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Reference metadata

1. Contact
2. Statistical presentation
3. Statistical processing
4. Quality management
5. Relevance
6. Accuracy and reliability
7. Timeliness and punctuality
8. Coherence and comparability
9. Accessibility and clarity
10. Cost and Burden
11. Confidentiality
12. Comment
Related Metadata
Annexes (including footnotes)

For any question on data and metadata, please contact: EUROPEAN STATISTICAL DATA SUPPORT

1. Contact

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1.1. Contact organisation	Hellenic Statistical Authority (ELSTAT)
1.2. Contact organisation unit	Population and Labour Market statistics Special Household Surveys Section
1.5. Contact mail address	18510, Pireos 46 and Eponiton str, PIRAEUS, GREECE

2. Statistical presentation

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2.1. Data description

The survey on "income and living conditions" covers four topics: main indicators, income distribution and monetary poverty, living conditions, material deprivation and childcare arrangements indicators, which are again structured into collections of indicators on specific topics.

The collection "main indicators" houses those indicators provided under the Open Method of Coordination in the area of combating poverty and social exclusion. This group of indicators houses the following three collections: the overarching portfolio of indicators, the social inclusion portfolio and the pensions portfolio.

The collection "income distribution and monetary poverty" houses collections of indicators relating to poverty risk, poverty risk of working individuals, income of people at risk of poverty as well as the distribution of income.

The collection "living conditions" hosts indicators relating to characteristics and living conditions of households, characteristics of the population according to different breakdowns, health and labour conditions as well as housing conditions.

The collection "current household income" covers indicators relating to financial and income parameters and "material deprivation" gives information on lack of specific goods and services in comparison with the countries of the European Union.

2.2. Classification system

The EU-SILC results are produced in accordance with the relevant international classification systems. The main classifications used are: ISCED 2011 for the level of education, ISCO 08 (COM) from 2010 for occupation and NACE (Rev. 2 from 2008) for economic activity.

2.3. Coverage - sector

Not applicable

2.4. Statistical concepts and definitions

Income:

The total disposable income of a household is calculated by adding together the personal income received by all of household members plus income received at household level. Missing income information in individual questionnaires is imputed.

Disposable household income includes:

- all income from work (employee wages and self-employment earnings)
- private income from investment and property
- transfers between households
- all social transfers received in cash including old-age pensions

Note:Some of the income components are mandatory only from 2007: Imputed rent, Interest paid on mortgage, Value of goods from own consumption, Employer's social insurance contributions. From the 2007 year on, all countries have to supply gross income information.

Equivalence scale:

To take into account the impact of differences in household size and composition, the total disposable household income is "equivalised". The equivalised income attributed to each member of the household is calculated by dividing the total disposable income of the household by the equivalisation factor. Equivalisation factors can be determined in various ways. Eurostat applies an equivalisation factor calculated according to the OECD-modified scale first proposed in 1994 - which gives a weight of 1.0 to the first person aged 14 or more, a weight of 0.5 to other persons aged 14 or more and a weight of 0.3 to persons aged 0-13.

Household definition:

A 'private household' means "a person living alone or a group of people who live together in the same private dwelling and share expenditures, including the joint provision of the essentials of living". EU-SILC implementing regulation number 1983/2003 on updated definitions, defines households in terms of sharing household expenses and (for non-permanent members) in terms of duration of stay and (for temporarily absent members) in terms of duration of absence.

Household type:

A common classification was developed by Eurostat for use in data collection surveys including ECHP, LFS, HBS and EU-SILC as well as the subsequent presentation of indicators relating to income, housing, education, healthcare, etc. Rather than focussing on "couples" and/or "families", the classification is constructed by reference to the numbers of adult members, their age and gender, and the numbers of dependent children living with them. This is reproduced below:

Type of household
Total
All households without dependent children
Single person household
One adult male
One adult female
One adult older than 65 years
One adult aged between 0 and 64 years
Two adults, no dependent children, younger than 65 years
Two adults, no dependent children, at least one aged 65 years and over
Three or more adults, no dependent children
All households with dependent children
Single parent with a least one dependent child
Two adults with one dependent child
Two adults with two dependent children
Two adults with three or more dependent children

Three or more adults with dependent children

Dependent children were previously defined as all persons aged less than 16, plus those economically inactive persons aged 16-24 living with at least one of their parents. Now a slightly different definition has been adopted: All persons aged less then 18 are considered as dependent children, plus those economically inactive persons aged 18-24 living with at least one of their parents.

Activity status:

Under EU-SILC respondents are asked to declare the number of months of year spent in a list of activity statuses (cross-sectional part). From this information a "calendar of activities" can be constructed.

Note: Separate questions also allow the construction of an "ILO activity status".

