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2 Introduction

The production of quality reports is part of the implementation of the EU-SILC instrument. In order to assess the quality of data at national level and to make a comparison among countries, the National Statistics Institutes are asked to report detailed information mainly on: the entire statistical process, sampling and non-sampling errors, and potential deviations from standard definition and concepts.

This document follows the ESS standard for quality reports structure (ESQRS), which is the main report structure for reference metadata related to data quality in the European Statistical System. It is a metadata template, based on 13 main concepts, which can be used across several statistical domains with the purpose of a better harmonisation of the quality reporting requirements in the ESS.

For that reason the template of this document differs from that one stated in the Commission Reg. 28/2004.

Finally it is the combination of the previous intermediate and final quality reports therefore it is worth mentioning that it refers to both the cross sectional and the longitudinal data.

3 Quality management - assessment Not requested by Reg. 28/2004

4 Relevance

Not requested by Reg. 28/2004

4.1 Relevance - User Needs Not requested by Reg. 28/2004
4.2 Relevance - User Satisfaction Not requested by Reg. 28/2004
4.3 Completeness Not requested by Reg. 28/2004
4.3.1 Data completeness - rate Not requested by Reg. 28/2004

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 effects and structure of the population under study. In addition to that, sampling errors and non sampling errors need to be taken into account. Sampling error refers 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 refers 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 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 is nearly always the case. 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 error - indicators

	AROPE			At risk of poverty (60%)			Severe Material Deprivation			Very low work intensity		
	Ind. value	Stand. errors	Half CI (95%)	Ind. value	Stand. errors	Half CI (95%)	Ind. value	Stand. errors	Half CI (95%)	Ind. value	Stand. errors	Half CI (95%)
Total	14,6	0,61	1,2	10,6	0,53	1,0	2,3	0,29	0,6	7,1	0,50	1,0
Male	13,7	0,70	1,4	10,0	0,62	1,2	2,1	0,29	0,6	7,1	0,58	1,1
Female	15,6	0,76	1,5	11,1	0,66	1,3	2,5	0,39	0,8	7,1	0,62	1,2
Age0-17	13,3	1,16	2,3	9,8	1,04	2,0	2,6	0,58	1,1	4,8	0,73	1,4

	AROPE			At risk of poverty (60%)			Severe Material Deprivation			Very low work intensity		
	Ind. value	Stand. errors	Half CI (95%)	Ind. value	Stand. errors	Half CI (95%)	Ind. value	Stand. errors	Half CI (95%)	Ind. value	Stand. errors	Half CI (95%)
Age18-64	15,9	0,65	1,3	10,7	0,55	1,1	2,6	0,31	0,6	8,1	0,52	1,0
Age 65+	11,4	1,21	2,4	11,1	1,20	2,4	0,4	0,23	0,5			

5.3 Non-sampling error

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:

1. – Unit non-response: refers to absence of information of the whole units (households and/or persons) selected into the sample
1. – 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 error

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

The sampling frame is a copy of the central population register called BEREG. This register is daily updated with information from local population register offices.

5.3.1.1 Over-coverage - rate

	Main problems	Size of error
Cross sectional data	Over-coverage: Over-coverage due to deaths and emigration between updating of the sampling frame and the interview is almost always discovered during the fieldwork. ·Under-coverage: Under-coverage due to immigration between the updating of the sampling frame and interview is small. ·Misclassification: There should be nearly no coverage errors connected to this frame, except for the extremely few cases of emigrations which are wrongly coded as non-response in stead of non-eligible because their emigration were not registered in the population register.	Over-coverage: In 2011 98 persons where classed as non-eligible becase of emigration, death or living in institutions. Under-coverage: Immigration is relatively small (roughly 79 500 in 2011), and the new sampling frame is updated very frequently. Misclassification: Only 7 persons could not be contacted because they were living at an unknown address in 2011. This is the maximum number of persons, which could be ineligible because they have emigrated.

