

HELLENIC STATISTICAL AUTHORITY - ELSTAT

EUSILC 2014

Quality Report (ESQRS)

Cross-sectional (2014) and Longitudinal (2011-2014) Component

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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 assess 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

4.1 Relevance – User needs

Not requested by Reg.28/2004 upon implementation of Reg. 1177/2003.
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	36.0	0.63	0.02	0.79	1.55	22.1	0.51	0.03	0.72	1.40	21.5	0.63	0.04	0.79	1.55	19.4	0.47	0.04	0.69	1.35
Male	35.3	0.77	0.02	0.87	1.71	22.2	0.62	0.04	0.79	1.55	21.2	0.69	0.04	0.83	1.63	17.9	0.56	0.04	0.75	1.47
Female	36.7	0.69	0.02	0.83	1.63	22	0.57	0.03	0.76	1.49	21.8	0.69	0.04	0.83	1.63	20.8	0.59	0.04	0.77	1.51
0-17	36.7	23.3 3	0.04	1.53	2.99	25.5	19.6 7	0.06	1.40	2.75	23.8	19.1 0	0.06	1.38	2.71	-	-	-	-	-
18-64	40.1	0.77	0.02	0.88	1.72	23.5	0.63	0.03	0.79	1.55	22.9	0.80	0.04	0.89	1.75	-	-	-	-	-
65+	23.0	10.7 4	0.05	1.04	2.03	14.9	0.68	0.06	0.82	1.61	15.5	0.95	0.06	0.97	1.91	-	-	-	-	-

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 problems that may arise is more possible to relate with the frame of PSUs.

Coverage problems encountered were:

- The frame of the 2011 Census of Population was somehow outdated and as a result some housing units were found to be empty or to be used for other purposes other than housing.
- 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 2014, were not included in our sampling frame.

However, any such problems are corrected with the use of the calibration procedure already described.

5.3.1.1 Over-coverage rate – (%)

	Main Problems	Size of error
Cross sectional data	Over-coverage Under-coverage Miss-classification	1.33% (136 addresses)

5.3.2 Measurement Errors

Cross sectional data

Source of measurement errors	Building process of questionnaire	Interview training	Quality Control
<p>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</p> <p>As the 2014 EU-SILC round was the 12th in the series, quality has considerably improved due to interviewers' feedback, continuous data analysis and research.</p>	<p>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.</p> <p>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 – 2013) together with the experience from the ECHP projects.</p> <p>Mainly the parts on self-employment income and taxes have been differently formulated.</p> <p>The questionnaires for the 2014 survey were the same as those of 2004-2013 survey except for some small changes in the wording. The major changes concern on additional questions using in the net/gross/net conversion model (see www.statistics.gr/social/statistics/statistical_data/income_and_living_conditions/metadata_and_questionnaires or on CIRCA). We did not include additional questions to cover other areas at the national level.</p>	<p>a) Interviewers</p> <p>All the external collaborators (interviewers) of Attiki Prefecture attended a four days training course before starting the fieldwork. Four days training was both on the basic concepts of the survey and the questionnaire completion and on the use and data entry in the electronic questionnaires.</p> <p>The training in Athens, Thessalonica, Patras (major regional offices in the country), followed by the Regional Offices Heads, which in turn trained both their personnel as well as the external collaborators.</p> <p>Two manuals were distributed and explained during the training:</p> <p>A general guidelines' manual containing information about the objectives of the survey, the organization of the survey, legal and administrative aspects around the survey, fieldwork aspect (how to contact the household, how to introduce oneself who answers which questions, time delays) and the content and correct completion of the questionnaires.</p> <p>A second manual on the use of portable PCs for the EU-SILC Computer Assisted Personal Interviews and about the data entry program itself.</p> <p>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.</p> <p>(b) The respondents</p> <p>The respondents hesitate in providing income figures and in general deny consulting their tax return, in order to provide exact /correct amounts.</p> <p>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 2014.</p> <p>There is a sense that still self-employment income is underestimated.</p>	<p>Apart from the interviewers the training sessions were also attended by supervisors. Each one of them was responsible for a group of interviewers. During the fieldwork period the supervisor had meetings with each one of the interviewers in his/her group at least once a week. During these meetings, apart from discussing problems or questions raised during the week, the supervisors also collected (from the interviewers' laptops and paper questionnaires) all 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.</p>

