



5th European Working
Conditions Survey, 2010

Quality Assurance Report

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for the Improvement of Living and Working Conditions

Prepared by Gallup Europe

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Quality assurance in EWCS was aimed at achieving a sound, methodologically solid survey which is fully comparative across the participating countries. In order to achieve this, quality management focused on ensuring that survey protocols are identical in each country or at least equivalent to the fullest possible extent, and on verifying that these protocols were implemented correctly during the planning and execution of the survey by Gallup Europe and their national partners.

EWCS quality management is rooted in the survey design and it addresses issues such as the definition, allocation and drawing of the sample; the way the survey instrument was developed and administered as well as the way the data were coded and edited. The quality assurance steps taken during survey implementation all targeted the careful implementation of the overall survey design.

This document provides a summary of the quality assurance activities performed during the 5th EWCS. The various activities are grouped according to the main tasks performed by Gallup Europe during survey preparation, fieldwork and data processing. More details on the process are available in the reports in which various aspects of the methodology are described.

1. Sampling

In all countries a multi-stage, stratified, random (probability) sample was drawn. In each stratum, the sample size was proportional to the number of persons in employment according to the latest available Labour Force Survey (LFS) publication on the Eurostat website, or national sources for those countries outside of the Eurostat system (the latest available national Labour Force Survey publications was referred to in each country).

Gallup Europe prepared sampling plans (including specific sample allocation plans), which were subjected to approval by Eurofound.

1.1. Coverage

- To ensure representativeness, everyone in the target population must have a chance (non-zero probability) to be selected. Quality management was aimed at ensuring that this requirement was taken into account to the fullest feasible level during planning and survey implementation.
- EWCS covered the whole territory of the countries included in the survey. The application of this rule was verified when sample allocation plans were investigated and approved by Gallup and Eurofound. Exceptions from this rule were approved by Gallup Europe/Eurofound.¹
- A sampling frame with at least 95% coverage (based on available registers or compiled via random route enumeration) was used in each country.

¹ The sample does not cover the French overseas departments, the Canaries and the Arctic Spitsbergen, and the Åland Islands in Finland.

1.2. Sampling design

- The sample size in the surveyed countries was at least 1000. The sample sizes in EWCS were extended² compared to the Tender specifications originally issued, partly to match the sample size of Eurofound's other flagship survey (European Quality of Life Survey) and partly upon the request of national governments to add extra sample to enable better national analyses (Belgian, French and Slovenian ministries financed the extra interviews in their countries)
- The samples were stratified by geographic regions and urbanisation level. The same regional level NUTS2 stratification was used for sampling in all countries. Some (smaller) countries only contain a few NUTS2 regions or even only one. In these countries the stratification was based on the more detailed NUTS3 regions. Albania, Kosovo and Montenegro are not included in the NUTS system. Here the relevant national regional breakdown was applied (with geographic regions typically used in national survey research practice) and the stratification plans were approved by Eurofound. Stratification according to urbanisation level could only be achieved on the basis of the distribution of the total (15+) population, as data on persons in employment were not available in the necessary format.
- Gallup Europe approved the use of non-clustered designs (e.g. sampled individuals were not geographically 'grouped' in small clusters) in Denmark and Finland, as these provided a higher precision in those countries.
- Sampling plans for each country were approved by Eurofound.
- PSU/interview allocation tables across the strata were prepared by Gallup Europe and verified by Eurofound. The national partners allocated the PSUs by selecting settlements randomly - with a probability proportionate to the relative size of the stratum. Gallup Europe collected documentation of the applied procedure and double-checked the list of PSUs (sampled settlements). The selection of PSUs for each country was submitted to Gallup Europe for approval.

1.3. Selecting the addresses

Register-based selection

- Register based sampling was done only in countries where it could be assured that the register covers at least 95% of the population and does not represent a known systematic bias.
- Quality of registers was assessed on the basis of information on coverage and updating frequency provided by the registers themselves. Gallup Europe and Eurofound approved the registers that were considered as appropriate sampling sources with high frequency of updates. The registers are discussed in detail in the Sampling Report.

² FYROM, Kosovo, Montenegro: +200; Cyprus, Estonia, Luxembourg, Malta, Slovenia: +400; France, Italy, Poland, UK: +500; Germany, Turkey: +1000.

- Registers of individuals (as proxies to households) were used in Denmark, Estonia, Finland, Hungary, Poland, Slovenia, Sweden and Norway. Registers of residential addresses (as proxies to households) were used in Bulgaria, Ireland, United Kingdom, Spain and the Netherlands. Both approaches are considered functionally equivalent to standard random route address enumeration in terms of coverage, and sampling efficiency.