5.3.2 Measurement error

Cross sectional data

Source of measurement errors	Building process of questionnaire	Interview training	Quality control
In every survey there is a chance of respondents giving an incorrect answer. The question/answer process can be seen in four different phases. First there is the understanding and interpretation of the actual question. If there are difficult terms or complicated wording, this may cause errors. In EU-SILC, the questions regarding inter-household transfers may be subject to this kind of errors because of the understanding of inter-household transfer and the term regular. Also the question on lowest monthly income to make ends meet (HS130) seems difficult to understand for many respondents. The second phase is where the respondent recalls information. Errors in this phase may rise if the information necessary is hard to retrieve because it is old, complicated or not available to the respondent. In EU-SILC some of the questions about housing costs are quite complicated even for the person responsible for the dwelling. This may affect the accuracy of the answers given. Apart from this, we have no suspicion of frequent errors caused by difficulties in information retrieval. The third phase is evaluating and selecting the information necessary to answer the question. In this phase, the respondent may actually have the right kind of information to answer the question correctly, but still end up with a wrong answer. This type of error is most frequent when the question is complicated and requires much information. Typical questions from EU-SILC may be questions requiring the respondent to select different economic components necessary for a specific question. Again the questions regarding inter-household transfers may be mentioned, but also the subjective evaluation of how difficult it is "to make ends meet", where the respondent has to choose which components to include in income. The fourth and final phase is the actual formulating of the answer. This may cause errors if the respondents mastering of the language in use is weak, if the answer requires use of complicated terms or if the communication between the interviewer and the respondent is not optimal.	In connection with the 2003 data collection, no specific field-testing of the questionnaire was done. The questionnaire was by large the same as in the pilot survey conducted in June 2002, and our opinion was that further field testing was unnecessary. Before finalising the questionnaire it was submit to a structured interviewer test, where three experienced interviewers tested by pre-defined profiles. In cases where EU-SILC variables and standard variables in our surveys are close we have used the national standards, which are well tested. The 2011 questionnaire is similar to the 2003-2010 questionnaires, only with a few minor adjustments. The questionnaire may be the cause of measurement errors. We have tried to establish a questionnaire according to the recommendations of Eurostat. In cases where EU-SILC variables and variables which are standard in our national surveys are close, we have preferred to use the national standards which are well tested. We shall comment on these variables and other cases where there might be deviations from Eurostat standards. HH010:The standard Norwegian question is much more detailed, but most categories are easily translated to Eurostat categories. To construct the Eurostat categories we added a question on number of apartments/flats in the building. HH020:The Norwegian question is more detailed. However it is quite clear how to aggregate categories to construct the Eurostat categories of owners and tenants. To distinguish between tenants paying rent at or below market price we asked whether the rent that is paid is market rent (question Husleie2). To distinguish households with a rent-free accommodation we asked whether the household pay rent (question Husleie1). HH030: Only rooms of at least 6 sqm are included. The consequences for comparability are negligible. HH040:We have split this question in two: Rot in	Interviewer effects may also be labelled under errors caused by interview. The interviewers used in EU-SILC were among the approximately 150 of the ordinary interviewer staff assigned to Statistics Norway. Approximately 130 of these interviewers are locally based interviewers who are part time employees with individual agreements ranging from 500 to 1200 hours of work per year. Theses interviewers are stationed in the sample areas according to the standard sampling frame. The approximately 100 centrally based interviewers are working from Statistics Norway's call centres in Oslo and Kongsvinger (where Statistics Norway has offices). When hired, all interviewers must complete an education consisting of self-studies and written tasks in two stages. The locally based interviewers are gathered to an obligatory three-day course (for centrally based interviewers two days) before they are hired for a trial period of 6 months. Before the end of the trial period and permanent hiring, all new interviewers are given a personal follow-up talk. As part of the general follow-up and education of locally based interviewers, telephone conferences are held on occasion. The centrally based interviewers have a supervisor on each work shift, and each call-centre has a co-ordinator who also follows up the interviewers on regular basis. The specific training for EU-SILC consists of an obligatory interview guide following the survey. This guide contains information about the survey, description of the sample, time limits (start and end) and a mentioning and instructions for some of the questions. Locally based interviewers are paid to read this instruction. In addition, they are paid a fixed price (estimated number of hours) for test interviewing before starting the actual work. In EU-SILC 2011, the estimated time destined to reading of instruction and training was 4 hours per interviewer. The centrally based interviewers are, in addition to reading the specific survey guide, given an oral	In the Norwegian EU-SILC there is not done any studies, such as re-interviews, record check studies, og split-samle experiments.

