases are exclusively assigned to only one interviewer and that no cases are shared between interviewers. In Denmark, Estonia, Finland, France, Poland and Slovenia, this difference is rather moderate, indicating that on average, interviewers are only assigned to less than 5 additional cases during the fieldwork that were originally assigned to a different interviewer. In Belgium, Switzerland, Germany, the Netherlands, Norway and Sweden, this average is more than 5 cases. A re-assignment of cases to another interviewer is most likely to occur after a refusal. Also a noncontact, an appointment or a case that has moved (to an unknown destination) can be a reason to re-assign. The efficacy of such re-assignments in the ESS is still to be determined and might be a relevant topic for future investigation.

Related to the impact of interviewer variance, it is also better to have equal workloads across interviewers. Especially the Czech Republic, but also Finland and Ireland seem the provide preferable results in this regard. However, in Switzerland, the Netherlands, Norway, Slovenia and particularly Germany, the inequality of interviewer workloads may be an element to more closely monitor and reduce in the future.

Figure 7 shows how the interviewer force in each ESS country has been deployed during the fieldwork[28]. Each horizontal line in the graph (probably consisting of many segments of different shades of grey) represents one interviewer. Each long rectangular segment represents a period of two weeks in the fieldwork. The darker the segment, the more contact attempts the interviewer did in that period of two weeks. Per country, the interviewers have been sorted by the 'average date of all their contact attempts'. The interviewers at the top of the graph have usually concentrated their activities at start of the fieldwork, whereas the interviewers at the bottom of the graph have usually concentrated their activities near the end of the fieldwork.

There does not seem to be a dominant pattern as to how countries use their interviewer capacity. In Finland (to a lesser extent in Denmark, France, Norway and Sweden) all interviewers work throughout the entire fieldwork period. In some other countries, all interviewers start at the beginning of the fieldwork period, but the number of active interviewers lowers as the fieldwork progresses. This is the case in Belgium, the Netherlands, Poland, Spain and Slovenia. Such a pattern might indicate that a subset of interviewers are selected for follow-up attempts (also of cases that were not initially theirs). For ex-

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[28]The Danish profile might be slightly biased because the contact form dataset did not correctly specify the variables 'TOTCIN1' - 'TOTCIN21'. This made unclear which contact attempts were done by a specific interviewer. For this figure, it was assumed that only the last contact attempt was done by the second interviewer as indicated by 'INTNUM2', whereas all previous contact attempts are done by the interviewer specified by 'INTNUM1'
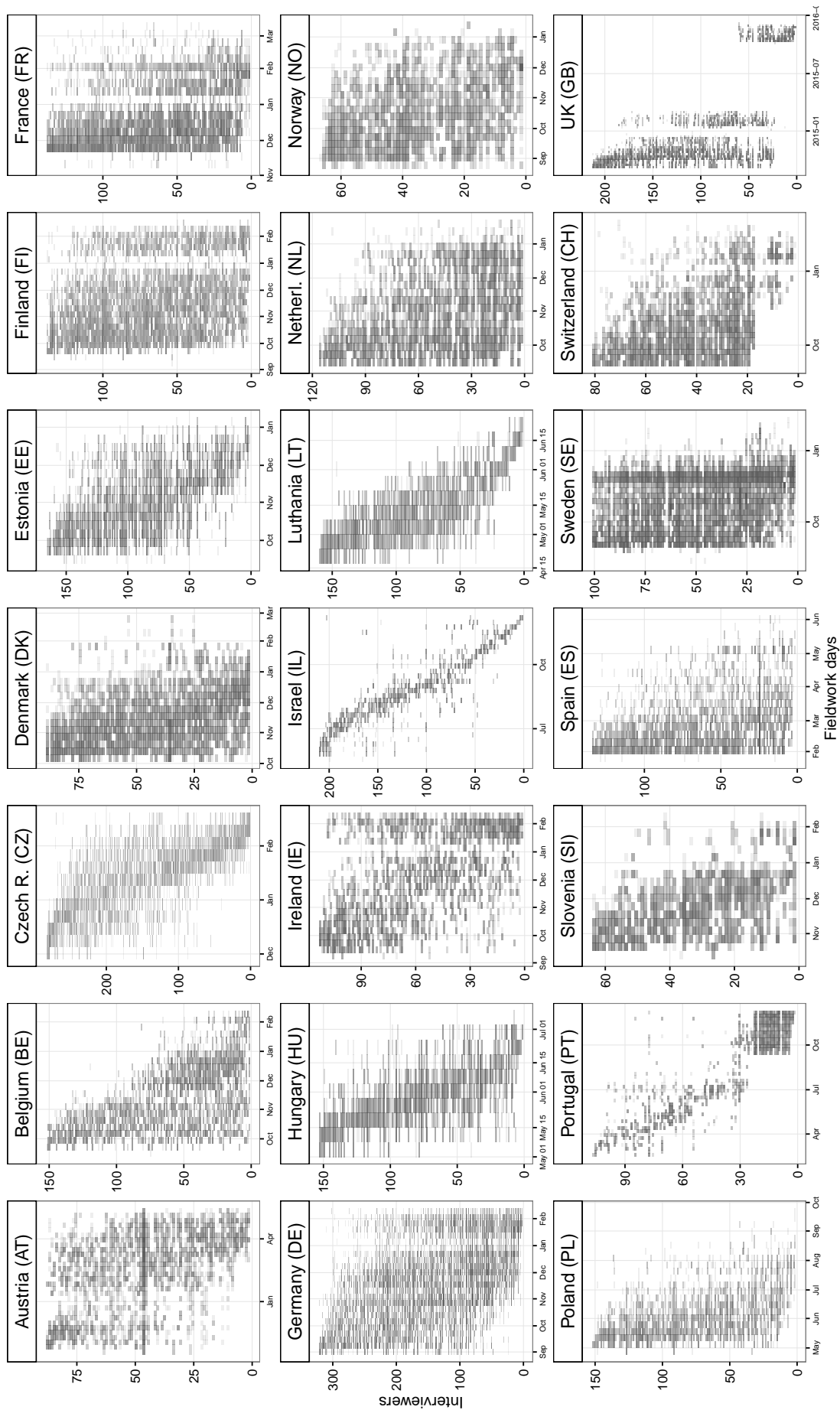
Figure 7: Interviewer assignment per country, ESS7[a]

53

ample, in Belgium, the more experienced or better performing interviewers are selected for refusal conversion purposes. An alternative explanation pertains to the possibility that concurrent projects may have required interviewer staff. In a few countries, the opposite pattern can be observed were all interviewers are only deployed near the end of the fieldwork. This is the case in Austria and Ireland and to a lesser extent in the Czech Republic. A concurrent survey project in Austria was the reason why many interviewers could not be hired from the start.

6.3 Nonresponse codes

Apart from looking at the fieldwork from a temporal dimension or from an interviewer force perspective, the ESS fieldwork for round 7 can also be assessed from the perspective of contact attempts. Most of these attempts are unsuccessful. Figure 8 shows the distribution of nonresponse codes per country. The number in each box represents the number of contacts that have been recorded in that category during the entire fieldwork period. For example, in Austria 1074 refusals by the target person have been recorded (multiple occasions per unit are possible). The shade of the box expresses the likelihood of a renewed contact attempt right after such a nonresponse code occurred. The darker the box, the higher the probability of a renewed contact attempt. For example, in the Netherlands, the box for 'refusal.proxy' is lighter than that for 'refusal.target', indicating that refusals by proxy are less likely to be re-issued than initial refusals by the target person. These reissue likelihoods are only calculated for initial refusals, language barriers, ... Only in the case of a sequence of noncontacts, the reissue likelihood is calculated for cases after 4 noncontacts, a series of 3 or less noncontacts without a new attempt is considered as not reissued.

The nonresponse categories are:

- *Refusal by respondent*

- *Refusal by proxy*: Refusal by proxy or interviewer didn't know if it was the target person

- *Noncontact*: No contact at all

- *Away / not available*: Respondent is unavailable/not at home until ...

- *Disabled (short)*: Mentally/physically unable/ill/sick (short term and therefore could be revisited during the fieldwork period)

- *Disabled (long)*: Mentally/physically unable/ill/sick (long term and would be unable to complete interview during the fieldwork period)

- *Language Barrier*

- *Other*

- *Moved (known)*: Respondent has moved, still in country

- *Moved (unknown)*: Respondent has moved to unknown destination

- *Ineligible*: Respondent has moved out of country, respondent is deceased, address is not valid

- *Partial*: Partial interview

Information on successful interviews or (preceding) appointments is excluded from Figure 8.

Regarding the frequencies of the different nonresponse codes, it is clear that noncontacts are the majority. In almost all countries, more than 50% of the observed nonresponse codes are noncontacts, In Switzerland, Sweden and France, it is even more than 70%. Only in Norway, only 22% are observed. This might indicate underreporting of noncontacts in Norway. Alternatively, automated calls have been registered (before the first and after the first contact attempt), the results can be seen in Table 17. Here, it can be observed that many contact efforts in Norway (but also in Sweden, Switzerland, France and Finland) have recorded in this alternative way.

The second most important category is nonresponse due to refusals. Because of the specific properties of countries working with household- or address-based samples, refusals by proxy (or before selection of the target) occur much more often in the Czech Republic, France, Ireland and the Netherlands (non-individual based samples).

Remarkable country differences can be observed regarding the nonresponse category 'other', which is used very often in Finland, the Netherlands and Sweden. Possibly, this can be related to the fact that in these countries the number of observed refusals is rather low. Possibly, 'other' might have been used as an alternative code to refusals. The number of partial interviews in the Czech Republic and Finland is also remarkable. Also, the code 'away/non available' is not frequently used in Switzerland. Nonresponse due to physical or mental disability (short or long-term) varies greatly between countries. It occurs extremely infrequently in Austria, the Czech Republic and the Netherlands and can be frequently observed in Belgium, Denmark, France, Germany, Ireland and Sweden. It seems very unlikely that these differences reflect true health differences between the European countries. This may also apply, perhaps to a lesser extent, to language barrier as a reason for nonresponse. Does the fact that in Poland or Slovenia no or hardly any language barriers are observed and in Ireland 235 cases are observed reflect the true situation regarding the populations' language proficiency? Of course, some countries might be linguistically more diverse than others, and the sampling approach (individual based versus address or household) might lead to inclusion or exclusion of some minority groups such as illegals or non-citizens. On the other hand, such differences might also be an artefact of how countries deal with (or train their interviewers to deal with) filling out contact forms. Some standardization regarding nonresponse across countries may be preferable. Other remarkable country differences with regard to nonresponse due to cases moved (to known or unknown destination; domestic or abroad) can be observed in Estonia, Germany and Poland.

Nonresponse categories that are most likely to be re-issued are 'away/not available', 'disabled (short)', 'other' and 'partial'. Noncontacts[29] and 'moved (known)' are generally less frequently re-issued, but still more often than refusals, long term disabilities, 'moved (unknown)' and ineligibles. Generally, re-issue probabilities correlate positively with conversion success. This means that fieldwork generally seeks to follow the path of least resistance (pursuing the low-hanging fruit). On the one hand, this is in line with the objective of maximizing the response rate. On the other hand it may not necessarily be

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[29]Recall that the re-issue probabilities are only determined after more than 4 initial noncontacts, as interviewers are supposed to visit at least 4 times before they can choose to consider a case as final noncontact

	refusal by target	refusal by proxy	noncontact	away / not available	disabled (short)	disabled (long)	language barrier	other	moved (known)	moved (unknown)	ineligible	partial
Austria	1074	364	2524	127	8	12	35	197	9	36	720	50
Belgium	1568	22	4867	847	44	199	112	278	60	147	102	21
Czech Rep.	421	491	1956	166	6	8	12	62	0	4	97	191
Denmark	1042	105	4278	342	57	126	66	463	44	50	27	14
Estonia	948	222	3622	884	58	80	23	38	183	368	23	0
Finland	847	52	9156	586	0	79	26	2769	12	19	3	110
France	330	1634	8794	455	230	195	23	54	1	0	457	6
Germany	5908	851	22340	8454	198	481	137	200	77	514	120	4
Hungary	1016	233	2411	227	7	32	3	193	63	250	90	0
Ireland	584	904	5407	129	34	163	235	25	9	20	447	0
Israel	240	325	1138	154	78	14	36	4	3	24	56	39
Luthania	245	574	749	20	0	16	4	0	9	25	483	2
the Netherlands	1214	467	5172	84	8	2	24	2256	7	10	194	13
Norway	1015	74	602	420	34	93	78	227	67	53	70	2
Poland	583	176	2222	513	38	101	0	337	272	320	50	6
Portugal	173	476	556	76	9	48	11	446	0	10	186	146
Slovenia	516	123	2094	469	17	34	2	680	30	95	40	16
Spain	417	215	4181	1334	47	71	23	134	131	488	111	3
Sweden	2321	144	24671	411	39	162	127	3342	0	151	89	31
Switzerland	1229	366	5323	46	38	101	96	0	41	108	25	8
United Kingdom	1385	1842	14886	1503	101	119	0	1229	0	0	431	47

Figure 8: Occurence and follow-up of nonresponse, ESS7[a]

Table 17: Number of automated calls before and after first face-to-face contact attempt, ESS7[30]

	Automatic calls	
	before 1st F2F contact attempt	after 1st F2F contact attempt
Austria	0	0
Belgium	0	0
Switzerland	0	5941
Czech Rep.	0	0
Germany	0	0
Denmark	0	0
Estonia	0	0
Spain	190	923
Finland	7644	2188
France	0	844
United Kingdom	0	0
Hungary	0	0
Ireland	0	0
Israel	0	0
Luthania	0	0
the Netherlands	0	0
Norway	4304	0
Poland	0	0
Portugal	0	0
Sweden	22	9246
Slovenia	0	0

the best strategy to minimize bias, since low response propensity groups such as (hard) refusals, disabled (long term) or language barriers are even more prone to be excluded from the respondent set.

Some contact attempts are not recorded in the contact history. Usually, these are automated telephone calls and are coded under the variables NUMTEL and NUMTELA in the contact form dataset. Table 17 provides a list of these attempts per country. For all these attempts, the dates are not available. For this report, the consequence of these poor-documented attempts is that they cannot be included in the many fieldwork analyses. This means that for some countries, results should be carefully interpreted.

6.4 Compliance with noncontact specifications

The ESS requires at least four contact attempts per case, from which at least one takes place in the evening and one during the weekend. The contact attempts should be spread over at least two weeks in order to increase the chance to establish contact.

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[30]source: contact form data

Table 18: Compliance with noncontact requirements, ESS7[32]

	First	Final NC's[b]		Compliance (%)			
	contact[a]	N	%	≥4[c]	>6pm[d]	Weekend[e]	2W[f]
Austria (AT)	1.35	219	6.21	91.78	86.30	87.67	61.19
Belgium (BE)	1.95	24	0.76	100.00	100.00	100.00	100.00
Switzerland (CH)	2.17	192	6.54	72.92	62.50	58.33	71.88
Czech R. (CZ)	1.50	58	1.83	100.00	50.00	86.21	43.10
Germany (DE)	1.87	374	3.81	33.42	41.44	39.04	51.60
Denmark (DK)	1.92	68	2.32	88.24	64.71	91.18	88.24
Estonia (EE)	1.57	139	3.85	100.00	89.93	89.93	75.54
Spain (ES)	1.89	83	2.80	92.77	90.36	89.16	80.72
Finland (FI)	2.19	177	5.26	59.32	12.43	14.69	75.14
France (FR)	2.17	464	12.34	100.00	82.97	91.81	97.63
UK (GB)	2.24	403	7.99	76.18	69.73	79.40	78.91
Hungary (HU)	1.44	103	3.12	97.09	73.79	95.15	56.31
Ireland (IE)	1.75	200	5.05	100.00	83.50	89.00	90.50
Israel (IL)	1.19	376	10.87	2.93	26.60	23.67	0.53
Lithuania (LT)	1.17	32	0.98	100.00	75.00	93.75	18.75
Netherl. (NL)	1.88	116	3.56	87.83	82.61	63.48	87.83
Norway (NO)	1.09	76	2.81	13.16	50.00	23.68	38.16
Poland (PL)	1.54	63	2.34	82.54	87.30	80.95	87.30
Portugal (PT)	1.07	0	0.00	0.00	0.00	0.00	0.00
Sweden (SE)	3.31	40	1.07	80.00	82.50	80.00	85.00
Slovenia (SI)	1.48	50	2.10	53.06	36.73	48.98	57.14

[a] **First Contact**: Average number of attempts until first contact
[b] **Final NC's**: Number and % of cases never contacted
[c] **≥4** : Final noncontacts attempted more that 4 times?
[d] **> 6pm** : Final noncontacts attempted during the evening?
[e] **Weekend**: Final noncontacts attempted during the weekend?
[f] **2W**: Final noncontacts attempted over at least two weeks?

Except for the first column, Table 18 deals only with cases with whom contact was never made during the fieldwork, and might be slightly different from the approach defining final noncontact as described by the NTS[31]. The first three columns of Table 18 indicate the average number of attempts that are needed to establish the first contact, and the number and percentage of final noncontacts. The last four columns display the percentage of noncontacts that have been contacted at least four times ('≥4'), in the evening ('>6pm'), at the weekend ('weekend') and for which the contact attempts were spread over two weeks ('2W'), complying with the ESS guidelines.

The first column (First contact) may be indicative of the contactability of a country. The more attempts that are needed in a country, the harder it is to contact individuals

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[31]Here noncontacts are those whose last contact attempt was a noncontact, except when one of the previous attempts resulted in a refusal
[32]source: contact form data

in that country. Because of a possible underreporting of noncontact events in Norway and prior telephone attempts to in-person attempts in particularly Sweden, Spain and Finland, these countries might show somewhat biased downward results for this and other columns in Table 18. On average, in Switzerland, Finland, France, the UK and Sweden, it takes more than two contact attempts to establish contact. Countries with better contactability (<1.5 attempts) are Austria, the Czech Republic, Hungary, Israel, Lithuania, Portugal and Slovenia.

Good initial contactability does not necessarily lead to a low noncontact rate. In fact, the average number of visits needed to establish contact and the number of never contacted cases do not clearly correlate. One may expect that in countries where cases are easily contacted (e.g. Austria), hardly any noncontacts should be observed and that in countries where cases are harder to establish contact with (e.g. Sweden), lots of cases that could never be contacted should remain. The result in Table 18 for those two countries actually show the opposite.

It therefore seems that low noncontact rates are related not only to a lack of contactability, but also to efforts to reduce the problem of cases being hard to reach. The last four columns of Table 18 illustrate these efforts. Belgium seems to be the only country that consistently adheres to the rules of noncontact prevention. France and Ireland also comply relatively well. Norway, Finland, Germany and Slovenia do not seem to comply very well, although this may be due to an underreporting of noncontact events in some of these countries.

It can be observed that the rule of at least 4 contact attempts is the most adhered to (on average 77%), whereas the weekend and evening requirement are less often complied with (less than 70% on average).

7   Fieldwork results

Many of the fieldwork processes that are discussed in the previous section may be related to the fieldwork results in terms of response rates, contact rates or refusal rates. The causal order of the relationship may not always be so obvious. On the one hand, extended fieldwork efforts or strategies may result in better response rates. On the other hand, the expectation of a good response rate may make fieldwork managers anticipate and alter their strategy to save on fieldwork costs. Therefore, one might also expect that low levels of fieldwork efforts are related to high response rates.

Additional to presenting the of fieldwork results, this section will also provide some indications of nonresponse bias, based on information from interviewer observable data.

To start with, consider Table 19 where the final (non)response codes are presented, according to NC's National Technical Summaries (NTS). Most of the main categories of response and nonresponse will be dealt with the in following sections.

7.1   Ineligibility

The percentage of ineligibles found in the sample is mainly related to the quality of the sampling frame. Address-based samples mostly contain ineligible cases due to unoccupied addresses, whereas individual based sample rather have ineligible case due to target individuals who left the country of are deceased. This may be explained by the time between the last update of, for example, the population register and the actual fieldwork.