Source of measurement errors	Building process of questionnaire	Interview training	Quality Control
		<p>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.</p> <p>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.</p>	

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

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

$$= \frac{\sum[DB120 = 11]}{\sum[DB120 = all] - \sum[DB120 = 23]} = \frac{4,463}{4,495} = 0.99288098 = 0.993$$

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

$$= \frac{\sum[DB135 = 1]}{\sum[DB130 = all]} = \frac{8,620}{10,388} = 0.82980362 = 0.830$$

$$NRh = (1 - 0.993 * 0.830) * 100 = 17.61\%$$

So, the household non-response rate is 17.61%

- Individual non-response rates (NRp)

$$NRp = (1 - (Rp)) * 100$$

where

$$Rp = \frac{\text{Number of personal interview completed}}{\text{Number of eligible individuals}} = \frac{17,916}{18,057} = 0.992$$

$$NRp = (1 - 0.992) * 100 = 0.781\%$$

- Overall individual non-response rates (*NRp)

$$*NRp = (1 - (Ra * Rh * Rp)) * 100 = (1 - (0.993 * 0.830 * 0.992)) * 100 = 18.254\%$$

So, the overall individual non-response rate is 18.254%

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	0.99	1.00
Rh	0.92	0.91	0.72	0.90
NRh	8.40	9.50	28.11	0.80
Rp	0.99	0.99	1.00	0.99
NRp	0.80	1.40	1.20	0.80
NRp2	9.13	4.97	28.25	10.52
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*	0.97
Proportion of complete household interviews accepted for data base (Rh)	A*	0.83
	B*	0.72
	C*	0.64
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*	17.61
	B*	28.11
	C*	37.92
Individual non-response rate (NRp)	A*	0.78
	B*	0.21
	C*	0.68
Overall individual non-response rate (NRp2)	A*	18.25
	B*	28.26
	C*	38.34

where:

A* = Total sample

B* = New sub-sample

C* = sub-sample surveyed for 4th year

Households' response rate per sub-sample – Longitudinal component

	Wave 2- 2012	Wave 3- 2013	Wave 4- 2014
Households' response rate			
Wave response rate	73.45	82.37	90.75
L follow-up rate	62.12	71.82	78.38
Follow-up ratio	1.61	1.84	1.66
Achieved sample size ratio	1.86	2.10	0.88

Individuals' response rate per sub-sample – Longitudinal component

	Wave 2- 2012	Wave 3- 2013	Wave 4- 2014
Individuals' response rate			
Wave response rate	84.43	84.19	83.84
L follow-up rate	-	-	-
Achieved sample size ratio	1.89	2.08	0.90
Response rate for non-sample persons	0.71	0.83	0.83

