HELLENIC STATISTICAL AUTHORITY - ELSTAT

EUSILC 2015

Quality Report (ESQRS)

Cross-sectional (2015) and Longitudinal (2012-2015) Component

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Contents

1 Contact

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2 Introduction

The production of Quality Report for EUSILC is one of the most important stages on the implementation of the survey. Through the Quality Reports the statistical services provide detailed information on the statistical procedure, the sampling design, the sampling and non sampling errors and possible divergences from the definitions described in the regulations, in order to access the quality of data at national level and allow for comparisons between the countries.
The present Quality Report follows the standard of the European Statistical System for Quality Reports (ESQRS) and consists of 13 chapters. It differs from the standard presented in Commission Regulation 28/2004 upon implementation of regulation 1177/2003 regarding the conduct of the survey. So, ELSTAT filled in the ERQRS chapters covered by Reg. 28/2004 and as a result chapters 3, 4, 6 and 7 remained blank.

3 Quality Management

Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

4 Relevance	Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.
4.1 Relavance – User needs	Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

4.2 Relevance – User satisfaction

Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

4.3 Completeness

Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

4.3.1 Data completeness – rate (%)
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

5 Accuracy and Reliability

The concept of accuracy refers to the precision of estimates computed from a sample rather than from the entire population. Accuracy depends on sample size, sampling design effect and structure of the population under study. In addition to that, sampling errors and non sampling errors need to be taken into account. Sampling errors refer to the variability that occurs at random because of the use of a sample rather than a census and non-sampling errors are errors that occur in all phases of the data collection and production process.

5.1 Accuracy - Overall
In terms of precision requirements, the EU-SILC framework regulation as well the Commission Regulation on sampling and tracing rules refer respectively, to the effective sample size to be achieved and to representativeness of the sample. The effective sample size combines sample size and sampling design effect which depends on sampling design, population structure and non-response rate.

5.2 Sampling Errors

EU-SILC is a complex survey involving different sampling design in different countries. In order to harmonize and make sampling errors comparable among countries, Eurostat (with the substantial methodological support of Net-SILC2) has chosen to apply the "linearization" technique coupled with the "ultimate cluster" approach for variance estimation. Linearization is a technique based on the use of linear approximation to reduce non-linear statistics to a linear form, justified by asymptotic properties of the estimator. This technique can encompass a wide variety of indicators, including EU-SILC indicators. The "ultimate cluster" approach is a simplification consisting in calculating the variance taking into account only variation among Primary Sampling Unit (PSU) totals. This method requires first stage sampling fractions to be small which the case is nearly always. This method allows a great flexibility and simplifies the calculations of variances. It can also be generalized to calculate variance of the differences of one year to another.
The main hypothesis on which the calculations are based is that the "at risk of poverty" threshold is fixed. According to the characteristics and availability of data for different countries we have used different variables to specify strata and cluster information. In particular, countries have been split into four groups:
1)BE, BG, CZ, IE, EL, ES, FR, IT, LV, HU, NL, PL, PT, RO, SI, UK and HR whose sampling design could be assimilated to a two stage stratified type we used DB050 (primary strata) for strata specification and DB060 (Primary Sampling Unit) for cluster specification;
2) DE, EE, CY, LT, LU, AT, SK, FI, CH whose sampling design could be assimilated to a one stage stratified type we used DB050 for strata specification and DB030 (household ID) for cluster specification;
3) DK, MT, SE, IS, NO, whose sampling design could be assimilated to a simple random sampling, we used DB030 for cluster specification and no strata;

5.2.1 Sampling Errors - Indicators

	At risk of poverty or social exclusion					At risk of poverty (60%)					Severe material deprivation					Very low work intensity				
	%	Var (str)	CV	SE	Half CI	%	Var (str)	CV	SE	Half CI	%	Var (str)	CV	SE	Half CI	%	Var (str)	CV	SE	Half CI
Total	35.7	0.39	0.02	0.62	1.22	21.4	0.43	0.03	0.65	1.28	22.2	0.40	0.03	0.64	1.25	18.7	0.36	0.03	0.60	1.18
Male	34.8	0.45	0.02	0.67	1.31	21.5	0.45	0.03	0.67	1.32	22.1	0.44	0.03	0.67	1.30	17.0	0.39	0.04	0.63	1.23
Female	36.6	0.45	0.02	0.67	1.32	21.2	0.52	0.03	0.72	1.41	22.2	0.44	0.03	0.67	1.31	20.5	0.46	0.03	0.68	1.33
0-17	37.8	1.34	0.03	1.16	2.27	26.6	1.20	0.04	1.10	2.15	25.7	1.26	0.04	1.12	2.20	-	-	-	-	-
18-64	39.4	0.51	0.02	0.71	1.40	22.5	0.62	0.03	0.79	1.54	23.5	0.50	0.03	0.71	1.39	-	-	-	-	-
65+	22.8	0.75	0.04	0.87	1.70	13.7	0.54	0.05	0.74	1.45	15.2	0.58	0.05	0.76	1.49	-	-	-	-	-

where
«-» = The indicator is not calculated for the specific age groups
CI = 95% Confidence Interval
SE = Standard Error
CV = Coefficient of Variation

5.3 Non-Sampling Errors
Non-sampling errors are basically of 4 types:

- Coverage errors: errors due to divergences existing between the target population and the sampling frame.
- Measurement errors: errors that occur at the time of data collection. There are a number of sources for these errors such as the survey instrument, the information system, the interviewer and the mode of collection
- Processing errors: errors in post-data-collection processes such as data entry, keying, editing and weighting
- Non-response errors: errors due to an unsuccessful attempt to obtain the desired information from an eligible unit. Two main types of non-response errors are considered:

– Unit non-response: refers to absence of information of the whole units (households and/or persons) selected into the sample
– Item non-response: refers to the situation where a sample unit has been successfully enumerated, but not all required information has been obtained.

5.3.1 Coverage Errors

Coverage errors include over-coverage, under-coverage and misclassification:

- Over-coverage: relates either to wrongly classified units that are in fact out of scope, or to units that do not exist in practice
- Under-coverage: refers to units not included in the sampling frame
- Misclassification: refers to incorrect classification of units that belong to the target population

Sampling Frame and Coverage Errors

EU-SILC survey is based on a two-stage stratified sampling of households from a frame of sampling which has been created on the basis of the results of the 2011 population census and covers completely the reference population.

The frame of PSUs is updated every ten (10) years through the general population census. Concerning the frame of households, within each selected PSU this is updated before the selection of the sampling households used for data collection. So, any coverage problem that may arise is more possible to relate with the frame of PSUs.

Coverage problems encountered were:

- Some houses were used as secondary residence, so they were out of scope of the survey.
- Some houses were impossible to be located due to incomplete information regarding their addresses.
- Housing units built after March 2015, were not included in our sampling frame.

However, the number of the above cases was very small (41) and anyway such cases are corrected with the use of the calibration procedure applied.