Table 19: Breakdown of final response and nonresponse, ESS7[a]

	Total[A]	Refusal target[B]	Refusal proxy[C]	Refusal opt-out[D]	No contact[E]	Language barrier[F]	Illness[G]	Other[H]	Not traceable[I]	Not residential[J]	Not occupied[K]	Other ineli.[L]	Emigrated[M]	Deceased[N]	Invalid interviews[U]	Valid interviews[V]	Records data file[X]	Not accounted[Y]	Response rate[rr]
Austria	3600	845	303	0	454	29	12	8	23	21	5	75	16	3	11	1795	1795	0	51.58%
Belgium	3204	835	0	2	35	104	185	147	20	10	29	10	41	12	5	1769	1769	0	57.03%
Czech Republic	3258	399	454	0	73	12	6	18	5	32	57	2	4	1	47	2148	2148	0	67.93%
Denmark	2937	918	83	0	117	57	124	92	2	8	0	1	21	10	0	1502	1502	2	51.85%
Estonia	3620	574	113	0	342	23	75	130	1	0	12	1	176	9	113	2051	2051	0	59.94%
Finland	3400	774	14	0	166	41	112	115	11	32	0	0	27	11	10	2087	2087	0	62.67%
France	4173	185	711	0	582	20	189	107	45	24	119	267	0	0	7	1917	1917	0	50.94%
Germany	9850	4123	522	0	737	81	336	784	0	24	33	0	49	50	66	3045	3045	0	31.41%
Hungary	3339	864	184	0	275	3	33	145	20	7	31	4	65	10	0	1698	1698	0	0.5270
Ireland	4400	380	533	0	233	235	163	0	0	51	377	13	18	6	1	2390	2390	0	60.74%
Israel	3500	127	249	0	373	35	35	57	2	17	34	0	0	3	6	2562	2562	0	0.7435
Lithuania	3634	236	556	0	54	4	16	21	105	167	183	23	12	5	2	2250	2250	2	0.6887
The Netherlands	3452	684	0	232	182	26	3	117	0	41	78	51	8	0	0	1919	1919	111	58.61%
Norway	2747	700	50	0	149	52	105	112	15	37	2	0	35	11	0	1436	1436	43	53.94%
Poland	2715	381	79	0	221	0	82	64	5	18	6	1	217	20	6	1615	1615	0	65.84%
Portugal	3100	172	854	0	45	11	48	290	9	14	110	34	0	0	248	1265	1265	0	0.4300
Slovenia	2400	411	75	321	178	2	33	85	4	1	7	6	38	8	0	1224	1224	7	52.31%
Spain	3010	259	126	0	396	21	62	29	19	8	37	3	81	44	0	1925	1925	0	0.6785
Sweden	3750	1222	50	0	40	116	141	185	30	9	0	108	52	6	0	1791	1791	0	50.10%
Switzerland	2941	662	103	0	282	88	108	129	0	18	0	0	9	7	3	1532	1532	0	52.70%
UK	5600	949	820	0	721	6	131	295	10	55	279	69	0	0	1	2264	2264	0	0.4356

[A] Total number of issued sample units
[B] Refusal by respondent
[C] Refusal by proxy, or household or address refusal
[D] Refusals by opt-out list
[E] No contact (after at least 4 visits)
[F] Language barrier
[G] Respondent ill or incapacitated, unable to co-operate throughout fieldwork period
[H] Contact, but no interview for other reasons (broken appointment, respondent unavailable
[I] Address not traceable
[J] Address not residential (institution, business/industrial) / Respondent resides in institution

[K] Address not occupied (demolished, not yet built) / Address occupied, but no resident household
[L] Other ineligible address
[M] Respondent emigrated/left the country long term (for more than 6 months)
[N] Respondent deceased
[U] Number of invalid interviews
[V] Number of valid interviews
[X] Number of records in the data file
[Y] Number of sample units not accounted for
[rr] Response rate main questionnaire X/(A-(sum of J,K,L,M,N))

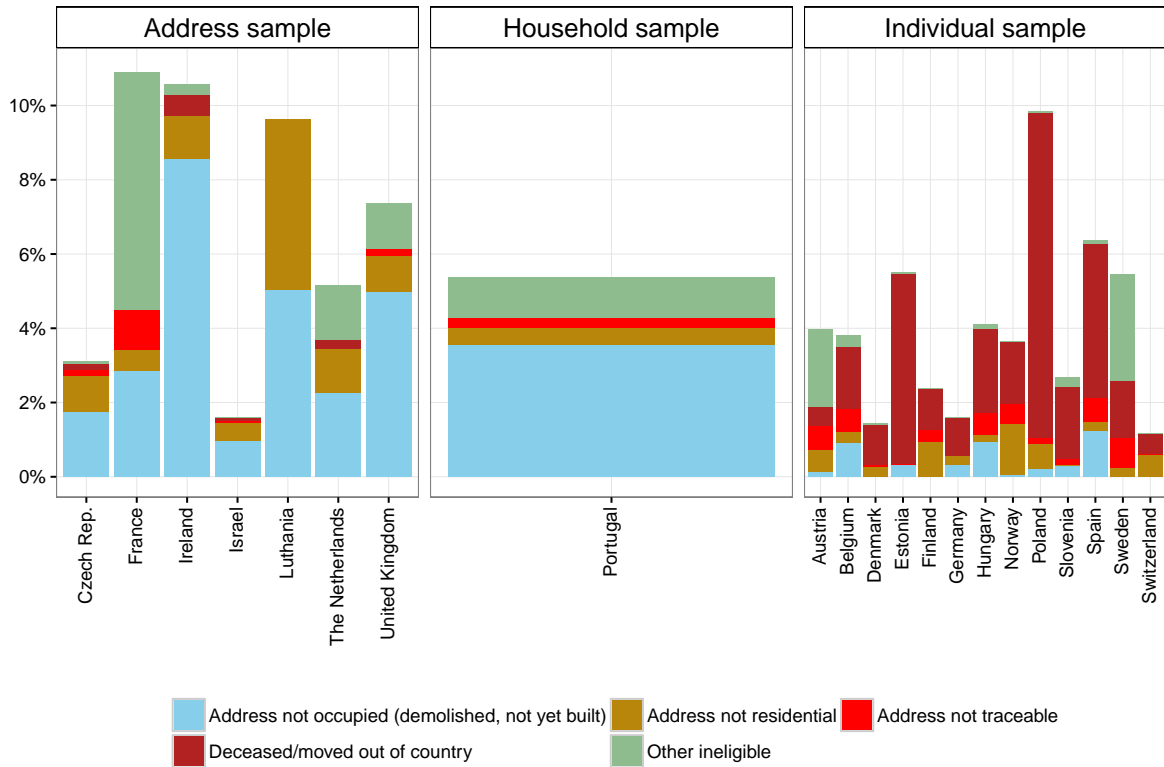[a] source: National Technical Summary

Figure 9: Ineligibles per country, ESS7[34]

Figure 9 shows the ineligibility rates on the sample by country and for each ineligibility category[33]. The countries are split by the type of sampling frame that they used. Address samples seem to have, on average 7% ineligible cases (with France and Ireland as outliers reaching 10%), whereas most individual based samples do not exceed 5% of ineligible cases.

In Ireland, the sample design involves address-based sampling, using the GeoDirectory, which is a listing of all addresses in Ireland. This allows residential addresses to be identified. One aspect of the GeoDirectory relevant for the calculation of gross sample size is that it does not identify all vacant addresses. According to Census 2011, 15.05% of residential addresses in Ireland are vacant. For this reason, the proportions of ineligible cases was estimated at 9.6%, which seems to be a good approximation, given the realized proportion of almost 11% ineligible cases. In France, the 10% of ineligible cases was also anticipated in the sampling sign-off documents. However, it is not completely clear what the 'other ineligibles' exactly means, and why it is so high. According to the sign-off documentation, Poland estimated its proportion of ineligible cases to be 7.4%, mainly due to emigration. The actual proportion of ineligible cases is nearly 10%.

It may be a suggestion, particularly for countries for which rather high ineligibility rates are observed, to gauge potential threats (e.g. selection effects/bias) because of ineligibility.

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[33]Although 'address not traceable' is not formally used to the determine the ineligibility rate, it is included in this presentation, as it is relevant from a fieldwork perspective.

[34]source: National Technical Summary. The table version of this figure can be found on page 100

7.2 Response rates

The ESS requirements state that each participating country should aim for a response rate of 70% or more. The response rates are calculated as the total number of completed interviews divided by the sample size from which the identified ineligible cases are subtracted (AAPOR RR1). Ineligibles are defined as 'Respondent deceased', 'Respondent moved out of the country', 'Derelict or demolished house', 'Not yet built, not ready for occupation', 'Not occupied', 'Address not residential: business', 'Address not residential: institution', and 'other ineligible'.

Figure 10 gives an overview of the obtained response rate in each participating country. The benchmark of 70% is clearly marked in the figure.

The graph clearly shows that, except Israel, none of countries were capable of achieving the prescribed 70% response rate. Only six countries were able to exceed 60%.

Figure 11 shows the evolution of the response rates for each country since ESS1. The blue line in the graphs indicate the 70% response rate benchmark, the red lines are the observed response rates per country and per round, where the grey is the average response rate over all countries, per round. It indicates a possible overall response rate trend.

In order to model this grey trend line (the effect of time on response rates), the following multilevel model can be used:

$$rr_{ij} = \gamma_{00} + \gamma_{10}R_i + \mu_{0j} + \varepsilon_{ij}, \tag{Model 1}$$

where rr_{ij} represents the response rate for ESS round i and for country j. γ_{00} is the overall intercept of the model, γ_{10} represents the categorical effect of the round R_i (1 to 6). The random effect μ_{0j} accommodates for the country differences and is necessary because not all countries participated in all seven rounds. The selectivity of countries per round (e.g. particularly lower response rate countries participating in round i while higher response rate countries participating in round i') would otherwise bias the time effect as measured by γ_{10}. By introducing the random effect μ_{0j} the effect of R_i can consequently be interpreted as an overall effect of time, regardless of the particular countries that participated in the rounds at hand.

There is a slight tendency for response rates to decrease over time. In ESS 3, ESS4, ESS5 and ESS7, the overall response rates were on average lower than in the previous rounds. Only in ESS2 and ESS6, response rates tended to increase as compared to the previous rounds.

Comparing ESS7 to ESS6, most countries were relatively stable (Belgium, the Czech Republic, Denmark, France, Germany, the Netherlands, Norway, Sweden, Spain and Switzerland). However, in some countries, response rates went down substantively (Estonia, Finland, Hungary Poland, Portugal, Slovenia and the UK). Countries substantially increasing in response rates could not be observed.

7.3 Noncontact rates

On top of the 70% response rate requirement, the ESS also set a goal to keep noncontact rates below 3%. The noncontact rate is defined as the number of final noncontacts, proportional to the total number of eligible cases. Final noncontacts are cases for which the last visit resulted in noncontact, except when one of the previous attempts was a

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[35]source: National Technical Summary. The table version of this figure can be found on page 101

[36]source: National Technical Summaries. The table version of this figure can be found on page 102
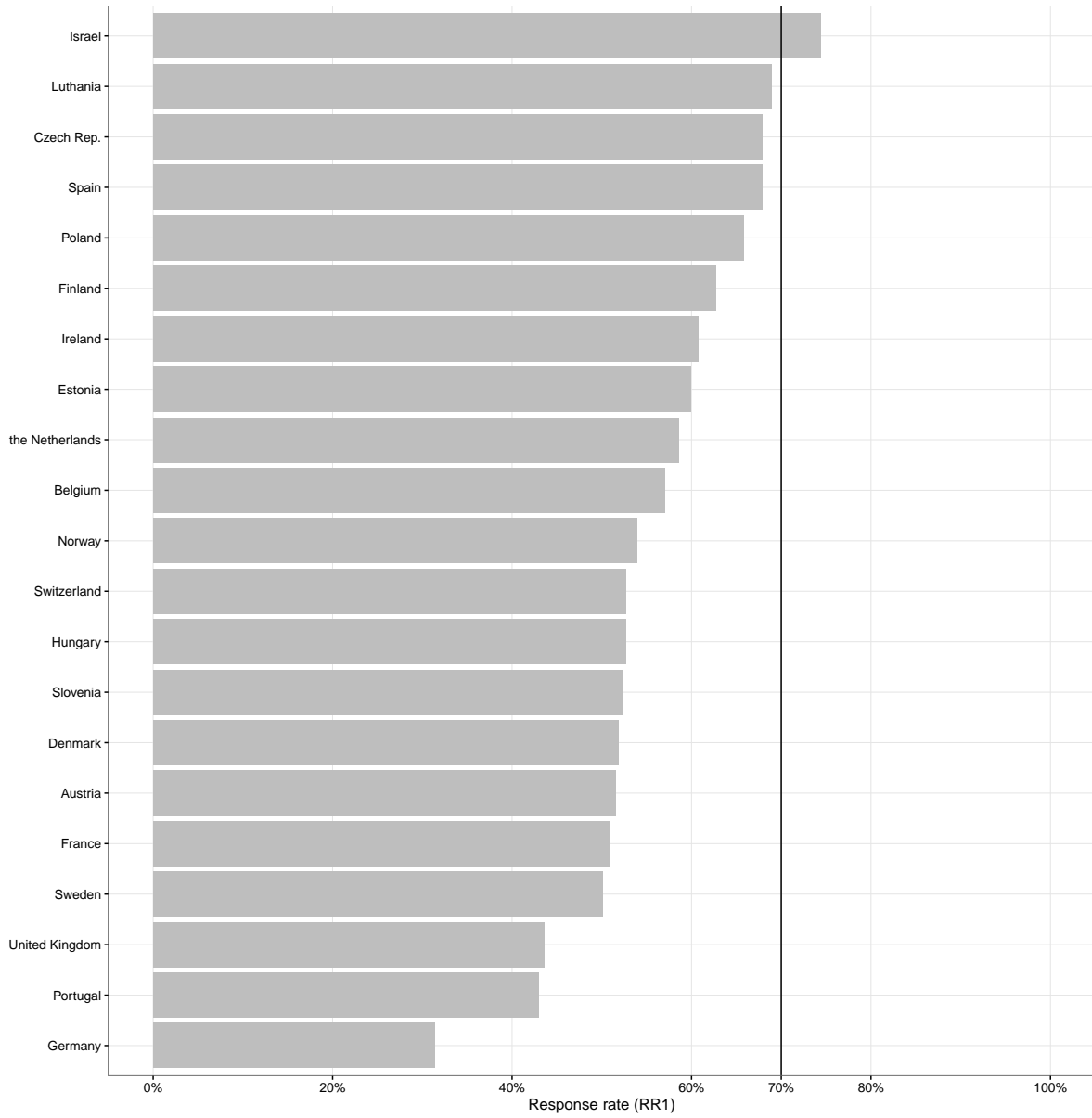
Figure 10: Response rates per country, ESS7[35]
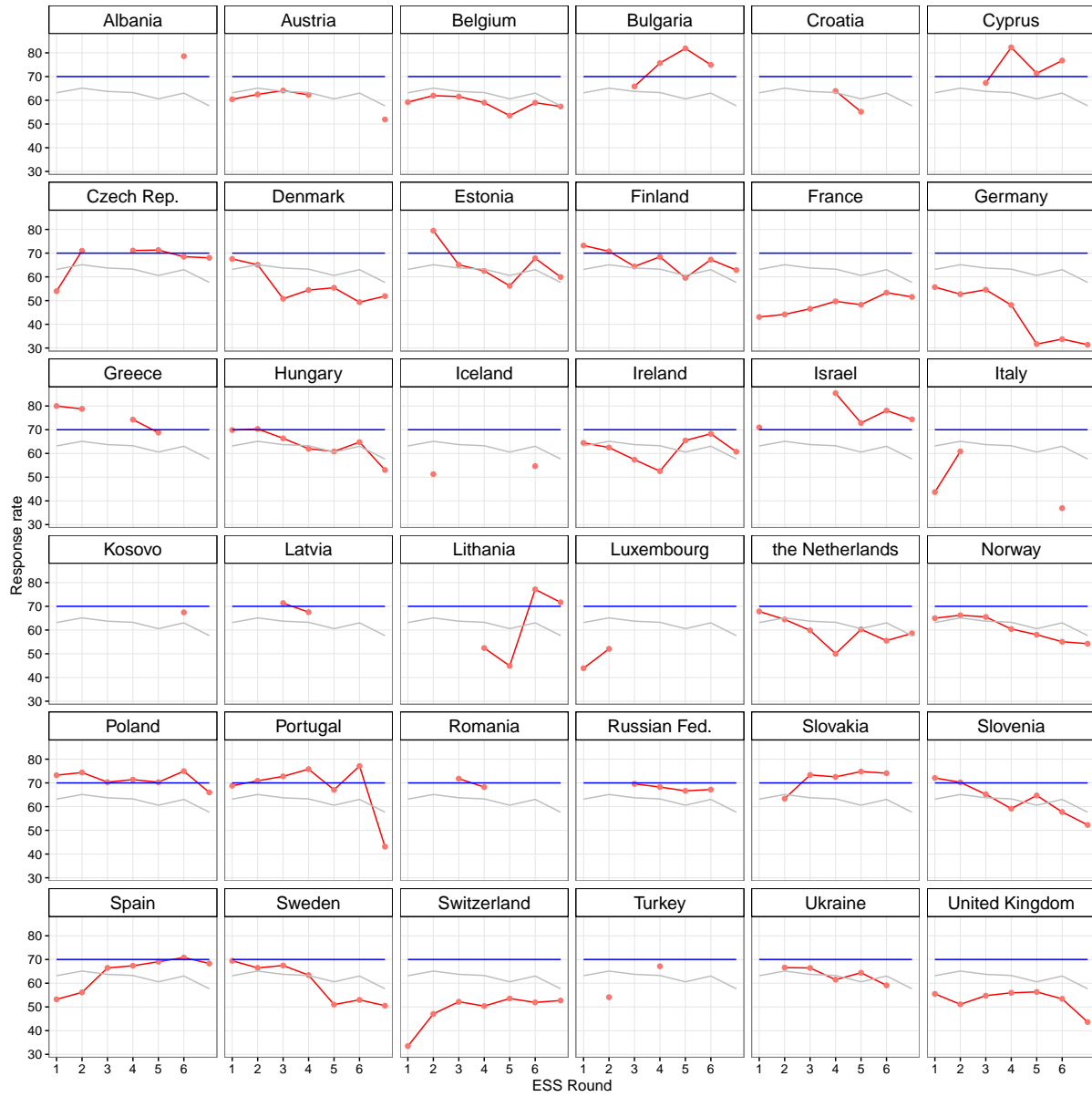
Figure 11: Response rates, ineligibles excluded, over different ESS rounds, 36 countries[36]

refusal. Figure 12 shows whether countries managed to achieve that 3% objective and in how far they deviate from this objective.

Apparently, only five out of the 21 ESS7 countries were able to keep their noncontact rates under 3%: the Czech Republic, Lithuania, Portugal, Belgium and Sweden. In France and Austria, Spain and the UK the noncontact rate seems to be excessively high.

It is hard to say whether noncontacts are a growing problem in the ESS. For some countries, the proportion of noncontacts has increased considerable as compared to ESS6: e.g. France (+5%), the Netherlands (+4%), and Poland (+4%), whereas other countries managed to substantively reduce their noncontact rates compared to ESS6: Belgium (-7%), Ireland (-7%), Germany (-3%) and Slovenia (-3%).

7.4 Refusal rates and refusal conversion

Refusals are usually the main cause for non-participation. The ESS encourages countries to have a strategy for refusal conversion, typically re-approaching refusals with a more experienced, trained interviewer with the purpose to reduce refusals rates and ultimately nonresponse rates. Figure 13 provides an overview of the cooperation rates per country. Cooperation rates are defined as the number of successful interviews, proportional to the sum of successful interviews and final refusals[38].

Cooperation rates range between almost 40% (Germany) and more than 80% (Israel and Spain) and may be a very good predictor for the final response rate. Among the 15 countries in the first release, the correlation between the cooperation rate and the response rate is 0.93.

In some countries, refusal conversion efforts can have a considerable effect on the eventual response rate, as indicated by Figure 14. The longer light bars indicate the response rate without any conversion efforts. The shorter dark bars at the end indicate the response rate increase due to conversion attempts. The darker the bars, the more initially reluctant nonrespondents have been reissued. Apparently, countries showing higher degrees of renewed contact attempts after a refusal, tend to increase their response rates more significantly. In that sense, refusal conversion efforts seem to pay off. Substantive changes in the response rates can be seen in Germany, Sweden, France, Switzerland, Belgium, the UK and the Netherlands. In Slovenia, Denmark, Portugal, Hungary and Austria, relatively little conversion attempts have been made, even though the response rates in these countries preferably need to be increased.

7.5 Other categories of nonresponse

Smaller than the category of refusals, but quite similar in size as noncontacts are non-respondents due to other reasons. Other nonresponse is categorized as: 'language barriers', 'Respondent ill or incapacitated, unable to co-operate throughout fieldwork period' and 'Contact, but no interview for other reasons (broken appointment, respondent unavailable)'. Figure 15 shows to what extent the residual category of nonrespondents contributes to nonresponse.

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[37]source: National Technical Summary. The table version of this figure can be found on page 103

[38]Refusals include refusals by the target person, by proxy, before within-household selection and opt-out.

[39]source: National Technical Summary. The table version of this figure can be found on page 104

[40]source: contact form data. The table version of this figure can be found on page 105

[41]source: National Technical Summary. The table version of this figure can be found on page 106

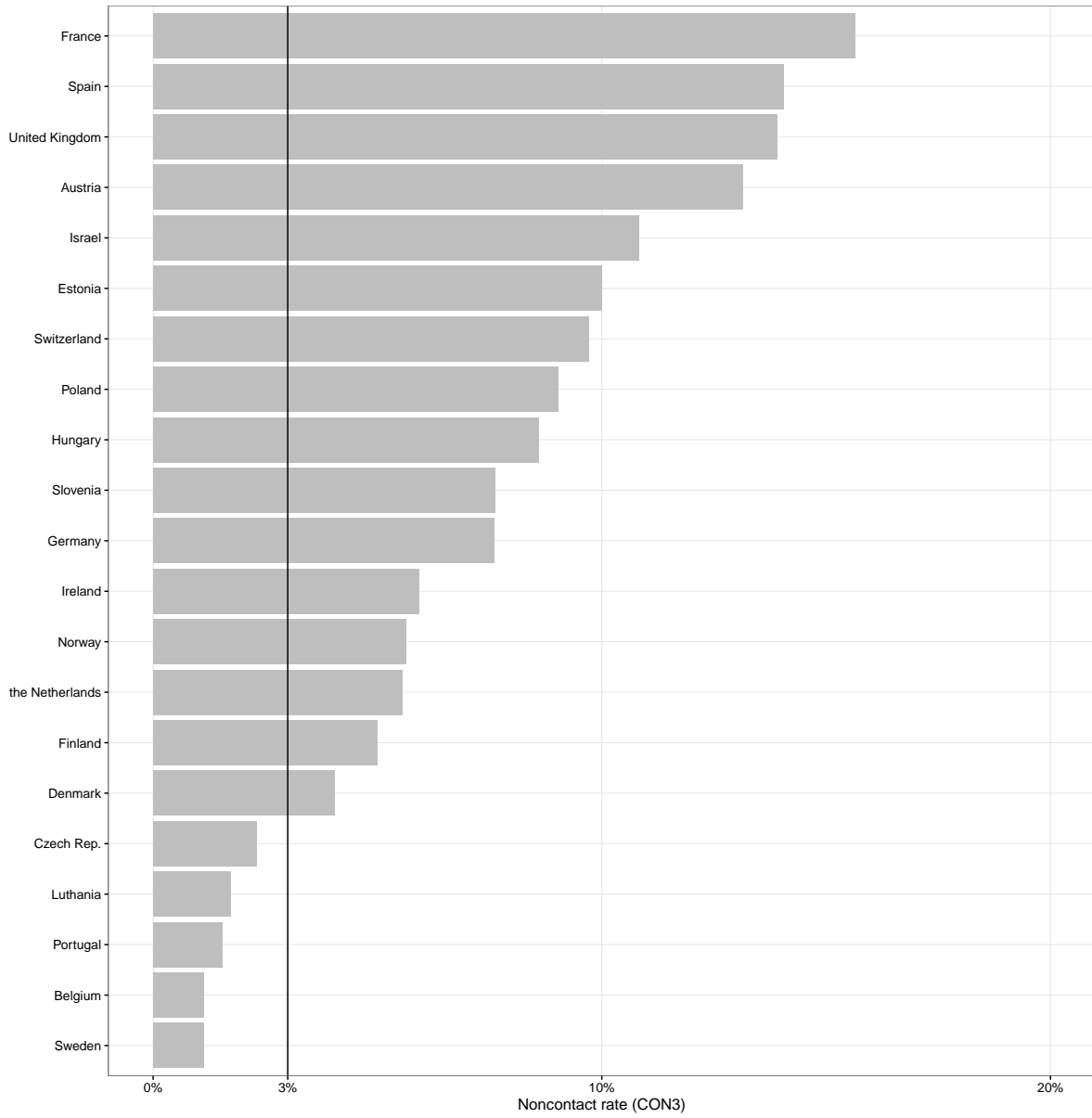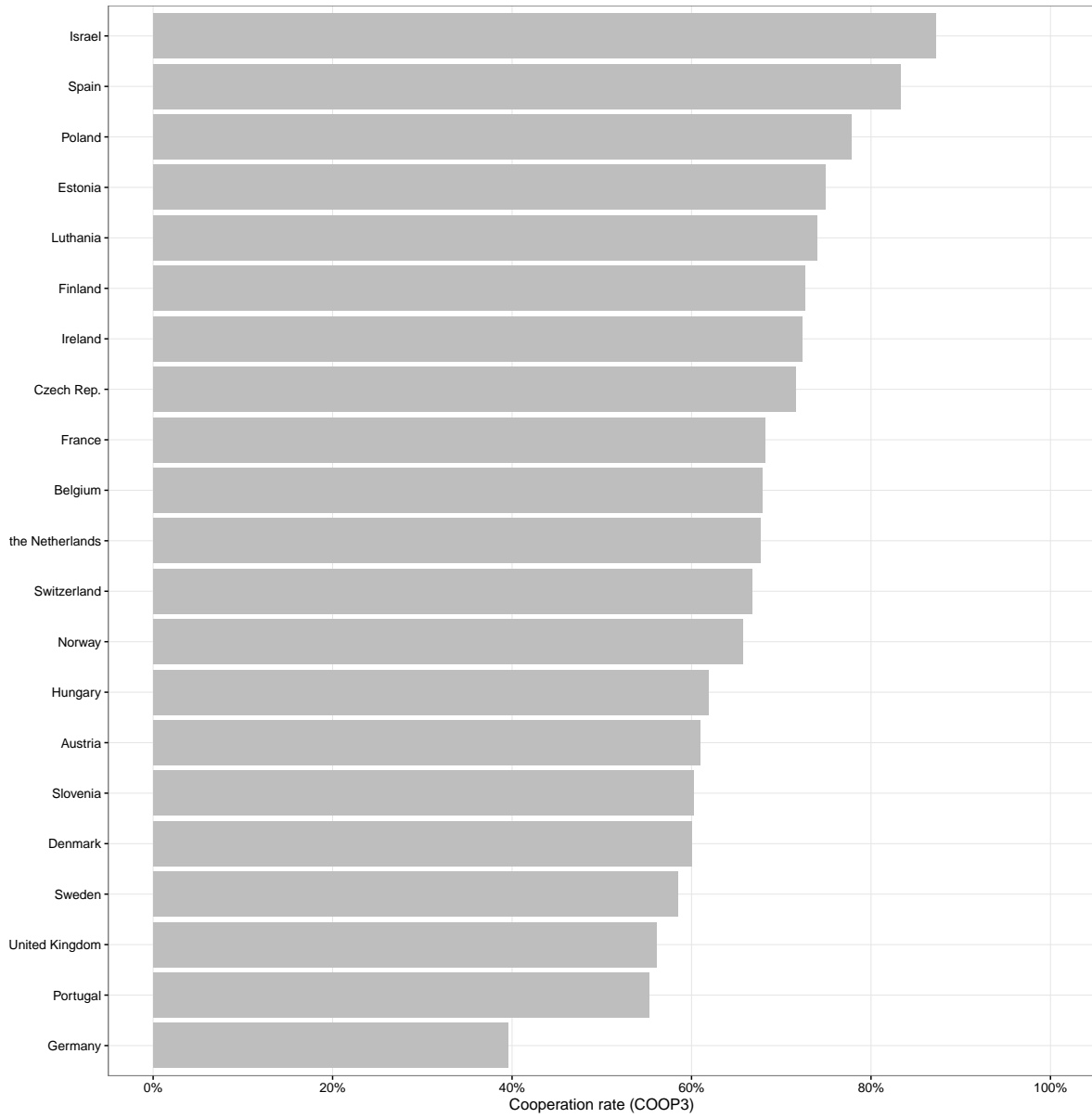**Figure 12:** Noncontact rates per country, ESS7[37]