Random Route selection

- In each country where no appropriate register was available for sampling, a collection of addresses was compiled (‘enumeration’) by specifically trained enumerators – via standard random route method. The addresses were collected before the actual fieldwork and the interviewers had no role in selecting the addresses. From a quality control point of view such enumeration enabled checking the sampling before the fieldwork, so that errors and noncompliant routes could still be corrected.
- The random route starting points were selected at random by the national centres and verified, primarily using Google map viewing, to rule out the selection of addresses in non-productive locations such as non-residential areas
- At each starting point, designated persons enumerated dwellings (addresses) according to a standard fixed-interval random route procedure (every third address). The enumerated addresses were subsequently entered into an electronic database.
- Gallup Europe provided a manual for the implementation of the random route procedure to the agencies in all the countries where this method was used. The manual was checked and approved by Eurofound.
- Uniform selection criteria were set for the persons that participated in the enumeration of addresses; the enumeration had to be conducted by qualified individuals who had experience with the random route methodology and they had to go through a specific training based on the manual provided by Gallup Europe.
- Enumerators used standardised enumeration forms for the collection of individual addresses. The list of enumerated addresses contained the exact address information; e.g. name of the street, number/name of house, number of apartment/door and the name of the resident where available.
- The application of the random route procedure was checked in 10% of the PSUs. Geographical Information System (GIS) support (geocoding of sampled addresses to enable review in Google maps, checking direction and sampling interval consistency) was used in the following countries: Austria, Belgium, Czech Republic, France, Germany, Lithuania and Luxemburg. Elsewhere the enumeration was controlled by replicating the random route procedure from the starting point. The verification used the following scoring system: 1 ‘full compliance’ 2 ‘minor mistakes (i.e. one or two missed addresses, did not start at the third address but the one that was given)’ 3 ‘major problem but route carried out randomly (i.e. the enumerator consistently turned left instead of to the right,

but apart from that random rules were followed) 4 ‘unacceptable routes (i.e. if someone completely ignored the random route procedure or if the route could not be verified at all)’. In case of non-compliance the PSUs were replaced and all PSUs enumerated by the specific enumerator were checked for other (systematic) errors. The PSUs that were verified were randomly selected by the national agencies, which also carried out the verification of the random routes and provided detailed reports on compliance with the selection rules.

1.4. Selecting the households and respondents

- A rule was put in place on how to select the household, in those cases where more than one household occupied the same address. Gallup Europe instructed the partners that in such cases the household to be interviewed was to be selected on the basis of the surnames of the head of household. The households for which the name of the head of household came first in the alphabetical order were selected for the study.
- A standard screening interview was conducted to identify the eligible respondent within each household. A person fulfilling the ILO definition of being in employment³ and having the most recent birthday was identified in case there was more than one person in employment in the household. Screener application was verified in back-check interviews. The screening outcome in terms of number of eligible persons in the household was documented on the Contact Sheet (selection probability within the household).
- Key quality indicators of the respondent selection:
 - % of cases when interviewee was not a working person (in % of verified interviews)
 - % of cases when interviewee was not the working person with the closest birthday/birthday (in % of verified interviews)

1.5. Non-contacts and recall design

- Excessive non-contacts (when interviewers cannot make a contact with the sampled households/individuals) may jeopardise the representativeness of the national samples. In carrying out the EWCS various quality measures were in

³ Persons in employment are those aged 15 year and over who during the reference week did any work for pay or profit, or were not working but had jobs from which they were temporarily absent. Family workers are included.

place to minimise noncontact in its national samples. In order to achieve acceptable response rates, a certain number of re-visits was required before interviewers were allowed to abandon an address without achieving a contact. Particularly, at every unit (household or individual) where contact had not been established in the initial visit, up to **three (3) recalls (re-visits)** were made