Using the calendar of activities, the following classification of most frequent activity status is established:

Activity and/or professional status

Employee (full-time)

Employee (part-time)

Self-employed (full-time)

Self-employed (part-time)

Unemployed

Pupil, student, further training, unpaid work experience

In retirement or in early retirement or has given up business

Unfit to work

Soldier

Domestic tasks

Person with permanent disability

For the 'in work poverty risk indicators', an individual is considered as having a particular activity status if he/she has spent time during the reference year in that status.

For the pensions indicator 'aggregate replacement ratio' only persons who have spent the total reported time in the relevant activity status are considered.

Education level:

Under EU-SILC, the attainment levels of individuals are classified according to the ‘International Standard Classification of Education' version of 2011.

Level 000 Less than primary education.

Level 100 Primary education.

Level 200 Lower secondary education.

Level 300 Upper secondary education.

Level 400 Post-secondary non-tertiary education.

Level 500 Short cycle tertiary

Level 600 Bachelor or equivalent

Level 700 Master or equivalent.

Level 800 Doctorate or equivalent.

Occupation:

Under EU-SILC, the occupational status of individuals is classified according to the ‘International Standard Classification of Occupations' ISCO_08 (COM).

We, also, present the following tables.

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 contribu-tions (PY030)	Cash profits or losses from self employ-ment (PY050)	Value of goods produced for own consumption (PY070)	Unemploy ment 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 employees were collected despite the fact that the gender pay gap is calculated with data from sources other than EU-SILC.

2.5. Statistical unit

Households and household members

2.6. Statistical population

The EU-SILC target population in each country consists of all persons living in private households. Persons living in collective households and in institutions are generally excluded from the target population.

2.7. Reference area

The whole country

2.8. Coverage - Time

Annual survey

2.9. Base period

Not applicable

3. Statistical processing

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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.

3.1. Source data

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 2016, were not included in our sampling frame.

However, the number of the above cases was very small (88) and anyway such cases are corrected with the use of the calibration procedure applied as it is described in the respective paragraph.

3.1.1. 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 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 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 22,326 households (the sampling fraction is 5,4‰).

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:

(See formula 1 in Annex)

The total number of the primary sampling units is 2,885 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:
(See formula 2 in Annex)
(See formula 3 in Annex)

The relation (2) denotes that the estimator of the final stratum, total Y_h is self-weighted.
Sample distribution over time
As the survey is annual, the sample of households is not distributed over time. The 2016 survey was carried out from May to November 2016 with reference period the previous year (2015).

Month	Date	Number	%
May	1 to 10	58	0.3
	11 to 20	224	1.2
	21 to 31	1,425	7.8
June	1 to 10	3,618	19.8
	11 to 20	3,346	18.3
	21 to 30	2,640	14.5
July	1 to 10	1,716	9.4
	11 to 20	1,374	7.5
	21 to 31	968	5.3
August	1 to 10	656	3.6
	11 to 20	335	1.8
	21 to 31	394	2.2
September	1 to 10	382	2.1
	11 to 20	321	1.8
	21 to 30	275	1.5
October	1 to 10	162	0.9
	11 to 20	123	0.7
	21 to 31	96	0.5
November	1 to 10	85	0.5
	11 to 20	54	0.3
	21 to 30	3	0.0
Total		**18,255**	**100,0**

Annexes:
Annex_Sampling_Design_and_Procedure_2016

3.1.2. 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 units selected in each sampling area are the households.

3.1.3. Sampling rate and sampling 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 22,326 households (the sampling fraction is 5.4‰).

The *actual sample size* for 2016 by rotation is presented below.

	Total	**Rotation 1**	**Rotation 2**	**Rotation 3**	**Rotation 4**
Status of households' sample	22,326	9,408	2,584	2,833	7,501

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	6,719	4,848
EL41	Voreio Aigaio	1,147	1,041
EL42	Notio Aigaio	1,373	1,039
EL43	Kriti	1,310	1,154
EL51	Anatoliki Makedonia & Thraki	1,079	1,017
EL52	Kentriki Makedonia	2,914	2,489
EL53	Dytiki Makedonia	990	782
EL54	Hpeiros	1,305	1,083
EL61	Thessalia	1,170	1,087
EL62	Ionia Nisia	821	511
EL63	Dytiki Ellada	1,048	955
EL64	Sterea Ellada	1,374	1,221
EL65	Peloponnisos	1,076	1,028
Total		**22,326**	**18,255**

Out of the initial 22,326 households a sample of 18,255 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 18,255 households, with 44.094 persons in total off which 38,016 are 16 years old and over and 37,850 of them completed the personal interview. The number of households of the new sub-sample selected was 9,408.

Overall, 88 addresses were not successfully contacted, out of which 79 addresses were actually out of scope of the survey (do not exist or are non-residential or unoccupied or not principal residences).