5.3.1.1 Over-coverage rate – (%)

	Main Problems	Size of error
Cross sectional data	Over-coverage Under-coverage Miss-classification	0.24% (41 addresses)

5.3.2 Measurement Errors

Cross sectional data

Source of measurement errors	Building process of questionnaire	Interview training	Quality Control
Measurement errors can occur from the questionnaire (design, content and wording), the interviewers and their training, the respondents, the routing, and the skills testing before starting the fieldwork As the 2015 EU-SILC round was the 13th in the series, quality has considerably improved due to interviewers' feedback, continuous data analysis and research.	For building up the questionnaires we adopted the initially proposed questionnaires of Eurostat as the basis (documents EU-SILC055 and EU-SILC065). The structure of the questionnaires is similar to these ones. The majority of the questions are almost literally copied and translated. In order to finalize the questionnaires, we took into account any observations made on the questionnaires of the previous years (pilot survey. EU-SILC 2003 – 2014) together with the experience from the ECHP projects. Mainly the parts on self-employment income and taxes have been differently formulated. The questionnaires for the 2015 survey were the same as those of 2004-2014 survey except for some small changes in the wording. The major changes concern on additional questions used in the net/gross/net conversion model (see http://www.statistics.gr/en/statistics/-/publication/SFA10/2015/ under questionnaire or on CIRCA). We did not include additional questions to cover other areas at the national level.	a) Interviewers All the external collaborators (interviewers) of Attiki Prefecture together with persons in charge of the survey in the Regional Offices of ELSTAT attended a one day training course before starting the fieldwork. The training was focused both on the basic concepts of the survey and the questionnaire completion and data entry in the electronic formats. The persons in charge of the survey in Regional Offices, in their turn, had to train the external collaborators in their areas. Training followed the structure of the manual that was distributed to the participants. It is a general guidelines' manual containing information about the objectives of the survey, the organization of it, legal and administrative aspects, fieldwork aspects (how to contact the household, how to introduce oneself, who answers which questions, time delays) and the content and correct completion of the questionnaires with analytic information on every question and further details where needed. Unfortunately, it seems that still some interviewers don't use the exact wording of the questions, while others may skip questions, especially subjective ones (e.g. deprivation questions). Also, in some cases, when the respondents didn't provide the figures the interviewers completed/imputed the figures themselves. (b) The respondents The respondents hesitate in providing income figures and in general deny consulting their tax return, in order to provide exact /correct amounts. Income from interests, dividends in unincorporated businesses is in general not provided from the households, resulting thus in a significant underestimation of it despite to increase in EU SILC 2015. There is a sense that still self-employment income is under-estimated.	As mentioned, apart from the interviewers, also the persons in charge of the survey in the Regional Offices attended the training. These are actually supervisors. Each one of them was responsible for a group of interviewers. During the fieldwork period the supervisor had meetings with the interviewers at least once a week. During these meetings, apart from discussing problems or questions raised during the week, the supervisors also collected all the completed questionnaires. Their main duty during the data collection period was to examine the interviewers' work. Furthermore the supervisors had to double check some of the answers with respondents either by telephone or by personally visiting the household in question, especially in the case of unusual answers or missing data.

Source of measurement errors	Building process of questionnaire	Interview training	Quality Control
		ELSTAT made several plausibility checks. Especially, for income data, lower and upper bounds of the range in which an amount of income was accepted were applied. These checks were carried out during the survey conduction, as the guidelines of the survey included such bounds for specific income data and afterwards centrally by personnel of ELSTAT. Whenever necessary, households were called back. Changes occurring in persons' activity status longitudinally resulted in a number of inconsistencies. For example, persons having been working in year N-1 but retired in year N, persons being students in year N-1 and employed in year N, income in year N-1 from persons who died in year N, etc. may result in these inconsistencies representing though reality. In any case the pre-mentioned examples resulted both in under and over reporting of income.	

5.3.3 Non response Errors

Non-response errors are errors due to an unsuccessful attempt to obtain the desired information from an eligible unit. Two main types of non-response errors are considered:

Unit non response: which refers to the absence of all information of a whole unit (households and/or persons) selected for survey.

Item non-response: which refers to the absence part of information of the unit (households and/or persons) selected for survey.

According the Commission Regulation 28/2004:

- *Household non-response rates (NRh)*

NRh = (1-(Ra * Rh)) * 100

Where

$$Ra = \frac{\text{Number of addresses successfully contacted}}{\text{Number of valid addresses selected}}$$

$$= \frac{\sum[DB120 = 11]}{\sum[DB120 = \text{all}] - \sum[DB120 = 23]} = \frac{9{,}947}{9{,}959} = 0.998795 = 0.999$$

$$Rh = \frac{\text{Number of household interviews completed and accepted for the database}}{\text{Number of eligible households at contacted addresses}} =$$

$$= \frac{\sum[DB135 = 1]}{\sum[DB130 = all]} = \frac{14{,}096}{17{,}233} = 0.817966 = 0.818$$

NRh=((1-0.999)*0.818)*100= 18.28%

So, the household non-response rate is 18.28%

- *Individual non-response rates (NRp)*

NRp = (1-(Rp))*100

where

$$Rp = \frac{\text{Number of personal interview completed}}{\text{Number of eligible individuals}} = \frac{29{,}405}{29{,}646} = 0.992$$

NRp=(1-0.992)*100=0.80%

- *Overall individual non-response rates (*NRp)*

*NRp=(1-(Ra*Rh*Rp))*100=(1-(0.999*0.818*0.992))*100= 18.94%

So, the overall individual non-response rate is 18.94%

5.3.3.1 Unit non response rate (%)

Unit non response rate per rotation panel

All households	Rotation 1	Rotation 2	Rotation 3	Rotation 4
Ra	1.00	1.00	1.00	1.00
Rh	0.90	0.90	0.91	0.76
NRh	9.90	10.00	9.40	24.65
Rp	0.99	0.98	0.99	1.00
NRp	1.20	1.70	1.40	0.20
NRp2	10.98	11.53	10.67	24.80
Original units	Ra / Rh / NRh / Rp / NRp / NRp2 no substitutions			

where:

Ra: address contact rate

Rh: proportion of complete household interviews accepted for data base

NRh: household non-response rate

Rp: proportion of complete personal interviews within households accepted for data base

NRp: individual non-response rate

NRp2: overall individual non-response rate

Non response rate on total sample, on new sub-sample, on sub-sample surveyed for fourth year

Address contact rate (Ra)	A*	0.99
	B*	0.99
	C*	0.98
Proportion of complete household interviews accepted for data base (Rh)	A*	0.82
	B*	0.76
	C*	0.66
Proportion of complete personal interviews within households accepted for data base (Rp)	A*	0.99
	B*	1.00
	C*	0.99
Household non-response rate (NRh)	A*	18.28
	B*	24.55
	C*	35.74
Individual non-response rate (NRp)	A*	0.80
	B*	0.25
	C*	0.78
Overall individual non-response rate (NRp2)	A*	18.94
	B*	24.74
	C*	36.24

where:
A* = Total sample
B* = New sub-sample
C* = sub-sample surveyed for 4th year

Households' response rate per sub-sample – Longitudinal component

Households' response rate	Wave 2-2013	Wave 3-2014	Wave 4-2015
Wave response rate	79.05	81.97	90.26
L follow-up rate	64.54	78.38	78.75
Follow-up ratio	2.48	1.49	1.25
Achieved sample size ratio	3.01	1.54	0.89

Individuals' response rate per sub-sample – Longitudinal component

Individuals' response rate	Wave 2-2013	Wave 3-2014	Wave 4-2015
Wave response rate	84.07	84.44	83.85
L follow-up rate	-	-	-
Achieved sample size ratio	3.00	1.56	0.90
Response rate for non-sample persons	0.86	0.83	0.91

5.3.3.2 Item non response rate (%)
The computation of item non-response is essential to fulfill the precision requirements concerning publication as stated in the Commission Regulation No 1982/2003. Item non-response rate is provided for the main income variables both at household and personal level.

5.3.3.2.1 Item non response rate per indicator
In the following table, the first row "% of households (/individuals) having received an amount" refers to cases where there was total information for the variable and there was no need for imputation. Data for all income components are collected at net values, which are after taxes and insurance contributions, and are then converted to gross values.