- Gallup Europe defined the rules of when to return to addresses where the initial contact/interviewing attempt was not successful, to maximize the likelihood of a successful contact. Local agencies adhered to an “optimizing” contact strategy taking into account that the target population was workers. The revisits had to be made at different times of the day and on different days of the week/weekend. In more detail, at least one of the visits had to be carried out on a weekend. In order to increase the likelihood of contacting persons – if the fieldwork schedule allowed – the last visit was requested to be carried out on a weekend and at least two weeks after the third visit.
- In order to avoid early substitutions, interviewers were not allowed, at any stage of the fieldwork, to use more than three times as many addresses as the number of interviews still to be conducted. Ten days after the fieldwork launch an initial version of the ‘three-time rule’ was revised as early checks confirmed that interviewers had difficulty understanding the rule. It was clarified that no further addresses could be contacted until the first batch (which was three times the number of the target interviews) was fully exhausted in a given PSU. Agencies were instructed to only provide a new batch of addresses proportional to the number of the remaining interviews to interviewers, when the initial batch was exhausted, and the target number of interviews was not reached.
- All visits have been recorded on Contact Sheets which were electronically submitted to Gallup Europe, in batches during the fieldwork. Gallup Europe performed thorough double-checks on the basis of contact sheet information, and in case of a noncompliant visiting schedule which resulted in a final non-contact (i.e. no visit on the weekend, visits outside the agreed time windows) additional visits were requested at the same address, irrespective if the required number of interviews in the particular PSU was achieved or not.
- Weekly submission of fieldwork outcomes (i.e. the number of successful interviews, refusals, non-contacts, etc.) improved quality assurance by allowing the monitoring of fieldwork performance and drawing attention to unusual codes (i.e. if a particular outcome has never been recorded or was reached too frequently compared to other countries). In case of anomalies national institutes could re-emphasise the correct usage of the various outcome codes among the field force.
- In almost all of the countries, the first contact with the respondent took place in a **face-to-face interview** situation. Due to barriers to face-to-face contacting in Sweden and large parts of Norway (where register sample units could be attributed with telephone numbers from the directory), the first contact with the respondents’ households and the eligibility screening took place via telephone.
- Leaving notification letters in the mailboxes of addresses where interviewers did

not establish a contact was the standard practice in all countries. In some countries register based sampling allowed that these letters were sent in advance (Denmark, Netherlands, Poland, Slovenia, Sweden, and Norway).

- The planned long fieldwork period (typically two to four months, as provided in the EWCS Technical Report) improved the chance of contacting the sampled households/persons.

1.6. Refusals

- Refusals are an increasingly important concern of the survey practice as they may introduce bias in the estimates when distributed unevenly across groups that differ on characteristics that are of interest to the survey. Thus, reducing refusals is an important element of the quality assurance in survey research.
- Gallup Europe provided training materials, helping interviewers to cope with the most typical respondent concerns (“why me?” and confidentiality problems, etc.). The training materials were pre-approved by Eurofound and translated into every interviewing language.
- Reissuing the contact information of people that had expressed a ‘soft refusal’ to another interviewer was a recommended practice and cases of such facilitation of respondent cooperation are documented in 11 countries (ES, FI, SK, CY, DK, EL, SI, BG, HU, MT and LV).

1.7. Support materials for the interviewers

- The following support materials were provided for the interviewers:
 - Centrally created introductory letter which was translated into all languages and signed by the Director of Eurofound.
 - Hard copies of a country-specific version of the EWCS Flyer created by Eurofound
 - Introduction letters mailed in countries where register based address list allowed it, and used by interviewers in countries where pre-mailing was not available.

2. Questionnaire

Quality assurance in questionnaire development ranged from designing a reliable and valid measurement instrument for the study (involving expert reviews and real life tests) which at the same time conforms with the various policy requirements that the results will have to support. After finalising the survey questionnaire, a uniform layout had to be created and uniform rules of administration had to be implemented to ensure comparability of the instrument.

The section below clarifies the various activities that were implemented to develop a valid and reliable measurement instrument that is internationally comparable. The most likely source of errors in any international study is the potential differences in national-language versions of the source questionnaire. In the 5th EWCS a series of activities was dealing with quality assurance of the translation of the English master questionnaire into the languages of administration.

2.1. Questionnaire development

- In several iterations Gallup Europe reviewed the draft English master questionnaire in collaboration with Eurofound to find appropriate operationalisations of the concepts that were newly added to the current wave, and to ensure that the questionnaire length remained within a reasonable limit.
- A qualitative pre-test was conducted in the United Kingdom and France with 15 respondents per country using a cognitive interviewing technique. This pre-test focused on the new questionnaire items and it explored interviewees' cognitive patterns when answering to the survey questions. A quantitative pre-test with 50 real life interviews in the UK and France was also carried out prior to questionnaire finalisation. This focused on the application of the complete questionnaire to find out any problems or context effects and the length of the interviews. A report summarising the lessons learnt was prepared by Gallup and submitted for review to Eurofound, to support further questionnaire development.
- The final questionnaire was constructed in interaction between Gallup Europe and Eurofound where both Gallup Europe and Eurofound proposed changes to the questionnaire. Eurofound approved the final questionnaire.
- Eurofound provided a Glossary with explanation of the concepts and terms used in the questionnaire. After Gallup Europe provided the results of pilot interviews conducted in the EU27 countries and Norway, Eurofound reviewed and further developed the final questionnaire and adapted the Glossary.
- Due to time constraints piloting of the questionnaire was not carried out prior to fieldwork in Croatia, FYROM and Turkey. In these countries 100 additional interviews were conducted in an independent sample as a first stage of the fieldwork. The interviews were closely inspected for potential errors by Gallup Europe's quality management experts.
- In order to clarify the validity of the final EWCS questionnaire compared to the