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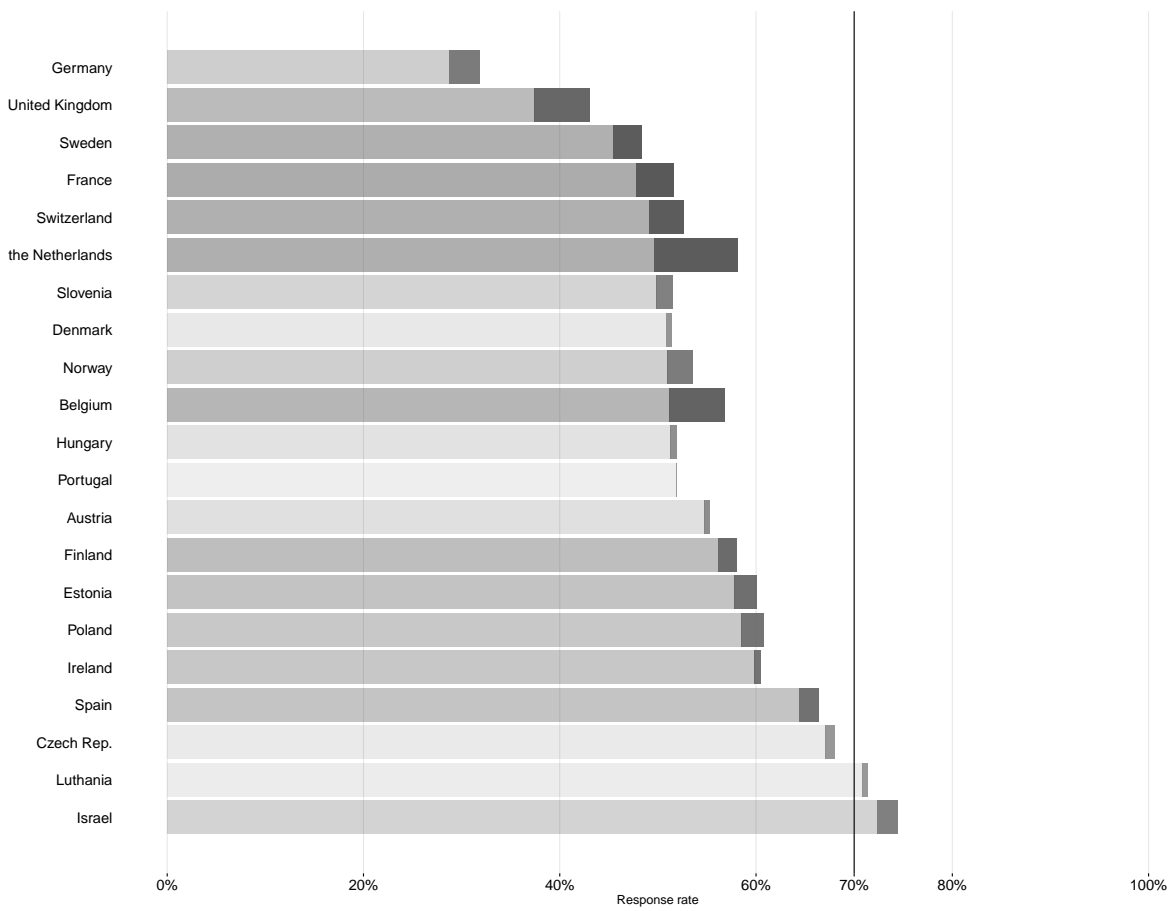**Figure 13:** Cooperation rates per country, ESS7[39]

Figure 14: Refusal conversion efforts and results per country, ESS7[40]
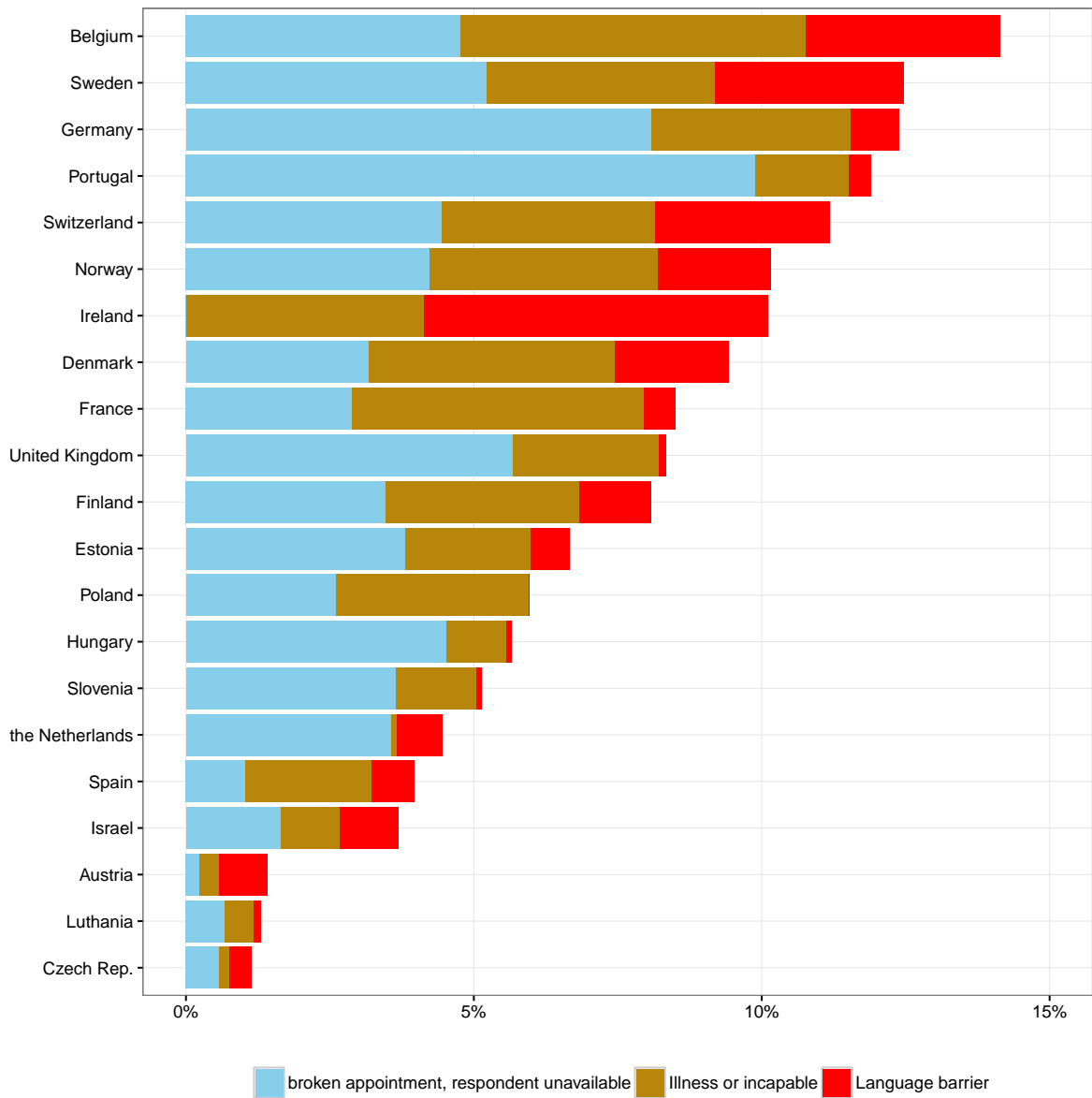
Figure 15: Nonresponse due to other reasons per country, ESS7[41]

There appear to be sizeable differences between countries regarding nonresponse due to 'other' reasons, ranging from hardly 1% in the Czech Republic to 14% in Belgium. The categories in this group are quite different from each other and therefore need a different approach when trying to reduce these residual categories of nonresponse. Language barriers and (long term) illness are groups of nonrespondents that are hard to convert, given the current ESS fieldwork practices. Language barriers in particular may be hard to circumvent as each country is limited in terms of the translated questionnaires and linguistic interviewer qualifications that they can offer to their respondents. Also the interviewing of mental and/or physically severely ill respondents might require a very specific approach, that has not yet been developed for the ESS. Some more flexibility can be expected regarding broken appointments and/or people being temporarily away. For some countries, this might result in a few additional percentage points of response.

7.6   Indications of nonresponse bias

In order to evaluate the extent to which nonresponse affects survey estimates, the ESS fieldwork protocol has chosen to collect data about observable information that can be recorded by the interviewers at their first visit. The following questions were asked:

- TYPE: What type of house does the (target) respondent live in? The interviewer could choose between: farm, detached house, semi-detached house, terraced house, the only housing unit in a building with another purpose (commercial property), flat, student apartment, retirement house, House-trailer or boat, or other. With regard to this variable, we will rather focus on the distinction between apartment dwellers and non-apartment dwellers (indicated as 'FLAT').

- GATE/DOOR: Before reaching the (target) respondent's individual door, is there an entry phone system or locked gate/door? (1: Entry phone system; 2: locked gate/door; 3: both entry phone system and locked gate/door; 4: neither of these).

- PHYSA: What is your assessment of the overall physical condition of this building/house? (Very good, good, satisfactory, bad, very bad)

- LITTER: In the immediate vicinity, how much litter and rubbish is there? (very large amount, large amount, small amount, none or almost none)

- VANDAA: In the immediate vicinity, how much vandalism and graffiti is there? (very large amount, large amount, small amount, none or almost none)

Apart from these observable data, many countries (particularly individual sample based frame countries) could also provide gender and age information about the sampled individuals. In sum, seven variables are available to make a nonresponse bias assessment.

Figure 16 gives an example of how such a nonresponse bias assessment can be represented. First, a table is provided, comparing the total sample distribution of the variable 'FLAT', to the distribution of respondents only and nonrespondents only. On a total of 881 sampled cases, only 300 (about 34%) cooperated in the survey. Of the total sample, 47% is said to live in an apartment (as recorded by the interviewers). Among the respondents only, 42% are apartment dwellers, indicating a nonresponse bias of 5%. However, this estimate of bias may be somewhat blurred because the housing situation of 8% of the total sample (4% among the respondents) has not been coded by the interviewers.

TYPE?	respon- dents		nonres pondents		total sample	
No flat	162	54%	233	4%	395	45%
Flat	125	42%	287	5%	412	47%
na	13	4%	62	1%	74	1%
	300		582		881	

(a) Flat × response table
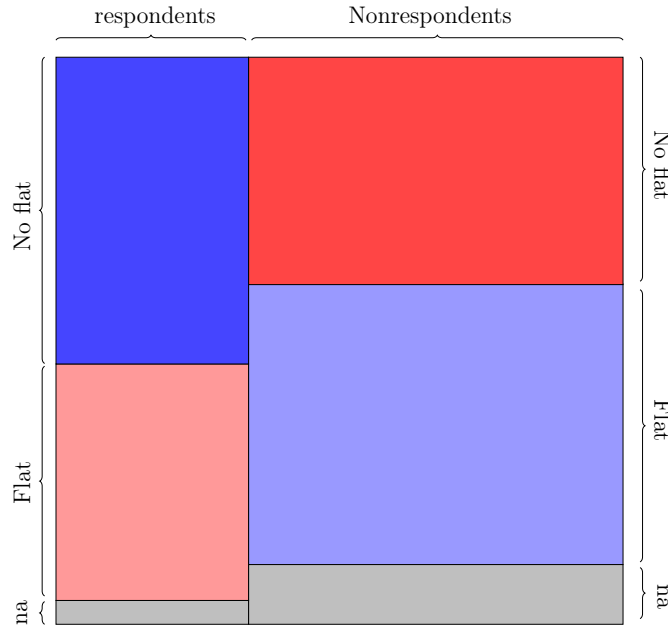
(b) Flat × response mosaic plot

Figure 16: Association between (non)response and type of housing, fictitious example

The information in the table of Figure 16 is also shown in the mosaic plot (second panel of Figure 16). The plot consists of two columns, with the respondents on the left hand side, the nonrespondents on the right hand side. Within each of the two columns, the distribution of the type of housing is displayed. Surfaces in blue indicate that particular combinations (for example, respondents living in flats) are overrepresented, red surfaces indicate under-representation. The colour intensity reflects the standardized (Pearson) residual[42] of the table analysis. Grey rectangles represent missing information for the observable variable.

The advantage of the mosaic plot is that it can be interpreted much faster than a contingency table, which is particularly convenient when many variables and many countries need to be compared. Figure 17 provides mosaic plots for all county × variable combinations. It should be noted that sample sizes of the different countries have been made equal (through weighting on the country level) so that the Pearson residuals do not reflect differences in the sample size, but only the degree of association between the various observable variables on the one hand and the 0-1 response indicator on the other hand. Also note that ineligible cases are not included in these plots.

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[42](actual - expected)/sqrt(expected)
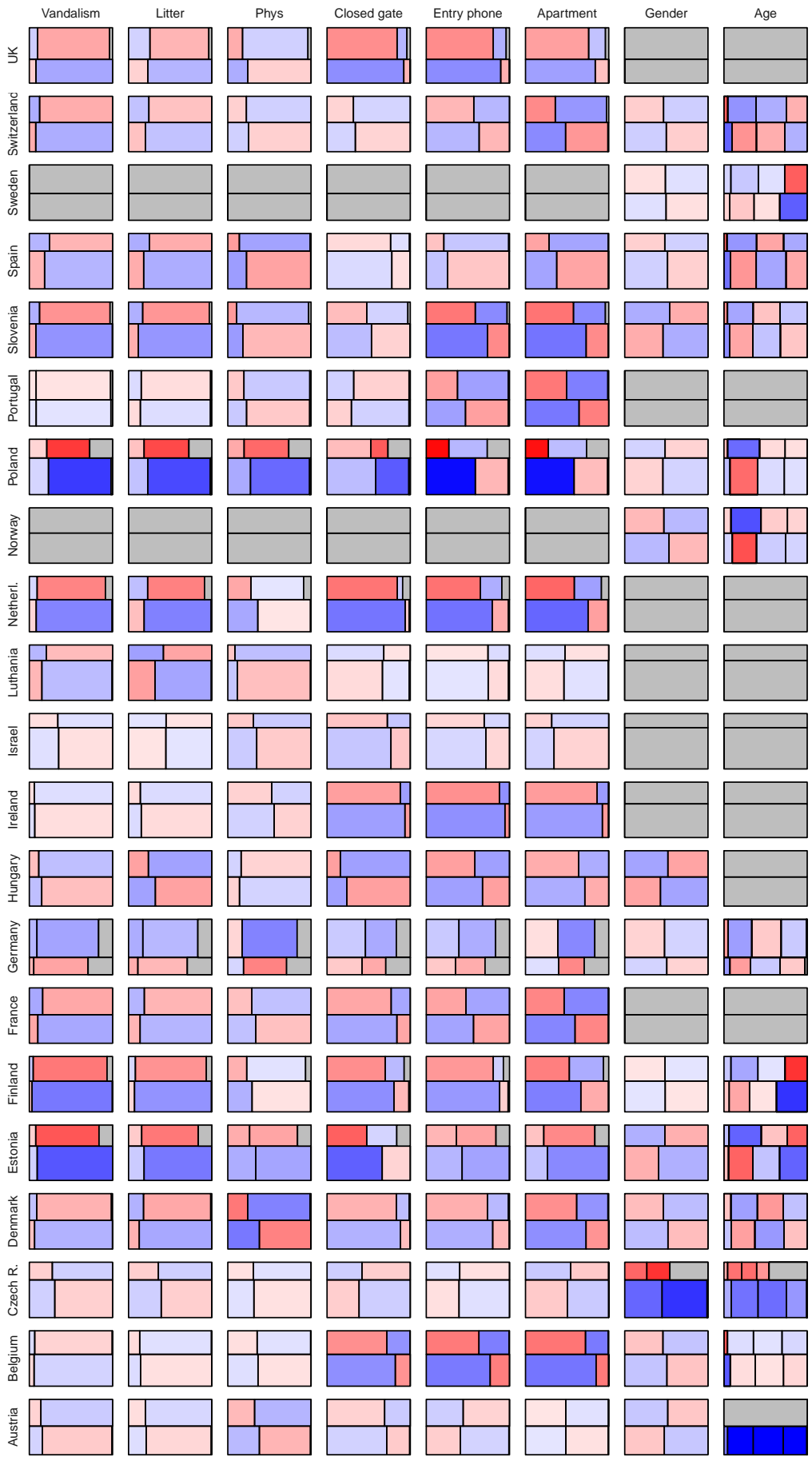
Figure 17: Indications of nonresponse bias per country, ESS7[a]

Vandalism Litter Phys Closed gate Entry phone Apartment Gender Age

UK Switzerland Sweden Spain Slovenia Portugal Poland Norway Netherl. Luthania Israel Ireland Hungary Germany France Finland Estonia Denmark Czech R. Belgium Austria

In a few countries, the mosaic plots may be misleading because the variables are not available for all cases (mostly missing data amongst nonrespondents). This is clearly the case for Austria (age), the Czech Republic (age and gender), Estonia (interviewer observations), Germany (interviewer observations), Poland (interviewer observations) and Slovenia (all).

The countries for which the most substantial differences between respondents and nonrespondents can be observed are Belgium ('closed gate', 'entry phone' and 'apartment'), Denmark (state of the dwelling), Estonia (age and gender), Finland ('apartment'), France ('apartment'), the age distribution in Norway, Sweden and most of the variables in Switzerland.

7.7 (Non)response during fieldwork

Per country, an overview is provided of how the different components of (non)response behave during the fieldwork (see Figure 18). The bottom layer (green) represents the evolution of completed interviews during the fieldwork. The next layers are refusals (brown), other nonrespondents (blue), noncontacts (grey) and ineligibles (red). The black line in each graph indicates the proportion of cases that have not been approached. The different layers add up to 100%, that is the total set of individuals/addresses that have been approached until each day in the fieldwork.

It is clear that the proportion of interviews gradually increases during the course of the fieldwork[43]. This means that realized interviews have been converted from the different categories of pending nonrespondents. In all countries, it seems obvious from the graphs that noncontacts are an important source to be converted to interviews (or possibly another category of nonrespondents)[44]. In many countries, the 'other' nonrespondents tend to be a category from which additional fieldwork efforts can still help convert cases into interviews (or other possible categories of nonresponse). It can be clearly seen because the red layers in these countries narrow down as the fieldwork proceeds. In France, Ireland and Switzerland, the 'other' respondents seem to be a relatively constantly sized group in the pending sample. Refusals generally tend to increase proportionally during the course of the fieldwork, particularly in the beginning of the fieldwork. Afterwards, due to refusal conversion, some countries succeed in stabilizing or even slightly reducing their proportion of refusals. Finally, the proportion of ineligible cases seems to be a marginal category, but generally this proportion seems to increase during the course of the fieldwork (for example, see Estonia, France, Ireland, the Netherlands and Poland).

Figure 19 provides, per country, an evolution of nonresponse bias during the fieldwork. For each country, there is a maximum of eight auxiliary variables available for which bias can be measured (see Figure 17). For each of these variables and for each day in the fieldwork, an estimate of the bias for that variable can be obtained by calculating the difference between the means among respondents only and the full sample. That bias is then standardized by dividing it by the standard deviation of that variable. Finally, an average is obtained for all available auxiliary variables for that country. It is plotted in Figure 19 (red line). The blue lines represent what can be called the contrast. It is

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[43]It is possible that small decreases of these realized interviews can be found (for example, in Belgium after about 60 days), which can be explained by the fact that new cases have been approached without leading to interviews. This can make the proportion of realized interviews decrease.