Cross sectional data

Source of measurement errors	Building process of questionnaire	Interview training	Quality control
	windows or floor and Leaking roof, damp walls or floor. HH070: When asking about interest on mortgage the respondents can choose whether they will report the amount per year, quarter or month. There are some cases where period and amount do not correspond, or the size of the mortgage and interest does not correspond, maybe due to interviewer errors. These cases have been corrected at by evaluation of each case. In cases where structural insurance, mandatory services and charges or cost of utilities are missing, average values based on post stratification of the size of the dwelling (and dwelling type for cost of utilities) have been imputed. Tax on dwellings for owners is not taken into account in HH070. HH090:'For the sole use of the household' is not included in the Norwegian questionnaire. HS160: The Norwegian question asks 'not enough **day**light'. HY080G: The same as for HY130G applies. HY080 is calculated as a sum of information from register and from interview. HY130G: The Norwegian question differs because it excludes alimonies to former spouse/children. Information on alimonies is taken from register. HY130 is therefore calculated as a sum of information from register and from interview. PL030: The only difference is that the Norwegian question is only asked respondents working less than 32 hours a week. Persons working 32 hours or more a week are considered as 'carrying out a job or profession'. The interviewer reads the categories. PL110: We ask for the name and address of the firm. Industry is coded from register information on the firm. PL060: The question explicitly mentions that paid overtime and extra work at home shall be included. PH020: In addition to chronic illness the question mentions 'any consequence of injury or any disability'. PH030: This variable is built on three questions to ensure that all the information needed for the variable is of good quality.1: ' Does this (chronic illness) lead to limitations in your daily activities' 2: ' Have these limitations lasted for at least six months' 3: ' Would you say that you are strongly limited or somewhat limited'? PE010: This variable combines information from interview and register. A person is considered as in education if he/she is in education according to PL030 (=3) or if they are in education according to register information. PE020: This information is taken from register. The register information is per 1 October 2011. PE040: This information is also taken from register per 1 October 2009.	presentation of the survey (briefing). The danger of systematic interviewer effects is reduced through training, but also by using a relatively large number of interviewers.	

5.3.3 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:

1) Unit non-response which refers to the absence of information of the whole units (households and/or persons) selected into the sample. According the Commission Regulation 28/2004:

- **Household non-response rates** (*NRh*) is computed as follows:

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

Where Ra is the address contact rate defined as:

Ra= Number of address successfully contacted/Number of valid addresses selected

and *Rh* is the proportion of complete household interviews accepted for the database

Rh=Number of household interviews completed and accepted for database/Number of eligible households at contacted addresses

- **Individual non-response rates** (*NRp*) will be computed as follows:

NRp=(1-(Rp)) * 100

Where *Rp* is the proportion of complete personal interviews within the households accepted for the database

Rp= Number of personal interview completed/Number of eligible individuals in the households whose interviews were completed and accepted for the database

- **Overall individual non-response rates** (*NRp) will be computed as follows:

***NRp=(1-(Ra * Rh * Rp)) * 100**

For those Members States where a sample of persons rather than a sample of households (addresses) was selected, the individual non-response rates will be calculated for 'the selected respondent', for all individuals aged 16 years or older and for the non-selected respondent.

2) Item non-response which refers to the situation where a sample unit has been successfully enumerated, but not all the required information has been obtained.