Global Working Conditions Survey questionnaire⁴ (as used by the ILO) a pre-test of the two different instruments was carried out in Albania, Kosovo and Montenegro in January 2010. The minimum sample size was 50 for each instrument in each country. The pre-test did not show any significant problems with the applicability of EWCS in these countries. In the second phase of the process, which was carried out *after* the fieldwork, only the EWCS questionnaire was tested. 25 exploratory interviews were conducted in each country in order to better understand the working situation of the respondents and how the survey questions, in their view, related to their concrete work situation.

2.2. Translation

- The EWCS instrument was translated to the main languages (national language and key minority languages) of the countries covered (a complete list of the languages is included in the Technical Report). Translation monitoring is traditionally one of the most sensitive quality management issues in large scale international studies such as the EWCS. The various steps described below were procedural segments of the translation/adaptation process, with embedded quality control features. The goal of the process was twofold; to verify trend question translations and to translate the newly added questions and items.
- Initial checks of the **trend** questions were carried out by local experts proficient in the source language (English) as well as in the target language at the national institutes. Translation issues were identified as minor/major problems, the latter defined as a significant discrepancy of the meaning of the previously existing translation and the source question. Changes proposed to correct major problems were collected by Gallup Europe who reviewed them and submitted them to Eurofound for approval. Minor issues (typically some technical differences or nominal differences of translation where functional equivalence was plausible) were not addressed in order to maintain consistency with previous wordings. Eurofound reviewed the items identified as subject to "major" change (substantial wording change in the local language compared to earlier versions) and either approved or disapproved them. All changes were documented in questionnaire database logs.
- For new or modified survey items a standard translation procedure was implemented in each country with the help of a centrally provided web-based translation management tool (Gallup Europe WebTrans). For the new questions a five-step process was implemented, with the following sequence:

⁴ The Global Working Conditions Survey questionnaire has been designed based on the EWCS. In case the EWCS questionnaire would not have been applicable in the three countries the Global Working Conditions Survey questionnaire could have been used.

- Two independent local translators
- A third person creating a reconciled version
- Independent back-translation
- Gallup Europe quality control check
- Approval
- For the modified trend questions (when a previously asked question was re-worded to some extent for the current administration of the survey) the process was simplified to four stages and the existing translation of the trend question was provided in the national language:
 - One local translator
 - Independent back-translation
 - Gallup Europe quality control check
 - Approval
- For the trend questions that were kept in their original form and wording, based on the result of the above mentioned verification the following processes took place:
 - No major problem identified:
Local translator did not suggest any change, final approval
 - A major problem identified:
One local translator suggested change: back translation, central specialist reviewed comment, asked for clarification if necessary, final approval
- As a separate quality assurance layer checks were carried out by the national correspondents of the European Working Conditions Observatory (EWCO) for the EU27 countries and Norway. Their task was to review the translated questionnaires in their national languages. This task was carried out in the WebTrans system. Eurofound created a written document and also provided an oral briefing about the rules for suggesting changes for both trend and new questions to the EWCO members. Rules were created on how to justify any suggested changes:
 - “wrong concept”
 - “wrong wording”
 - “alternative proposal”
- The EWCO correspondents also carried out a maximum of 5 interviews with respondents from different socio-economic and sectoral backgrounds, to ensure that the questionnaire language was properly understood, and they could formulate recommendations based on these interviews as well.
- Gallup Europe drafted written guidelines and also provided an in-person briefing to EWCO members (as well as a hotline to address issues coming up during their activity) on how to use the WebTrans platform where EWCO members had to document their suggestions and the reasons for suggesting the change to ensure the

full documentation of the process. Members of the EWCO network made suggestions for changing any item in the translation but had no final authority to modify the items.

- In Croatia, FYROM, Turkey, Albania, Kosovo and Montenegro Gallup Europe was responsible of the translation validation. This included the same process as for EU27 countries and Norway.
- The central project team was responsible for making the final decision on the most appropriate translation after the EWCO correspondents and other experts in Croatia, FYROM, Turkey, Albania, Kosovo and Montenegro had completed their task and provided their feedback on possible improvement of the local language instrument. The recommendations of the experts were considered by Eurofound and Gallup Europe, and were approved as deemed appropriate.
- A history log of the full translation process was stored for future reference and quality monitoring purposes, identifying all changes made during the process with their justifications for each country. Gallup Europe finally performed a visual check of the final translated questionnaires.