[44]This does clearly not apply to Norway, for which it was assumed that noncontacts were considerable underreported in the contact form dataset.
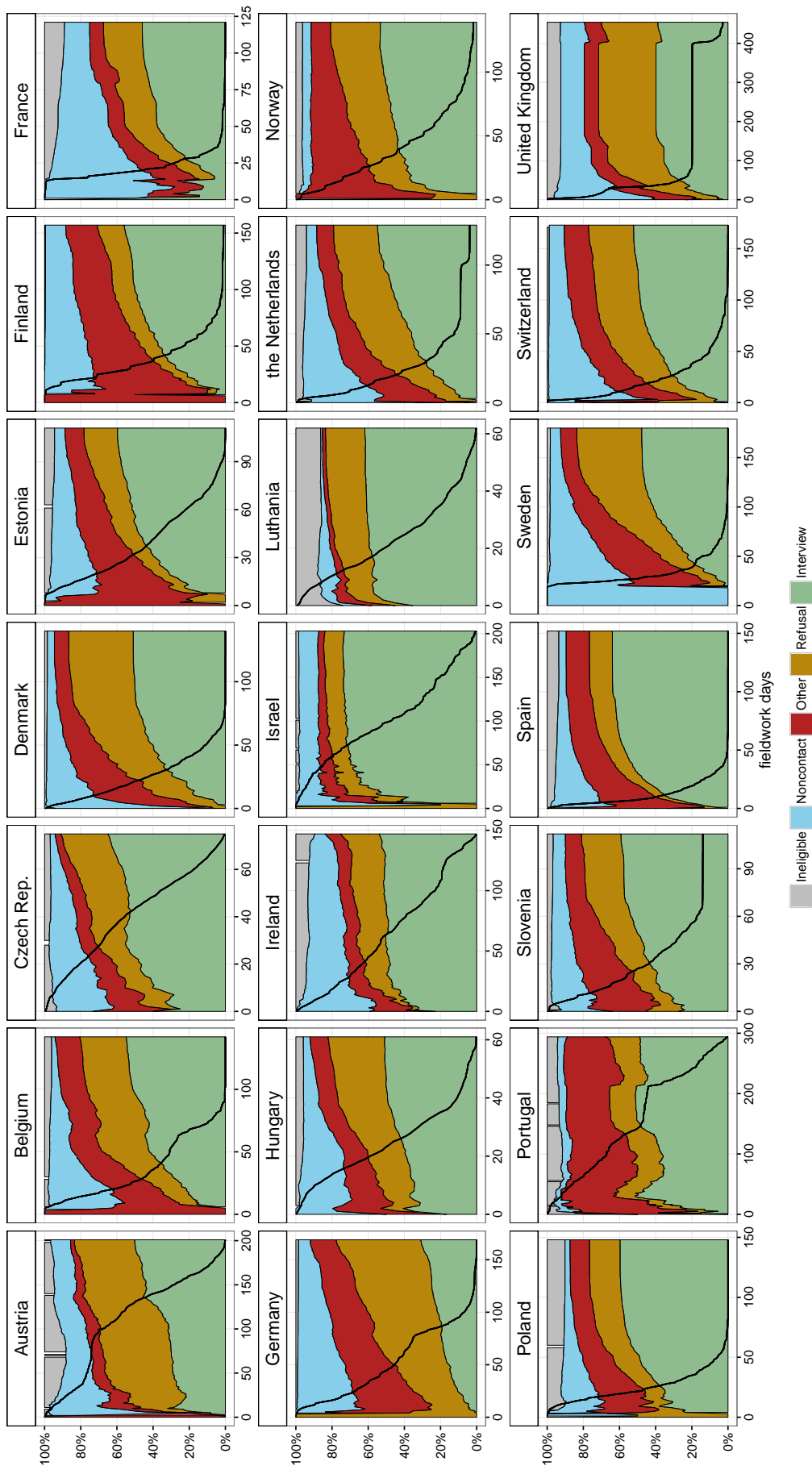
Figure 18: (Non)response evolution during fieldwork per country, ESS7[a]

[a]source: contact form data

the difference between the respondents and nonrespondents (whereas the bias refers to the difference between respondents and the full sample)[45]. The grey bars in the figure indicate the fieldwork efforts for each day in the fieldwork as the ratio between the number of contact attempts and the number of pending nonrespondents. It should be noticed that only auxiliary variables have been used for which no more than 5% of the information in the variable is missing due to item nonresponse in these auxiliary variables. For this reason, no bias or contrast is calculated for Slovenia and the Netherlands. For Austria, Belgium, Switzerland, Denmark, and Finland, all 8 available variables have been used. For the Czech republic, France and Ireland all but age and gender have been used, For Germany, Estonia, Norway, Poland and Sweden only age and gender could be used.

In most countries, the indications of bias decrease as the fieldwork proceeds. In some instances, however, bias can increase or stabilize, in spite of additional fieldwork efforts. Examples of this can be found in Belgium, Norway, Spain and Switzerland. In these countries, the average standardized contrast seems to increase. This might suggest that additional fieldwork efforts do not develop the recruitment of 'high hanging' nonrespondents, so that the realized sample does not benefit optimally from these additional fieldwork efforts.

The disadvantage of such time-based bias and contrast monitoring is that the indicators of bias and contrast are not only determined by extended fieldwork efforts, but also by the assignment of cases in the field. If, for example, particular groups such as apartment dwellers in big cities are only assigned later in the fieldwork, bias might occur because apartment dwellers in big cities simply do not yet have the opportunity of belonging to the respondent set. Therefore, it might also be better to show the same indicators according to the number of contact attempts per case, instead of according to the timeframe of the fieldwork.

Figure 20 provides a similar analysis as Figure 19, but here bias is represented as a function of the response rate (x-axis) or the number of contact attempts (dots). For example, the first dot on the left hand side of each graph indicates what the bias and contrast would be given the response in the case where all sample case are attempted only once. The second dot provides bias, contrast and response rate information if cases are attempted twice or less[46], the third, and so forth.

A first observation related to Figure 20 is that countries differ regarding the number of contact attempts per case and therefore also relates to Figure 6, where it was found that countries such as Austria and the Czech Republic on average make only two contact attempts per case while Sweden, France or Finland register on average more than 5 contact attempts per case. In Figure 20, this results in many more dots in country-specific graphs for these latter countries.

Given a variable x, the expression for its bias is $\frac{n_{nr}}{n}(\bar{x}_r - bar x_{nr})$[47]. Bias reduction can be obtained by (1) reducing the nonresponse rate or (2) reducing the contrast between respondents and nonrespondents.

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[45]Formally, the bias can be denoted $\frac{1}{8}\sum_{i=1}^{8}\left|\frac{\bar{x}_{r,i}-\bar{x}_{f,i}}{\sigma_{x_i}}\right|$, where for the ith variable x, the difference is determined between the respondent mean $\bar{x}_r$ and the full sample mean $\bar{x}_f$, and standardized by dividing by σ_x. Equivalently, the contrast is determined by $\frac{1}{8}\sum_{i=1}^{8}\left|\frac{\bar{x}_{r,i}-\bar{x}_{nr,i}}{\sigma_{x_i}}\right|$, where $\bar{x}_{nr}$ is the nonrespondent mean

[46]In the event that a second attempt never took place

[47]$\frac{n_{nr}}{n}$ expression of the nonresponse rate and $\bar{x}_r - bar x_{nr}$ expression the contrast between respondents (r) and nonrespondents (nr) related to variable x.
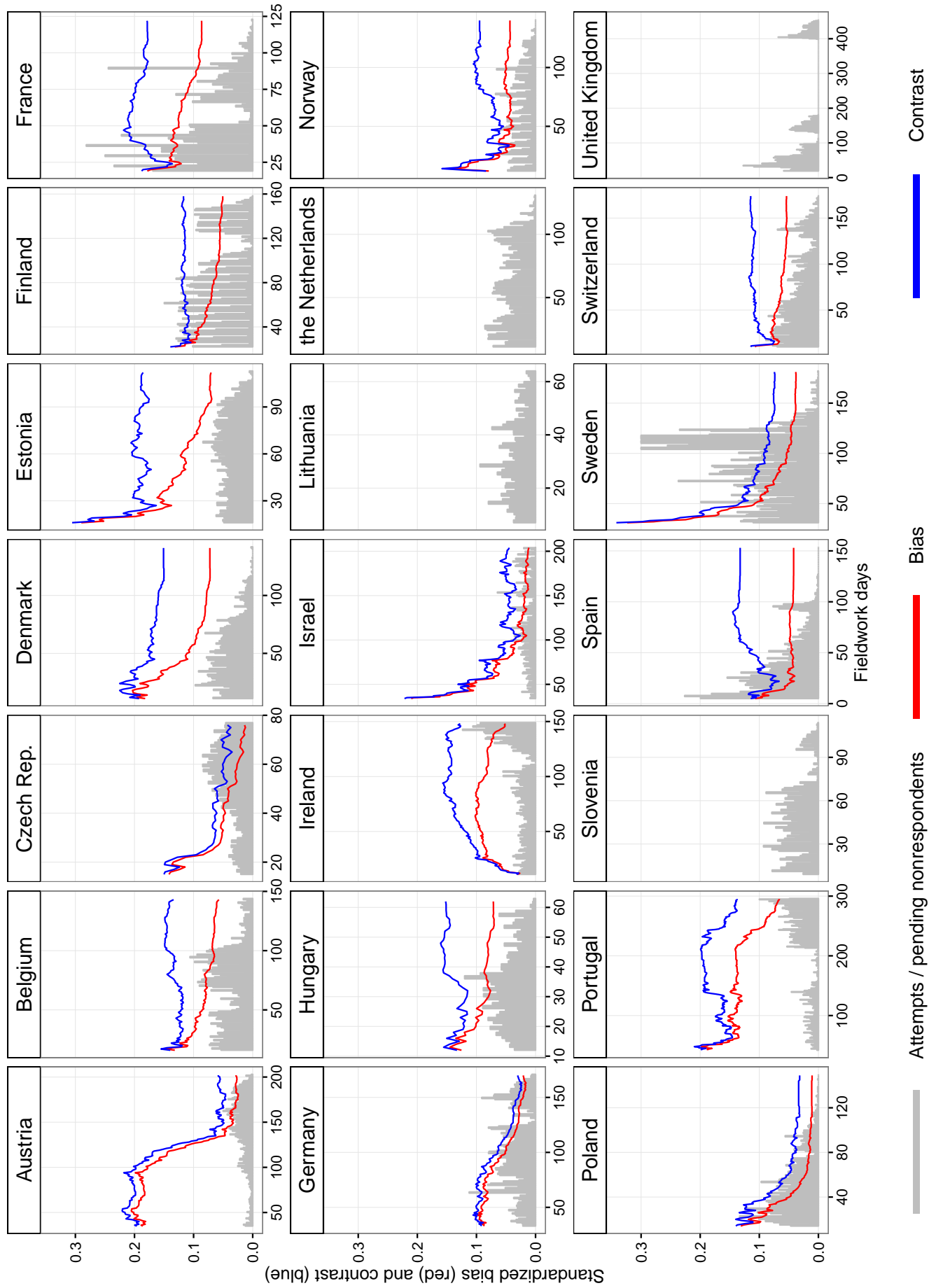
Figure 19: Nonresponse bias evolution during fieldwork per country, ESS7[a]
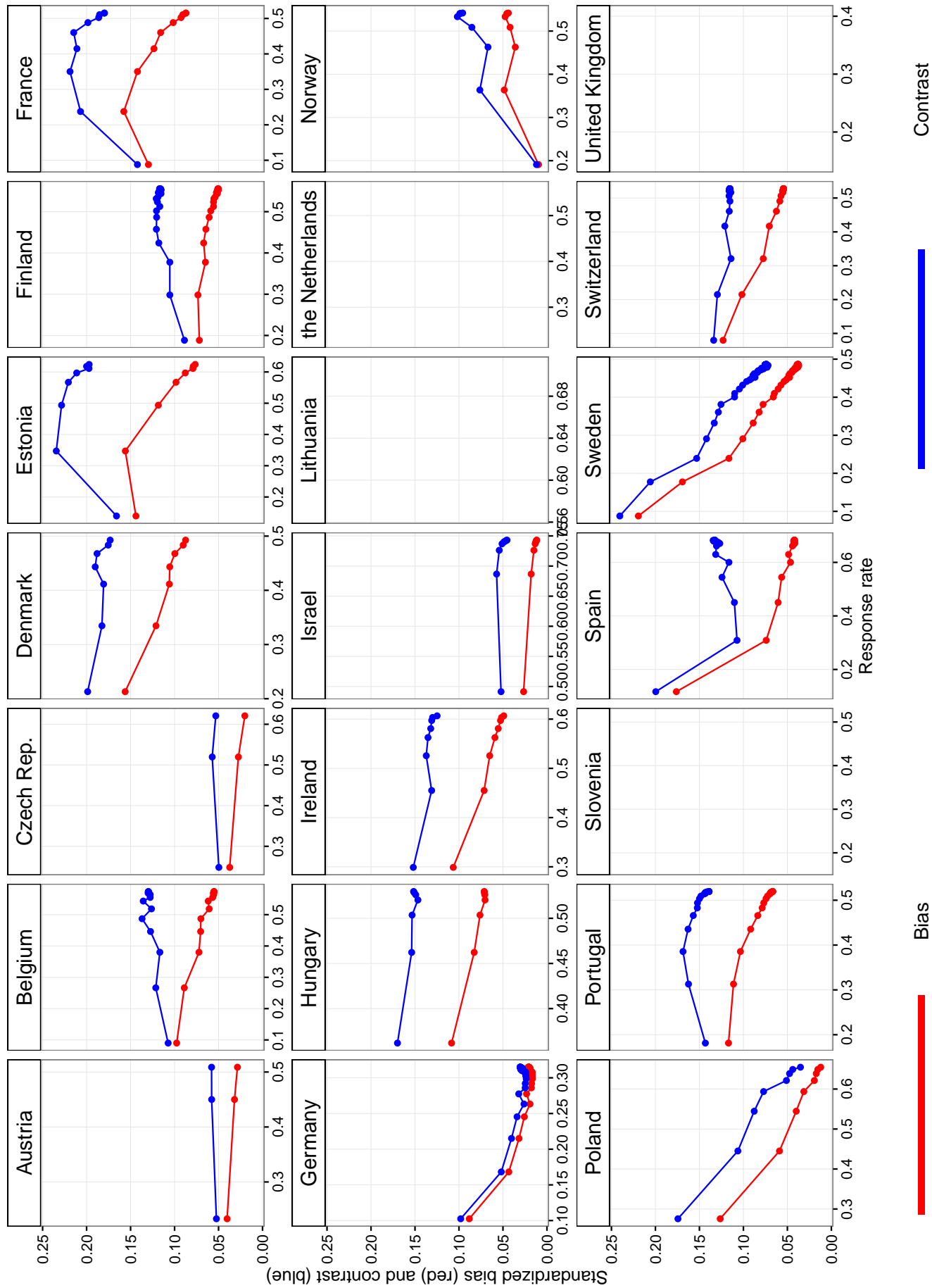
Figure 20: Nonresponse bias evolution per contact attempt, ESS7[a]

[a]source: contact form data

The second strategy may apply to Germany, Sweden and Poland, where additional contact attempts per case seem to pay off in terms of reduced bias. Clearly, the bias reduction is primarily realized by reducing the contrast between respondents and non-respondents. Provided that these countries (Germany in particular) have a low response rate, the bias does not seem to be severely affected by that low response rate.

Belgium and Finland clearly belong the group of countries where the response rate is the main contributor to the reduction of bias. The contrast in these countries does not decrease (or may even increase). Also Austria, the Czech Republic, Switzerland and Denmark show a similar pattern. Comparing Belgium and Germany, where bias, contrast and response rate were relatively similar after the first contact attempt, Germany considerable succeeded in reducing its bias, through contrast reduction, even though its response rate was eventually relatively low. Because Belgium only increased its response without reducing its contrast, the bias is still considerable at the end of the fieldwork.

The evolution of Estonia, France (and to some extent Norway) is much harder to interpret. Bias and contrast clearly increase between the first and second contact attempt, after which the bias (not the contrast) starts to reduce again.

8   The interviews

Once contact and survey participation have been established with the target person, the actual interview can start. The ESS7 main file was used to obtain some first indications of the quality of this questioning and answering process. In the subsequent section, interview quality will be assessed looking at interviewer effects (section 8.1), interview length (section 8.2), non-substantive answers (section 8.3), straight-lining (section 8.4), third party presence and the interviewer evaluation of the respondent (section 8.5) and the language being used during the interview (section 8.6).

8.1   Interviewer effects

In each round of the ESS almost 4000 interviewers play a central role in the data collection process. Their tasks are comprehensive and survey researchers are aware of the possible positive and negative impact of interviewers on the data quality. Interviewers can help and stimulate the respondent to perform his or her role in an adequate way (positive impact) or they can influence the responses in a systematic way (negative impact). With such a large number of interviewers in a cross-national survey, the implementation of standardized interviewing techniques and the reduction of negative interviewer effects can be considered as a major challenge.

Previous reports provide strong indications of the existence of interviewer effects or interviewer variance on substantial survey questions (ESS-DACE: deliverable 12.2 and 12.10) (Loosveldt & Beullens, 2010; Beullens & Loosveldt, 2013, 2014). As a summary of these reports, consider Figure 21, showing the distribution of intra-interviewer correlations over 28 core survey items in 36 ESS countries. For each country, up to seven sets of boxplots are shown, referring to all rounds of the ESS so far. The outer grey boxplots show the distribution of the raw (null model) intra-interviewer correlation[48] The inner black boxplots indicate the distribution of the same intra-interviewer correlations after

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[48]This might be written as $y_{ij} = \gamma_{00} + \mu_{0j} + \varepsilon_{ij}$, where particularly the term μ_{0j} refers to deviations of interviewer j to the overall mean (γ_{00}) of variable y.

controlling for or removing respondent characteristics: degree of urbanization and the region of the country the respondent lives in. The distinction between raw and controlled intra-interviewer correlation may be relevant as interviewers are mostly assigned to sample cases in their own neighbourhood in order to reduce travel time and cost. Therefore, area and interviewer effects are hard to disentangle. By controlling for relevant respondent characteristics, these area effects are partially taken into account, making the resulting interviewer-specific samples more comparable.

Figure 21 suggests that the overall level of intra-interviewer correlation is relatively stable within countries. There is no clear upward or downward trend related to interviewer effects, although in Hungary and Slovakia an increasing trend may be discerned, whereas Spain shows a somewhat declining trend. Taking area information into account only slightly reduce the levels of intra-interviewer correlation, suggesting that interviewer effects that are observed are not that likely to be area effects.

Countries reporting high levels of intra-interviewer correlation in ESS7 are Austria, the Czech Republic, Hungary, Lithuania, Israel and Ireland (on average exceeding 0.10). Somewhat less at risk are Belgium, Estonia, Germany, Poland and Slovenia. Low intra-interviewer correlations can be found in Denmark, Finland, France, the Netherlands, Norway, Sweden, the UK and Switzerland.

Interviewer variance potentially becomes disadvantageous when the interviewer workload is on average high, and when workload is not equally distributed over the interviewers. Figure 22 shows for each country how unequal interviewer workload is distributed. In each country, interviewers have been ordered according to number of interviews they have conducted (interviewer with low workload being located at the left hand side). The red line in each graph indicates cumulatively what percentage of the interviews have been conducted by the percentage of interviewers. The graphs are similar to what is shown by income inequality plots (or Lorenz curves) from which gini-coefficients are derived. The grey line indicates a situation of perfect workload equality. As can be seen, Belgium, Estonia, Germany, Hungary, Israel, Poland, Portugal and Switzerland show strong evidence of interviewer workload inequality, which might have a unfavourable effect on standard errors. The average number of interviewed cases per interviewer is indicated in each country title. Belgium, the Czech Republic, Germany and Poland seem to have a relatively low number of average interviewer workload, whereas Austria, Ireland, Norway, Slovenia, Sweden and Switzerland show a high number of average interviews per interviewer.

Figure 23 shows for same 28 survey items how strong the variance of the estimates inflates due to interviewer clustering.

In ESS7, interviewer effects are problematic for Austria and Ireland, particularly because of the intra-interviewer correlations in these countries, but also because of a relatively high interviewer workload (relatively few interviewers for a large sample). In these two countries, the variance of the mean of a variable can inflate with a factor 3 or more. In the Czech Republic, however, that had one of the highest intra-interviewer correlations of all ESS7 countries, the effect in terms of variance inflations is rather moderate, since the workload per interviewer is low and is fairly equally distributed over the interviewers. Nevertheless, the Czech Republic still might want to consider how to reduce interviewer effects, as the impact in terms of variance inflation is still substantial (factor 2 and higher). A similar conclusion applies to Estonia, Belgium, Germany, Lithuania, Poland, Slovenia and Switzerland, that should still closely monitor the issue of interviewer effects as it potentially affects the accuracy of their statistics (factor 1.5 and higher). Due to low intra-interviewer correlations, countries such as
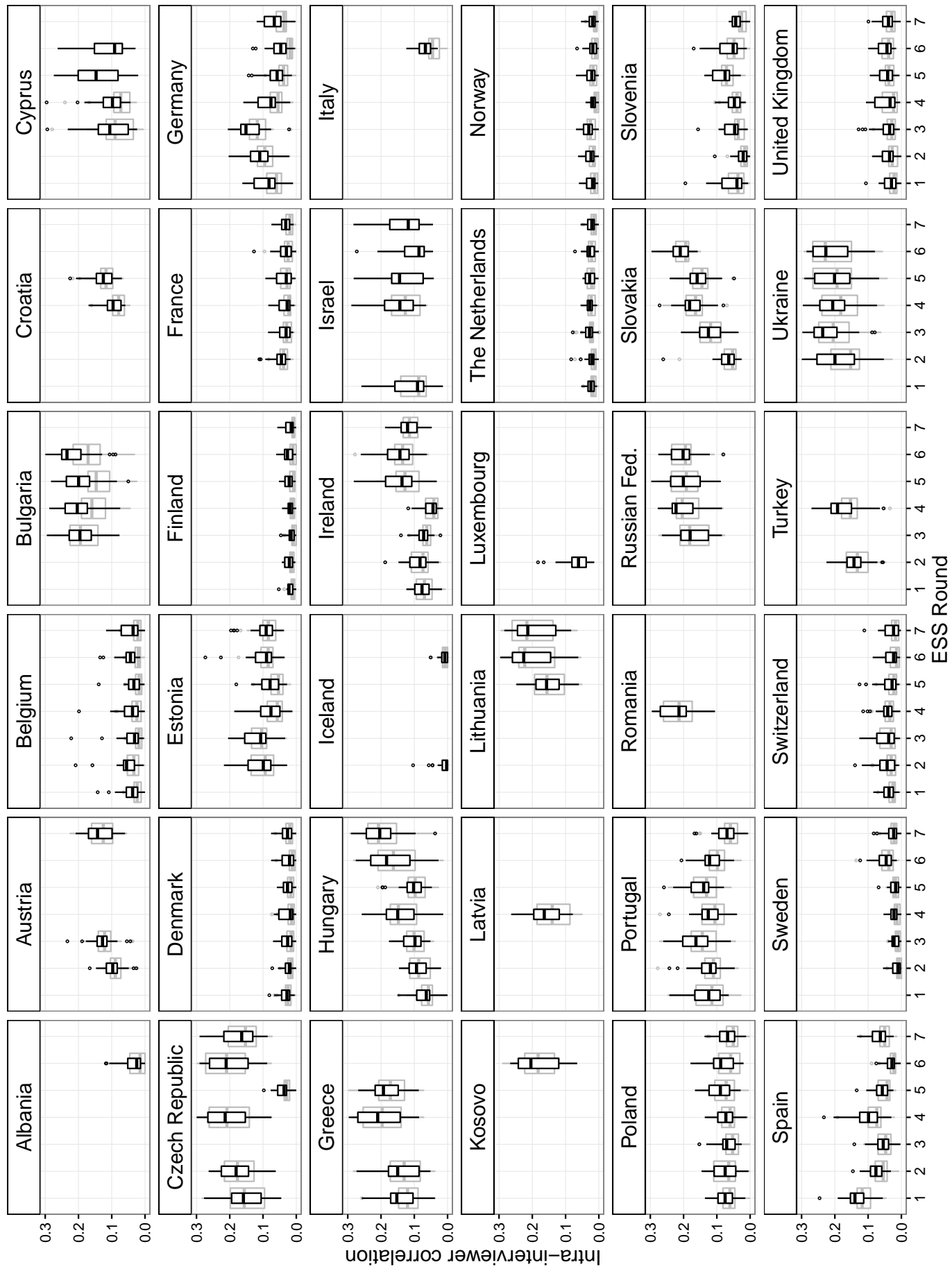
Figure 21: Interviewer variance on substantial items per country, 36 countries[a]
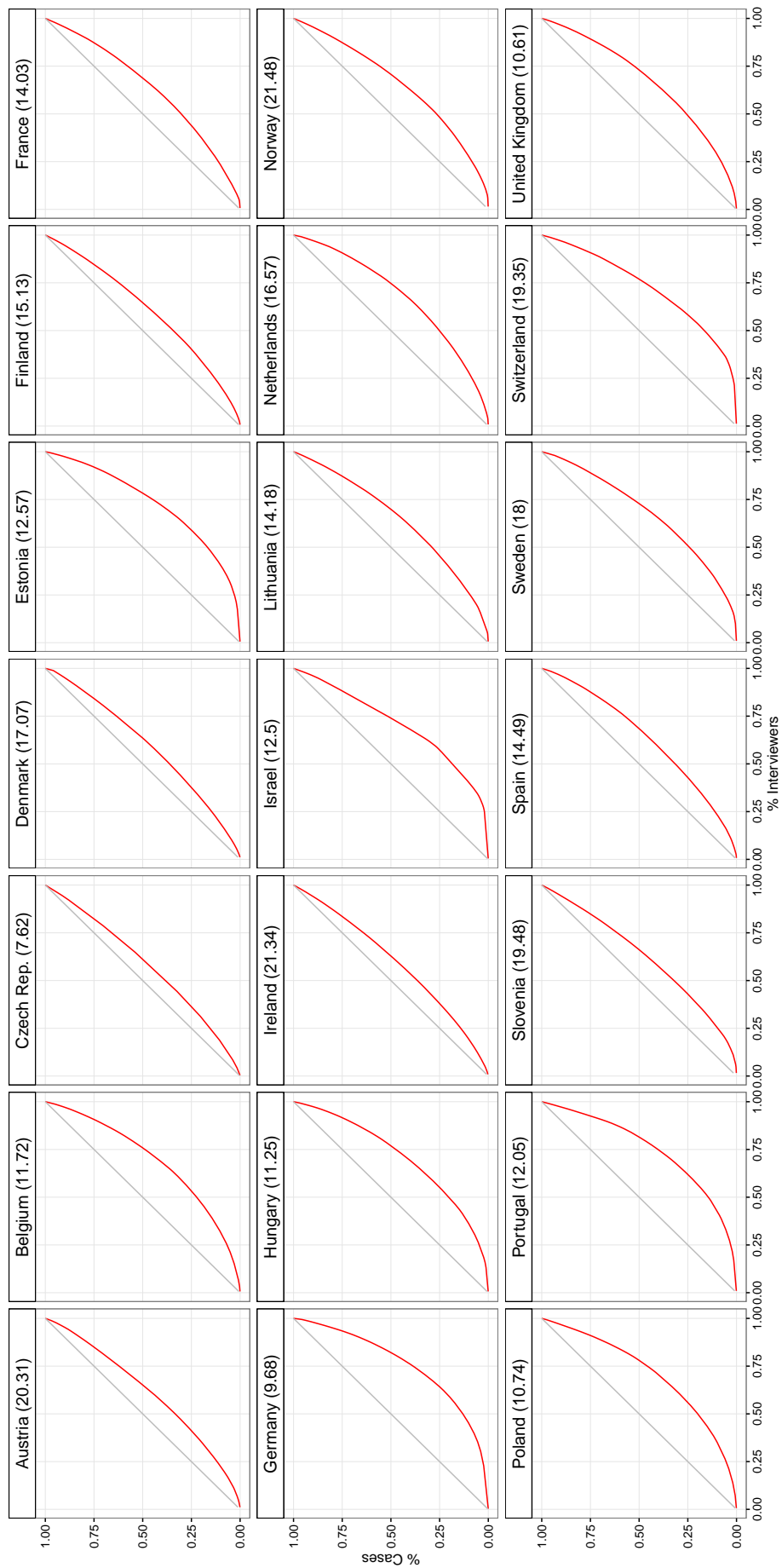
Figure 22: Inequality of interviewer workloads, ESS7[a]