	Total household gross income (HY010)	**Total disposable household income (HY020)**	**Total disposable household income before social transfers other than old-age and survivors benefits (HY022)**	**Total disposable household income before all social transfers (HY023)**
% of households having received an amount	99.5	99.7	99.3	95.8
% of households with missing values (before imputation)	0.0	0.0	0.0	0.0
% of households with partial information (before imputation)	0.0	0.0	0.0	0.0

	Income from rental of property or land (HY040)	Family/ Children related allowances (HY050)	Social exclusion payments not elsewhere classified (HY060)	Housing allowances (HY070)	Regular inter-hh cash transfers received (HY080)	Interest, dividends, profit from capital investments in incorporated businesses (HY090)
% of households having received an amount	12.2	10.2	8.1	0.1	8.7	6.9
% of households with missing values (before imputation)	0.0	0.0	0.0	0.0	0.0	0.0
% of households with partial information (before imputation)	0.0	0.0	0.0	0.0	0.0	0.0

	Cash or near-cash employee income (PY010)	Income from private use of company car (PY021)	Cash profits or losses from self-employment (PY050)	Unemploy-ment benefits (PY090)	Old-age benefits (PY100)	Survivors benefits (PY110)	Sickness benefits (PY120)	Disability benefits (PY130)	Education related allowances (PY140)
% of individuals having received an amount	24.9	0.4	12.6	2.1	28.6	4.7	0.1	1.6	0.1
% of individuals with missing values (before imputation)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% of individuals with partial information (before imputation)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

5.3.4 Processing Errors

Data entry and coding	Editing controls
PAPI and CAWI methods have been used to interview the persons. **(1) Data entry controls** As pre-mentioned, several plausibility checks have been made, using the validation rules of doc.65. Besides Eurostat's basic checks, some additional checks were applied through data entry programs. In general, data entry programs and post-data entry programs checks concern the following: • Coverage • Checks on the number of questionnaires expected to be collected • Number of expected household questionnaires per area unit. • Number of expected personal questionnaires per interviewed household. • Number of split-off households. • Number of tracing sheets and number of moved members. • Deletion of duplicates • Person identification check (household member check / person identification check on household register • Monitoring of flows, valid values and out of range values • Intra-year inconsistencies check • Intra-questionnaire inconsistencies check • Controlling of the amount of income components and especially of social transfers *Personal Register* The specific childcare programs are cross-checked with the age of the child. For example, for a three-year-old child the field "number of hours spent per week in a program of obligatory educational level" cannot be completed. Household Questionnaire • On *tenure status*, if the answer is "owned dwelling without financial obligations" or "provided rent-free" the answer in question on arrears on mortgage or rent payments should be recorded as "not applicable". • When in all five items regarding the *Capacity of the household to afford paying for one week annual holiday away from home, have a meal with meat, chicken, fish every second year, etc.* the answer is positive, then in question on "ability to make ends meet" the answer "with great difficulty" is not accepted. *Personal Questionnaire* • The age is cross-checked with the educational level attended. • Cross-check between the educational level currently attended and the level of education attained (a person cannot attend a level of education lower than the one he/she has completed). • Cross-check between the age at which the person completed a specific educational level and the specific educational level attained. The age should not be less than the usual age at which the level is attained. • When a person is suffering from a chronic illness or condition the answer "very good" to the question on health status is not accepted • In the question on basic activity status all the answers are cross-checked with the answer provided in the personal register. • A more complicated cross-check is applied as regards the year of birth, the age first job was undertaken and years spent as employee or self-employed. • In activity history the answer "have never worked" is not accepted when the answer in current activity status is 'working (full or part time)' or when the answers in the question 'Have you ever worked?' is "yes". • When the respondent is an employee, questions on income from paid employment should be answered. • When the respondent is self-employed, questions on income from self-employment should be answered. • As regards social security benefits, and specifically the social solidarity allowance for pensioners, upper and lower boundaries are inserted for the registration of the amount. • The s/n of the member who submitted tax returns with the respondent is cross-checked with the information provided in the register. For all the above checks the cursor couldn't continue to the next answer and a special notice appeared on the screen. Longitudinal checks • Checks and comparisons of the *demographic data* recorded in the Personal Register with the data provided in the previous year. • Checks and comparisons of *citizenship and country of birth data* with the data provided in the previous year. **(2) Codification** The codification regarding occupation (ISCO), economic activity of the local unit (NACE), as well as nationality, is undertaken by experienced personnel, following the international classifications (ISCO-08, NACE rev. 2) as well as the guidelines provided in Doc 65. **(3) Other controls and other problems** Several plausibility checks have been made; mostly similar to the checks SAS program applies. During data processing of raw data ACCESS-2000, ORACLE (golden 3.2) and win-SPSS 23 have been used.	The finalized data files prepared by expert staff were then processed using SAS programs and applying various logical and consistency checks. Before sending the final D-, R-, H- and P- files, these were further checked using EUROSTAT's SAS programs.

5.3.4.1 Imputation - rate
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

5.3.4.2 Rate of units surveyed in more than one year
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

5.3.5 Model assumption error
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

5.3.6 Data Revisions
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

5.3.6.1 Data revision - policy
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

5.3.6.2 Data revision - practice
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

5.3.6.3 Data revision - average size
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

5.3.7 Seasonal adjustment
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

6 Timeliness and Punctuality
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

6.1 Timeliness
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

6.1.1 Time lag - first result
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

6.1.2 Time lag - final result
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

6.2 Punctuality
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

6.2.1 Punctuality - delivery and publication
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

7 Accessibility and Clarity
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

7.1 Dissemination format – Press Release
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

7.2 Dissemination format – Publication
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

7.3 Dissemination format - online database
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

7.3.1 Data Tables
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

7.4 Dissemination format - microdata access
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

7.5 Documentation on methodology
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

7.5.1 Metadata completeness - rate
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

7.5.2 Metadata - consultations
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

7.6 Quality management - documentation
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

7.7 Dissemination - other
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

8 Comparability
According to the Regulation (EC) No 1177/2003 of the European Parliament and of the Council concerning EU-SILC: "Comparability of data between Member States shall be a fundamental objective and shall be pursued through the development of methodological studies from the outset of EU-SILC data collection, carried out in close collaboration between the Member States and Eurostat". Although the best way for keeping the comparability of data is to apply the same methods and definitions of variables, small departures of the definitions given by Eurostat are allowed in EU-SILC. In this way, the mentioned Regulation in its article 16th says: "Small departures from common definitions, such as those relating to private household definition and income reference period, shall be allowed, provided they affect comparability only marginally. The impact of comparability shall be reported in the quality reports." The definitions used in SILC in Greece are fully comparable with Eurostat definitions

The coherence of two or more statistical outputs refers to the degree to which the statistical processes, by which they were generated, used the same concepts and harmonized methods. A comparison with external sources for all income target variables and the number of persons who receive income from each 'income component' will be provided, where the Member States concerned consider such external data to be sufficiently reliable.