2.3. Technical set up of the questionnaire

- For the PAPI interviews Gallup Europe carried out the following checks in Final Master source (English) version:
 - verifying the skip patterns, instructions and showcards (content and layout)
 - providing item level explanations for national institutes for improving the coherence of translation and offering background information for interviewers implementing the instrument on the field
- National institutes that applied CAPI were responsible for programming their CAPI scripts, which were verified by Gallup Europe. In addition to the above mentioned checks (done also for PAPI instrument) Gallup Europe checked the imputation/verification rules laid out in the CAPI scripting guideline (to prevent the imputation of illogical responses or values). Furthermore, Gallup Europe performed central quality control for the CAPI scripts.

2.4. Pilot interviews

- In order to check the applicability of each language version prior to the fieldwork, a pilot interviewing phase was embedded in the survey procedure. In each country 25 pilot interviews were carried out in the national language by a recruited sample of persons in employment to test the (semi) final local questionnaire by the local fieldwork agencies
- Local agencies submitted a report on the findings and suggested modifications. Gallup Europe provided a summary of the findings to Eurofound to facilitate the finalisation of the questionnaire.

- Based on the findings of the pilot interviews Gallup Europe and Eurofound implemented last minute changes to the questionnaire. This activity was not foreseen in the survey plan, and the modified items had to go through translation.

3. Field force

An important quality dimension of the EWCS was that only interviewers with substantial relevant experience and project-specific training were allowed to participate in the execution of the survey. Furthermore, the interviewers received a survey manual translated into their language, in which instructions were given on how to select the respondents and carry out the interviews. The manual also included a glossary of the survey questionnaire explaining what kind of information is sought after by asking each of the questions.

3.1. Interviewers

- Only interviewers with a minimum of one year of experience as interviewers and/or having participated in at least three face-to-face survey implementations in the past could participate. Only native speakers of the language(s) of the given country participated in data collection. In countries with multiple languages bilingual interviewers were deployed for the project.
- All interviewers who participated in the EWCS fieldwork were provided with proper identification; badges (preferably with photo) and a phone number where respondents could call to check that the interviewer really belongs to the given research organisation. This was used in each country in order to gauge trust and enhance respondent cooperation.
- Interviewer lists with the above information were submitted by each partner and verified by Gallup Europe.

3.2. Minimising the potential impact of interviewer bias

- In order to ensure that the interviewers would not have significant individual impact on the whole data (interviewer bias) the number of interviews per interviewers was 20 at maximum. Some little deviance from the rule was however allowed for practical reasons (i.e. it was allowed for an interviewer to cover three Primary Sampling Units with 8 target interviews each).
- In some countries or regions (Belgium, France, Malta, Western Finland/Lapland) this rule was relaxed because of the unexpected sample size increases and the stringent criteria for interviewer participation.
- In each case when this threshold was surpassed, the interviewers who conducted more than 24 interviews were subjected to thorough verification (the validity and quality of their submitted interviews was checked).

3.3. Interviewer training

- Gallup Europe and Eurofound held a central one-day training seminar for the local project managers in Brussels two weeks prior to the start of fieldwork. In the training the key parameters of the study, the questionnaire, and the quality assurance tools and procedures were explained.
- Each interviewer participating in the fieldwork received detailed in-person training in each of the countries, including target group definition, fieldwork administration rules, and detailed explanation of the questionnaire with a special emphasis on probing for the open ended questions about occupation and sector of economic activity (Q2, Q3, Q9). Also contacting strategy and the use of supporting materials were explained. The training included a role-play of the interviewing situation.
- Content of the briefings was defined by Gallup Europe and verified by Eurofound. National agencies could (at their own initiative) amend the briefing curriculum with aspects that they considered relevant or helpful to ensure the quality of the data collection process.
- An overview of all briefing events was compiled by Gallup Europe and provided to Eurofound.