[a]source: main files & interviewer file
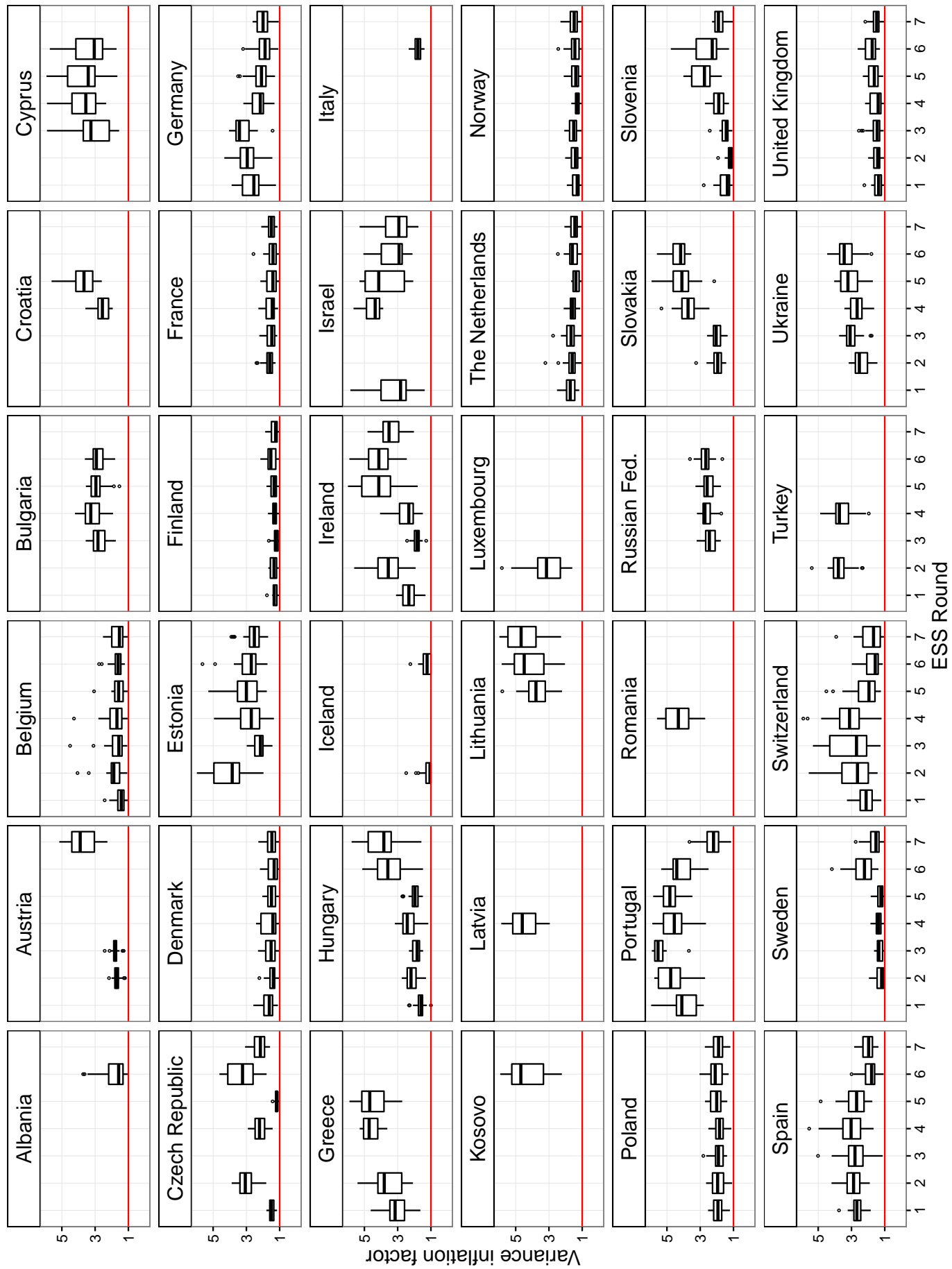
Figure 23: Variance inflation due to interviewer variance, 36 countries[a]

82
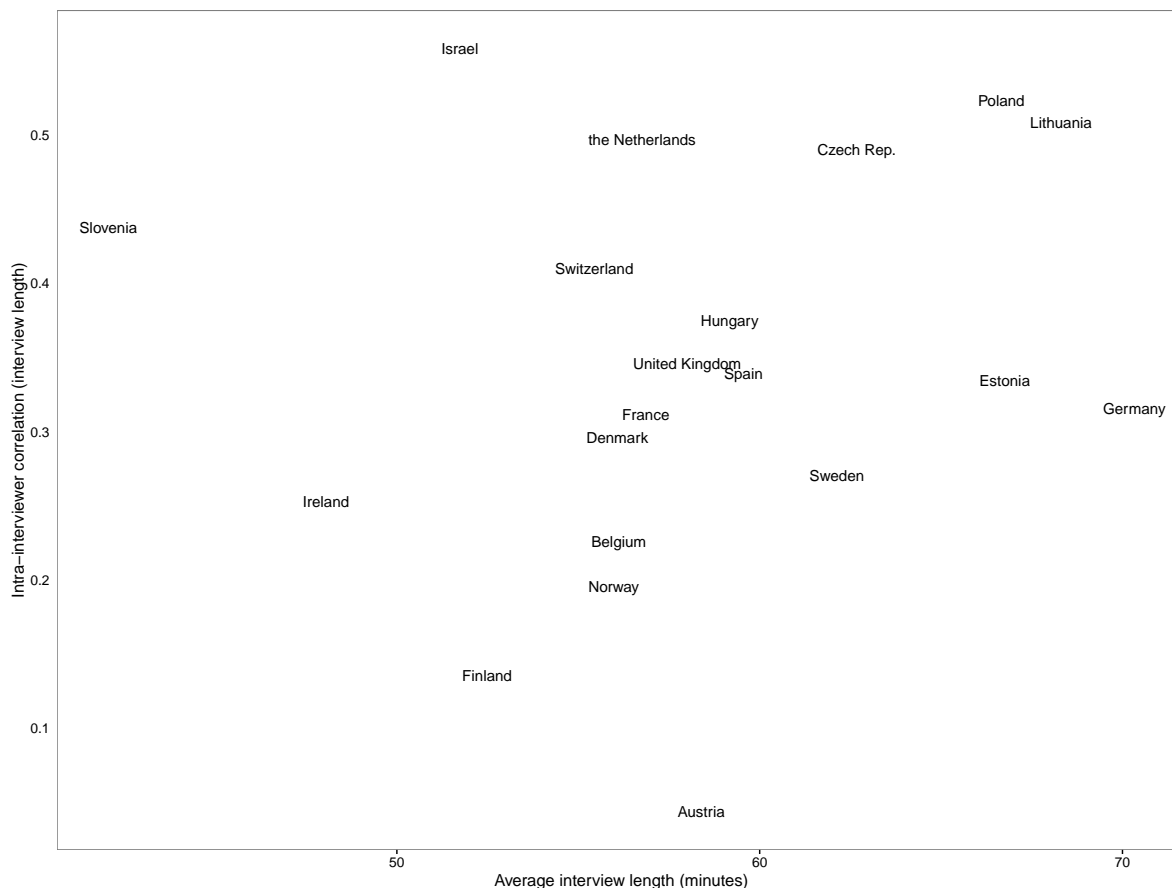
Figure 24: Interview length per country, ESS7[49]

Denmark, Finland, France, the Netherlands, Norway and Sweden are relatively safe, although some of these countries might still consider adjusting the average level and inequality of interviewer workloads.

8.2   Interview length

In the ESS, interviewers are instructed to perform their tasks according to the key principle of standardized interviewing. Standardized interviewing aims to ensure that all respondents answer exactly the same questions under conditions that are as consistent as possible (Groves et al., 2004). It further means that interviewers should apply the same basic task rules during the interaction with each respondent, and that they should spend the same efforts to obtain adequate responses. Standardized interviewing implies that each interviewer's contribution to interview length should be approximately the same for each interview with a similar respondent. Therefore, the overall expectation is that interviewer effects on interview length are limited.

It has been observed in previous rounds of the ESS that interview length is not independent of the interviewer (Loosveldt & Beullens, 2013a, 2013b; Beullens & Loosveldt, 2013, 2014). In ESS7, again interviewer effects on interview length can be observed in many countries. In Figure 24, the x-axis represents the average length per interview in the different countries, the y-axis indicates the intra-interviewer correlation with regard to interview length.

The between-country differences regarding interview length are quite striking. Slovenian interviews tend to be short (on average 42 minutes), whereas German interviews tend to be the longest (on average 70 minutes). About half of the countries are situated in the 55-60 minutes range. Previous research (Loosveldt & Beullens, 2013a) has suggested that country differences cannot simply be reduced to language differences. Some countries use questionnaires in different languages and some countries share languages (see language overview on page 22). For example, Germany and Austria, both use a German questionnaire but the average interview length in German is substantially different between the two countries.

The intra-interviewer correlation regarding interview length can amount to about 0.50 (the Netherlands, the Czech Republic and Poland) or even more (Israel) and is in most countries 0.20 to 0.40. It should be noted that taking into account the number of questions that needed to be answered (questionnaire routing), the age, gender and level of education of the respondents hardly change the configuration of countries in Figure 24.

The fact that both countries and interviewers conduct interviews of considerably different duration may signal that interviews are not administered in a uniform way.

8.3 Item nonresponse

Another indicator of survey quality, particularly regarding the obtained answers, is the degree to which respondents give substantive answers to the survey questions. Of course, it should be acknowledged that 'don't know' or 'refusal' may be a perfectly reasonable and valid answer. Nevertheless, the volume of item nonresponse is preferably rather low. Also, differences with regard to item nonresponse between countries or between interviewer may be hard to accept.

The ESS7 main file contains 507 items to which respondents possibly could give an answer. Many of these items, however, are inapplicable for most respondents because of questionnaire routing (depending of job status, family composition, ...). Conditional on previous answers, respondents need to provide on average 260 answers. This number was determined for each respondent individually. Then, the number of non-substantive answers was calculated ('don't know','no answer','refusal') and divided by the items that should have been answered. In Figure 25, the ESS7 countries have been ordered according to the average number of these non-substantive answers.

The variables most prone to item-nonresponse are HINCTNTA (Household's total net income, all sources, 14% missing, slightly more refusals than don't know's), father's highest level of education (9% missing), LRSCALE (Placement on left right scale, 9% missing), NOIMBRO (Of every 100 people in country how many born outside country, 7%), TRSTUN (trust in united nations, 6% missing), SMCTMBE (Some cultures: much better or all equal, 6% missing), TRSTEP (trust in European Parliament, 6%), mother's highest level of education (6% missing), RLGUEIM (Religious beliefs and practices undermined or enriched by immigrants, 6% missing), MBTRU (Member of trade union or similar organisation, 5% missing) and GVTRIMG (Compared to yourself government treats new immigrants better or worse, 5% missing). All other variables have more than 95% substantive answers.

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[49]source: main file. The table version of this figure can be found on page 109
[50]source: main file. The table version of this figure can be found on page 110
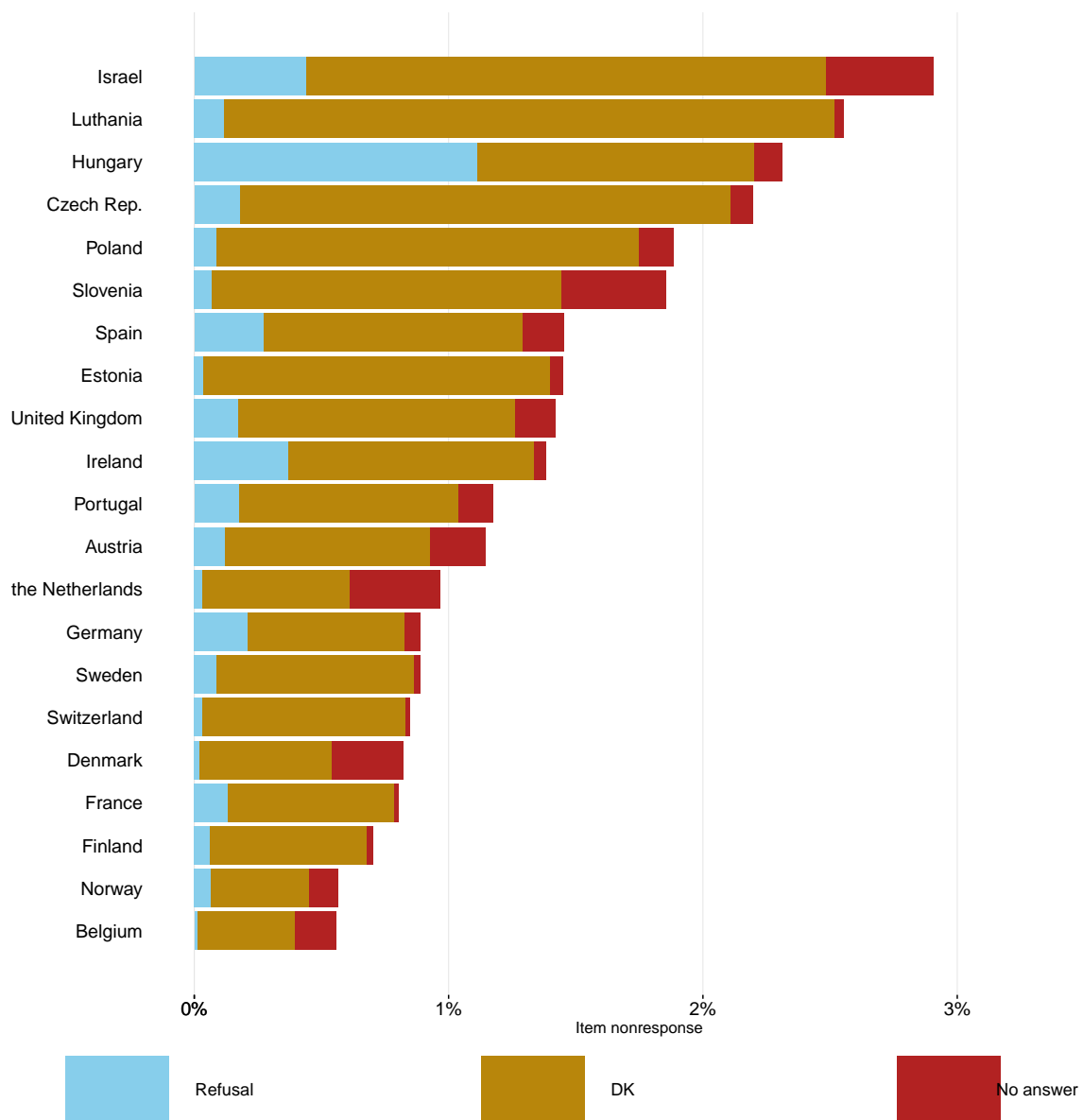
Figure 25: Item nonresponse per country, ESS7[50]

Somewhat in line with the item-nonresponse analyses of ESS6 (Beullens & Loosveldt, 2014), the Czech Republic, Poland, Israel, Lithuania, Hungary and Estonia have the highest levels of nonresponse. In ESS6, Belgium, Norway, Finland and France were also the 4 countries with the lowest levels of item-nonresponse.

'Don't know' seems to be most frequently used category for item-nonresponse, although some countries slightly deviate, for example, Ireland has relatively more refusals, while the Netherlands and Slovenia obtain relatively more 'no answers'.

Again, it is not always clear whether item missingness is favourable or not, since 'don't know' or 'no answer' may be perfectly valid answers. Nevertheless, it seems appropriate to detect why these country differences are observed (e.g. the Czech Republic has 5 times more item-nonresponse than Belgium). Country differences may be real. For example, in some countries it may be more appropriate to report income than in others. But if item-nonresponse differences across countries reflect different interviewing styles such as probing or interviewing speed, it may be appropriate to intervene during interviewer training/briefing.

Figure 26 shows how the average level of item-nonresponse per county is related to the intra-interviewer correlation regarding item-nonresponse per country. Not only is item-nonresponse different across countries, it also varies depending on the interviewer within the countries. In Ireland, Austria and Estonia, more than 20% of the variability of item-nonresponse among respondents can be attributed to interviewers effects. This suggests that the interviewing styles of interviewers are different and may elicit different response patterns among respondents.

8.4 Straight-lining

Straight-lining can be defined as providing the same answer to an item as compared to the previous item. In this regard, consider the illustrative example of how a respondents could have answered a series of 6 question in a set of items. If one respondent answers with 7,8,8,6,6,5, he/she gives the same score twice out of five occasions (the first answers cannot be a straight-line answer). This respondent would give 2/5=40% straight-line answers.

There is of course nothing wrong with straight-lining, as long as the respondents' scores consistently reflect the true underlying attitude or behaviour. However, it is hard to accept that differences in straight-line tendencies can be observed between countries or interviewers, or that straight-lining occurs more frequent as interviewers become more acquainted with the questionnaire (Beullens & Loosveldt, 2013). Straight-lining can be considered as a kind of satisficing that can be provoked by the interviewer. Therefore, interviewer variances should be avoided, unless it reflects differences between the respondents in the small interviewer samples. Otherwise, some interviewers might be more inclined than others to accept straight-lining.