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 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, that is 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 household having received an amount	99.9	100.0	99.3	96.9
% of household with missing values (before imputation)	0.0	0.0	0.0	0.0
% of household 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 household having received an amount	14.3	9.6	5.4	0.1	7.7	4.8
% of household with missing values (before imputation)	0.0	0.0	0.0	0.0	0.0	0.0
% of household 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)	Unemployment benefits (PY090)	Old-age benefits (PY100)	Survivors benefits (PY110)	Sickness benefits (PY120)	Disability benefits (PY130)	Education related allowances (PY140)
% of household having received an amount	24.2	0.5	12.3	2.5	30.0	5.3	0.3	1.5	0.1
% of household with missing values (before imputation)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% of household 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
<p>PAPI and CAPI methods have been used to interview the persons. The electronic questionnaires used with CAPI method, were designed using Oracle - SQL, resulting in fewer errors compared to other methods.</p> <p>(1) Data entry controls</p> <p>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.</p> <p>In general, data entry programs and post-data entry programs checks concern the following:</p> <ul style="list-style-type: none"> • 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 <p><u>Personal Register</u></p> <p>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.</p> <p><u>Household Questionnaire</u></p> <ul style="list-style-type: none"> • On <i>tenure status</i>, 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 <i>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.</i> the answer is positive, then in question on "ability to make ends meet" the answer "with great difficulty" is not accepted. <p><u>Personal Questionnaire</u></p> <ul style="list-style-type: none"> • The age is cross-checked with the educational level attended. • The age is cross-checked with the educational level attained. • 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. <p>For all the above checks the cursor couldn't continue to the next answer and a special notice appeared on the screen.</p> <p><u>Longitudinal checks</u></p> <ul style="list-style-type: none"> • Checks and comparisons of the <i>demographic data</i> recorded in the Personal Register with the data provided in the previous year. • Checks and comparisons of <i>citizenship and country of birth data</i> with the data provided in the previous year. <p>(2) Codification</p> <p>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 65/11.</p> <p>(3) Other controls and other problems</p> <p>Several plausibility checks have been made; mostly similar to the checks SAS program applies. During data processing of raw material ACCESS-2000, ORACLE (golden 3.2) and win-SPSS 22 have been used.</p>	<p>The finalised data files prepared by expert staff were then processed using SAS programs and applying various logical and consistency checks.</p> <p>Before sending the final D-, R-, H- and P- files, data files were further checked using EUROSTAT's SAS programs.</p>

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 harmonised 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
<p>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 having members diplomatic missioners.</p>	<p>The definition of household that Eurostat recommends is used. Household is defined as a person living alone or a group of people who live together in the same dwelling and share expenditures including the joint provision of the essentials of living.</p>	<p>All household members aged 16 years or over at the time of the interview are selected for a personal interview.</p> <p>Subject to the further and specific conditions shown below, if the following persons share household expenses, must be regarded as household members:</p> <ol style="list-style-type: none"> 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 <p>Further conditions for inclusion as household members are as follows:</p> <p>(a) Categories 3,4 and 5:</p> <p>Such persons must currently have no private address elsewhere; or their actual or intended duration of stay must be six months or more.</p> <p>(b) Category 6:</p> <p>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.</p> <p>(c) Category 7 and 8:</p> <p>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 must consider this address to be his/her main residence.</p> <p>(d) Category 9:</p> <p>Such person must have clear financial ties to the household and must be actually or prospectively absent from the household for less than six months.</p>

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 2013 referred to income received in previous years.	For SILC 2014; the income reference period is the year 2013	The reference period for taxes on wealth was 2013.	The income reference period is the previous calendar year (year 2013), while current variables refer to the fieldwork period (April - June 2014). Therefore the lag is at minimum 4 months and at maximum 6 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 incorporated 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 harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization

Cash or near-cash employee income (PY010)	Other non-cash employee income (PY020)	Income from private use of company car (PY021)	Employers social insurance contributions (PY030)	Cash profits or losses from self employment (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 harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Full harmonization	Gross monthly earnings from employee were collected despite the fact that the gender pay gap is calculate 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 and CAPI. 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.	<p>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.</p> <p>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).</p> <p>Because of the fact that net income data are collected, ELSTAT uses a model that converts net income amounts to gross values. This model has been produced by University of Sienna with the collaboration of ELSTAT.</p>

8.2 Comparability- over time

In Greece, due to financial crisis, some significant differences are observed between EU-SILC 2014 and EU-SILC 2013 indicators. Moreover, in some cases the low frequency of certain variables may also result to changes from year to year.

Comparison of income target variables – EU SILC 2014 and 2013

Income Component	%
Total disposable hh income (HY020)	-6.6
Total disposable hh income before social transfers other than old-age and survivors benefits (HY022)	-6.1
Total disposable hh income before all social transfers (HY023)	-6.1
Cash or near-cash employee income (PY010N)	-8.6
Cash profits or losses from self-employment (PY050N)	-3.5