8.1 Comparability - geographical
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

8.1.1 Asymmetry for mirror flow statistics - coefficient
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

8.1.2 Reference Population

Reference Population	Private household definition	Household membership
The reference population is all citizens officially living at Greek territory (population de facto). The source of our sample is the Census Population. This Census includes all private households and their current members residing in the territory independently of any socio-economic characteristics they may have. Persons living in collective households and in institutions are excluded from the target population as well as households with diplomatic missioners as members.	The definition of household that Eurostat recommends is used. Household is defined as a person living alone or a group of persons living together in the same dwelling and sharing expenditures including the joint provision of the essentials of living.	All household members aged 16 years and over at the time of the interview are selected for a personal interview. Subject to the further and specific conditions shown below, if the following persons share household expenses, must be regarded as household members: 1. Persons usually resident, related to other members 2. Persons usually resident, not related to other members 3. Resident boarders, lodgers, tenants 4. Visitors 5. Line-in domestic servants, au-pairs 6. Persons usually resident, but temporarily absent from the dwelling (for reasons of holiday travel, work, education or similar) 7. Children of the household being educated away from home 8. Persons absent for long periods, but having household ties: persons working away from home 9. Persons temporarily absent but having household ties: persons in hospital, homes or other institutions Further conditions for inclusion as household members are as follows: (a) Categories 3,4 and 5: Such persons must currently have no private address elsewhere; or their actual or intended duration of stay must be six months or more. (b) Category 6: Such persons must currently have no private address elsewhere and their actual or intended duration of absence from the household must be less than six months. (c) Category 7 and 8: Irrespective of the actual or intended duration of absence, such persons must currently have no private address elsewhere, must be the partner or child of a household member and must continue to retain close ties with the household and consider this address to be their main residence. (d) Category 9: Such persons must have clear financial ties to the household and must be actually or prospectively absent from the household for less than six months.

8.1.3 Reference period

Period for taxes on income and social insurance contributions	Income reference period	Reference period for taxes on wealth	Lag between the income reference period and current variables
The income reference period is a fixed twelve-month period, namely the previous calendar year. Tax refunds received during 2014 refer to income received in previous years.	For SILC 2015; the income reference period is the year 2014.	The reference period for taxes on wealth was 2014.	The income reference period is the previous calendar year (year 2014), while current variables refer to the fieldwork period (May - November 2015). Therefore the lag is may vary from 5 to 11 months.

8.1.4 Statistical concepts and definitions

Total household gross income (HY010)	Total disposable household income (HY020)	Total disposable household income before social transfers other than old-age and survivors benefits (HY022)	Total disposable household income before all social transfers (HY023)
Full harmonization	Full harmonization	Full harmonization	Full harmonization

Imputed rent (HY030)	Income from rental of property or land (HY040)	Family/ Children related allowances (HY050)	Social exclusion payments not elsewhere classified (HY060)	Housing allowances (HY070)	Regular inter-hh cash transfers received (HY080)	Interest, dividends, profit from capital investments in incorpo-rated businesses (HY090)	Interest repayments on mortgage (HY100)	Income received by people aged under 16 (HY110)	Regular taxes on wealth (HY120)	Regular inter household cash transfer paid (HY130)
Full harmoniza-tion	Full harmonizat ion	Full harmoniz-ation	Full harmoniza-tion	Full harmoniza-tion	Full harmoniza-tion	Full harmoniza-tion	Full harmoniza-tion	Full harmoniza-tion	Full harmoniza-tion	Full harmoniza-tion

Cash or near-cash employee income (PY010)	Other non-cash employee income (PY020)	Income from private use of company car (PY021)	Employers social insurance contribu-tions (PY030)	Cash profits or losses from self employ-ment (PY050)	Value of goods produced for own consumption (PY070)	Unemployment benefits (PY090)	Old-age benefits (PY100)	Survivors benefits (PY110)	Sickness benefits (PY120)	Disability benefits (PY130)	Education related allowances (PY140)	Gross monthly earnings from employees (PY200)
Full harmoni-zation	Full harmoni-zation	Full harmoni-zation	Full harmoni-zation	Full harmoni-zation	Full harmoni-zation	Full harmoni-zation	Full harmoni-zation	Full harmoni-zation	Full harmoni-zation	Full harmoni-zation	Full harmoni-zation	Gross monthly earnings from employees were collected despite the fact that the gender pay gap is calculated with data from sources other than EU-SILC.

Source or procedure used for income data collection	Income components	Method used for target variables collection in the required form
Data for income components were collected mainly with the use of PAPI while also CAWI was introduced. Each one of the variables was collected separately.	Interviewers and interviewees have the choice to provide income data gross or net (of taxes and if possible of social transfers) at income component level. Net income values are recorded after taxes and insurance contributions.	The basic goal of the survey regarding the income variables is the register of gross income with certain details at individual level and income component, while for the disposable income the register as sum of three variables at household level. In some countries, like Greece, there may exist practical difficulties in the collection of income data in that exact form despite of the source of data (survey or administrative sources). Because of the fact that net income data are collected, ELSTAT uses a model that coverts net income amounts to gross values. This model has been produced by University of Sienna with the collaboration of ELSTAT.

8.2 Comparability- over time

In the following tables household and personal income components are presented for two consecutive years of EU-SILC, 2014 and 2015.

Comparison of income target variables – EU SILC 2015 and 2014

Net Income Component	%
Total disposable hh income (HY020)	-1.1
Total disposable hh income before social transfers other than old-age and survivors benefits (HY022)	-0.9
Total disposable hh income before all social transfers (HY023)	-1.8
Cash or near-cash employee income (PY010N)	-1.4
Cash profits or losses from self-employment (PY050N)	-3.8

Household income per net income component

Income Component	2014 Mean	2015 Mean	2014 Sum (in mio €)	2015 Sum (in mio €)
Total disposable hh income (HY020)	15,106.08	14,940.51	64,453.80	62,688.00
Total disposable hh income before social transfers other than old-age and survivors benefits (HY022)	14,500.07	14,376.50	61,868.11	60,321.50
Total disposable hh income before all social transfers (HY023)	8,992.60	8,831.86	38,369.12	37,057.06
Income from rental of property or land (HY040)	580.56	520.22	2.477,08	2,182.76
Family/ Children related allowances (HY050)	148.32	144.28	632.84	605.37
Social exclusion payments not elsewhere classified (HY060)	85.47	97.78	364.69	410.27
Housing allowances (HY070)	2.04	1.89	8.70	7.92
Regular inter-hh cash transfers received (HY080)	348.87	338.31	1,488.56	1,419.49
Interest, dividends, profit from capital investments in incorporated businesses (HY090)	78.40	74.95	334.51	314.49
Income received by people aged under 16 (HY110)	0.51	0.41	2.16	1.73
Regular taxes on wealth (HY120)	535.19	595.87	2,283.51	2,500.16
Regular inter household cash transfer paid (HY130)	238.84	245.52	1,019.07	1,030.15

Individual income per net income component

Income Component	2014 Mean	2015 Mean	2014 Sum (in mio €)	2015 Sum (in mio €)
Cash or near-cash employee income (PY010)	2,999.45	2,958.39	27,313.81	26,821.69
Income from private use of company car (PY021)	11.15	10.12	101.54	91.75
Cash profits or losses from self-employment (PY050)	1,517.93	1,460.94	13,822.68	13,245.34
Pension from individual private plans (PY080)	0.45	0.17	4.10	1.56
Unemployment benefits (PY090)	84.86	48.19	772.79	436.9
Old-age benefits (PY100)	2,273.42	2,274.68	20,702.40	20,623.01
Survivors benefits (PY110)	318.62	304.98	2.901.44	2,765.07
Sickness benefits (PY120)	2.40	2.32	21.87	21,00
Disability benefits (PY130)	83.40	96.59	759.47	875.71
Education-related allowances (PY140)	3.78	2.37	34.42	21.45

8.2.1 Length of comparable time series

Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

8.3 Comparability - Categories
Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

9 Coherence
Coherence between two or more statistical results refers to the degree of using the same definitions and methods in order to produce the statistics. Below, we present comparisons on indicators, income and other characteristics between EU-SILC and other surveys (HBS, LFS) as well as administrative sources.