The following sets of questions have been used to determine a score (percentage) for straight-lining per respondent:

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[51]source: main file. The table version of this figure can be found on page 111

Social trust (11-point scale)

- PPLTRST Most people can be trusted or you can't be too careful
- PPLFAIR Most people try to take advantage of you, or try to be fair
- PPLHLP Most of the time people helpful or mostly looking out for themselves

Trust in political institutions (11-point scale)

- TRSTPRL Trust in country's parliament
- TRSTLGL Trust in country's parliament
- TRSTPLC Trust in the police
- TRSTPLT Trust in politicians
- TRSTPRT Trust in political parties
- TRSTEP Trust in the European Parliament
- TRSTUN Trust in the United Nations

Satisfaction with . . . (11-point scale)

- STFLIFE life as a whole
- STFECO the present state of the economy in [country]
- STFGOV the [country]'s government
- STFDEM the way democracy works in country
- STFEDU the state of education in country nowadays
- STFHLTH the state of health services in country nowadays

Attitudes towards immigrants (11-point scale)

- IMBGECO Immigration bad or good for country's economy
- IMUECLT Country's cultural life undermined or enriched by immigrants
- IMWBCNT Immigrants make country worse or better place to live

Qualification needed for immigration (11-point scale)

- QFIMEDU good educational qualifications
- QFIMLNG speak country's official language
- QFIMCHR Christian background
- QFIMWHT be white
- QFIMWSK work skills needed in country
- QFIMCMT committed to way of life in country
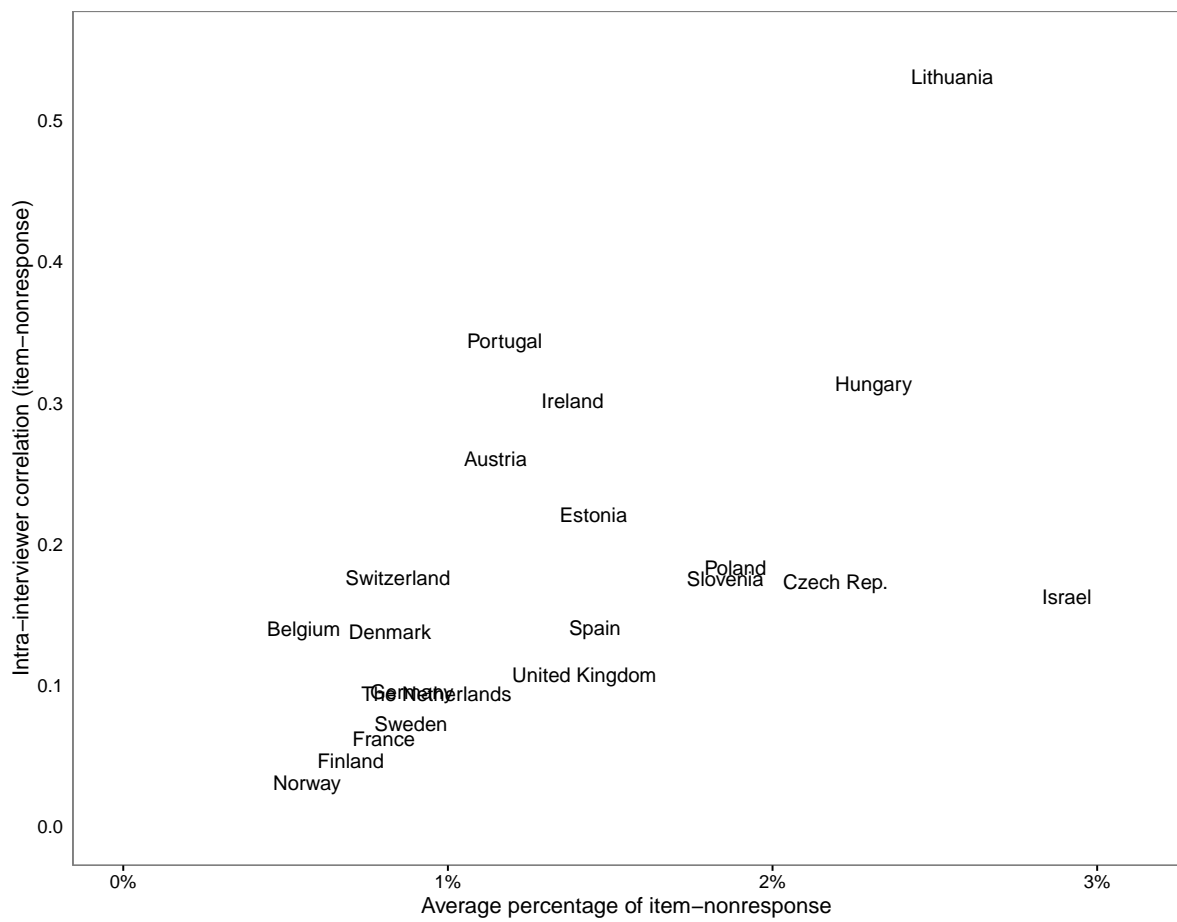
Figure 26: Item nonresponse and its interviewer variance per country, ESS7[51]
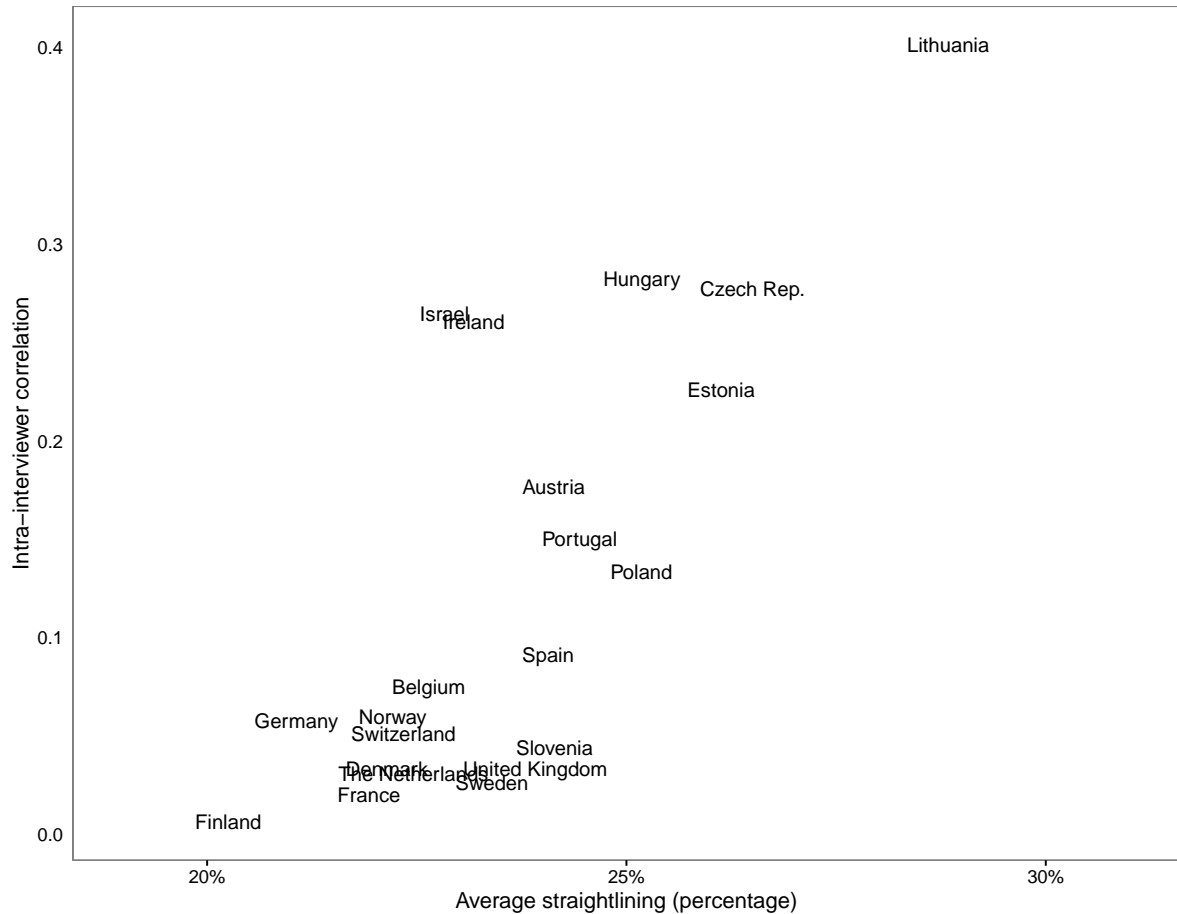
Figure 27: Straight-lining per country, ESS7[52]

There are 25 items from 5 sets of questions. So, for 20 items (all but the first of each set), a potential straight-lined answer can be observed. For each respondent, a score is calculated expressing the percentage of straight-lined answers out of the 20 potential questions. Per country, the average percentage is determined, as well as the intra-interviewer correlation with regard to these straight-lined percentages. Figure 27 shows both these dimensions per country.

It seems that two groups of countries can be observed in Figure 27. The group of the Czech Republic, Ireland, Israel, Lithuania, Portugal, Hungary Estonia, Austria and Poland combines relatively high percentages of straight-lining with high intra-interviewer correlations regarding straight-lining. Also, it seems that both dimensions of Figure 27 are strongly related. A possible hypothesis explaining this relationship may be the fact that some interviewers resort to straight-lining in order to short-cut their interviewing efforts. As a result, not only the intra-interviewer correlation increases, also the overall country-specific level of straight-lining increases. Countries reporting high percentages of and/or high levels of interviewer correlation regarding straight-lining may be asked to more closely monitor their interviewer force to assess whether specific interviewers are responsible for these sizeable figures.

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[52]source: main file. The table version of this figure can be found on page 112

8.5 Third party presence and interviewer evaluation

Preferably, the interviewer and the respondent are left alone during the interview. The presence of other household members, neighbour or friend might influence the answers provided by the respondent. After the interview, the interviewer is asked to fill out a small questionnaire about the interview. One of the questions is 'Was there anyone present who interfered with the interview?'. Figure 28 gives these percentages per country.

Third party presence seems to be a rather marginal phenomenon as in most countries, less than 10% of the interviews took place with someone else other than the respondent and interviewer. In the Scandinavian countries, the ideal situation where no one is present other than respondent and interviewer is most adhered to. In Israel, the Spain and Portugal third party presence occurs in 10% of the interviews. These countries might emphasize the importance of interviewing one-on-one during the interviewer briefing/training.

Apart from assessing third party presence during the interview, the interviewers are also also asked to assess how well the respondents played their roles:

- RESCLQ Did the respondent ask for clarification on any questions?

- RESRELQ Did you feel that the respondent was reluctant to answer any questions?

- RESBAB Did you feel that the respondent tried to answer the questions to the best of his or her ability?

- RESUNDQ Overall, did you feel that the respondent understood the questions?

Figure 29 reports how often interviewers observed whether respondents ever showed the behaviour as listed above.

According to the interviewers, about half of the respondents asked for clarification during the interview. It is hard to assess whether this is a sign of good rather then bad survey quality. On the one hand, questions might not be clear to the respondent which lowers data quality, on the other hand, asking for clarification might indicate the respondents' interest and motivation to play their role as a respondent as adequate as they can. The interviewers' assessments regarding the three remaining variables vary much more between and within countries, although the majority of respondents did not seem to be reluctant, tried to answer the questions to the best of their abilities, and seemed to have understood the questions.

In the Czech Republic, Hungary, Israel, Lithuania and Portugal more than half of the respondents showed signs of reluctance during the interviews. In Norway, Germany, Denmark and Sweden, less than 20% of the respondents tended to be reluctant. Interviewers in Estonia, Ireland, Hungary, Israel, Lithuania and the Czech Republic thought that 30% or more of their respondents did not try to answer the questions to the best of their abilities, whereas in the Scandinavian countries this was less than 10%. In many countries, in 30% of the cases did the interviewers have the impression that respondents did not always understand the questions: Estonia, Poland, the Netherlands, Belgium, Slovenia, the Czech Republic, Hungary, Israel, Lithuania, Spain, Portugal and Ireland. In Finland, Switzerland, Austria, Denmark and Germany this was less than 20%.

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[53]source: interviewer questionnaire. The table version of this figure can be found on page 113
[54]source: interviewer questionnaire. The table version of this figure can be found on page 114
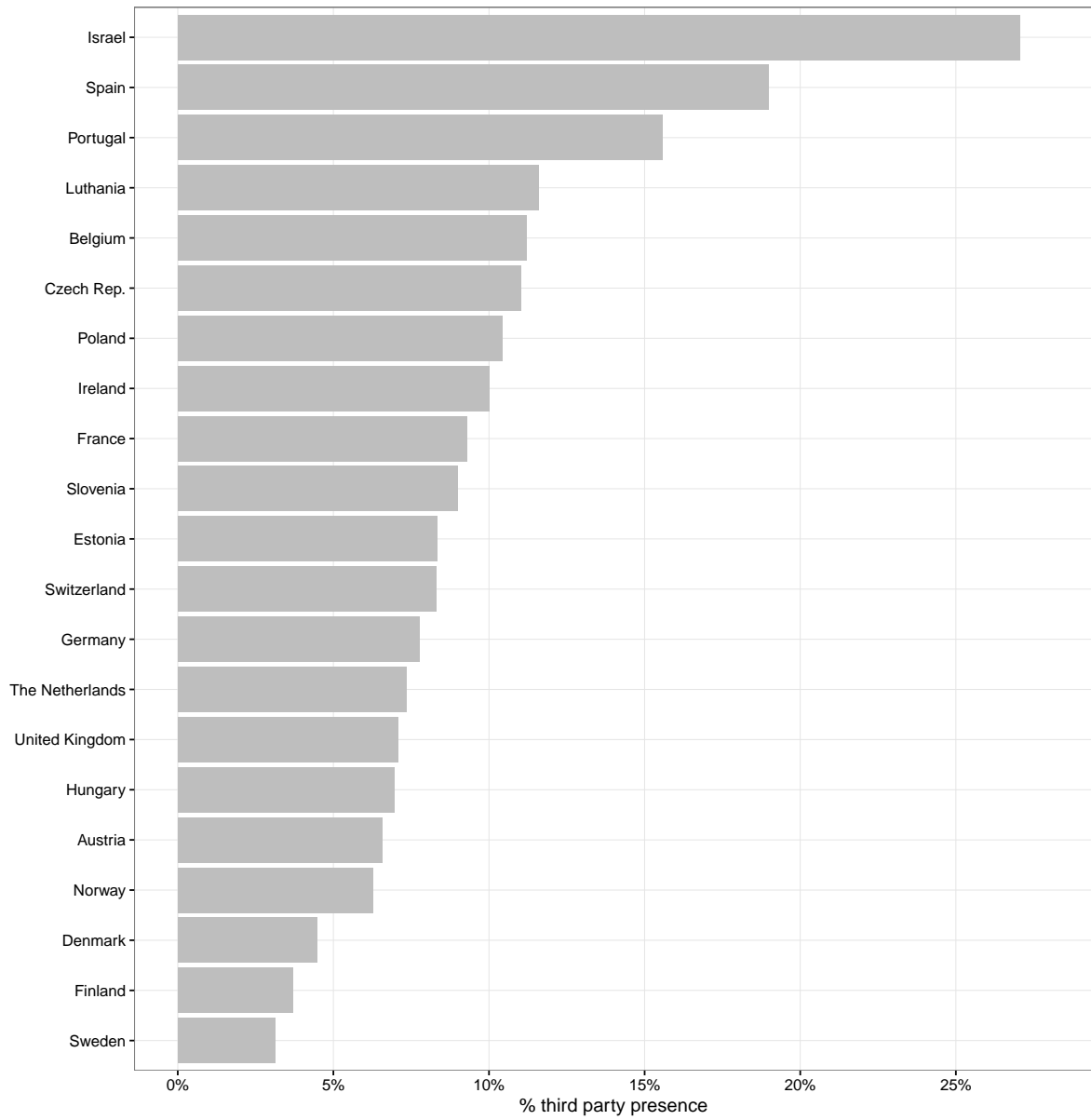
Figure 28: Third party presence per country, ESS7[53]
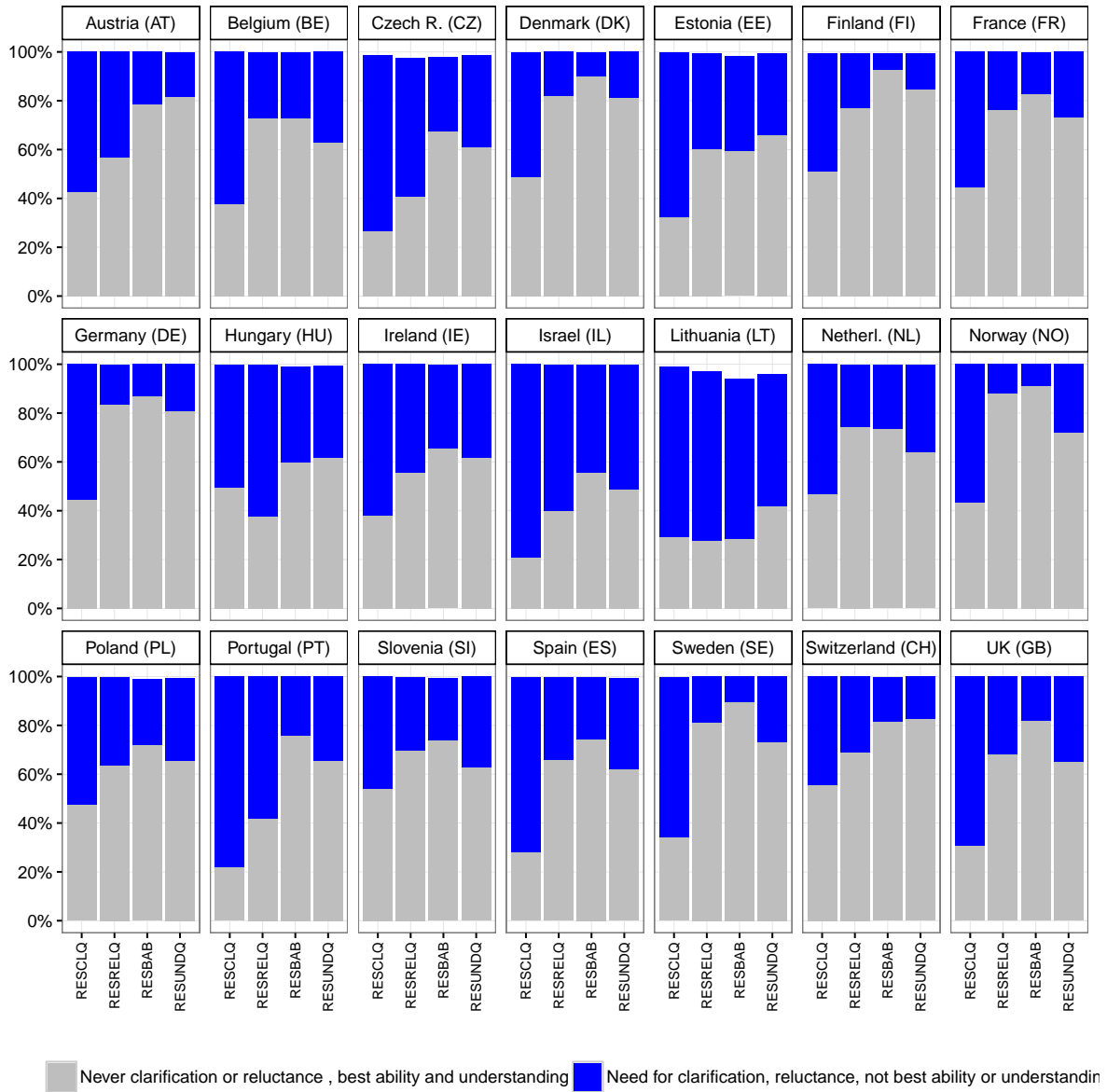
Figure 29: Interviewer evaluation of respondents, ESS7[54]

8.6 Interview language

For each ESS7 respondent, the language in which the interview was administered is known an can be compared to the home language of the respondents. In Figure 30, the black bars indicate to what extent the interview was not administered in the first language (spoken at home) by the respondent. The grey bars indicate to what extent not even the second home language was the same as the interview language. Red bars provide the percentage of cases for which no information on the respondents' language was available, and the blue bars indicate the percentage of nonresponse due to language barriers.

In Poland, Portugal and the Czech Republic, there seem to be no language issues as practically every respondent was interviewed in his or her home language. Also, hardly no language barrier nonresponse was observed in these countries. In other countries, on average about 5% of the respondents could not be interviewed in their home language, with Switzerland, Spain and Israel being an outliers ($>10\%$).

The impact of interview language on data quality has not been assessed so far in the ESS. Nevertheless, not being interviewed in someone's home language might be related to how well the respondents play their role. This might relate to respondents struggling more to provide survey answers adequately. Based on ESS7 data, a report will be written evaluating the interviewers' assessment of their respondents.

9 Backchecks

An important tool in order to assess the validity of the collected survey data are backchecks. Data in the context of (face-to-face) surveys may be prone to so-called 'curbstoning' or data fabrication by interviewers. As a result, it is preferred to (partially) check whether interviews have actually been conducted with the correct target individual and that refusals and noncontacts as indicated by the contact forms reflect the actual fieldwork events. Re-approaching sample units might therefore be helpful to check whether the target individuals can recall whether they truly participated, refused or were not contacted. Other than that, backchecks may include:

- checks on the respondent selection

- checks on whether an interview was indeed conducted,

- checks if showcards were used,

- checks that a laptop was used (if applicable),

- the approximate length of the interview,

- whether the supplementary questionnaire was administered by the interviewer or completed by the respondent,

- and optionally, some of the ESS questions could be asked again.

According to the ESS specifications, backchecks are recommended, only to be applied on a (small) subset of the respondents, refusals, noncontacts (and ineligibles), preferably across all interviewers. Figure 31 summarizes the results per country.