Household income per income component

Income Component	2013 (mean)	2014 (mean)	2013 sum (in mio €)	2014 sum (in mio €)
Total disposable hh income (HY020)	16,170.00	15,106.08	68,668.53	64,453.80
Total disposable hh income before social transfers other than old-age and survivors benefits (HY022)	15,435.26	14,500.07	65,548.33	61,868.11
Total disposable hh income before all social transfers (HY023)	9,574.63	8,992.60	40,660.24	38,369.12
Income from rental of property or land (HY040)	571.49	580.56	2,426.94	2,477.08
Family/ Children related allowances (HY050)	142.48	148.32	605.07	632.84
Social exclusion payments not elsewhere classified (HY060)	111.15	85.47	472.016	364.69
Housing allowances (HY070)	3.78	2.04	16.060	8.70
Regular inter-hh cash transfers received (HY080)	297.13	348.87	1,261.83	1,488.56
Interest, dividends, profit from capital investments in incorporated businesses (HY090)	79.36	78.40	337.00	334.51
Income received by people aged under 16 (HY110)	0.00	0.51	0.0	2.16
Regular taxes on wealth (HY120)	475.54	535.19	4,039.81	2,283.51
Regular inter household cash transfer paid (HY130)	277.45	238.84	2,019.45	1,019.07

Individual income per income component

Income Component	2013 (mean)	2014 (mean)	2013 sum (in mio €)	2014 sum (in mio €)
Cash or near-cash employee income (PY010)	3,280.45	2,999.45	30,237.00	27,313.81
Income from private use of company car (PY021)	13.85	11.15	127.32	101.54
Cash profits or losses from self-employment (PY050)	1,572.69	1,517.93	14,473.46	13,822.68
Pension from individual private plans (PY080)	0.82	0.45	7.55	4.10
Unemployment benefits (PY090)	121.81	84.86	1,123.67	772.79
Old-age benefits (PY100)	2,417.77	2,273.42	22,215.06	20,702.40
Survivors benefits (PY110)	324.88	318.62	2,990.56	2,901.44
Sickness benefits (PY120)	2.82	2.40	25.90	21.87
Disability benefits (PY130)	95.16	83.40	876.91	759.47
Education-related allowances (PY140)	3.60	3.78	33.32	34.42

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 2014 was compared with the same indicator calculated from the 2013. It is noted that, for the Household Budget Survey, the pre-mentioned indicators have 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.

2014 SILC and 2014 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 2014, making thus the survey robust.

PL031: “Self-defined current activity status”. %

Self-defined current activity status	EU-SILC 2014	LFS 2014
At work (Full + Part time)	37.1	38.1
Unemployed	15.7	13.8
Non economically active	47.1	48.1

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

Number of hours usually worked per week in main job	EU-SILC 2014	LFS 2014
	42.6	40.0

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

Persons working in the local unit	EU-SILC 2014	LFS 2014
1 person	20.5	20.3
2 persons	11.8	13.1
3 persons	6.2	6.6
4 persons	4.1	4.3
5 persons	3.7	3.6
6 persons	1.8	2.0
7 persons	0.9	1.2
8 persons	1.3	1.2
9 persons	0.6	0.4
10 persons	2.8	1.8
11-19 persons	10.3	8.5
20-49 persons	9.8	6.9
50 persons or more	17.9	15.0
Don't know but fewer than 11 persons	3.7	5.4
Don't know but more than 10 persons	4.8	9.7

PL040: “Status in employment”. %

Status in employment	SILC 2014	LFS 2014
Self employed with employees	5.5	6.1
Self employed without employees	23.9	24.8
Employee	66.2	64.6
Family worker	4.4	4.6

PE040: “Highest ISCED level attained”. %

Highest ISCED level attained	SILC 2014	LFS 2014
Never attended any level of education	6.0	4.9
Primary education	21.7	24.6
Lower secondary education	11.9	12.2
Upper secondary education	32.7	31.1
Post secondary non tertiary education	5.4	6.5
First stage of tertiary education	19.6	18.6
Second stage of tertiary education	2.5	2.2