The 2016 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)	9,510	100.0
Address contacted (DB120 =11)	9,422	99.1
Address non-contacted	88	0.9

(DB120 =21 to 23)		
Address cannot be located (DB120 =21)	9	0.1
Address unable to access (DB120 =22)	0	0.0
Address does not exist (DB120 =23)	79	0.8

Distribution of Households by "Household questionnaire result (DB130)" and by "Household interview acceptance (DB135)"

	Number of households	**%**
Total	21,900	100.0
Household questionnaire completed (DB130 =11)	18,255	83.4
Interview not completed (DB130 =21 to 24)	3,645	16.6
Refusal to co-operate (DB130 =21)	1,731	7.9
Entire household temporarily away (DB130 =22)	1,500	6.8
Household unable to respond (DB130 =23)	133	0.6
Other reasons(DB130 =24)	281	1.3
Household questionnaire completed (DB135=1or 2)	18,255	100.0
Interview accepted for	18,255	100.0

database (DB135=1)		
Interview rejected (DB135=2)	0.0	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	38,016	14,870	4,594	5,061	3,491
Number of accepted personal questionnaires	37,850	14,834	4,550	5,037	3,429
Accepted household interviews	18,255	7,313	2,131	2,385	6,426

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	38,016	37,850	0	0	26	110	30	0
%	100.0	99.6	0	0	0.1	0.3	0	0
	Rotation 1							
Total	14,870	14,834	6	0	0	10	20	0
%	100.0	99.8	0	0	0	0.1	0.1	0
	Rotation 2							
Total	4,594	4,550	0	0	1	40	3	0
%	100.0	99.0	0	0	0	0.9	0.1	0
	Rotation 3							
Total	5,061	5,037	0	0	5	19	0	0
%	100.0	99.5	0	0	0.1	0.4	0	0
	Rotation 4							
Total	13,491	13,429	0	0	14	41	7	0
%	100.0	99.5	0	0	0.1	0.3	0.1	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 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	22,326	9,408	2,584	2,833	7,501
Household Questionnaires completed	18,255	7,313	2,131	2,385	6,426
Interviews Accepted for database	18,255	7,313	2,131	2,385	6,426

Longitudinal Sample Size 2013-2016

Year	Rotation 2 (4 years)	Rotation 3 (3 years)	Rotation 4 (2 years)	Totals
2013	4,676	0	0	4,676
2014	3,335	4,447	0	7,782
2015	2,921	3,185	9,946	16,052
2016	2,584	2,833	7,501	12,918
Totals	13,516	10,465	17,447	41,428

3.2. Frequency of data collection

ELSTAT collects EU-SILC data annually.

3.3. Data collection

Modes of data collection

Mostly paper assisted personal interviewing (PAPI) technique has been used. The other techniques used are presented in the following table as the distribution of individuals aged 16 or over by data status and type of interview.

	Total	RB260=1	RB260=3	RB260=5	RB260=6	RB260=8	RB260=10
		PAPI	CATI	CAWI	PAPI Proxy	CATI Proxy	CAWI Proxy
Total	37,850	34,529	1,872	261	928	242	18
%	100.0	91.2	4.9	0.7	2.5	0.6	0.0
	Rotation 1						
Total	14,834	13,997	388	0	390	59	0
%	100	94.4	2.6	0.0	2.6	0.4	0.0
	Rotation 2						
Total	4550	3963	382	65	99	40	1
%	100.0	87.1	8.4	1.4	2.2	0.9	0.0

	Rotation 3						
Total	5,037	4,332	439	49	149	68	0
%	100.0	86.0	8.7	1.0	3.0	1.4	0.0
	Rotation 4						
Total	13,429	12,237	663	147	290	75	17
%	100.0	91.1	4.9	1.1	2.2	0.6	0.1

3.4. Data validation

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

3.5. Data compilation

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

3.5.1. Weighting procedure

Design Factor

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 1 introduced in 2016, which replaced panel 1 introduced in 2012, the household design weight (target variable DB080) is defined as the inverse of its probability of selection.

(See Formula and explanations in the attached Annex)

For households in panels 2,3 and 4 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 2013-2016. The rotation panels this period comprises are depicted in the following scheme.

2013	3	4	1	**2**
2014	4	1	**2**	**3**
22015	1	**2**	**3**	**4**
2016	**2**	**3**	**4**	**1**

As it is clear from the scheme above:

- The longitudinal component 2013-2016 of EU-SILC consists of rotation panels 2, 3 and 4 for a duration of 4, 3 and 2 years respectively (2013-2016 for rotation panel 2, 2014-2016 for rotation panel 3 and 2015-2016 for rotation panel 4).
- the cross-sectional component 2016 of EU-SILC consists of rotation panels 2, 3, 4 and 1.
- 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.