5.3.3.1 Unit non-response - rate

Cross sectional data

Address contact rate (Ra)*		Complete household interviews (Rh)*		Complete personal interviews (Rp)*		Household Non-response rate (NRh)*		Individual non-response rate (NRp)*		Overall individual non-response rate (NRp)*	
A*	B*	A*	B*	A*	B*	A*	B*	A*	B*	A*	B*
0,998	0,999	0,494	0,468	1,00	1,00	50,7	53,3	0	0	50,7	53,3

* All the formulas are defined in the Commission Regulation 28/2004, Annex II

A* = Total sample; B = * New sub-sample

5.3.3.2 Item non-response - rate

The computation of item non-response is essential to fulfil 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 by indicator

	Total hh gross income (HY010)	Total disposable hh income (HY020)	Total disposable hh income before social transfers other than old-age and survivors benefits (HY022)	Total disposable hh income before all social transfers (HY023)
% of household having received an amount	100	100	99,9	99,9
% of household with missing values (before imputation)				
% of household with partial information (before imputation)				

	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)
% of household having received an amount	86,8	3,7	38,3	3,5	2,9	6,9	99,8
% of household with missing values (before imputation)							
% of household with partial information (before imputation)							

	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
% of household having received an amount	76,3	53,6	1,3	75,7	10,1	0	4,2	19,7	0,7	19,3	14,0	11,5
% of household with missing values (before imputation)												
% of household with partial information (before imputation)												

5.3.4 Processing error

Data entry and coding

Editing controls

The data collection mode in the Norwegian EU-SILC is CATI, using the interview programme Blaise developed in the Netherlands. Data entry controls are built into the electronic questionnaire, and there is less need for post data control. Control of data in the programme is done in various ways.

First, all selections are done automatically by the programme, thus reducing the risk of errors in the selections done by interviewers. This also reduces the number of signals and checks necessary. Second, all numeric variables have absolute limits for data entry, for example when entering the number of hours worked per week it is impossible to enter numbers above 168. Thirdly, and similar, there are built inn checks (hard error) which it is impossible to override. An obvious example is that year and date of birth is checked against the date of the interview. Last there are signals (soft error) which gives a warning to the interviewer if the answer is either unlikely because it is extreme or because it does not correspond to answers given to questions asked earlier. These signals can be overridden if the answer in question is confirmed.

For an overview of filters in the questionnaire we refer to the written questionnaire. No errors of any importance have been detected in the post data-collection process except some confusion on id for household members where we need to programme a wider range of signals and checks. This error only occurs for persons who are not members of the household according to the population register. For mother, father or spouse id is assigned automatically based on kinship from register.

Professional coders at Statistics Norway, who also do the coding in the Labour force survey, do coding of occupation and industry. The coding is based on information from the interview, but also with support from registers. Industry is coded from information on the name and address of workplace. This is in most cases gathered from register (for the selected respondents) in advance of the interview. If the respondent confirms this information, no post-interview coding is necessary. Income is also gathered from register, so no editing is necessary.