3.4. Interviewers' Manual

- Gallup Europe provided uniform written English instructions for the interviewers regarding the data collection procedure and the questionnaire in an Interviewers' Manual.
- The Interviewers' Manual paid special attention to:
 - how to avoid /convert refusals in order to achieve a highest possible response rate
 - how to enter the verbatim responses for open-ended questions in order to enable accurate and efficient coding of occupation and economic activity, which beyond the analytical value of the indicators were also necessary for weighting of the data
- The Manual included an annotated questionnaire explaining the purpose of the questions and the meaning of potentially ambiguous questions/categories/phrases.
- The Manual and the training session for the interviewers covered in detail the ISCO/NACE classification to ensure that sufficient information was collected to allow later coding at four digit level. Gallup Europe developed specific **probing questions** for the occupation and economic activity which were included in the Interviewing Manual in order to capture as much information as needed for later coding.
- Interviewers' Manual was sent to Eurofound for approval

- Local fieldwork agencies translated the Interviewers' Manual and delivered it to the interviewers. No adaptations of the content were allowed, meaning that each interviewer had the same instructions.
- In cases when the Manual could not provide a meaningful answer to an acute problem, interviewers could call in their field office any time for clarifications and advice throughout the designated interviewing period (in the evenings and on weekends as well).

4. Fieldwork

Any survey reaches a critical period in terms of quality management during the fieldwork when a large number of interviewers and respondents are involved in the implementation of the survey with each individual being a potential source of errors, misunderstandings, or even misconduct. While the overall impact of one individual interviewer's mistakes remains in most cases limited, without an overarching quality framework the potential of many individuals producing errors vastly increases. Only a very clear, proactive and transparent interviewing verification scheme that checks key parameters of the work carried out – in addition to a well selected and well managed field force – can ensure that the desired results are achieved.

Particularly, a very important quality measure is to ensure that all protocols that were designed to enhance the likelihood of contacting respondents and ensure their participation in the study are properly implemented. Quality assurance activities had a strong focus on verifying and advising the interviewers' work in this regard. The particular checks implemented to control the quality of the fieldwork implementation are detailed in the below paragraphs.

4.1. Time/schedule

- Interviews were carried out at different times of the day and during different days of the week, but primarily in the evenings and during weekends. The standard interviewing time was between 16:00 and 20:00 during weekdays, and between 10:00 and 19:00 on the weekends. In several countries (BE, EL, ES, FR, IT, MT, PT), upon the request of the national partners, the interviewing window was extended to include the lunchtime (12:00-14:00) to comply with the typical work schedule and availability of persons in employment for a survey interview.
- At every household where contact had not been established in the initial visit, up to three (3) recalls (re-visits) were made at different times of the day and on different days of the week (including weekend).
- The implementation of these rules was thoroughly checked by the national fieldwork management teams as well as by Gallup Europe based on the contact sheet data that were submitted in regular intervals throughout the fieldwork.

4.2. Monitoring fieldwork progress

- Weekly reporting on the progress of the fieldwork (with the number of full interviews achieved) was requested from national partners and was transmitted to Eurofound to provide an ongoing feedback on fieldwork activities.
- Local agencies using CAPI methodology uploaded the completed interviews and contact sheets at regular intervals to Gallup Europe's central data storage.
- Local agencies who used PAPI interviewing were requested to submit the completed questionnaires and associated contact sheets in batches of 200 interviews
- These data were monitored and assessed against conformity with the centrally defined master data structure, and answers to open ended questions were uploaded to the coding application for further processing by national partners. Contact sheets were verified for completeness and compliance with the visiting rules.
- Eurofound staff carried out fieldwork visits and reviewed the fieldwork activities in Belgium, Finland, France, Ireland, Lithuania, the Netherlands, Portugal, Slovenia, the UK and Croatia. These visits included an overview of the project activities with the local management teams as well as interviewer "shadowing" and debriefing to get first-hand experience on the actual administration of the questionnaire and contact attempts with the household. Eurofound provided feedback to Gallup Europe about the outcomes of the visits, which was generally reassuring. When Eurofound reported a mistake, Gallup Europe acted without delay to clarify and eliminate the source of the discrepancy.

4.3. Quality control of the interviewing

- Gallup Europe developed a standard back-checking questionnaire which was used for verifying the interviews (a selection of the survey questions were asked a second time from a proportion of the respondents who were contacted again at a different time). Eurofound approved the standard back-checking questionnaire
- A random selection of at least 10% of the interviews was verified. Local agencies carried out the interview-checking by using the standard back-checking questionnaire throughout a central checking interface (the Gallup WEBcheck). National institutes provided a complete listing (or a randomly selected sample) of the phone numbers collected from the households where interviews had been conducted. Gallup provided a WebCATI interface for all national institutes to check their interviews, along with a results screen, where national project managers were able to track the results and follow-up on any problems that might have uncovered.
- Quality control of those interviews where a phone number was provided on the contact sheet was carried out over the phone. When no phone number was available the checking was done face to face. In Germany, due to data protection regulations, those who did not provide a telephone number could only be re-

contacted by post for interview verification.