Non-Response Adjustments

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).

Adjustments to External Data

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 2016). 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.

Final Weights

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 2016 and panels “2,3,4” and “2,3” respectively.

Annexes:

Annex_Weighting_Procedure_2013_2016

3.5.2. Estimation and imputation

Imputation Procedure Used

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.

Imputed Rent

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.

Company Car

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.

3.6. Adjustment

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

4. Quality management

Top

4.1. Quality assurance

The quality of the survey is ensured by the existence of a methodological handbook issued by Eurostat, as well as by the use of a common questionnaire – template in order to improve comparability of results in all member states, and with the application of Code of Good Practice for European Statistics.

More specifically, the EU-SILC survey is based on a framework Regulation (1177/2003) that defines the scope, definitions, time reference, characteristics of the data, data required, sampling, sample sizes, transmission of data, publication, access for scientific purposes, financing, reports and studies. In addition, Eurostat and Member States have developed the technical aspects of the instrument, in particular one Regulation on 'Quality Reports' (28/2004).

Quality Assurance Framework of the European Statistical System

4.2. Quality management - assessment

Assessment of the quality is carried out by the ELSTAT and Eurostat. The sample size is such, as to ensure high accuracy results. The sample size represents the reference research population and all necessary measures are taken in order to accomplish the appropriate checks and minimize measurement errors in data collection. The data are accompanied by quality reports analyzing the accuracy, consistency and comparability of data.

After the checks in order to detect errors, which are being corrected and the estimation of sampling errors, the obtained results are considered to be of high quality.

5. Relevance

Top

5.1. Relevance - User Needs

EU-SILC the main user is Eurostat: Other users are:

- Institutional users like other Commission services, other European institutions (such as the ECB), national administrations (mainly those in charge of the monitoring of social protection and social inclusion, or other international organisations;
- Statistical users in Eurostat or in Member States National Statistical Institutes to feed sectoral or transversal publications such as the Annual Progress Report on the Lisbon Strategy (structural indicators), the Sustainable Development Strategy monitoring report, the Eurostat yearbook and various pocketbooks, among other reports;
- Researchers having access to microdata
- End users - including the media - interested in living conditions and social cohesion in the EU.

5.2. Relevance - User Satisfaction

Department of Statistical Information Transmission conducts a survey on users’ satisfaction.

User satisfaction survey

5.3. Completeness

The completeness of data and breakdowns are considered as very satisfactory based on the needs set from Eurostat’s Regulations.

5.3.1. Data completeness - rate

The completeness of data and breakdowns are considered as very satisfactory based on the needs set from Eurostat’s Regulations.

6. Accuracy and reliability

Top

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.

6.1. 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.

6.2. Sampling error

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;

6.2.1. Sampling error - 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	36.6	0.42	0.02	0.64	1.26	21.2	0.31	0.03	0.56	1.10	22.4	0.36	0.03	0.60	1.18	19.2	0.32	0.03	0.57	1.11
Male	34.4	0.38	0.02	0.62	1.21	21.2	0.33	0.03	0.58	1.13	22.2	0.39	0.03	0.62	1.22	17.3	0.37	0.04	0.61	1.19
Female	35.6	0.35	0.02	0.59	1.16	21.2	0.36	0.03	0.60	1.18	22.6	0.41	0.03	0.64	1.25	21.1	0.40	0.03	0.63	1.24
0-17	37.5	1.27	0.03	1.13	2.21	26.3	1.03	0.04	1.01	1.99	26.7	1.26	0.04	1.12	2.20	-	-	-	-	-
18-64	39.7	0.46	0.02	0.68	1.33	22.7	0.45	0.03	0.67	1.31	23.7	0.44	0.03	0.66	1.30	-	-	-	-	-
65+	22.0	0.47	0.03	0.69	1.35	12.4	0.28	0.04	0.53	1.04	15.2	0.41	0.04	0.64	1.26	-	-	-	-	-

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

Annexes:
ANNEX_SAMPLING_ERRORS_INCOME_VARS_CROSS_LONG_2013-2016
ANNEX_SAMPLING_ERRORS_EQINC_CROSS_LONG_2013-2016

6.3. Non-sampling error

Non-sampling errors are basically of four 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.

6.3.1. Coverage error

Coverage errors include over-coverage, under-coverage and missclassification

- Over-coverage relates either to 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 2016, were not included in our samplingframe

However, the number of the above cases was very small (88) and anyway such cases are corrected with the use of the calibration procedure applied.