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[55]source: main file, contact form data. The table version of this figure can be found on page 115
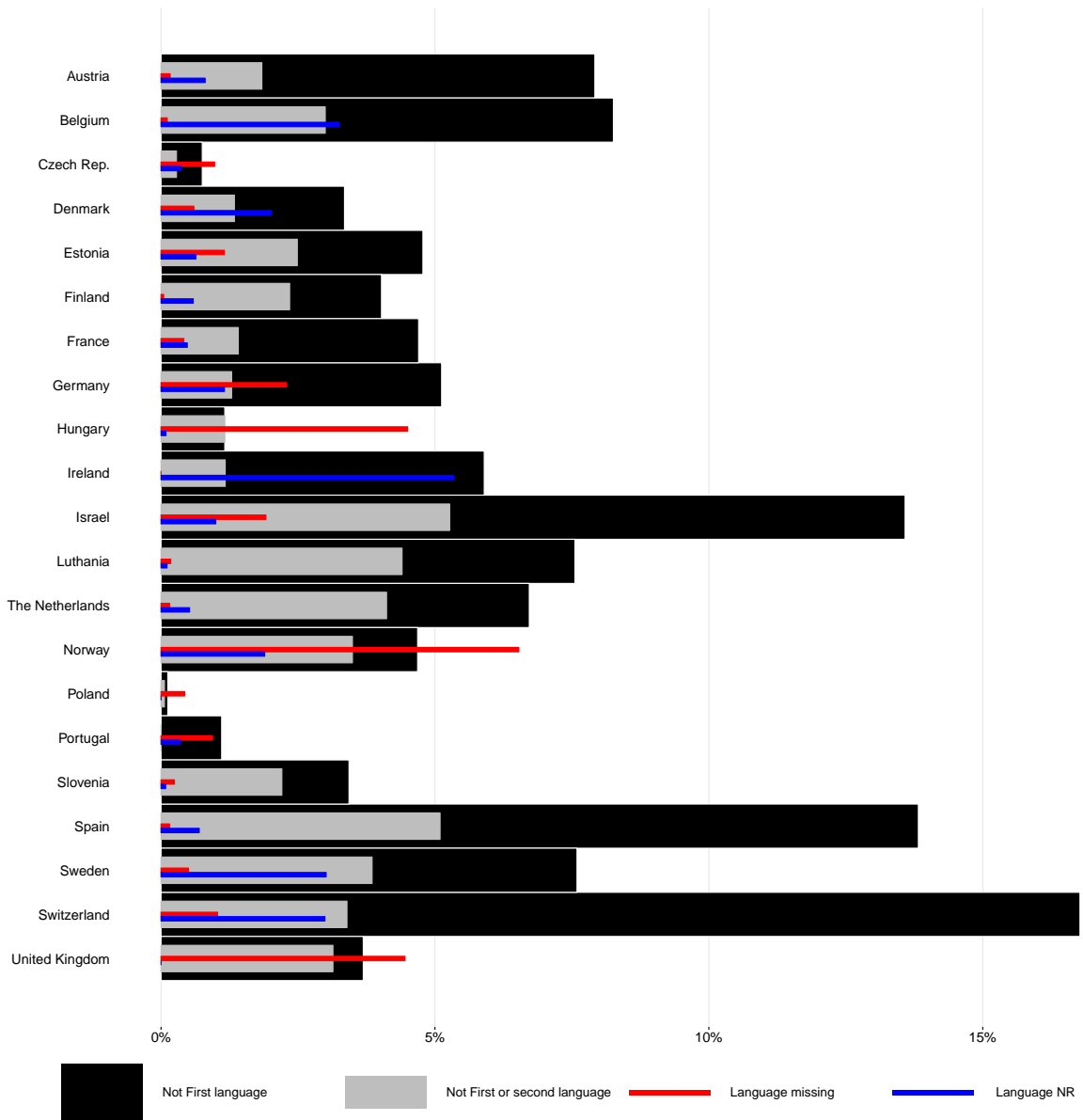
Figure 30: Interview not in first or second home language of respondent, per country, ESS7[55]
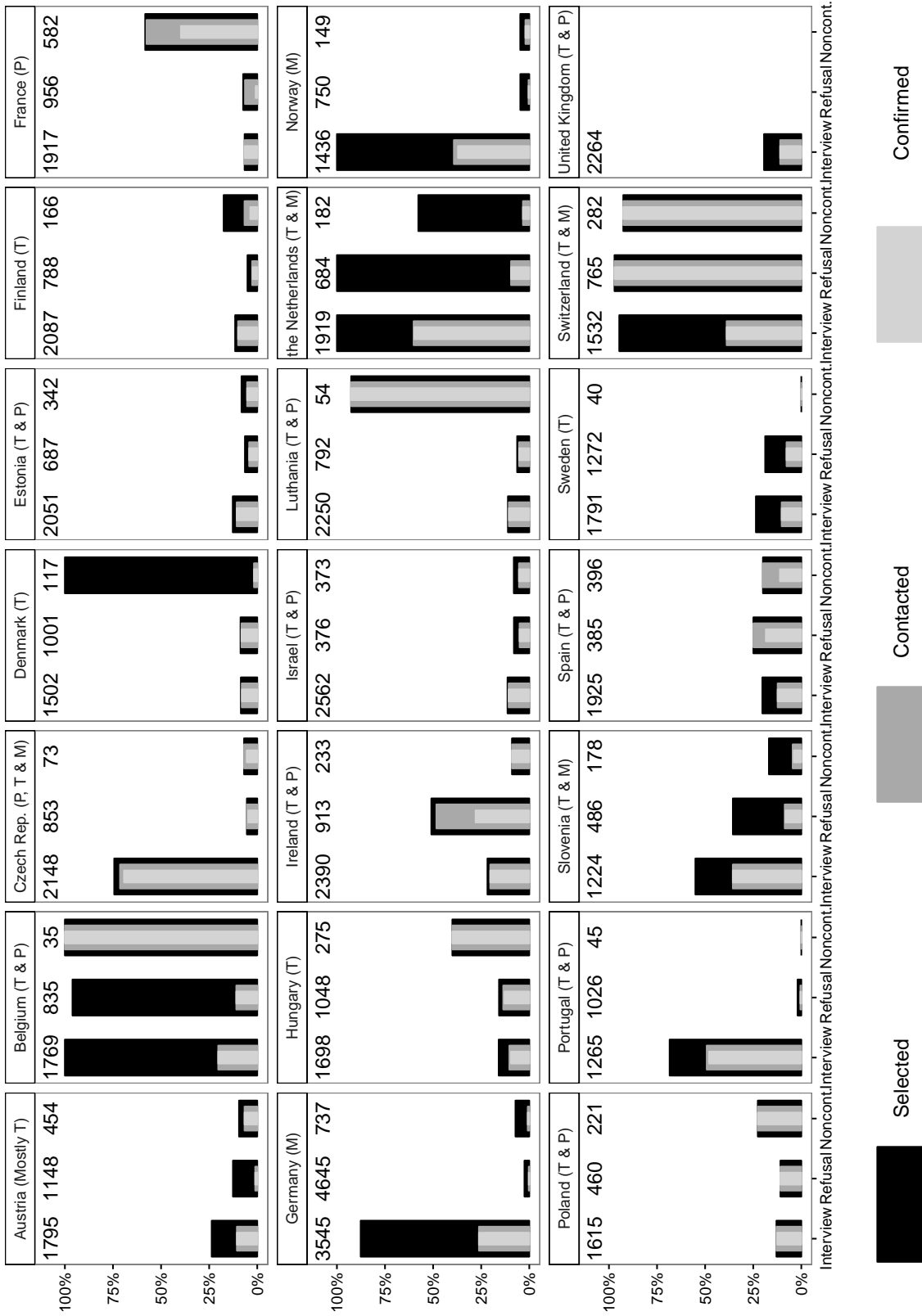
Figure 31: Backcheck results per country, ESS7[a]

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[a]source: ESS Documentation report e01_1. The table version of this figure can be found on page 116

95

Each panel in the figure represents a country, and within each country there are three columns, consisting of three different colours. The first column represents the backchecks on respondents, the second refers to refusals and the last column refers to noncontacts. Above each column, the total number of final interviews, refusals and noncontacts is given. For example, in Austria, there are 1795 interviews[56], 1148 final refusals and 454 final noncontacts. The black part of the columns each indicate the percentage of cases that have been selected for backchecks. For example, in Austria, almost 24% of all interviewed cases have been selected for backchecks. Less than half of the selected cases (or about 11% of all interviewed cases) could be successfully contacted (grey part of the column) and that same proportion confirmed participation. In the heading of each panel, where the names of the country are mentioned, it is also indicated by which mode the backchecks were conducted (P: personal (face-to-face); T: Telephone and M: Mail).

The results suggest that in most countries only a (small) subset of the cases is selected (which is consistent with the ESS specifications). Only in Belgium, the Netherlands and Switzerland (almost) all cases have been selected. Clearly, the weakest element in the backcheck procedure is to establish contact with the cases. However, most (if not all) contacted cases seem to confirm their true (non)respondent status, since the two grey (dark and light) are mostly equally large, except for example in France and Ireland.

Setting aside these relatively positive results, much information about the backchecks is not provided:

- Whether the cases are randomly selected

- Whether the cases are also selected across interviewers

- The results about the showcards, length of the interview, laptop or optional supplementary questionnaire

- By whom the backchecks were done

This last item is rather important as it is better to have an independent agency (or the NC) to execute the backchecks in order to guarantee an impartial post-hoc fieldwork assessment.

An important reason to attribute more importance to backchecks is the observation that the ESS has to deal with relatively strong evidence of interviewer effects. Blasius (2015) has connected this to the possibility of data duplication or data fabrication. Such fraudulent practices are not necessarily due to interviewers, but can also be initiated by survey agencies or supervisors. This is why an impartial agency may be required to run the backcheck procedure. Also, apart from traditional backchecks, new technologies such as recorded interviews or gps can be used to deter and/or detect fraudulent behaviour.

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[56] According to the National Technical Summary (see ESS Documentation report e01_1)

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10 Appendix

Data for Figure 6 on page 50: Average number of contact attempts per country

	Average number of contact attempts per case
Austria	2.18
Belgium	3.60
Switzerland	3.82
Czech R.	1.97
Germany	4.65
Denmark	3.42
Estonia	2.91
Spain	3.49
Finland	5.15
France	4.45
UK	4.65
Hungary	1.96
Ireland	2.63
Israel	1.45
Lithuania	1.27
Netherlands	3.48
Norway	2.13
Poland	2.57
Portugal	3.12
Sweden	9.87
Slovenia	2.65

Data for Figure 8 on page 56: Occurence and follow-up of nonresponse

	refusal by target	refusal by proxy	noncontact noncontact	away / not available	disabled (short)	disabled (long)	language barrier	other	moved (known)	moved (unknown)	ineligible	partial
Austria	1074 (0.19)	364 (0.17)	2524 (0.56)	127 (1.00)	8 (1.00)	12 (0.00)	35 (0.17)	197 (0.97)	9 (0.11)	36 (0.03)	720 (0.76)	50 (1.00)
Belgium	1568 (0.69)	22 (0.91)	4867 (1.00)	847 (1.00)	44 (1.00)	199 (0.07)	112 (0.07)	278 (0.98)	60 (0.46)	147 (0.01)	102 (0.20)	21 (0.95)
Czech Rep.	421 (0.05)	491 (0.07)	1956 (0.97)	166 (1.00)	6 (0.00)	8 (1.00)	12 (0.00)	62 (0.00)	0 (0.00)	4 (0.00)	97 (0.00)	191 (1.00)
Denmark	1042 (0.09)	105 (0.17)	4278 (0.95)	342 (0.95)	57 (0.87)	126 (0.07)	66 (0.11)	463 (0.96)	44 (0.98)	50 (0.53)	27 (0.25)	14 (0.36)
Estonia	948 (0.53)	222 (0.49)	3622 (0.87)	884 (0.93)	58 (1.00)	80 (0.00)	23 (0.00)	38 (0.72)	183 (0.96)	368 (0.00)	23 (0.00)	0 (0.00)
Finland	847 (0.60)	52 (0.42)	9156 (0.89)	586 (0.95)	0 (0.00)	79 (0.31)	26 (0.23)	2769 (0.86)	12 (0.91)	19 (0.26)	3 (0.00)	110 (0.93)
France	330 (0.75)	1634 (0.80)	8794 (0.94)	455 (0.91)	230 (0.76)	195 (0.28)	23 (0.14)	54 (0.48)	1 (0.00)	0 (0.00)	457 (0.00)	6 (0.50)
Germany	5908 (0.38)	851 (0.42)	22340 (0.83)	8454 (0.97)	198 (1.00)	481 (0.00)	137 (0.17)	200 (0.92)	77 (0.89)	514 (0.12)	120 (0.20)	4 (0.00)
Hungary	1016 (0.15)	233 (0.19)	2411 (0.97)	227 (0.80)	7 (0.86)	32 (0.00)	3 (0.00)	193 (0.50)	63 (0.58)	250 (0.23)	90 (0.13)	0 (0.00)
Ireland	584 (0.50)	904 (0.47)	5407 (1.00)	129 (1.00)	34 (1.00)	163 (0.00)	235 (0.00)	25 (1.00)	9 (0.00)	20 (0.00)	447 (0.00)	0 (0.00)
Israel	240 (0.52)	325 (0.25)	1138 (0.13)	154 (0.89)	78 (0.78)	14 (0.00)	36 (0.03)	4 (0.50)	3 (0.33)	24 (0.00)	56 (0.00)	39 (0.89)
Luthania	245 (0.04)	574 (0.03)	749 (0.98)	20 (0.00)	0 (0.00)	16 (0.00)	4 (0.00)	0 (0.00)	9 (0.00)	25 (0.00)	483 (0.00)	2 (0.00)
the Netherlands	1214 (0.74)	467 (0.58)	5172 (0.91)	84 (0.89)	8 (0.80)	2 (0.00)	24 (0.25)	2256 (0.84)	7 (0.14)	10 (0.20)	194 (0.00)	13 (0.92)
Norway	1015 (0.40)	74 (0.29)	602 (0.21)	420 (0.89)	34 (0.50)	93 (0.05)	78 (0.39)	227 (0.64)	67 (0.85)	53 (0.11)	70 (0.07)	2 (1.00)
Poland	583 (0.46)	176 (0.48)	2222 (0.96)	513 (0.97)	38 (1.00)	101 (0.18)	0 (0.00)	337 (0.90)	272 (0.73)	320 (0.11)	50 (0.00)	6 (1.00)
Portugal	173 (0.02)	476 (0.01)	556 (0.05)	76 (1.00)	9 (1.00)	48 (0.02)	11 (0.00)	446 (0.17)	0 (0.00)	10 (0.00)	186 (0.00)	146 (1.00)
Slovenia	516 (0.30)	123 (0.38)	2094 (0.77)	469 (0.94)	17 (0.94)	34 (0.06)	2 (0.00)	680 (0.42)	30 (0.60)	95 (0.17)	40 (0.30)	16 (1.00)
Spain	417 (0.51)	215 (0.47)	4181 (0.94)	1334 (1.00)	47 (0.98)	71 (0.17)	23 (0.10)	134 (0.74)	131 (1.00)	488 (0.26)	111 (0.00)	3 (0.67)
Sweden	2321 (0.77)	144 (0.61)	24671 (0.96)	411 (0.96)	39 (1.00)	162 (0.85)	127 (0.12)	3342 (0.98)	0 (0.00)	151 (0.20)	89 (0.87)	31 (1.00)
Switzerland	1229 (0.76)	366 (0.59)	5323 (0.89)	46 (0.00)	38 (0.89)	101 (1.00)	96 (0.08)	0 (0.00)	41 (0.95)	108 (0.15)	25 (0.04)	8 (1.00)
United Kingdom	1385 (0.55)	1842 (0.64)	14886 (0.89)	1503 (0.96)	101 (0.67)	119 (0.20)	0 (0.00)	1229 (0.71)	0 (0.00)	0 (0.00)	431 (0.07)	47 (0.87)

Number identifies number of events in contact form dataset (reissue probability)

Data for Figure 9 on page 61: Ineligibles per country

		Address not		occupied	other ineligible	Deceased/moved out of country
		traceable	residential			
Austria	Individual sample	0.64	0.58	0.14	2.08	0.53
Belgium	Individual sample	0.62	0.31	0.91	0.31	1.65
Czech Rep.	Address sample	0.15	0.98	1.75	0.06	0.15
Denmark	Individual sample	0.07	0.27	0.00	0.03	1.06
Estonia	Individual sample	0.03	0.00	0.33	0.03	5.11
Finland	Individual sample	0.32	0.94	0.00	0.00	1.12
France	Address sample	1.08	0.58	2.85	6.40	0.00
Germany	Individual sample	0.00	0.24	0.34	0.00	1.01
Hungary	Individual sample	0.60	0.21	0.93	0.12	2.25
Ireland	Address sample	0.00	1.16	8.57	0.30	0.55
Israel	Address sample	0.06	0.49	0.97	0.00	0.09
Luthania	Address sample	2.89	4.60	5.04	0.63	0.47
Norway	Individual sample	0.55	1.35	0.07	0.00	1.67
Poland	Individual sample	0.18	0.66	0.22	0.04	8.73
Portugal	Household sample	0.29	0.45	3.55	1.10	0.00
Slovenia	Individual sample	0.17	0.04	0.29	0.25	1.92
Spain	Individual sample	0.63	0.27	1.23	0.10	4.15
Sweden	Individual sample	0.80	0.24	0.00	2.88	1.55
Switzerland	Individual sample	0.00	0.61	0.00	0.00	0.54
The Netherlands	Address sample	0.00	1.19	2.26	1.48	0.23
United Kingdom	Address sample	0.18	0.98	4.98	1.23	0.00

Data for Figure 10 on page 63: Response rates per country

	Response Rate
Austria	51.58
Belgium	57.03
Czech Rep.	67.93
Denmark	51.85
Estonia	59.94
Finland	62.67
France	50.94
Germany	31.41
Hungary	52.70
Ireland	60.74
Israel	74.35
Luthania	68.87
the Netherlands	58.61
Norway	53.94
Poland	65.84
Portugal	43.00
Slovenia	52.31
Spain	67.85
Sweden	50.10
Switzerland	52.70
United Kingdom	43.56

Data for Figure 11 on page 64: Response rates, ineligibles excluded, over different ESS rounds

	R1	R2	R3	R4	R5	R6	R7
Albania						78.60	
Austria	60.41	62.49	64.10	62.26			51.92
Belgium	59.21	61.97	61.55	59.00	53.53	58.98	57.40
Bulgaria			65.85	75.67	81.87	74.93	
Croatia				63.94	55.17		
Cyprus			67.32	82.32	71.34	76.75	
Czech Rep.	53.97	71.02		71.11	71.31	68.50	68.04
Denmark	67.56	65.11	50.78	54.45	55.40	49.33	51.88
Estonia		79.46	65.08	62.51	56.21	67.84	59.95
Finland	73.21	70.77	64.40	68.44	59.58	67.27	62.88
France	43.09	44.19	46.54	49.69	48.25	53.35	51.56
Germany	55.68	52.71	54.59	48.12	31.67	33.76	31.41
Greece	79.99	78.78		74.27	68.80		
Hungary	69.86	70.33	66.38	61.98	60.86	64.78	53.03
Iceland		51.28				54.65	
Ireland	64.46	62.51	57.38	52.55	65.46	68.30	60.74
Israel	70.99			85.39	72.85	78.08	74.39
Italy	43.72	60.84				36.92	
Kosovo						67.45	
Latvia			71.35	67.53			
Lithania				52.41	44.89	77.14	71.68
Luxembourg	43.90	52.07					
the Netherlands	67.85	64.46	59.85	50.00	60.28	55.52	58.61
Norway	65.01	66.24	65.52	60.44	58.04	55.07	54.25
Poland	73.24	74.38	70.33	71.38	70.29	74.96	65.97
Portugal	68.81	70.88	72.76	75.79	67.08	77.12	43.13
Romania			71.80	68.21			
Russian Fed.			69.59	68.26	66.64	67.21	
Slovakia		63.40	73.37	72.55	74.78	74.09	
Slovenia	72.09	70.24	65.19	59.15	64.71	57.74	52.29
Spain	53.22	56.13	66.45	67.35	69.05	70.83	68.31
Sweden	69.46	66.46	67.47	63.41	50.99	52.98	50.52
Switzerland	33.46	47.07	52.18	50.36	53.54	51.91	52.70
Turkey		54.11		67.15			
Ukraine		66.59	66.42	61.50	64.41	59.10	
United Kingdom	55.52	51.09	54.76	55.95	56.33	53.40	43.65
Overall	63.16	65.12	63.73	63.26	60.59	63.03	57.66

Data for Figure 12 on page 66: Noncontact rates per country

	Noncontact Rate
Austria	13.13
Belgium	1.14
Czech Rep.	2.31
Denmark	4.04
Estonia	10.00
Finland	5.00
France	15.65
Germany	7.60
Hungary	8.59
Ireland	5.92
Israel	10.83
Luthania	1.72
the Netherlands	5.56
Norway	5.63
Poland	9.03
Portugal	1.53
Slovenia	7.62
Spain	14.05
Sweden	1.13
Switzerland	9.70
United Kingdom	13.90

Data for Figure 13 on page 67: Cooperation rates per country

	Cooperation Rate
Austria	60.99
Belgium	67.88
Czech Rep.	71.58
Denmark	60.01
Estonia	74.91
Finland	72.59
France	68.15
Germany	39.60
Hungary	61.84
Ireland	72.36
Israel	87.20
Luthania	73.96
the Netherlands	67.69
Norway	65.69
Poland	77.83
Portugal	55.22
Slovenia	60.27
Spain	83.33
Sweden	58.47
Switzerland	66.70
United Kingdom	56.14

Data for Figure 14 on page 68: Nonresponse due to other reasons per country

| | Response rate | | |
	Initial	conversion bonus	Reissue %
Israel	0.72	0.02	0.34
Luthania	0.71	0.01	0.03
Czech Rep.	0.67	0.01	0.06
Spain	0.64	0.02	0.52
Ireland	0.60	0.01	0.50
Poland	0.59	0.02	0.48
Estonia	0.58	0.02	0.53
Finland	0.56	0.02	0.59
Austria	0.55	0.01	0.19
Portugal	0.52	0.00	0.01
Hungary	0.51	0.01	0.16
Belgium	0.51	0.06	0.69
Norway	0.51	0.03	0.40
Denmark	0.51	0.01	0.09
Slovenia	0.50	0.02	0.32
the Netherlands	0.50	0.09	0.78
Switzerland	0.49	0.03	0.77
France	0.48	0.04	0.81
Sweden	0.45	0.03	0.77
United Kingdom	0.37	0.06	0.63
Germany	0.29	0.03	0.40

Data for Figure 15 on page 69: Nonresponse due to other reasons per country

	Language barrier	Illness	Unavailable
Austria	0.84	0.35	0.23
Belgium	3.37	6.00	4.77
Czech Rep.	0.38	0.19	0.57
Denmark	1.97	4.28	3.18
Estonia	0.67	2.19	3.80
Finland	1.24	3.37	3.46
France	0.54	5.08	2.88
Germany	0.84	3.47	8.09
Hungary	0.09	1.03	4.53
Ireland	5.97	4.14	0.00
Israel	1.02	1.02	1.66
Luthania	0.13	0.51	0.67
the Netherlands	0.79	0.09	3.57
Norway	1.96	3.97	4.23
Poland	0.00	3.35	2.61
Portugal	0.38	1.64	9.89
Slovenia	0.09	1.41	3.64
Spain	0.75	2.20	1.03
Sweden	3.27	3.98	5.22
Switzerland	3.03	3.72	4.44
United Kingdom	0.12	2.53	5.69

Data for Figure 17 on page 72: Indications of nonresponse bias per country

	VANDA ++	VANDA −	VANDA NA	LITTER ++	LITTER −	LITTER NA	PHYS ++	PHYS −	PHYS NA	GATE Yes	GATE No	GATE NA
Austria	0.158 (0.149)	0.835 (0.848)	0.007 (0.004)	0.212 (0.207)	0.781 (0.789)	0.007 (0.004)	0.379 (0.351)	0.613 (0.645)	0.007 (0.004)	0.276 (0.292)	0.717 (0.705)	0.007 (0.004)
Belgium	0.057 (0.060)	0.943 (0.938)	— (0.002)	0.144 (0.140)	0.856 (0.858)	— (0.002)	0.363 (0.358)	0.637 (0.640)	— (0.002)	0.180 (0.221)	0.820 (0.777)	— (0.002)
Switzerland	0.077 (0.099)	0.923 (0.901)		0.202 (0.222)	0.798 (0.778)		0.249 (0.237)	0.751 (0.763)		0.660 (0.671)	0.340 (0.329)	
Czech R.	0.306 (0.296)	0.694 (0.704)		0.392 (0.381)	0.608 (0.619)		0.314 (0.312)	0.686 (0.688)		0.615 (0.604)	0.385 (0.396)	
Germany	0.053 (0.079)	0.653 (0.714)	0.294 (0.207)	0.111 (0.153)	0.595 (0.641)	0.294 (0.207)	0.189 (0.177)	0.517 (0.617)	0.294 (0.207)	0.286 (0.345)	0.420 (0.448)	0.294 (0.207)
Denmark	0.063 (0.076)	0.936 (0.917)	0.001 (0.008)	0.128 (0.153)	0.870 (0.840)	0.001 (0.007)	0.380 (0.311)	0.620 (0.682)	0.001 (0.007)	0.116 (0.134)	0.882 (0.858)	0.001 (0.007)
Estonia	0.095 (0.088)	0.905 (0.850)	— (0.062)	0.186 (0.175)	0.814 (0.763)	— (0.062)	0.336 (0.308)	0.664 (0.631)	— (0.062)	0.337 (0.346)	0.663 (0.592)	— (0.062)
Spain	0.183 (0.202)	0.817 (0.798)		0.182 (0.203)	0.818 (0.797)		0.225 (0.197)	0.771 (0.796)	0.004 (0.006)	0.217 (0.220)	0.778 (0.774)	0.004 (0.006)
Finland	0.031 (0.038)	0.965 (0.931)	0.003 (0.031)	0.071 (0.076)	0.925 (0.892)	0.004 (0.032)	0.291 (0.263)	0.703 (0.705)	0.006 (0.032)	0.179 (0.200)	0.804 (0.757)	0.017 (0.042)
France	0.102 (0.130)	0.898 (0.870)		0.138 (0.163)	0.862 (0.837)		0.336 (0.314)	0.664 (0.686)		0.161 (0.194)	0.839 (0.806)	
UK	0.079 (0.091)	0.921 (0.889)	— (0.021)	0.232 (0.246)	0.768 (0.733)	— (0.021)	0.241 (0.204)	0.759 (0.775)	— (0.021)	0.078 (0.101)	0.922 (0.876)	0.000 (0.023)
Hungary	0.149 (0.132)	0.851 (0.868)		0.322 (0.282)	0.678 (0.718)		0.141 (0.150)	0.859 (0.850)		0.762 (0.799)	0.238 (0.201)	
Ireland	0.065 (0.063)	0.935 (0.937)		0.153 (0.148)	0.847 (0.852)		0.557 (0.546)	0.443 (0.454)		0.064 (0.086)	0.936 (0.914)	
Israel	0.352 (0.350)	0.648 (0.650)		0.448 (0.449)	0.552 (0.551)		0.347 (0.337)	0.653 (0.663)		0.232 (0.243)	0.768 (0.757)	
Luthania	0.151 (0.166)	0.843 (0.833)	0.007 (0.005)	0.318 (0.346)	0.676 (0.649)	0.007 (0.005)	0.116 (0.107)	0.877 (0.888)	0.007 (0.005)	0.322 (0.321)	0.665 (0.670)	0.012 (0.009)
Netherl.	0.082 (0.087)	0.912 (0.873)	0.006 (0.039)	0.187 (0.205)	0.805 (0.754)	0.008 (0.041)	0.360 (0.326)	0.633 (0.633)	0.007 (0.041)	0.048 (0.055)	0.939 (0.899)	0.013 (0.046)
Norway			1.000 (1.000)			1.000 (1.000)			1.000 (1.000)			1.000 (1.000)
Poland	0.230 (0.223)	0.752 (0.672)	0.018 (0.105)	0.230 (0.215)	0.752 (0.680)	0.017 (0.104)	0.272 (0.247)	0.711 (0.652)	0.017 (0.102)	0.398 (0.333)	0.585 (0.565)	0.017 (0.102)
Portugal	0.082 (0.082)	0.898 (0.897)	0.020 (0.021)	0.142 (0.147)	0.842 (0.837)	0.017 (0.016)	0.225 (0.209)	0.758 (0.775)	0.017 (0.016)	0.692 (0.677)	0.292 (0.307)	0.016 (0.015)
Sweden			1.000 (1.000)			1.000 (1.000)			1.000 (1.000)			1.000 (1.000)
Slovenia	0.078 (0.096)	0.919 (0.891)	0.002 (0.013)	0.118 (0.138)	0.881 (0.849)	0.002 (0.013)	0.182 (0.152)	0.817 (0.836)	0.002 (0.012)	0.464 (0.476)	0.534 (0.512)	0.002 (0.012)