- In some countries (Bulgaria, Lithuania, Luxembourg, Poland, Croatia and FYROM) the number of achieved back-checking interviews remained somewhat below the 10% threshold (8-9%) compared to the achieved sample (which exceeded the planned number in most of these cases). Despite iteratively repeated efforts, a segment of the sampled respondents could not be reached in these countries for this follow-up.
- Gallup Europe provided the result of the back-checking as an SPSS data file. The following quality indicators can be constructed:
 - the application of the recent birthday method
 - screeners/eligibility
 - interview completion/validity
 - socio-demographic check
 - survey content consistency check

These indicators were shared with national partners as the fieldwork progressed so that they could clarify discrepancies with the interviewers – or clarify whether the information provided during the verification interview was correct. For example, in the back-checking interviews, 14 people stated that they were not working. In the follow-up contact it was confirmed that they were in some type of (marginal) employment in the reference week of the interview, making them eligible survey respondents.

Amendments in the SPSS data file were made when the back-checking process verified that a value in key demographic variables was recorded incorrectly.

5. Data processing

Data processing is by definition a quality assurance activity. It's aimed at creating a coherent dataset that truly represents the responses provided by the people interviewed on the field, and eliminating all 'noise' stemming from possible interviewer or data-entry errors as well as a lack of attention of the respondents. When there was doubt about the quality of the data, respondents were re-contacted, if possible, to clarify their responses.

5.1. CAPI programming

- Gallup Europe provided uniform logical controls for each CAPI partner to implement in their own systems.
- The CAPI scripts were first checked by doing 5 test interviews using the pre-final questionnaire prior to the pilot interviewing stage. Later on the partners were requested to make further 5 test interviews with the final questionnaire before the fieldwork.

- Another layer in the preparation of the CAPI program for data collection consisted of the central testing of the program by Gallup Europe, verifying that the central logical controls and range checks were properly applied and implemented in the national CAPI scripts. The green light for CAPI data collection was only given after the CAPI application was tested by Gallup Europe (such a check was not possible in Germany, due to software licence problems).
- Gallup also verified contact sheet scripting where this was integrated in the CAPI environment.
- Data consistency and quality were checked based on interim submissions of the data.

5.2. Data entry

- In CAPI the answers were directly entered into a form that contained logical and range checks (i.e. the script did not allow the entry of a value over 168 for the number of hours spent weekly on a certain activity, or a value of 7 on a five-point scale, and would automatically skip questions which were not applicable to the respondent, etc.). Gallup Europe developed a CAPI scripting protocol with all the requested checks and verifications to ensure coherent data.
- If PAPI was used Gallup provided a data entry template to the local agencies.
- SPSS templates for the survey and contact sheet data files were sent to Eurofound for approval prior to distributing them to the national partners.

5.3 Coding

- In the questionnaires, categories of educational attainment were used that were nationally relevant, as suggested by national agencies and approved by Eurofound.
- The quality of open-ended responses to Q2, Q3 and Q9 was checked at an early stage of fieldwork using the first 50-100 interviews. These responses were translated and submitted to Gallup Europe for verification. On the basis of these verifications Gallup Europe consulted the national partners to harmonise coding protocols and coder practices.
- National coding teams were set up with coders trained specifically for EWCS. These teams coded all the responses in close cooperation with each other to enhance inter-coder reliability and consistency.
- In countries where coders did not have prior experience with ISCO/NACE/ISCED coding Gallup provided special training for the coders.
- For the training the answers to open-ended questions of the first 50-100 cases were used, and codes were provided by a central Gallup Europe coding assistance team so that local coding decisions could be verified.

- Cases that could not initially be coded were reassigned for quality control where further details were collected about the job or economic sector from the respondent, as necessary.
- To improve the coding process and help the local coding teams, Gallup developed several documents;
 - ISCO88 coding instruction table
 - ISCO probing glossary
 - NACE Codes EN - Descriptions and Definitions
 - Additional Guidelines to Occupation Coding in EWCS 2010