6.3.1.1. Over-coverage - rate

	Main Problems	Size of error
cross- sectional data	Over-coverage Under-coverage Miss-classification	0.39% (88 addresses)

6.3.1.2. Common units - proportion

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

6.3.2. Measurement error

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 2016 EU-SILC round was the 14th in the series, quality has considerably been 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, so 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 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 2016 survey were the same as those of the previous years except for some improving changes in specific questions (e.g. education) and some small changes in the wording. Also, the ad hoc questions were incorporated in the questionnaires of the main survey. The major changes related to the questionnaires of Eurostat concern as in the previous years additional questions used in the net/gross/net conversion model (see http://www.statistics.gr/en/statistics/-/publication/SFA10/2016/ 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	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 alsocollected 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.

	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. There is a sense that still self-employment income is under-estimated. 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.

6.3.3. Non response error

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 to the Commission Regulation 28/2004:

- · *Household non-response rates (NRh)*

NRh = (1-(Ra * Rh)) * 100
Where
[formula 1 in Annex - Non response errors]
[formula 2 in Annex - Non response errors]

NRh=((1-0.999)*0.834)*100= 16.68%
So, the household non-response rate is 16.68%

- · *Individual non-response rates (NRp)*

NRp = (1-(Rp))*100
where
[formula 3 in Annex - Non response errors]
NRp=(1-0.996)*100=0.40%

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

*NRp=(1-(Ra*Rh*Rp))*100=(1-(0.999*0.834*0.996))*100= 17.02%
So, the overall individual non-response rate is 17.02%

Annexes:
Annex_Non_Response_Errors_2016

6.3.3.1. 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	0.79	0.85	0.87	0.88
NRh	21.58	14.70	13.20	12.40
Rp	0.99	0.99	1.00	1.00
NRp	0.20	1.00	0.50	0.50
NRp2	21.74	15.55	13.63	12.84
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*	0.83
	B*	0.79
	C*	0.73
Proportion of complete personal interviews within households accepted for data base (Rp)	A*	0.99
	B*	0.99
	C*	0.98
Household non-response rate (NRh)	A*	16.68
	B*	21.61
	C*	28.00
Individual non-response rate (NRp)	A*	0.40
	B*	0.24
	C*	1.59
Overall individual non-response rate (NRp2)	A*	17.02
	B*	21.80
	C*	29.15

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 2-2014	Wave 3-2015	Wave 4-2016
Wave response rate	80.06	81.09	86.98
L follow-up rate	72.28	78.75	78.87
Follow-up ratio	1.68	2.07	1.69
Achieved sample size ratio	1.83	2.12	0.85

Individuals' response rate per sub-sample - Longitudinal Component

Individuals' response rate	Wave 2-2014	Wave 3-2015	Wave 4-2016
Wave response rate	84.73	84.87	84.24
L follow-up rate	-	-	-
Achieved sample size ratio	1.88	2.12	0.86
Response rate for non-sample persons	0.81	0.91	0.79

6.3.3.2. 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.

6.3.3.2.1. Item non-response rate by 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	99.2	99.7	99.3	98.2
% 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	11.9	15.5	6.9	0.1	8.7	6.5
% 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)	Unemployment 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	25.2	0.4	13.4	2.0	29.3	5.0	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

In the attached Annex, we present the "% of households having received an amount" and the "% of individuals having received an amount" for the household and personal gross income variables respectively both for the cross-sectional and longitudinal component of the survey.

Annexes:

Annex_Item_Non_Response_2013_2016

6.3.4. Processing error

Data Entry and Coding	Editing Controls
Mainly PAPI method was used for interviews while the analysis of all methods used has been presented in 3.3 (modes of data collection). **(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.	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.

- 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 appreared 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.

6.3.4.1. Imputation - rate

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

6.3.5. Model assumption error

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

6.4. Seasonal adjustment

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

6.5. Data revision - policy

The revision policy may relate to the survey data and the survey itself, i.e. the questionnaire, the sample, etc., and takes into account users’ needs in additional statistical information Revision Policy

6.6. Data revision - practice

After identifying the users’ needs (e.g. Eurostat’s) questionnaires are, whenever needed, redesigned with care not to danger comparability over time and at European level.
Review of data is being made after the application of checks by ELSTAT and by Eurostat, and after correcting any inconsistencies that may exist in the data, both cross-sectionally and longitudinally.

6.6.1. Data revision - average size

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

7. Timeliness and punctuality

Top

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

7.1. Timeliness

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

7.1.1. Time lag - first result

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

7.1.2. Time lag - final result

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

7.2. Punctuality

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

7.2.1. Punctuality - delivery and publication

The data are produced and disseminated on a predetermined date.

8. Coherence and comparability

Top

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 2015 refer to income received in previous years.	For SILC 2016; the income reference period is the year 2015.	The reference period for taxes on wealth was 2015.	The income reference period is the previous calendar year (year 2015), while current variables refer to the fieldwork period (May - November 2016). Therefore the lag may vary from 5 to 11 months.