PL051 : “Occupation”. %

Occupation	SILC 2014	LFS 2014
Armed forces Occupations	1.5	1.7
Managers	2.1	3.9
Professionals	13.3	19.0
Technicians and Associate Professionals	7.2	8.0
Clerical support workers	11.3	9.6
Services and sales workers	20.0	21.9
Skilled Agricultural, Forestry and Fishery workers	14.6	12.6
Craft and related Trades workers	13.7	9.8
Plant and machine operators and assemblers	6.4	6.5
Elementary occupations	9.8	7.1

PL111: “Economic Activity”. %

Economic activity	2014 SILC	2014 LFS
Agriculture, hunting, forestry and fishing	12.3	13.4
Mining and quarrying	0.3	0.3
Manufacturing	9.7	9.0
Electricity, gas, steam and air conditioning	0.6	0.8
Water supply: sewerage, waste management and remediation	0.5	0.7
Construction	4.4	4.2
Wholesale and retail trade: repair of motor vehicles and motorcycles	18.5	17.6
Transportation and storage	5.1	4.9
Accommodation and food service activities	7.7	8.5
Information and communication	2.4	2.1
Financial and insurance activities	2.6	2.7
Real estate activities	0.2	0.1
Professional scientific and technical activities	4.9	5.2
Administrative and support service activities	2.1	2.4
Public administration and defense; compulsory social security	9.3	8.9
Education	7.9	8.3
Human health and social work activities	6.4	5.9
Arts, entertainment and recreation activities	1.6	1.4
Other service activities	2.1	2.0
Activities of households as employers	0.8	1.3

Household by size. %

Households type	SILC 2014	LFS 2014
One person household	25.7	29.1
Two persons household	29.5	30.6
Three persons household	19.8	18.3
Four persons household	18.8	16.4
Five persons household	4.8	4.0
More than six persons household	1.5	1.5

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

Have you ever worked?	SILC 2014	LFS 2014
Yes	68.5	62.2
No	31.5	37.8

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

Working less than 30 hours per week	SILC 2014	LFS 2014
Percentage of persons working less than 30 hours per week	13.2	11.2

PL140: “Type of contract”. %

Type of contract	SILC 2014	LFS 2014
Permanent job / work contract of unlimited duration	76.3	88.0
Temporary job/work contract of limited duration	23.7	12.0

Comparison of labour participation. EEA 2014 - SILC 2014 %

Age groups	Total		Males		Females	
	LFS 2014	SILC 2014	LFS 2014	SILC 2014	LFS 2014	SILC 2014
15-19 years	8.9	10.6	9.1	8.8	8.6	12.5
20-24 years	48.5	44.0	52.2	45.5	44.9	42.4
25-29 years	85.4	85.9	88.5	86.9	82.0	84.8
30-34 years	89.7	90.4	96.5	96.5	82.8	84.2
35-39 years	87.6	88.1	96.2	97.8	78.9	79.0
40-44 years	86.9	87.4	96.6	96.1	77.3	79.0
45-49 years	83.4	82.6	92.9	94.5	74.0	71.8
50-54 years	72.7	72.2	87.2	88.6	59.6	57.2
55-59 years	53.9	56.7	71.1	72.3	38.8	42.3
60-64 years	28.5	29.2	36.7	41.3	20.8	17.3
65 ετών +	2.8	2.6	4.5	3.6	1.5	1.7

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: 2014 SILC –HBS (in euro)

EU-SILC 2014	HBS 2014
4,608.00	4,944.74

At-risk-of-poverty rate: 2014 SILC –HBS (%)

EU-SILC 2014	HBS 2014
22.1	20.4

HH021: “Tenure status”. %

Tenure status	HBS 2014	EU-SILC 2014
Owner	81.4	79.5
Tenant	18.6	20.5

HH081: “ Bath or shower in dwelling ”%

Bath or shower in dwelling	HBS 2014	EU-SILC 2014
Yes	1.5	0.7
No	98.5	99.3

HH091: “ Indoor flushing toilet for sole use of household ”%

Indoor flushing toilet for sole use of household	HBS 2014	EU-SILC 2014
Yes	1.6	0.5
No	98.4	99.5

HH010: “Dwelling type” %

Dwelling type	HBS 2014	EU-SILC 2014
Detached house	32.0	32.9
Semidetached house	8.6	10.2
Apartment or flat	59.4	56.9
Some other kind of accommodation	0.0	0.0