5.3.4.1 Imputation - rate

Not requested by Reg. 28/2004

5.3.4.2 Common units - proportion	Not requested by Reg. 28/2004
5.3.5 Model assumption error	Not requested by Reg. 28/2004
5.3.6 Data revision	Not requested by Reg. 28/2004
5.3.6.1 Data revision - policy	Not requested by Reg. 28/2004
5.3.6.2 Data revision - practice	Not requested by Reg. 28/2004
5.3.6.3 Data revision - average size	Not requested by Reg. 28/2004
5.3.7 Seasonal adjustment	Not requested by Reg. 28/2004
6 Timeliness and punctuality	Not requested by Reg. 28/2004
6.1 Timeliness	Not requested by Reg. 28/2004
6.1.1 Time lag - first result	Not requested by Reg. 28/2004
6.1.2 Time lag - final result	Not requested by Reg. 28/2004
6.2 Punctuality	Not requested by Reg. 28/2004
6.2.1 Punctuality - delivery and publication	Not requested by Reg. 28/2004
7 Accessibility and clarity	Not requested by Reg. 28/2004
7.1 Dissemination format - News release	Not requested by Reg. 28/2004
7.2 Dissemination format - Publications	Not requested by Reg. 28/2004
7.3 Dissemination format - online database	Not requested by Reg. 28/2004
7.3.1 Data tables - consultations	Not requested by Reg. 28/2004
7.4 Dissemination format - microdata access	Not requested by Reg. 28/2004
7.5 Documentation on methodology	Not requested by Reg. 28/2004
7.5.1 Metadata completeness - rate	Not requested by Reg. 28/2004
7.5.2 Metadata - consultations	Not requested by Reg. 28/2004
7.6 Quality management - documentation	Not requested by Reg. 28/2004
7.7 Dissemination format - other	Not requested by Reg. 28/2004
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."
8.1 Comparability - geographical	Not requested by Reg. 28/2004
8.1.1 Asymmetry for mirror flow statistics - coefficient	Not requested by Reg. 28/2004

8.1.2 Reference population

Reference population	Private household definition	Household membership
Persons aged 16 years or more at December 31 N-1 who are living outside an institution.	A private household is defined as individuals that share food, meaning that they either do not pay for their food or that they share expenses for food. The definition does not require that they eat at the same times or that they are related.	Persons will be considered as household members if they spend most of their nights at the address of the household. 1. A spouse/cohabitant who registered at the household address but is absent from the dwelling because of work, education or conscription is still considered a member of the household. In case the spouse/cohabitant have moved from the dwelling but juridical still owns (part of) the dwelling is not considered as a member of the household. 2. Persons aged 18 years and more who are absent because of education are considered members of the household if they spend a minimum of 4 days a week at the address of the household. 3. Persons aged 17 years and younger who are absent because of education are considered as members of the household. 4. Persons temporarily absent from the dwelling for less then 6 months are not considered as permanent residents unless they do not have a private address elsewhere. 5. Persons in institutions (including children) and in private care are considered as living permanently at their place of residence if the stay exceeds 6 months. Individuals admitted to hospitals or imprisoned are considered as permanent residents where they had their last place of permanent residency. 6. Persons in conscription service are members of the household that they we

Reference population	Private household definition	Household membership
		members of before the conscription.

8.1.3 Reference Period

Period for taxes on income and social insurance contributions	Income reference periods used	Reference period for taxes on wealth	Lag between the income ref period and current variables
Calendar year N-1	Calendar year N-1	N.A.	The income variables are collected from registers and the interval between the end of the income reference period and the time of interview for current variables is maximum 6 months

8.1.4 Statistical concepts and definitions

Total hh gross income (HY010)	Total disposable hh income (HY020)	Total disposable hh income before social transfers other than old-age and survivors' benefits (HY022)	Total disposable hh income before all social transfers (HY023)
F	F	F	F

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 paid on mortgage (HY100)	Income received by people aged under 16 (HY110)	Regular taxes on wealth (HY120)	Regular inter-hh transfers paid (HY130)
F	F	L	F	L	F	F	F	F	NC	F

HY050:Includes the following components: child allowance, maternity benefits (daily cash benefit for working mothers and lump sum benefit for non-working mothers), cash-for-care benefit, child support for singe parents (education and childcare) and transitional benefit to single parents. Deviation from the SILC concept:The current register da covers only roughly 50% of the total amount paid out in daily cash maternity benefit. The remaining amount is included in PY010 (Gross employee cash or near cash income).

HY070:Includes dwelling support in cash received by renters and owner-occupiers.Deviation from the SILC concept:The benefit from renting a subsidised dwelling is not include in the income concept.

HY080:Includes alimonies and paid maintenance from former spouse (or advance payment from the government). Information on regular private cash support received by childr living in separate households (e.g. students) is collected from the interview.

HY120: Included in HY140: Total tax on income.