8.2. Comparability - over time

In the following tables household and personal income components are presented for two consecutive years of EU-SILC, 2015 and 2016.

Comparison of income target variables – EU SILC 2016 and 2015

Net Income Component	%
Total disposable hh income (HY020)	-0.1
Total disposable hh income before social transfers other than old-age and survivors benefits (HY022)	-0.1
Total disposable hh income before all social transfers (HY023)	0.1

Cash or near-cash employee income (PY010N)	1.3
Cash profits or losses from self-employment (PY050N)	-2.4

Household income per net income component

Income Component	2015 Mean	2016 Mean	2015 Sum (in mio €)	2016 Sum (in mio €)
Total disposable hh income (HY020)	14,940.51	14,932.34	62,688.00	62,249.71
Total disposable hh income before social transfers other than old-age and survivors benefits (HY022)	14,376.50	14,366.90	60,321.50	59,892.52
Total disposable hh income before all social transfers (HY023)	8,831.86	8,841.43	37,057.06	36,857.99
Income from rental of property or land (HY040)	520.22	520.03	2,182.76	2,167.89
Family/ Children related allowances (HY050)	144.28	165.95	605.37	691.83
Social exclusion payments not elsewhere classified (HY060)	97.78	90.91	410.27	378.99
Housing allowances (HY070)	1.89	1.94	7.92	8.07
Regular inter-hh cash transfers received (HY080)	338.31	333.66	1,419.49	1,390.94
Interest, dividends, profit from capital investments in incorporated businesses (HY090)	74.95	74.13	314.49	309.04
Income received by people aged under 16 (HY110)	0.41	0.26	1.73	1.09
Regular taxes on wealth (HY120)	595.87	591.04	2,500.16	2,463.92
Regular inter household cash transfer paid (HY130)	245.52	249.26	1,030.15	1,039.09

Individual income per net income component

Income component	2015 Mean	2016 Mean	2015 Sum (in mio €)	2016 Sum (in mio €)
Cash or near-cash employee income (PY010)	2,958.39	2,997.50	26,821.69	27.026,22

Income from private use of company car (PY021)	10.12	9.88	91.75	89.05
Cash profits or losses from self-employment (PY050)	1,460.94	1,394.29	13,245.34	12,571.26
Pension from individual private plans (PY080)	0.17	0.17	1.56	1.53
Unemployment benefits (PY090)	48.19	44.58	436.9	401.96
Old-age benefits (PY100)	2,274.68	2,257.63	20,623.01	20,355.36
Survivors benefits (PY110)	304.98	302.40	2,765.07	2,726.52
Sickness benefits (PY120)	2.32	2.35	21	21.16
Disability benefits (PY130)	96.59	93.02	875.71	838.73
Education-related allowances (PY140)	2.37	2.39	21.45	21.54

8.2.1. Length of comparable time series

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

8.3. Coherence - cross domain

2016 SILC and 2016 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 2016, making thus the survey robust.

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

Self-defined current activity status	EU-SILC 2016	LFS 2016
At work (Full + Part time)	39.1	39.3
Unemployed	13.7	13.9
Non economically active	47.3	46.8

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

Number of hours usually worked per week in main job	EU-SILC 2016	LFS 2016
	42.4	42.1

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

Persons working in the local unit	EU-SILC 2016	LFS 2016
1 person	17.8	18.8
2 persons	12.1	12.2
3 persons	6.6	7.1
4 persons	3.5	4.0
5 persons	3.7	3.5
6 persons	1.8	1.9

7 persons	1.1	1.3
8 persons	1.5	1.3
9 persons	0.7	0.5
10 persons	1.9	1.9
11-19 persons	11.7	10.5
20-49 persons	10.1	8.7
50 persons or more	17.9	14.6
Don’t know but fewer than 11 persons	4.2	5.3
Don’t know but more than 10 persons	5.4	8.4

PL040: “Status in employment”. %

Status in employment	**EU-SILC 2016**	**LFS 2016**
Self employed with employees	5.8	7.4
Self employed without employees	23.5	22.8
Employee	66.5	65.9
Family worker	4.1	3.9

PE040: “Highest ISCED level attained”. %

Highest ISCED level attained	**EU-SILC 2016**	**LFS 2016**
Never attended any level of education	5.3	4.1
Primary education	21.1	22.8
Lower secondary education	11.2	13.3
Upper secondary education	32.9	30.4
Post secondary non tertiary education	5.9	6.8
First stage of tertiary education	20.7	20.3
Second stage of tertiary education	2.8	2.3

PL051: “Occupation”. %

Occupation	EU-SILC 2016	LFS 2016
Armed forces Occupations	1.5	1.7
Managers	1.6	2.7
Professionals	13.6	19.3
Technicians and Associate Professionals	6.8	8.1
Clerical support workers	10.7	10.4
Services and sales workers	22.6	23.8
Skilled Agricultural, Forestry and Fishery workers	15.5	11.4
Craft and related Trades workers	11.2	9.6
Plant and machine operators and assemblers	7.1	6.0
Elementary occupations	9.3	7.0