9.2 Coherence - internal

Comparison of the total equivalized disposable household income (deciles). EU-SILC 2013 and 2014

	EU-SILC 2013	EU-SILC 2014	Change
Households	4,246.66	4,266.75	0.47
Total equivalised disposable household income	9,609.20	8,878.80	-7.60
Standard deviation	7,760.24	6,906.40	-11.00
10%	2,037.51	1,923.17	-5.61
20%	4,261.42	3,721.01	-12.68
30%	5,503.48	4,958.21	-9.91
40%	6,618.22	5,951.37	-10.08
50%	7,922.35	7,047.04	-11.05
60%	9,027.14	8,229.65	-8.83
70%	10,184.46	9,444.81	-7.26
80%	11,895.75	11,062.91	-7.00
90%	14,315.84	13,669.48	-4.52
100%	24,344.10	22,767.69	-6.00

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	432,932	705,645	61.4
Special allowance for families having 3 or more than 3 children	115,497	121,905	94.7

Unemployment benefit

As regards regular unemployment benefits, comparisons with administrative data indicate that the survey recorded approximately 26% more persons receiving unemployment benefits (214,510 persons in EU-SILC compared to 170,015 registered persons in OAED for December 2013).

10 Cost and Burden

The mean interview duration

The mean interview duration per household was estimated at 57.27 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	17.16
Maximum	60
Minimum	5
PB120-Minutes to complete the personal questionnaire	
Mean	19.30
Maximum	60
Minimum	10
Mean of interview duration	57.27

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 problems that may arise is more possible to relate with the frame of PSUs

Coverage problems encountered were:

1. The frame of the 2011 Census of Population was somehow outdated and as a result some housing units were found to be empty or to be used for other purposes other than housing.
2. Some houses were used as secondary residence, so they were out of scope of the survey.
3. Some houses were impossible to be located due to incomplete information regarding their addresses.
4. Housing units built after March 2014, were not included in our sampling frame.

However, any such problems are corrected with the use of the calibration procedure described in the dedicated 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 10.659 households (the sampling fraction is about 1,8‰). 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 1,360 areas.

As in each year the 25% of the sample 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 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:

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

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

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

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 1,8‰

Sample distribution over time

As the survey is annual, the sample of households is not distributed over time. The 2014 survey was carried out from June to September 2014 with reference period the previous year (2013).

Month	Date	Number	%
June	1 to 10	395	4.6
	11 to 20	538	6.2
	21 to 31	1,362	15.8
July	1 to 10	1,814	21.0
	11 to 20	1,266	14.7
	21 to 30	1,020	11.8
August	1 to 10	438	5.1
	11 to 20	243	2.8
	21 to 30	217	2.5
Total		8,620	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

Given that the effective sample size has been already treated in the section dealing with sampling errors, 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 10.659 households (the sampling fraction is about 2,5‰). This fraction was the same in each geographical region.

The *actual sample size* for 2014 by rotation is presented below.

	Total	Rotation 1	Rotation	Rotation 3	Rotation 4
Status of households' sample	10,659	1,555	3,335	4,447	1,322

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

Population and sample distribution

	Name	Drawn	Accepted (DB135=1)
GR11	Thraki and Anatoliki Macedonia	598	533
GR12	Kentriki Macedonia	1,797	1,572
GR13	Dytiki Macedonia	268	246
GR14	Thessalia	668	583
GR21	Ipeiros	376	341
GR22	Ionía Nisia	199	138
GR23	Dytiki Ellada	719	645
GR24	Stereá Ellada	520	436
GR25	Peloponnisos	563	498
GR30	Attiki	3,852	2,772
GR41	Voreio Aigaio	209	197
GR42	Notio Aigaio	269	155
GR43	Kriti	621	504
Total	Total	10,659	8,620

Out of the 10,659 addresses successfully contacted 8,620 households completed the Household questionnaire and were all 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 8,620 households, 21,230 persons in total and 18,289 persons aged 16 or over. In order to achieve this, the number of households of the new sub-sample selected was 4,447.