5.4. ISCO/NACE coding support

- Accurate coding of verbatim responses to international categories of occupation and economic activity sector of the employer organisation was essential not just to guarantee integrity of the verbatim replies and the assigned codes, but also to ensure quality of the weighting that used both variables for post-stratification. Open-ended answers were entered – typed in – in the local language (along with the respondent identification number) on spreadsheets ready to be uploaded in a special coding application.
- Gallup developed a special software application to assist the ISCO/NACE coding activity.
- The interface assisted coders to assign a code to each reply according the ISCO88/08 (4-digit level) and NACE 1.1/2.0 (2-digit level) schemes.
- The application had the following features:
 - text searching in open ended answers,
 - sorting by any of the key variables: ID, Q2, Q3 (both describing respondent's job/occupation), Q9 (economic sector of employer), Q11 (number of co-workers) and EF1(level of completed education),
 - additional information was available in popup windows: Q5 (age when full time education was completed), Q6 (employment status), Q10 (private/public sector), Q17 (number of people working under the supervision of the respondent),
 - multiple and later modifiable selection of items to be coded in one go,
 - two levels of coding: (1) choosing the appropriate 2-digit category first, (2) choosing the 4-digit category from a filtered list based on two-digit code (ISCO),
 - possibility of adding a comment to each encoded item, and
 - possibility to review and recode already encoded items.
- For each country, the first 50-100 items (test items) of preliminary data were translated into English, and these items were coded independently by all members of the local coding teams (in original language) and by one Gallup Europe coder

(the English translation).

- These test codings were compared with one another, and besides calculating percentage of agreement, in the case of ISCO coding detailed comments about the rationale behind Gallup Europe’s coding were provided to facilitate general agreement on coding principles. In the case of NACE coding detailed comments were deemed unnecessary due to generally much higher agreement levels than in the case of ISCO.
- Test-coding comparisons have been documented in the form of Excel files (one for ISCO and one for NACE for each country). These files contain the measures for the percentage of agreement up to 2-3-4 digits, as well as those items that were coded in the test, and any of the variables that were relevant for coding these ‘test-items’.
- The differences between codings were discussed (in the form of exchanged comments recorded in the coding comparison Excel files) by local and Gallup Europe’s coders until agreement was reached on final codes of test items and on coding principles.
- Verbatim responses in the local language and their codes are included in the final dataset in order to offer the possibility for future clarifications/checks.
- All verbatim replies were submitted with full English translations from Albania, Kosovo and Montenegro to facilitate central quality control.

5.5. Data editing and cleaning

- Upon the reception of local data files Gallup Europe’s system checked the uniqueness of the interview identifier/respondent ID and did not allow any identifier that was not unique in the national data files.
- Gallup Europe limited the editing of the data with setting rules that precisely describe the possible range of cleaning and editing, and clearly prohibit other further editing of the data. Gallup Europe aimed to eliminate errors stemming from data processing and ensured logical consistency across respondents’ replies (i.e. automatically recoded variables that were mistakenly not skipped on the basis of a previous reply to missing).
- Gallup Europe submitted its data editing and cleaning plan and report to Eurofound to document the editing process.
- Checks were carried out to ensure variable level verification (illegal values, outlier verification, etc.) and person-level data coherence (to verify and possibly to eliminate cross-variable contradictions).
- The variables and rules of validation were decided in collaboration with Eurofound and SPSS syntax was developed by Gallup Europe to list cases with inconsistent or potentially dubious values.
- Gallup Europe provided a Data Cleaning and Editing report to document the details of the edits that were centrally initiated.

5.6. Weighting

- Gallup Europe was responsible for weighting the datasets. Design weights (on the basis of the number of eligible persons in each household) as well as post-stratification weights were computed for each case in the national datasets. Post-stratification was based on geographic regions (NUTS2), age, sex, economic sector (based on NACE main codes) and occupation (ISCO main codes).
- The targets for post-stratification weights were derived from Eurostat LFS database (reference: 2009 Q4) for most countries. For the Albania, Kosovo and Montenegro most recent national LFS data was used to determine the weighting targets.
- Comparisons between samples and universes were carried out for each country and a brief sample evaluation report - summarising cases with significant discrepancies between official universe descriptions - and unweighted survey data distributions were provided.

5.7. Data file

- Gallup Europe defined a metadata structure (information that describes the properties of the dataset to be submitted) for each national agency to provide the national results in the given format. Gallup Europe verified the accurate application of the master data structure.
- The names and labels used were created to keep consistency with previous EWCS datasets.
- Interviewer ID was included in the final dataset.
- EWCS 2010 results were integrated into the total EWCS database, supplied by Eurofound, containing the micro-data from all 4 previous rounds of the survey.
- A list of the variable names and codes used in the survey were provided in a data file readable by other statistical programmes.
- Local agencies made sure that their data files are properly anonymised before providing them to Gallup Europe.
- Local agencies did the data entering and included the information in fieldwork contact sheets into a central data file as well. The definitions of each type of data (contacts, response rate, etc) were completely identical in all countries/territories, containing corresponding respondent ID's.