9.1 Coherence - cross domain
The risk of poverty indicator EU-SILC 2015 was compared with the same indicator calculated from the HBS 2015. It is noted that, for the Household Budget Survey, the pre-mentioned indicator has been estimated from consumption expenditure and not from income. When comparing the two survey results it is essential to keep in mind the differences between the concepts and methodologies. Discrepancies may further arise by the fact that they serve different purposes; HBS targets household expenditure whereas EU-SILC targets household income.

2015 SILC and 2015 LFS compared target variables
The data presented below indicate that most of the quality target variables are in coherence with variables collected from LFS – 2nd quarter of 2015, making thus the survey robust.

PL031: "Self-defined current activity status". %

Self-defined current activity status	EU-SILC 2015	LFS 2015
At work (Full + Part time)	38.2	38.5
Unemployed	14.6	14.5
Non economically active	47.2	47.0

PL060: "Number of hours usually worked per week in main job". %

Number of hours usually worked per week in main job	EU-SILC 2015	LFS 2015
	42.3	42.1

PL130: "Number of persons working in the local unit". %

Persons working in the local unit	EU-SILC 2015	LFS 2015
1 person	20.0	19.7
2 persons	12.7	13.0
3 persons	6.7	7.4
4 persons	4.0	4.5
5 persons	3.4	3.8
6 persons	2.1	1.9
7 persons	1.3	1.4
8 persons	1.5	1.4
9 persons	0.7	0.4
10 persons	2.1	1.7
11-19 persons	10.1	9.9
20-49 persons	9.7	7.4
50 persons or more	17.2	14.0
Don't know but fewer than 11 persons	3.1	4.9
Don't know but more than 10 persons	5.4	8.6

PL040: "Status in employment". %

Status in employment	SILC 2015	LFS 2015
Self employed with employees	5.8	6.9
Self employed without employees	24.6	23.7
Employee	65.8	65.0
Family worker	3.8	4.4

PE040: "Highest ISCED level attained". %

Highest ISCED level attained	SILC 2015	LFS 2015
Never attended any level of education	5.4	4.3
Primary education	21.8	23.6
Lower secondary education	11.3	13.4
Upper secondary education	32.5	30.3
Post secondary non tertiary education	5.6	6.5
First stage of tertiary education	20.4	19.9
Second stage of tertiary education	2.9	2.0

PL051: "Occupation". %

Occupation	SILC 2015	LFS 2015
Armed forces Occupations	1.3	1.6
Managers	1.7	3.1
Professionals	13.9	18.6
Technicians and Associate Professionals	7.1	8.2
Clerical support workers	11.1	10.5
Services and sales workers	20.8	23.7
Skilled Agricultural, Forestry and Fishery workers	15.1	12
Craft and related Trades workers	12.0	9.6
Plant and machine operators and assemblers	6.1	5.8
Elementary occupations	10.9	7.1

PL111: "Economic Activity". %

Economic activity	2015 SILC	2015 LFS
Agriculture, hunting, forestry and fishing	12.6	12.9
Mining and quarrying	0.3	0.3
Manufacturing	9.2	9.3
Electricity, gas, steam and air conditioning	0.6	0.7
Water supply: sewerage, waste management and remediation	0.5	0.6
Construction	4.4	4
Wholesale and retail trade: repair of motor vehicles and motorcycles	18.6	18.3
Transportation and storage	4.8	4.7
Accommodation and food service activities	8.5	9
Information and communication	2.5	2
Financial and insurance activities	2.5	2.4
Real estate activities	0.2	0.2
Professional scientific and technical activities	5.1	5.8
Administrative and support service activities	2.2	2.4
Public administration and defense; compulsory social security	9.2	8.7
Education	8.2	8.1
Human health and social work activities	6.2	5.9
Arts, entertainment and recreation activities	1.5	1.3
Other service activities	2.3	2.1
Activities of households as employers	0.8	1.3

Household by size. %

Household type	SILC 2015	LFS 2015
One person households	25.7	29.3
Two persons households	29.5	32.1
Three persons households	19.8	18.0
Four persons households	17.5	15.5
Five persons households	5.2	3.8
Six and more persons households	2.3	1.3

PL015: "Have you ever worked" (for persons not working but having worked in the past). %

Have you ever worked?	SILC 2015	LFS 2015
Yes	68.5	63.7
No	31.5	36.3

PL120: "Number of persons working less than 30 hours per week". %

Working less than 30 hours per week	SILC 2015	LFS 2015
Percentage of persons working less than 30 hours per week	12.5	11.4

PL140: "Type of contract". %

Type of contract	SILC 2015	LFS 2015
Permanent job / work contract of unlimited duration	75.4	88.1
Temporary job/work contract of limited duration	24.6	11.9

Comparison of labour force participation, LFS 2015 - SILC 2015 %

Age groups	Total		Males		Females	
	LFS 2015	SILC 2015	LFS 2015	SILC 2015	LFS 2015	SILC 2015
15-19 years	6.5	12.2	6.9	13.4	6.2	10.9
20-24 years	47.4	48.2	49.5	47.3	45.1	49.1
25-29 years	85.4	86.8	87.7	89.9	82.8	83.8
30-34 years	89.1	91.8	95.2	97.3	83.1	85.8
35-39 years	89.4	89.3	96.6	97.9	82.3	80.7
40-44 years	88.6	87.5	96.4	96.0	80.6	78.7
45-49 years	84.0	82.5	93.0	93.0	75.5	72.8
50-54 years	75.4	72.0	88.3	87.0	63.0	57.0
55-59 years	54.5	53.9	72.4	69.8	38.2	39.7
60-64 years	29.0	27.7	37.6	37.3	21.1	18.7
65 ετών +	3.1	2.4	4.4	3.1	2.1	1.8

9.1.1 Coherence - sub annual and annual statistics

Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

9.1.2 Coherence with HBS

At-risk-of-poverty threshold: 2015 SILC –HBS (in euro)

EU-SILC 2015	HBS 2015
4,512.00	4,985.50

At-risk-of-poverty rate: 2015 SILC –HBS (%)

EU-SILC 2015	HBS 2015
21.4	19.7

HH021: "Tenure status". %

Tenure status	HBS 2015	EU-SILC 2015
Owner	82.8	78.2
Tenant	17.2	21.8

HH081: "Bath or shower in dwelling"%

Bath or shower in dwelling	HBS 2015	EU-SILC 2015
Yes	1.1	0.5
No	98.9	99.5

HH091: "Indoor flushing toilet for sole use of household"%

Indoor flushing toilet for sole use of household	HBS 2015	EU-SILC 2015
Yes	1.3	0.4
No	98.7	99.6

HH010: "Dwelling type" %

Dwelling type	HBS 2015	EU-SILC 2015
Detached house	33.4	32.3
Semidetached house	9.3	9.8
Apartment or flat	57.2	57.9
Some other kind of accommodation	0.1	0.0

9.2 Coherence - internal

Comparison of the mean total equivalized disposable household income (deciles). EU-SILC 2014 and 2015

	EU-SILC 2014	EU-SILC 2015	Change % (2015/2014)
Households	4,266,745	4,195,840	-1.66
Mean total equivalised disposable household income	8,878.80	8,836.48	-0.48
Standard deviation	6,906.40	8,170.11	18.30
10%	1,923.17	1,750.41	-8.98
20%	3,721.01	3,904.86	4.94
30%	4,958.21	5,088.59	2.63
40%	5,951.37	6,152.19	3.37
50%	7,047.04	7,166.59	1.70
60%	8,229.65	8,178.71	-0.62
70%	9,444.81	9,394.13	-0.54
80%	11,062.91	11,010.99	-0.47
90%	13,669.48	13,479.83	-1.39
100%	22,767.69	22,234.57	-2.34

Comparison of number of persons who receive income from family allowances with external sources

Allowances	Number of persons that received the family allowances in survey data	Number of persons received the family allowances in administrative data	Recorded in survey / recorded from administrative data %
Unified children allowance	543,925	739,274	73.6
Special allowance for families having 3 or more than 3 children	114,061	117,918	96.7

Unemployment benefits

As regards unemployment benefits (regular and for seasonal employees), comparisons with administrative data indicate that the survey recorded 1.5% fewer persons receiving unemployment benefits (170.932 persons in EU-SILC compared to 173,526 persons in OAED's data for December 2014), so the two sources are very close.