PL111: “Economic Activity”. %

Economic activity	EU-SILC 2016	LFS 2016
Agriculture, hunting, forestry and fishing	12.1	12.4
Mining and quarrying	0.2	0.4
Manufacturing	9.0	9.58
Electricity, gas, steam and air conditioning	0.8	0.8
Water supply: sewerage, waste management and remediation	0.5	0.6
Construction	4.6	4.0
Wholesale and retail trade: repair of motor vehicles and motorcycles	18.1	17.9

Transportation and storage	4.9	5.0
Accommodation and food service activities	9.3	9.3
Information and communication	2.5	2.2
Financial and insurance activities	2.8	2.6
Real estate activities	0.2	0.2
Professional scientific and technical activities	4.7	5.5
Administrative and support service activities	2.0	2.4
Public administration and defense; compulsory social security	10.9	9.0
Education	7.7	8.0
Human health and social work activities	5.4	5.9
Arts, entertainment and recreation activities	1.5	1.3
Other service activities	2.0	1.8
Activities of households as employers	0.9	1.1

Household by size. %

Household type	**SILC 2016**	**LFS 2016**
One person households	25.7	30.5
Two persons households	29.5	35.1
Three persons households	19.8	16.6

Four persons households	17.7	13.2
Five persons households	5.1	3.5
Six and more persons households	2.3	1.1

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

Have you ever worked?	**EU-SILC 2016**	**LFS 2016**
Yes	67.5	64.4
No	32.5	35.6

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

Working less than 30 hours per week	**EU-SILC 2016**	**LFS 2016**
Percentage of persons working less than 30 hours per week	12.4	11.0

PL140: “Type of contract”. %

Type of contract	**EU-SILC 2016**	**LFS 2016**
Permanent job / work contract of unlimited duration	77.1	88.8
Temporary job/work contract of limited duration	22.9	11.2

Comparison of labour force participation, LFS 2016 - SILC 2016 %

Age groups	**Total**		**Males**		**Females**	
	SILC 2016	**LFS 2016**	**SILC 2016**	**LFS 2016**	**SILC 2016**	**LFS 2016**
15-19 years	13.6	6.9	17.4	7.7	9.6	6.1
20-24 years	48.0	44.1	48.6	46.3	47.5	41.8
25-29 years	85.3	84.7	87.3	88.4	83.4	80.4
30-34 years	89.9	88.2	96.8	94.9	82.5	81.9
35-39 years	89.2	89.6	96.8	96.7	81.7	82.2
40-44 years	87.4	88.4	96.9	96.5	77.6	80.5
45-49 years	84.2	85.3	94.3	92.6	74.9	78.3
50-54 years	74.0	76.3	87.5	88.8	60.5	64.4
55-59 years	54.9	58.3	73.5	73.9	38.6	44.0
60-64 years	28.5	30.9	36.9	39.8	20.50	22.7
65 ετών +	2.6	3.2	3.9	4.3	1.6	2.3

2016 SILC and 2016 HBS comparison

The risk of poverty indicator EU-SILC 2016 was compared with the same indicator calculated from the HBS 2016. 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.

At-risk-of-poverty threshord: 2016 SILC, HBS (in euros)

EU-SILC 2016	HBS 2016
4,500.00	4,792.10

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

EU-SILC 2016	HBS 2016
21.2	18.2

HH021: "Tenure Status" (%)

Tenure status	HBS 2016	EU-SILC 2016
Owner	82.1	78.2
Tenant	17.9	21.8

HH081: "Bath or shower in dwelling" (%)

Bath or shower in dwelling	HBS 2016	EU-SILC 2016
Yes	1.1	0.5
No	98.9	99.5

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

Indoor flushing toilet for sole use of household	HBS 2016	EU-SILC 2016
Yes	0.9	0.4
No	99.1	99.6

HH010: "Dwelling type" (%)

Dwelling type	HBS 2016	EU-SILC 2016
Detached house	33.2	32.8
Semidetached house	9.3	9.1
Apartment or flat	57.4	58.0
Some other kind of accommodation	0.0	0.0

8.4. Coherence - sub annual and annual statistics

Coherence between two or more statistical results refers to the degree of using the same definitions and methods in order to produce the statistics. In the previous paragraphs we presented comparisons on indicators, income and other characteristics between EU-SILC and other surveys (HBS, LFS), while in paragraph 8.6 we present some more data and some comparisons with administrative sources.