Overall, 60 addresses were not successfully contacted, out of which 24 addresses that were out of scope of the survey, correspond to vacant accommodation, or buildings used as secondary residences or for business purposes, or demolished housing units.

The 2014 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)	4,523	100.0
Address contacted (DB120 =11)	4,463	98.7
Address non-contacted (DB120 =21 to 23)	60	1.3
Address cannot be located (DB120 =21)	32	0.7
Address unable to access (DB120 =22)	0	0.0
Address does not exist (DB120 =23)	28	0.6

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

	Number of households	%
Total	10,388	100,0
Household questionnaire completed (DB130 =11)	8,620	84.9
Interview not completed (DB130 =21 to 24)	1,768	15.1
Refusal to co-operate (DB130 =21)	1,459	6.0
Entire household temporarily away (DB130 =22)	243	8.1
Household unable to respond (DB130 =23)	37	0.5
Other reasons(DB130 =24)	29	0.5
Household questionnaire completed (DB135=1 or 2)	8,620	100,0
Interview accepted for database (DB135=1)	8,620	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	18,057	2,872	6,164	6,592	2,429
Number of accepted personal questionnaires	17,916	2,85	6,079	6,578	2,403
Accepted household interviews	8,620	1,381	2,911	3,177	1,151

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	18,057	17,916	2	1	23	89	24	2
%	116.6	99.2	0	0	0.1	0.5	0.1	0
Rotation 1								
Total	2,872	2,850	1	0	4	14	3	0
%	100	99.2	0	0	0.1	0.5	0.1	0
Rotation 2								
Total	6,164	6,079	1	0	15	51	17	1
%	100	98.6	0	0	0.2	0.8	0.3	0
Rotation 3								
Total	6,592	6,578	0	1	2	10	0	1
%	100	99.8	0	0	0	0.2	0	0
Rotation 4								
Total	2,429	2,409	0	0	2	14	4	0
%	100	99.2	0	0	0.1	0.6	0.2	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 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 2014 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	10,659	1,555	3,335	4,447	1,322
Household Questionnaires completed	8,620	1,381	2,911	3,177	1,151
Interviews Accepted for database	8,620	1,381	2,911	3,177	1,151

Longitudinal sample size 2011-2014

Year	Rotation 1 (3 rd year)	Rotation 2 (2 nd year)	Rotation 4 (4 th year)	Totals
2011	0	0	2,642	2,642
2012	2,594	0	1,581	4,175
2013	1,625	4,676	1,319	7,620
2014	1,555	3,335	1,291	6,181
Total	5,774	8,011	6,833	20,618

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. The other techniques used are the CAPI (more specifically face-to-face interviews with laptops) and CATI techniques, while the use of self-administered by the respondent technique is very limited.

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=2 CAPI	RB260=3 CATI	RB260=4 Questionnaire filled-in by the individual him/her self	RB260=5 Proxy
Total	17,916	15,407	350	1,505	52	602
%	117.0	86.0	2.0	8.4	0.3	3.4
	Rotation 1					
Total	2,850	2,428	69	265	6	82
%	89.6	85.2	2.4	9.3	0.2	2.9
	Rotation 2					
Total	6,079	5,221	84	544	35	195
%	90.2	85.9	1.4	8.9	0.6	3.2
	Rotation 3					
Total	6,578	5,778	139	416	11	234
%	248.1	87.8	2.1	6.3	0.2	3.6
	Rotation 4					
Total	2,409	1,980	58	280	0	91
%	87.7	82.2	2.4	11.6	0	3.8