	ENTRY PHONE Yes	ENTRY PHONE No	ENTRY PHONE NA	Dwelling Single	Dwelling Multi	Dwelling NA	GENDER Female	GENDER Male	GENDER NA	AGE <20	AGE 21-40	AGE 41-60	AGE >60	AGE NA
Austria	0.583 (0.570)	0.410 (0.426)	0.007 (0.004)	0.485 (0.484)	0.508 (0.510)	0.008 (0.006)	0.525 (0.505)	0.475 (0.495)		0.044 (0.023)	0.308 (0.159)	0.360 (0.186)	0.284 (0.147)	0.003 (0.485)
Belgium	0.232 (0.288)	0.768 (0.710)	— (0.002)	0.848 (0.794)	0.151 (0.203)	0.001 (0.004)	0.493 (0.514)	0.507 (0.486)		0.076 (0.061)	0.300 (0.305)	0.339 (0.341)	0.285 (0.292)	
Switzerland	0.365 (0.395)	0.635 (0.605)		0.482 (0.423)	0.508 (0.559)	0.010 (0.018)	0.501 (0.516)	0.499 (0.484)		0.097 (0.072)	0.293 (0.315)	0.341 (0.352)	0.270 (0.260)	
Czech R.	0.607 (0.604)	0.393 (0.396)		0.502 (0.515)	0.497 (0.484)	0.000 (0.001)	0.541 (0.457)	0.448 (0.390)	0.011 (0.153)	0.087 (0.073)	0.322 (0.273)	0.341 (0.290)	0.245 (0.215)	0.005 (0.149)
Germany	0.356 (0.414)	0.351 (0.379)	0.294 (0.207)	0.399 (0.392)	0.307 (0.401)	0.294 (0.207)	0.495 (0.514)	0.505 (0.486)	0.000 (0.000)	0.071 (0.057)	0.246 (0.272)	0.356 (0.353)	0.301 (0.302)	0.026 (0.015)
Denmark	0.201 (0.225)	0.798 (0.767)	0.001 (0.007)	0.727 (0.673)	0.272 (0.323)	0.001 (0.005)	0.481 (0.507)	0.519 (0.493)	— (0.000)	0.088 (0.086)	0.283 (0.300)	0.352 (0.332)	0.277 (0.282)	
Estonia	0.569 (0.534)	0.431 (0.405)	— (0.062)	0.263 (0.247)	0.736 (0.690)	0.000 (0.063)	0.593 (0.564)	0.407 (0.436)		0.055 (0.057)	0.291 (0.327)	0.323 (0.319)	0.331 (0.296)	
Spain	0.739 (0.752)	0.257 (0.242)	0.004 (0.006)	0.375 (0.346)	0.621 (0.650)	0.004 (0.004)	0.486 (0.496)	0.514 (0.504)		0.079 (0.065)	0.308 (0.323)	0.359 (0.348)	0.254 (0.263)	
Finland	0.102 (0.110)	0.881 (0.847)	0.017 (0.042)	0.665 (0.603)	0.332 (0.367)	0.003 (0.030)	0.514 (0.515)	0.486 (0.485)		0.062 (0.072)	0.245 (0.280)	0.324 (0.325)	0.369 (0.323)	
France	0.432 (0.476)	0.568 (0.524)		0.595 (0.531)	0.401 (0.465)	0.004 (0.004)			1.000 (1.000)					1.000 (1.000)
UK	0.105 (0.134)	0.895 (0.843)	0.000 (0.023)	0.838 (0.793)	0.162 (0.185)	0.000 (0.023)			1.000 (1.000)					1.000 (1.000)
Hungary	0.324 (0.368)	0.676 (0.632)		0.713 (0.678)	0.287 (0.322)		0.571 (0.529)	0.429 (0.471)						1.000 (1.000)
Ireland	0.055 (0.081)	0.945 (0.919)		0.923 (0.899)	0.074 (0.099)	0.003 (0.002)			1.000 (1.000)					1.000 (1.000)
Israel	0.284 (0.289)	0.716 (0.711)		0.343 (0.335)	0.657 (0.665)				1.000 (1.000)					1.000 (1.000)
Luthania	0.244 (0.248)	0.744 (0.743)	0.012 (0.009)	0.462 (0.465)	0.532 (0.530)	0.006 (0.004)			1.000 (1.000)					1.000 (1.000)
Netherl.	0.194 (0.221)	0.793 (0.733)	0.013 (0.046)	0.752 (0.682)	0.239 (0.275)	0.010 (0.042)			1.000 (1.000)					1.000 (1.000)
Norway			1.000 (1.000)			1.000 (1.000)	0.468 (0.496)	0.532 (0.504)		0.100 (0.093)	0.290 (0.322)	0.350 (0.335)	0.260 (0.250)	
Poland	0.394 (0.417)	0.589 (0.482)	0.017 (0.102)	0.584 (0.479)	0.402 (0.422)	0.014 (0.099)	0.542 (0.533)	0.458 (0.467)		0.072 (0.063)	0.331 (0.349)	0.321 (0.316)	0.276 (0.272)	
Portugal	0.513 (0.564)	0.471 (0.421)	0.016 (0.015)	0.643 (0.564)	0.357 (0.430)	— (0.006)			1.000 (1.000)					1.000 (1.000)
Sweden			1.000 (1.000)			1.000 (1.000)	0.504 (0.508)	0.496 (0.492)		0.070 (0.077)	0.291 (0.311)	0.309 (0.313)	0.330 (0.299)	
Slovenia	0.262 (0.309)	0.736 (0.678)	0.002 (0.012)	0.729 (0.669)	0.266 (0.312)	0.006 (0.019)	0.540 (0.509)	0.460 (0.491)		0.069 (0.058)	0.278 (0.290)	0.331 (0.327)	0.322 (0.324)	

Proportion among respondents (proportion among full sample)

Data for Figure 21 on page 80 and Figure 23 on page 82: Interviewer variance on substantial items per country and Variance inflation due to interviewer variance

	R1	R2	R3	R4	R5	R6	R7
Albania						0.02 / 0.01 / 1.59	
Austria			0.13 / 0.12 / 1.79				0.14 / 0.13 / 3.90
Belgium	0.04 / 0.02 / 1.43	0.06 / 0.03 / 1.88	0.03 / 0.02 / 1.57	0.04 / 0.02 / 1.69	0.03 / 0.02 / 1.59	0.04 / 0.02 / 1.61	0.04 / 0.02 / 1.54
Bulgaria			0.20 / 0.20 / 2.83	0.21 / 0.16 / 3.26	0.20 / 0.15 / 2.95	0.23 / 0.17 / 2.92	
Croatia				0.10 / 0.08 / 2.56	0.13 / 0.12 / 3.67		
Cyprus			0.11 / 0.09 / 3.33	0.10 / 0.07 / 3.74	0.16 / — / 5.59	0.09 / — / 3.15	
Czech Republic	0.16 / 0.16 / 1.50	0.18 / 0.18 / 3.06		0.22 / 0.22 / 2.21	0.04 / 0.03 / 1.16	0.27 / 0.28 / 3.23	0.17 / 0.16 / 2.16
Denmark	0.03 / 0.03 / 1.62	0.02 / 0.02 / 1.38	0.03 / 0.02 / 1.51	0.02 / 0.01 / 1.41	0.03 / 0.02 / 1.49	0.02 / 0.01 / 1.33	0.03 / 0.02 / 1.47
Estonia		0.10 / 0.09 / 4.17	0.11 / 0.10 / 2.15	0.08 / 0.06 / 2.71	0.08 / 0.05 / 3.00	0.09 / 0.08 / 2.71	0.09 / 0.08 / 2.52
Finland	0.02 / 0.01 / 1.33	0.02 / 0.01 / 1.34	0.02 / 0.01 / 1.23	0.02 / 0.01 / 1.32	0.02 / 0.01 / 1.33	0.03 / 0.01 / 1.53	0.02 / 0.01 / 1.24
France		0.04 / 0.04 / 1.60	0.03 / 0.03 / 1.47	0.03 / 0.02 / 1.45	0.03 / 0.03 / 1.41	0.03 / 0.02 / 1.40	0.03 / 0.02 / 1.49
Germany	0.08 / 0.06 / 2.55	0.11 / 0.09 / 2.95	0.15 / 0.12 / 3.42	0.08 / 0.05 / 2.16	0.06 / 0.04 / 2.09	0.05 / 0.02 / 1.88	0.07 / 0.04 / 2.00
Greece	0.15 / 0.12 / 3.15	0.16 / 0.13 / 3.94		0.23 / 0.21 / 7.32	0.20 / 0.19 / 4.79		
Hungary	0.06 / 0.06 / 1.59	0.09 / 0.09 / 2.20	0.10 / 0.10 / 1.83	0.15 / 0.15 / 2.42	0.10 / 0.10 / 1.96	0.20 / 0.17 / 3.59	0.24 / 0.24 / 3.83
Iceland		0.00 / — / 1.06				0.01 / 0.01 / 1.23	
Ireland	0.08 / 0.07 / 2.33	0.08 / 0.07 / 3.56	0.07 / 0.06 / 1.83	0.04 / 0.04 / 2.33	0.14 / 0.13 / 4.15	0.14 / 0.14 / 4.19	0.12 / 0.11 / 3.52
Israel	0.09 / 0.09 / 2.83			0.15 / 0.14 / 6.91	0.15 / — / 4.55	0.10 / — / 3.28	0.12 / — / 3.02
Italy						0.07 / 0.05 / 1.78	
Kosovo						0.23 / 0.21 / 4.94	
Latvia							
Lithuania				0.16 / 0.14 / 4.83	0.16 / 0.16 / 3.78	0.29 / 0.30 / 5.41	0.28 / 0.27 / 4.70
Luxembourg		0.06 / — / 3.17					
The Netherlands	0.02 / 0.02 / 1.72	0.02 / 0.01 / 1.60	0.03 / 0.02 / 1.67	0.03 / 0.02 / 1.57	0.03 / 0.02 / 1.38	0.03 / 0.02 / 1.59	0.02 / 0.02 / 1.44
Norway	0.02 / 0.01 / 1.30	0.02 / 0.02 / 1.41	0.03 / 0.03 / 1.51	0.02 / 0.01 / 1.31	0.02 / 0.02 / 1.39	0.02 / 0.01 / 1.44	0.02 / 0.01 / 1.48
Poland	0.08 / 0.06 / 1.93	0.08 / 0.06 / 1.95	0.07 / 0.05 / 1.90	0.07 / 0.06 / 1.84	0.09 / 0.07 / 2.01	0.09 / 0.06 / 2.10	0.07 / 0.05 / 1.90
Portugal	0.12 / 0.11 / 4.31	0.12 / 0.11 / 5.04	0.16 / 0.15 / 7.00	0.13 / 0.11 / 5.78	0.14 / 0.13 / 5.09	0.12 / 0.10 / 4.47	0.07 / 0.06 / 2.20
Romania				0.23 / 0.22 / 4.31			
Russian Fed.			0.18 / 0.18 / 2.45	0.22 / 0.20 / 2.72	0.20 / 0.19 / 2.58	0.20 / 0.20 / 2.66	
Slovakia		0.06 / 0.05 / 1.95	0.13 / 0.12 / 2.04	0.18 / 0.16 / 3.73	0.16 / 0.14 / 4.10	0.22 / 0.21 / 4.23	
Slovenia	0.04 / 0.04 / 1.37	0.02 / 0.02 / 1.18	0.05 / 0.04 / 1.43	0.05 / 0.04 / 1.88	0.08 / 0.07 / 2.75	0.05 / 0.05 / 2.28	0.04 / 0.03 / 1.90
Spain	0.14 / 0.12 / 2.67	0.08 / 0.05 / 2.87	0.05 / 0.05 / 2.79	0.10 / 0.07 / 3.02	0.06 / 0.04 / 2.69	0.03 / 0.02 / 1.79	0.06 / 0.05 / 1.97
Sweden		0.01 / 0.01 / 1.19	0.02 / 0.01 / 1.36	0.02 / 0.01 / 1.37	0.02 / 0.02 / 1.23	0.05 / 0.04 / 2.22	0.02 / 0.02 / 1.53
Switzerland	0.04 / 0.03 / 2.12	0.04 / 0.03 / 3.17	0.04 / 0.03 / 2.82	0.04 / 0.03 / 3.19	0.03 / 0.02 / 1.95	0.02 / 0.01 / 1.57	0.02 / 0.02 / 1.68
Turkey		0.14 / 0.13 / 3.79		0.19 / 0.15 / 3.73			
Ukraine		0.21 / 0.16 / 2.53	0.24 / 0.20 / 3.08	0.22 / 0.19 / 2.66	0.25 / 0.20 / 3.21	0.28 / 0.27 / 3.44	
United Kingdom	0.03 / 0.02 / 1.37	0.04 / 0.03 / 1.43	0.04 / 0.03 / 1.46	0.03 / 0.02 / 1.40	0.04 / 0.04 / 1.63	0.04 / 0.04 / 1.75	0.04 / 0.03 / 1.48

ICC (raw) / ICC (controlled for region*density) / VIF

Data for Figure 24 on page 83: Interview length per country

	Length	ICC
Austria	58.39	0.04
Belgium	56.12	0.23
Switzerland	55.44	0.41
Czech Rep.	62.68	0.49
Germany	70.33	0.32
Denmark	56.08	0.30
Estonia	66.76	0.33
Spain	59.55	0.34
Finland	52.49	0.14
France	56.86	0.31
United Kingdom	58.00	0.35
Hungary	59.18	0.37
Ireland	48.05	0.25
Israel	51.74	0.56
Lithuania	68.31	0.51
the Netherlands	56.76	0.50
Norway	55.98	0.20
Poland	66.66	0.52
Sweden	62.13	0.27
Slovenia	42.05	0.44

Data for Figure 25 on page 85: Item nonresponse per country

	Refusal	Don't know	No answer
Austria	0.12	0.81	0.22
Belgium	0.01	0.38	0.16
Czech Rep.	0.18	1.93	0.38
Denmark	0.02	0.52	0.28
Estonia	0.04	1.36	0.05
Finland	0.06	0.61	0.02
France	0.13	0.66	0.02
Germany	0.21	0.62	0.07
Hungary	1.11	1.09	0.11
Ireland	0.37	0.97	0.05
Israel	0.44	2.04	0.42
Luthania	0.12	2.40	0.03
the Netherlands	0.03	0.58	0.35
Norway	0.07	0.39	0.13
Poland	0.09	1.66	0.14
Portugal	0.18	0.86	0.13
Slovenia	0.07	1.38	0.41
Spain	0.27	1.02	0.16
Sweden	0.09	0.78	0.02
Switzerland	0.03	0.80	0.02
United Kingdom	0.17	1.09	0.16

Data for Figure 26 on page 88: Item nonresponse and its interviewer variance per country

	Item nonresponse (%)	ICC
Austria	1.15	0.26
Belgium	0.56	0.14
Switzerland	0.85	0.18
Czech Rep.	2.49	0.17
Germany	0.90	0.10
Denmark	0.83	0.14
Estonia	1.45	0.22
Spain	1.45	0.14
Finland	0.70	0.05
France	0.80	0.06
United Kingdom	1.43	0.11
Hungary	2.31	0.31
Ireland	1.38	0.30
Israel	2.91	0.16
Lithuania	2.55	0.53
The Netherlands	0.97	0.09
Norway	0.59	0.03
Poland	1.89	0.18
Portugal	1.18	0.34
Sweden	0.89	0.07
Slovenia	1.86	0.18

Data for Figure 27 on page 89: Straight-lining per country

	% straightlining	ICC
Austria	24.13	0.18
Belgium	22.64	0.08
Switzerland	22.34	0.05
Czech Rep.	26.50	0.28
Germany	21.06	0.06
Denmark	22.15	0.03
Estonia	26.13	0.23
Spain	24.07	0.09
Finland	20.25	0.01
France	21.93	0.02
United Kingdom	23.91	0.03
Hungary	25.18	0.28
Ireland	23.18	0.26
Israel	22.83	0.26
Lithuania	28.84	0.40
The Netherlands	22.46	0.03
Norway	22.21	0.06
Poland	25.18	0.13
Portugal	24.44	0.15
Sweden	23.40	0.03
Slovenia	24.14	0.04

Data for Figure 28 on page 91: Third party presence per country

	Third party presence
Austria	0.07
Belgium	0.11
Czech Rep.	0.11
Denmark	0.04
Estonia	0.08
Finland	0.04
France	0.09
Germany	0.08
Hungary	0.07
Ireland	0.10
Israel	0.27
Luthania	0.12
The Netherlands	0.07
Norway	0.06
Poland	0.10
Portugal	0.16
Slovenia	0.09
Spain	0.19
Sweden	0.03
Switzerland	0.08
United Kingdom	0.07

Data for Figure 29 on page 92: Interviewer evaluation of respondents

	RESCLQ			RESRELQ			RESBAB			RESUNDQ		
	0	1	NA	0	1	NA	0	1	NA	0	1	NA
Austria (AT)	764	1031		1017	777	1	1408	386	1	1465	329	1
Belgium (BE)	667	1102		1290	478	1	1289	479	1	1113	656	
Czech R. (CZ)	574	1548	26	876	1221	51	1453	651	44	1306	810	32
Denmark (DK)	736	763	3	1232	270		1353	148	1	1218	284	
Estonia (EE)	669	1379	3	1238	806	7	1222	797	32	1351	689	11
Finland (FI)	1070	1006	11	1612	465	10	1937	140	10	1771	306	10
France (FR)	854	1063		1459	457	1	1588	329		1403	514	
Germany (DE)	1351	1694		2544	500	1	2646	398	1	2460	585	
Hungary (HU)	839	855	4	637	1053	8	1016	665	17	1048	637	13
Ireland (IE)	910	1480		1327	1063		1569	821		1477	913	
Israel (IL)	535	2027		1018	1535	9	1421	1134	7	1250	1303	9
Lithuania (LT)	662	1565	23	622	1556	72	641	1475	134	939	1218	93
Netherl. (NL)	894	1025		1426	491	2	1414	502	3	1231	687	1
Norway (NO)	622	814		1265	171		1308	127	1	1032	404	
Poland (PL)	771	840	4	1026	582	7	1164	437	14	1058	547	10
Portugal (PT)	279	986		529	736		959	306		829	436	
Slovenia (SI)	660	563	1	856	366	2	906	312	6	770	454	
Spain (ES)	542	1376	7	1264	654	7	1428	487	10	1196	718	11
Sweden (SE)	614	1176	1	1451	340		1601	189	1	1307	484	
Switzerland (CH)	851	681		1054	478		1250	280	2	1263	269	
UK (GB)	691	1573		1539	725		1849	415		1477	787	

Data for Figure 30 on page 94: Interview not in first or second home language of respondent, per country

	Not 1st language	Not 1st/2nd language	Missing	nonresponse
Austria	0.08	0.02	0.00	0.01
Belgium	0.08	0.03	0.00	0.03
Switzerland	0.17	0.03	0.01	0.03
Czech Rep.	0.01	0.00	0.01	0.00
Germany	0.05	0.01	0.02	0.01
Denmark	0.03	0.01	0.01	0.02
Estonia	0.05	0.02	0.01	0.01
Spain	0.14	0.05	0.00	0.01
Finland	0.04	0.02	0.00	0.01
France	0.05	0.01	0.00	0.00
United Kingdom	0.04	0.03	0.04	0.00
Hungary	0.01	0.01	0.05	0.00
Ireland	0.06	0.01	0.00	0.05
Israel	0.14	0.05	0.02	0.01
Luthania	0.08	0.04	0.00	0.00
The Netherlands	0.07	0.04	0.00	0.01
Norway	0.05	0.03	0.07	0.02
Poland	0.00	0.00	0.00	0.00
Portugal	0.01	0.00	0.01	0.00
Sweden	0.08	0.04	0.00	0.03
Slovenia	0.03	0.02	0.00	0.00

Data for Figure 31 on page 95: Backcheck results per country

	Interview			Refusal			Noncontact		
	Selected	Contacted	Confirmed	Selected	Contacted	Confirmed	Selected	Contacted	Confirmed
Austria	425	190	190	145	12	12	43	30	30
Belgium	1769	359	359	802	91	91	263	261	261
Czech Rep.	1597	1532	1488	46	46	40	5	5	4
Denmark	128	121	120	87	82	82	124	2	2
Estonia	261	219	219	44	29	29	28	18	18
Finland	240	208	208	40	21	19	29	11	6
France	126	126	126	70	61	8	339	335	231
Germany	3107	928	928	117	13	13	53	6	6
Hungary	270	176	162	165	142	135	110	110	110
Ireland	520	485	485	465	441	255	21	21	21
Israel	290	275	275	30	19	19	30	20	20
Luthania	250	239	239	50	42	42	50	50	50
The Netherlands	1919	1154	1146	691	65	65	105	6	6
Norway	1436	563	532	35	3	3	7	3	3
Poland	209	209	203	50	50	50	50	50	50
Portugal	866	622	607	20	5	5	0	0	0
Slovenia	674	436	436	173	42	40	30	8	7
Spain	390	237	237	96	96	71	79	79	44
Sweden	423	183	183	239	98	98	0	0	0
Switzerland	1450	595	595	743	743	743	261	261	261
United Kingdom	439	249	249	NA	NA	NA	NA	NA	NA