10 Cost and Burden

The mean interview duration

The mean interview duration per household was estimated at 58.06 min. The average has been calculated according to the duration being registered in the questionnaires as the sum of the duration of the household interviews plus the sum of the duration of all personal interviews, divided by the number of household questionnaires completed and accepted for database. The time needed for the data entry of the questionnaires in the computer (PAPI interview) has not been taken into account. Note that we did not include additional questions to cover other areas at the national level.

Interview duration

HB100- Number of minutes to complete the household questionnaire	
Mean	17.07
Maximum	58
Minimum	5
PB120-Minutes to complete the personal questionnaire	
Mean	19.65
Maximum	60
Minimum	10
Mean of inteview durarion	58.06

11 Confidentiality

Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

11.1 Confidentiality - Policy

Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

11.2 Confidentiality – Data treatment

Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

12 Statistical processing

Detailed information concerning sampling frame, sampling design, sampling units, sampling size, weightings and mode of data collection can be found in this section. Such information is mainly used for the computation of the accuracy measures.

12.1 Data source

Sampling frame and coverage errors

EU-SILC survey is based on a two-stage stratified sampling of households from a frame of sampling which has been created on the basis of the results of the 2011 population census and covers completely the reference population.

The frame of PSUs is updated every ten (10) years through the general population census. Concerning the frame of households, within each selected PSU this is updated before the selection of the sampling households used for data collection. So, any coverage problem that may arise is more possible to relate with the frame of PSUs.

Coverage problems encountered were:

- Some houses were used as secondary residence, so they were out of scope of the survey.
- Some houses were impossible to be located due to incomplete information regarding their addresses.
- Housing units built after March 2015, were not included in our sampling frame.

However, the number of the above cases was very small (41) and anyway such cases are corrected with the use of the calibration procedure applied as it is described in the respective paragraph.

12.1.1 Sampling design and procedure

Type of sampling design

The two-stage area sampling was applied for the EU-SILC survey.

Stratification and sub stratification criteria

There are two levels of area stratification in the sampling design. The first level is the geographical stratification based on the partition of the total country area into thirteen (13) Regions corresponding to the European NUTS2 level. The two former major city agglomerations of Greater Athens and Greater Thessalonica constitute separate major geographical strata.

The second level of stratification entails grouping Municipal/Local communes within Region by degree of urbanization, i.e., according to their population size. The scaling of urbanization was finally designed in four groups:

Stratum	Degree of Urbanization
1	30,000 residents or more
2	5,000 – 29,999 residents
3	1,000 – 4,999 residents
4	0 – 999 residents

The number of the final strata in the thirteen (13) Regions is 50. The former Greater Athens Area was divided into 31 strata of about equal size (equal number of households) on the basis of the lists of city blocks of the Municipalities that constitute it and taking into consideration socio-economic criteria. Similarly, the former Greater Thessaloniki Area was divided into 9 equally sized strata. The two Major former City Agglomerations account for about 39,1% of total population and for even larger percentages in certain socio-economic variables. Thus, the total number of final strata of the survey is 90.

The initial sample size is 17,443 households (the sampling fraction is 4,2‰). This fraction is the same in each geographical region.

As it was mentioned above, the Regions (NUTS2) in Greece are thirteen (13) in number. However, throughout this study the 2nd Region (Central Macedonia) was considered without former Greater Thessaloniki and the 9th Region (Attica) without the former Greater Athens area, while either of these two former major agglomerations was treated as a geographical region.

Sample selection schemes

1st stage of sampling

In this stage, from any final stratum, say stratum h, n_h primary units were drawn. The number n_h of draws was approximately proportional to the population size X_h of the stratum (number of households according to the last population census of the year 2011).

Each area unit (primary unit) of the stratum has a selection probability proportional to its size. So, if X_{hi} is the number of households (according to the 2011 population census) of the unit in the sample of order i, then the probability of being drawn was:

$$P_{hi} = \frac{X_{hi}}{X_h} \quad (1)$$

The total number of the primary sampling units is 2,276 areas.

As in each year one rotation panel of the sample of households is replaced, the new households belong to different primary sampling units.

2nd stage of sampling

In this stage from each primary sampling unit (selected area) the sample of ultimate units (households) is selected. Actually, in the second stage we draw a sample of dwellings. However, in most cases, there is one-to-one relation between household and dwelling. If the selected dwelling consists of one or more households then all of them are interviewed.

Let M_{hi} be the number of households during the survey period in the i_{th} selected area of the stratum h. This number comes from an updated list of households. Out of them a systematic sample of m_{hi} households is selected with equal probabilities. All m_{hi} households have the same chance to be included in the survey, equal to: m_{hi} / M_{hi}.

The sample size m_{hi} was determined by calculating the sampling interval δ_{hi} as following:

$$\frac{1}{n_h} \cdot \frac{1}{P_{hi}} \cdot \frac{M_{hi}}{m_{hi}} = \lambda \Rightarrow \quad (2)$$

$$\frac{1}{n_h} \cdot \frac{1}{P_{hi}} \cdot \delta_{hi} = \lambda \Rightarrow$$

$$\delta_{hi} = \frac{M_{hi}}{m_{hi}} = \lambda \cdot n_h \cdot P_{hi} \quad (3)$$

The relation (2) denotes that the estimator of the final stratum, total Y_h is self-weighted. Additionally the overall sampling fraction $1/\lambda$ in each Region (NUTS2) is equal to 4.2‰

Sample distribution over time

As the survey is annual, the sample of households is not distributed over time. The 2015 survey was carried out from May to November 2015 with reference period the previous year (2014).

Month	Date	Number	%
May	1 to 10	176	1.2
	11 to 20	761	5.4
	21 to 31	1,342	9.5
June	1 to 10	2,182	15.5
	11 to 20	2,139	15.2
	21 to 30	1,499	10.6
July	1 to 10	1,145	8.1
	11 to 20	848	6.0
	21 to 31	634	4.5
August	1 to 10	368	2.6
	11 to 20	291	2.1
	21 to 31	391	2.8
September	1 to 10	625	4.4
	11 to 20	474	3.4
	21 to 30	309	2.2
October	1 to 10	80	0.6
	11 to 20	94	0.7
	21 to 31	47	0.3
November	1 to 10	408	2.9
	11 to 20	273	1.9
	21 to 30	10	0.1
Total		**14,096**	**100.0**

12.1.2 Sampling unit

The sample of private households was selected in two stages. The primary units are the areas (one or more unified city blocks) and the ultimate sampling units selected in each sampling area are the households.

12.1.3 Sampling rate and sample size

Concerning the SILC instrument, three different sample size definitions can be applied:

- the *actual sample size* which is the number of sampling units selected in the sample
- the *achieved sample size* which is the number of observed sampling units (household or individual) with an accepted interview
- the *effective sample size* which is defined as the achieved sample size divided by the design effect with regards to the at-risk-of poverty rate indicator

In this section the attention focuses mainly on the achieved sample size.