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 for employee (PY200
L	F	F	L	L	NC	F	F	F	F	F	F	NC

PY010: Defined as the sum of all wages and salaries including overtime, holiday pay, tips and bonuses. Deviations from the SILC concept: payments to foster parents (included wages, cannot be separated from wages), severance and termination pay (included in wages, cannot be separated from wages) and sickness benefits that are not directly paid to the employee (i.e. compensation from the Social Security Scheme to the employer). With the exception of sickness benefits these deviations are expected to be of a minor importance.

PY030: Defined as paid in employers' national insurance contribution per person. Deviation from the SILC concept: Because of the allowance scheme which is per company (an every company has employees in the various zones and age groups) it is virtually impossible to calculate the payroll tax directly per person. Therefore, the calculation is done by companies where we have taken into account the allowance scheme, zones, age, sector and individual exceptions industries.

PY050: Entrepreneurial income is collected net in register data. Gross cash losses thus appear as negative amounts. Deviation from the SILC concept:It has not been possible t identify – and thus deduct from self-employment income – interest paid on business loans.

PY070: The tax-assessed benefit from consuming own goods (estimated by the tax authorities) is included in gross cash income from self-employment (PY050). The variable PY070 is not included in Norwegian data because the value of own goods for own consumption is assumed to be ignorable. Data from the Norwegian HBS in 2006 shows that consumption of own goods is estimated to be only 0,13 percent of the total consumption in the households. In total, the value of own goods for own consumption is less than 40 NKr (appr 50 euro) on average per household.

PY090: Deviation from the SILC concept: No information available on benefits (in-kind) related to vocational training.

PY100: Include old-age pension from the social security system and occupational pensions. Deviation from the SILC concept: It was not possible to split the different types of occupational pensions into different functions, e.g. old-age, disability or survivor's pension. In stead all types of occupational pensions have been included under the old-age function.

PY110: Includes survivor's pension from the National Insurance Scheme. In addition several minor income items have been included that are received mainly by survivors, e.g. tax-free wage income and holiday pay earned by the deceased. Deviation from the SILC concept: Not possible to include funeral grants in the income concept. This benefit is transferred directly to the firm of undertakers.

PY120:Includes sickness benefits paid by the National Insurance Scheme directly to the employee (i.e. after day 16 of sickness). Deviation from the SILC concept: The current register data covers only roughly 50% of the total amount paid out in daily cash sickness benefit. The remaining amount (compensation to the employer) is included in PY010 (Gross employee cash or near cash income).

PY130: Include disability pension from the National Insurance Scheme, basic and attendance benefit and rehabilitation benefits. Deviation from the SILC concept: Early retireme benefit is included in occupational pension, i.e. old-age function.

The source or procedure used for the collection of income variables	The form in which income variables at component level have been obtained	The method used for obtaining target variables in the required form
All income data in the EU-SILC are collected from various administrative and statistical registers, exept from hy100 and hy030 witch are collected from the interview. The main registers used are: (a) The Tax Return Register (Employee income, self-employment income, taxable pensions etc.) (b) The Tax Register for Personal Tax Payers (Assessed taxes, social security contributions) (c) National Insurance Service (Family allowances, attendance benefits, cash-for-care, child care benefits to single parents) (d) Register for end-of-the-year Certificates (Unemployment benefits, sickness and maternity allowance, company car) (e) State Educational Loan Fund (Education related benefits) (f) The State Housing Bank (Dwelling support)	The register data only report gross income at component level. Total assessed taxes and contribution to social security are collected separately from tax registers.	All income data recorded gros at component level.

	The source or procedure used for the collection of income variables	The form in which income variables at component level have been obtained	The method used for obtaining target variables in the required form
	(g) Social statistics (Social assistance) A comprehensive data file on income is created by linking the total resident population to all the different income registers. The key that links the individual to the registers is the Personal Identification Number.		