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																																																												
<p>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.</p> <p>For the households of the new panel 3 introduced in 2014, which replaced panel 3 introduced in 2010, the household design weight (target variable DB080) is defined as the inverse of its probability of selection.</p> $\frac{1}{n_h} \cdot \frac{1}{P_{hi}} \cdot \frac{M_{hi}}{m_{hi}} = DW_{hi}$ <p>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). nh = the sample size of primary units in the stratum. Phi = the selection probability of primary unit.</p> <p>For households in panels 4, 1 and 2 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:</p> <ul style="list-style-type: none">• 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 <p>The longitudinal period of this quality report refers to the period 2011-2014. The rotation panels this period comprises are depicted in the following scheme.</p> <table><tr><td>2003</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>2004</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>2005</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td>2006</td><td>4</td><td>5</td><td>6</td><td>7</td></tr><tr><td>2007</td><td>5</td><td>6</td><td>7</td><td>8</td></tr><tr><td>2008</td><td>6</td><td>7</td><td>8</td><td>1</td></tr><tr><td>2009</td><td>7</td><td>8</td><td>1</td><td>2</td></tr><tr><td>2010</td><td>8</td><td>1</td><td>2</td><td>3</td></tr><tr><td>2011</td><td>1</td><td>2</td><td>3</td><td>4</td></tr><tr><td>2012</td><td>2</td><td>3</td><td>4</td><td>1</td></tr><tr><td>2013</td><td>3</td><td>4</td><td>1</td><td>2</td></tr><tr><td>2014</td><td>4</td><td>1</td><td>2</td><td>3</td></tr></table> <p>As it is clear from the scheme above:</p> <ul style="list-style-type: none">• the longitudinal component 2011-2014 of EU-SILC consists of rotation panels 4, 1 and 2 for a duration of 4, 3 and 2 years respectively (2011-2014 for rotation panel 4, 2012-2014 for rotation panel 1 and 2013-2014 for rotation panel 2).• the cross-sectional component 2014 of EU-SILC consists of rotation panels 4, 1, 2 and 3.• 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.	2003	1	2	3	4	2004	2	3	4	5	2005	3	4	5	6	2006	4	5	6	7	2007	5	6	7	8	2008	6	7	8	1	2009	7	8	1	2	2010	8	1	2	3	2011	1	2	3	4	2012	2	3	4	1	2013	3	4	1	2	2014	4	1	2	3	<p>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.</p> <p>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.</p> <p>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).</p>	<p>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 2013). This method enables the distribution of auxiliary variables, at household and individual level, to coincide with the corresponding population distribution of external data.</p> <p>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.</p> <p>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).</p> <p>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.</p>
2003	1	2	3	4																																																										
2004	2	3	4	5																																																										
2005	3	4	5	6																																																										
2006	4	5	6	7																																																										
2007	5	6	7	8																																																										
2008	6	7	8	1																																																										
2009	7	8	1	2																																																										
2010	8	1	2	3																																																										
2011	1	2	3	4																																																										
2012	2	3	4	1																																																										
2013	3	4	1	2																																																										
2014	4	1	2	3																																																										

The **final cross sectional weights** were calculated as described above.

The **final longitudinal weights** were 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 2014 and panels “4,1,2” and “4,1” respectively.

12.5.2 Estimation and imputation

Imputation procedure used	Imputed rent	Company car
<p>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.</p>	<p>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:</p> <ul style="list-style-type: none"> • Dwelling type - Detached house, Semi-detached or groups of similarly dwellings, Apartment or flat in a building with less than 10 dwellings, Apartment or flat in a building with 10 dwellings or more, Some other kind of accommodation, please specify • Number of rooms • Tenure status - Owned, Rented, Sub-rented with rent at prevailing or market price (Included are cases where rent is recovered from housing benefit), Rented at a reduced price (lower price than the market price), 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. <p>It is noted that in the files the variable was completed with the results of the stratification method.</p>	<p>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.</p> <p>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.</p> <p>More specifically:</p> <ol style="list-style-type: none"> 1. Depreciation = (Purchase prices – selling prices at X) / X. 2. Where X is the average age of a company car. <p>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.</p>

12.6 Adjustments

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

13 Comments

National questionnaire is 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 2014 Operation Guidelines' you can find information of the 2014 Ad-hoc Module variables.

Annexes

Indices

[Time series](#)

Questionnaires[Personal Questionnaire](#)[Household Questionnaire](#)[Members' Register](#)[Household Register](#)[Current Household Income](#)**Methodological Documents**[Item Non Response](#)[Sampling Errors](#)[Metadata](#)