Sample size and allocation criteria

According to the Article 9 of the Regulation (EC) No 1177/2003, the minimum *effective sample size* for Greece is 4.750 households and 9.500 persons aged 16 or over. The initial sample size is 17.443 households (the sampling fraction is 4.2‰). This fraction was the same in each geographical region.

The *actual sample size* for 2015 by rotation is presented below.

	Total	Rotation 1	Rotation 2	Rotation 3	Rotation 4
Status of households' sample	17,443	1,391	2,921	3,185	9,946

In Greece, there are thirteen (13) administrative regions (NUTS2). However, the 2nd geographical region (Kentriki Macedonia) and the 9th geographical region (Attiki) do not include the Greater Thessaloniki and the Greater Athens area respectively; both of these two major agglomerations are treated as a separate geographical region.

Sample distribution

	Name	Drawn	Accepted (DB135=1)
EL30	Attiki	5,680	4,057
EL41	Voreio Aigaio	815	629
EL42	Notio Aigaio	908	697
EL43	Kriti	992	852
EL51	Anatoliki Makedonia & Thraki	852	768
EL52	Kentriki Makedonia	2,403	2,076
EL53	Dytiki Makedonia	704	565
EL54	Hpeiros	891	828
EL61	Thessalia	896	822
EL62	Ionia Nisia	666	389
EL63	Dytiki Ellada	876	805
EL64	Sterea Ellada	952	858
EL65	Peloponnisos	808	750
Total		**17,443**	**14,096**

Out of the initial 17,443 household sample 14,096 households were successfully contacted and completed the household questionnaire, so accepted for the database. This was above the minimum effective sample size (4.750 households) requested by the Regulation (EC) No 1177/2003 Article 9. Thus, the achieved sample size was 14,096 households, with 34.465 persons in total off which 29.646 are 16 years old and over and 29.405 of them completed the personal interview. The number of households of the new sub-sample selected was 9,946.

Overall, 41 addresses were not successfully contacted, out of which 29 addresses were actually out of scope of the survey (do not exist or are non-residential or unoccupied or not principal residences).

The 2015 sample results are shown in the table below:

Distribution of households by 'record of contact at address' (DB120)

	Number of households	%
Total (DB120 =11 to 23)	9,988	100.0
Address contacted (DB120 =11)	9,947	99.6
Address non-contacted (DB120 =21 to 23)	41	0.4
Address cannot be located (DB120 =21)	12	0.1
Address unable to access (DB120 =22)	0	0.0
Address does not exist (DB120 =23)	29	0.3

Distribution of households by 'household questionnaire result' (DB130) and by "household interview acceptance" (DB135)

	Number of households	%
Total	17,233	100.0
Household questionnaire completed (DB130 =11)	14,096	81.8
Interview not completed (DB130 =21 to 24)	3,137	18.2
Refusal to co-operate (DB130 =21)	1,003	5.8
Entire household temporarily away (DB130 =22)	1927	11.2
Household unable to respond (DB130 =23)	142	0.8
Other reasons(DB130 =24)	65	0.4
Household questionnaire completed (DB135=1or 2)	14,096	100.0
Interview accepted for database (DB135=1)	14,096	100.0
Interview rejected (DB135=2)	0	0.0

Achieved sample size

The table below presents the achieved samples of persons aged 16 years and over, as well as of households, within each rotational group.

	Total	Rotation 1	Rotation 2	Rotation 3	Rotation 4
Individuals 16 years and over	29,646	2,566	5,546	5,998	15,536
Number of accepted personal questionnaires	29,405	2,536	5,454	5,917	15,498
Accepted household interviews	14,096	1,217	2,570	2,827	7,482

Distribution of household members by data status and rotation group

	Total	RB250 =11	RB250 =21	RB250 =22	RB250 =23	RB250 =31	RB250 =32	RB250 =33
Total	29,646	29,405	0	0	37	195	9	0
%	100.0	99.2	0	0	0.1	0.7	0	0
	Rotation 1							
Total	2,566	2,536	0	0	5	25	0	0
%	100.0	98.8	0	0	0.2	1	0	0
	Rotation 2							
Total	5,546	5,454	0	0	9	75	8	0
%	100.0	98.3	0	0	0.2	1.4	0.1	0
	Rotation 3							
Total	5,998	5,917	0	0	4	76	1	0
%	100.0	98.6	0	0	0.1	1.3	0	0
	Rotation 4							
Total	15,536	15,498	0	0	19	19	0	0
%	100.0	99.8	0	0	0.1	0.1	0	0

where
11 = information completed only from interview
21 = individual unable to respond
22 = failed return self-completed questionnaire
23 = refusal to co-operate
31 = person temporarily away and no proxy possible
32 = no contact for other reasons
33 = information not completed: reason unknown

Substitutions

No substitution procedures were applied.

Method of selection of substitutes

Not applicable

Renewal of sample: rotational groups

The survey is a simple rotational design survey. The sample for any year consists of 4 replications, which have been in the survey for 1-4 years. With the exception of the first three years of the survey, any particular replication remains in the survey for 4 years. Each year, one of the 4 replications from the previous year is dropped and a new one is added. Between year T and T+1 the sample overlap is 75%; the overlap between year T and year T+2 is 50%; and it is reduced to 25% from year T to year T+3, and to zero for longer intervals.

The size of each Rotational Group for the 2015 survey is shown in Table below:

Household sample size of the rotational groups

	Total	Rotation 1	Rotation 2	Rotation 3	Rotation 4
Addresses in initial sample	17,443	1,391	2,921	3,185	9,946
Household Questionnaires completed	14,096	1,217	2,570	2,827	7,482
Interviews Accepted for database	14,096	1,217	2,570	2,827	7,482

Longitudinal sample size 2012-2015

Year	Rotation 1 (4 years)	Rotation 2 (3 years)	Rotation 3 (2 years)	Totals
2012	2,594	0	0	2,594
2013	1,625	4,676	0	6,301
2014	1,555	3,335	4,447	9,337
2015	1,391	2,921	3,185	7,497
Total	*7,165*	*10,932*	*7,632*	*25,729*

12.2 Frequency of data collection

ELSTAT collects EU-SILC data annually.

12.3 Data collection

Modes of data collection

Mostly, paper assisted personal interviewing (PAPI) technique has been used. In some cases CATI was used while CAWI was introduced for first time in 2015 survey.

The following table presents the distribution of individuals aged 16 or over by data status and type of interview.

Distribution of individuals aged 16 or over by type of interview and rotational group

	Total	RB260=1 PAPI	RB260=3 CATI	RB260=5 CAWI	RB260=6 PAPI Proxy
Total	29,405	27,743	743	74	845
%	100.0	94.3	2.5	0.3	2.9
	Rotation 1				
Total	2,536	2,282	134	18	102
%	100.0	90,0	5.3	0.7	4
	Rotation 2				
Total	5,454	5,004	316	32	102
%	100.0	91.7	5.8	0.6	1.9
	Rotation 3				
Total	5,917	5,459	246	24	188
%	100.0	92.3	4.2	0.4	3.2
	Rotation 4				
Total	15,498	14,998	47	0	453
%	100.0	96.8	0.3	0	2.9

12.4 Data validation

Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

12.5 Data compilation

Please find below a description of the weighting and imputation procedures.