8.2 Comparability - over time Not relevant

8.2.1 Length of comparable time series Not requested by Reg. 28/2004

8.3 Comparability - domain Not requested by Reg. 28/2004

9 Coherence

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.

9.1 Coherence - cross domain

In 2003, it was conducted an analysis in which one compared SILC data with the national income registry. For 2003 there are only minor differences in the amount of total income and disposable (after-tax) income based on national definitions and the corresponding figures based on SILC definitions. As is shown in table 1, the difference amounted to about 5 billion NOK (or ca 0.5 per cent) for both income concepts.

The main explanation for the difference between the two income definitions is that the national definition comprises some income items that are not part of the SILC income definition. This is for example the case for certain fringe benefits other than company cars (e.g. free newspapers and telephone, low-interest loans, private insurance paid by employers etc.). I addition the SILC definition does not include *capital gains,* while this is the case in the national definition. In 2003 this income item amounted to a negative value of roughly 2 billion NOK in Norway. Finally, the national definition includes payments from a private pension scheme. Although this item is collected in SILC (PY080G), it is not included in the definition of income.

Table 1 Total gross income and disposable income. Billion NOK. 2003

	SILC definition	National definition	Difference
Total Gross income	975,0	979,8	4,8
Disposable income[1]	734,5	739,3	4,8

[1] In the national definition this income concept refers to 'After-tax income'.

In addition there are differences between national practice and SILC in income definitions at the component level, although these differences have almost no impact on total gross income and disposable income. In the definition of employee income (wages and salaries) the national definition for example includes sickness benefit and maternity allowance, while in the SILC definition these components are considered part of transfers. For self-employment income sickness benefit is again included in the national definition, but not in the SILC definition (transfer). In addition several types of pensions are specified in the SILC income concept (e.g. old-age pension, disability pension and survivor's pension), while in the national definition these programmes are all part of 'Social security benefits'.

Table 2 Comparison of income components. The national definition and EU-SILC. Billion NOK. 2003

Income component	**SILC**	**National definition**
Employee income	607,5	627,3
Self-employment income	48,7	50,6
Property income	86,8	84,9
Transfers received	232,0	216,9
Total income	975,0	979,8
Taxes and negative transfers	240,5	240,5
Disposable (after-tax) income	734,5	739,3

9.1.1 Coherence - sub annual and annual statistics Not relevant

9.1.2 Coherence - National Accounts Not relevant

9.2 Coherence - internal Not requested by Reg. 28/2004

10 Cost and Burden

Not requested by Reg. 28/2004

11 Confidentiality

Not requested by Reg. 28/2004

11.1 Confidentiality - policy Not requested by Reg. 28/2004

11.2 Confidentiality - data treatment Not requested by Reg. 28/2004

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 Source data

The sampling frame is a copy of the central population register called BEREG. This register i daily updated with information from local population register offices.

12.1.1 Sampling design and procedure

Type of sampling design

Up until 2008, the sample for EU-SILC in Norway was composed of an old sample for a longitudinal survey established in 1997, and a new sample with a different design in 2003 (se quality report for 2007). From 2008 on, the sample is selected only according to the new design because all respondent from the old sample were rotated out.

The sample in 2011 is now according to the rules for simple random sampling in one stage. There is still a systematic element, that stems from the arrangement of the population register.

Stratification and sub stratification criteria

The primary stratification criterion for the period 2003-2006 was age. The design chosen implicated that age was the central criterion for representativity. The sample was drawn as a proportion *p*of the population within one-year groups. Based on experience from analysing cross sectional EU-SILC data from 2003 to 2006, this way of stratification was problematic because the rotational groups were biased.

In 2007, the representativity based on one-year age groups was abandoned, and the new rotational groups are drawn as the proportion *p* of the population 16 years and over. In addition, each existing rotational group is then supplemented with new 16 year olds and new immigrants to ensure representativity. The same system has been used in 2011. The sample is drawn from the population register, and this register is arranged to ensure geographical representativity. This is done by municipality and postal codes. As in the old part of the sample, the register is arranged by family number and personal code within the family before the actual selection of units.