8.5. Coherence - National Accounts

There are no details presented regarding the coherence between EU-SILC and National Accounts on disposable income results since the data taken into account fot it's calculation are not actually on the same basis.
On the part of National Accounts further data are taken into account (like general partnerships' results belonging to household members) that is very difficult at the moment to isolated and compare on the same basis.

8.6. Coherence - internal

Comparison of the mean total equivalized disposable household income (deciles). EU-SILC 2015 and 2016

	EU-SILC 2015	EU-SILC 2016	Change % (2016/2015)
Households	4,195,840	4,168,784	-0.64
Mean total equivalised disposable household income	8,836.48	8,841.79	0.06
Standard deviation	8,170.11	8,429.45	3.17
10%	1,750.41	1,698.00	-2.99
20%	3,904.86	3,837.03	-1.74
30%	5,088.59	5,058.54	-0.59
40%	6,152.19	6,051.86	-1.63
50%	7,166.59	7,038.03	-1.79
60%	8,178.71	8,047.74	-1.60
70%	9,394.13	9,231.88	-1.73
80%	11,010.99	10,836.73	-1.58
90%	13,479.83	13,132.58	-2.58
100%	22,234.57	21,654.26	-2.61

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	709,706	768,469	92.4.6
Special allowance for families having 3 or more than 3 children	76,694	120,184	63.8

Unemployment benefits

As regards unemployment benefits (regular and for seasonal employees), comparisons with administrative data indicate that the survey recorded 11.1% fewer persons receiving unemployment benefits (168.060 persons in EU-SILC compared to 186,737 persons in OAED’s data for December 2015).

9. Accessibility and clarity

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

9.1. Dissemination format - News release

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

9.2. Dissemination format - Publications

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

9.3. Dissemination format - online database

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

9.3.1. Data tables - consultations

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

9.4. Dissemination format - microdata access

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

9.5. Dissemination format - other

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

9.6. Documentation on methodology

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

9.7. Quality management - documentation

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

9.7.1. Metadata completeness - rate

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

9.7.2. Metadata - consultations

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

10. Cost and Burden

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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	16.76
Maximum	35
Minimum	5
PB120-Minutes to complete the personal questionnaire	
Mean	18.66
Maximum	50
Minimum	10
Mean of inteview durarion	56.04

11. Confidentiality

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11.1. Confidentiality - policy

The issues concerning the observance of statistical confidentiality by the Hellenic Statistical Authority (ELSTAT) are arranged by articles 6, 7 and 8 of the Law 3832/2010, as amended by article 90 paragraph 8 of Law 3842/2010 and by article 10 of Law 3899/2010, as well as by article 8 of Law 2392/1996, which was brought back into force, in accordance with article 90 paragraph 8 of Law 3842/2010.

Furthermore, ELSTAT disseminates the statistics in compliance with the statistical principles of the European Statistics Code of Practice and in particular with the principle of statistical confidentiality.

11.2. Confidentiality - data treatment

- ELSTAT protects and does not disseminate data it has obtained or it has access to, which enable the direct or indirect identification of the statistical units that have provided them by the disclosure of individual information directly received for statistical purposes or indirectly supplied from administrative or other sources. ELSTAT takes all appropriate preventive measures so as to render impossible the identification of individual statistical units by technical or other means that might reasonably be used by a third party. Statistical data that could potentially enable the identification of the statistical unit are disseminated by ELSTAT if and only if:

a) these data have been treated, as it is specifically set out in the Regulation on the Statistical Obligations of the agencies of the Hellenic Statistical System (Government Gazette 2469 B, 4.11.2011) (ELSS), in such a way that their dissemination does not prejudice statistical confidentiality or

b) the statistical unit has given its consent, without any reservations, for the disclosure of data.

- The confidential data that are transmitted by ELSS agencies to ELSTAT are used exclusively for statistical purposes and the only persons who have the right to have access to these data are the personnel engaged in this task and appointed by an act of the President of ELSTAT.
- Issues referring to the observance of statistical confidentiality are examined by the Statistical Confidentiality Committee (SCC) operating in ELSTAT. The responsibilities of this Committee are to recommend on:

  - the level of detail at which statistical data can be disseminated, so as the identification, either directly or indirectly, of the surveyed statistical unit is not possible;
  - the anonymization criteria for the microdata provided to users;
  - the granting to researchers access to confidential data for scientific purposes.

For further information, visit Hellenic Statistical Authority webpage

Provision of microdata
Provision of Statistical Data

12. Comment

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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 '2016 Operation Guidelines' you can find information of the 2016 Ad-hoc Module variables.

Related metadata

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Annexes

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ANNEX_WHEIGHTING_PROCEDURE_2013_2016
ANNEX_SAMPLING_ERRORS_INCOME_VARS_CROSS_LONG_2013-2016
ANNEX_SAMPLING_ERRORS_EQINC_CROSS_LONG_2013-2016
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