12.5.1 Weighting procedure

Design factor	Non-response adjustments	Adjustment to external data
For the computation of the sample household design weights and the cross sectional weights of the survey in general, the EC-Eurostat document EU-SILC Doc. 157/05 was used. For the households of the new panel 4 introduced in 2015, which replaced panel 4 introduced in 2011, the household design weight (target variable DB080) is defined as the inverse of its probability of selection. $$\frac{1}{n_h}\cdot\frac{1}{P_{hi}}\cdot\frac{M_{hi}}{m_{hi}}=DW_{hi}$$ where M_{hi} = the number of households in the updated sampling frame (list) in the area (primary unit). M_{hi} = the number of selected households in the area (primary *unit).* N_h = the sample size of primary units in the stratum. P_{hi} = the selection probability of primary unit. For households in panels 1, 2 and 3 the household design weights are defined by applying the general procedure of EU-SILC Doc. Titled "Longitudinal weighting" for the longitudinal weights and EU-SILC Doc 65 as a supporting document: • Computation of panel person design weights • Correction for non-response due to attrition • Computation of sub-sample household weights • Computation of sample household design weights The longitudinal period of this quality report refers to the period 2012-2015. The rotation panels this period comprises are depicted in the following scheme. 2012 2 3 4 **1** 2013 3 4 **1** **2** 2014 4 **1** **2** **3** 2015 **1** **2** **3** **4** As it is clear from the scheme above: • The longitudinal component 2012-2015 of EU-SILC consists of rotation panels 1, 2 and 3 for a duration of 4, 3 and 2 years respectively (2012-2015 for rotation panel 1, 2013-2015 for rotation panel 2 and 2014-2015 for rotation panel 3). • the cross-sectional component 2015 of EU-SILC consists of rotation panels 1, 2, 3 and 4. • The first wave of the EU-SILC longitudinal component is the first year each rotation panel of the longitudinal component is in the survey, while the second and following waves are the 2nd, 3rd and 4th year respectively for which the specific rotation panel is being surveyed. Also, in general, the cross-sectional weights computed for the survey form the basis also for the computation of longitudinal weights and the methods and procedures used are identical. So, the computation of the longitudinal weight variables and the relevant procedure is a continuation of the cross-sectional procedure.	Within each design stratum, the non-response adjustment of the responding households is carried out by the inverse of the response rate, so as to "make up" for non-responding cases in that stratum. Target variable DB080 was adjusted for non-response for the variables DB120 (record of contact at address) and DB130 (household questionnaire result). The corrections were conducted at subsequent steps. The multiplication of DB080 with each one of the two corrections, results in a corrected DB080 weight that is used as initial weight in the calibration procedure referred in the following paragraph. Concerning the non-response adjustment for the second and following waves of the longitudinal component, especially concerning variables RB060 and PB050, the previous year's respective values are corrected (inflated) with an adjustment coefficient in order to take into account the population "attrition". This coefficient is computed for every year and panel separately based on the specific for that year and panel population characteristics. Also this coefficient is different for each one of the two variables RB060 and PB050 since those two refer to different populations (RB060 to all persons irrespectively of their age, while PB050 to adults that accepted to participate in the survey).	Adjustment to external data involves the calibration of the household and personal weights in conjunction with external sources (Projections for population and household totals for the year 2015). This method enables the distribution of auxiliary variables, at household and individual level, to coincide with the corresponding population distribution of external data. The auxiliary variables used at household level are the household size, the tenure status and the Region (NUTS 2). Also, at personal level the auxiliary variables used are age groups (five years age groups) and gender. The weights obtained after this procedure of calibration are the household cross-sectional weights (variable: DB090). As all the household members reply to the household questionnaire, DB090 is also the weight of each member of the household (variable: RB050). The last step involves the calculation of the personal cross sectional weights for household members aged of 16 and over (variable: PB040). The calibration procedure was applied again using as initial weights variable RB050 and as auxiliary variable the distribution of population aged 16 and over by age (five years age groups) and sex.

The **final cross sectional weights** where calculated as described above, i.e using DB080 after non-response adjustment as the initial weights for new panel and base weights adjusted for non-response due to attrition for former panels. The calibration methods were then applied for the total sample.

The **final longitudinal weights** (variables DB090, RB060 and PB050) where calculated with the same way as the respective cross-sectional weights (DB090, RB050 and PB040). Then, longitudinal weight variables RB062 and RB063 are computed on the basis of RB060, but as indicated from the respective documents, they are computed only for year 2015 and panels "1,2,3" and "1,2" respectively.

12.5.2 Estimation and imputation

Imputation procedure used	Imputed rent	Company car
In the very few cases where imputation was required, mainly, net income was converted to gross by applying the existing tax system and social insurance contributions rules. Personal refusals were imputed using existing data from previous waves as the starting point.	We calculate the imputed rent using the self assessment method and the stratification method. With the first method, the respondent provides the figure and the interviewer checks the answer according to the rents prevailing in the specific area. Also, for calculation of the imputed rent we developed the stratification method using the following variables: • **Dwelling type** – a)Detached house, b)Semi-detached or groups of similarly dwellings, c)Apartment or flat in a building with less than 10 dwellings, d)Apartment or flat in a building with 10 dwellings or more, e)Some other kind of accommodation, please specify • **Number of rooms** • **Tenure status** – a)Owned, b)Rented, c)Sub-rented with rent at prevailing or market price (Included are cases where rent is recovered from housing benefit), d)Rented at a reduced price (lower price than the market price), e)Provided rent-free (from the employer, relatives. etc.) • **For owned dwelling** Year of purchase/inhabit main dwelling Monthly imputed rent for the dwelling (price that the household would pay for a similar rented dwelling) Approximate range for imputed rent (when the household does not know) Mortgage loan (paid interest) • **For dwelling rented with rent lower than the market price** Year of sign the rent contract for the main dwelling Rent per month for the main dwelling Monthly Imputed rent for the dwelling (if it is provided at reduced price) Approximate range for imputed rent (if the household does not know) • **For provided rent-free dwelling** Year of movement in the dwelling Monthly Imputed rent for the dwelling (price that the household would pay for a similar rented dwelling) Approximate range for imputed rent (if the household does not know) • **Other variables** Dwelling amenities, balcony, veranda, garage/ parking, elevator, swimming pool garden and also dwelling area. It is noted that in the files the variable was completed with the results of the stratification method.	The benefit for individuals of using a company car for private use was not directly assessed at the interview but afterwards calculated by applying the depreciation method. According to doc. EU-SILC 130/04 the main idea of the method was to impute to the employee the amount the recipient would have to pay over the reference period to enjoy the same benefit from the use of own vehicle. More specifically: 1. Depreciation = (Purchase prices – selling prices at X) / X. 2. Where X is the average age of a company car. To calculate the "purchase price" and the "selling price", the model, the registration year and other characteristics of the car have been used. A list of prices or manufacturer's recommended retail prices have been used for a wide range of new cars. If a specific type of car was not included in the list, the RRP has been available from the manufacturer's website. If a RRP was not available in the country, then it was estimated based on the price of a similar car or the price relative to other cars in the country with the similar pricing structure. The list price included VAT and vehicle registration tax. For calculating the "average age of a company car" an average of 5 has been considered.

12.6 Adjustments

Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.

13 Comments

National questionnaires are available in Circa BC at: https://circabc.europa.eu/. Please select EU SILC section and then select the folder '06 National Questionnaire' in the library list. Additionally under the folder '02 Guidelines' and then under the folder '2.4 2015 Operation Guidelines' you can find information of the 2015 Ad-hoc Module variables.

Annexes

Indices

Time series

Questionnaires
Personal Questionnaire
Household Questionnaire
Members' Register
Household Register
Current Household Income
Social and Cultural Participation (Ad-Hoc)

Methodological Documents
Item Non Response
Sampling Errors
Metadata