Sample selection schemes

The sample for the Norwegian EU-SILC before 2007 consisted of an existing sample for a longitudinal and a new sample selected according to a new design. For information on the old selection schemes, se previous intermediate quality reports.
Deleting rotational groups and adding new rotational groups and supplementing the sample resulted in a sample in 2011 of 9 384 persons.

Sample distribution over time

To make the data collection effective, and to ensure a highest possible response rate among the new respondents in the sample, the sample was divided into four periodical groups with different start of the interviewing but similar end of interviewing. Interviewing of all groups ended 16 June 2011.

12.1.2 Sampling unit

The sample units are persons aged 16 years or more registered in the central population register (inhabitants).

12.1.3 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

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

The selected sample size set to meet demands for minimum effective sample size of both the cross-sectional and the longitudinal survey over time is 8 500 persons at the start of the EU-SILC project in 2003, each representing one separate household.

In 2003 8 500 persons constituted a proportion $p \approx 0{,}0024$ of the total population (inhabitants aged 16 years or more). This proportion is meant to be identical each year of the survey, and thus the size of the gross sample will change according to changes in the population. The 2011 sample consists of 9 384 persons 16 years and over. During the field period, 98 of these proved to be non-eligible (either dead or emigrated), thus giving a gross sample of 9 286 persons. We succeeded in interviewing 4 814 of these (net sample), a response rate of 51.8 percent. 4 628 interviews were accepted in the data file.

In all households interviewed there were 9 097 persons aged 16 years or more. The minimum sample size set by Eurostat for the cross sectional components was 3 750 households and 6 250 persons. The effective sample size is: Net sample / design effect for equivalent income. The design effect for equivalent income is estimated to be 1,039. In the Norwegian 2011 survey this gives an achieved effective sample size of 4 808 households and 9 452 persons.

The selected sample size by rotational groups, referring to selected respondent (household), can be seen in table 1 below.

Table 1 Rotational groups 2011 - DB175

	Gross sample	Achieved sample size
1 = 2004-2011	1 198	649
2 = 2005-2012	1 176	606
3 = 2006-2013	1 113	538
4 = 2007-2014	1 213	609
5 = 2008-2015	1 130	575
6 = 2009-2016	1 368	700
7 = 2010-2017	1 068	565
8 = 2011-2018	1 118	572

12.2 Frequency of data collection

Data collection is conducted once a year, during the first 4-6 month of the year.

Renewal of sample: Rotational groups

In the Norwegian design, each selected respondent (sample unit) is part of the sample in eight years. Each year 1/8 of the sample will be replaced. In a period of transition from the old to the new design in the 2003-2007 period, some respondents in the old sample belonged to the sample for eleven years, while some belonged for only six years. Following the new routine for new rotational groups from 2007 on, with supplementation of 16 year olds and immigrants in the existing rotational groups, some selected respondents will belong to the sample in from 7 years to 1 year.

New entries in 2011 are coded with DB075 = 8

12.3 Data collection

Mode of data collection

A description of the mode of data collection used in your country. Please mention if you use mixed mode of data collection.

1-PAPI (% of total)	2-CAPI (% of total)	3-CATI (% of total)	4-Self administrated (% of total)
-	0,01	99,99	-

The mean interview duration

The mean interview duration per household is calculated as the sum of the duration of all household interviews plus the sum of the duration of all personal interviews, divided by the number of household questionnaires completed. Only households accepted for the database have to be considered.

Average interview duration = 30 min

Sample distribution over time

To make the data collection effective, and to ensure a highest possible response rate among the new respondents in the sample, the

sample was divided into four periodical groups with different start of the interviewing but similar end of interviewing.

Fieldwork duration

HB010	HB020	start_day	start_month	end_day	end_month
2011	NO	6	1	11	6

12.4 Data validation

Not requested by Reg. 28/2004

12.5 Data compilation

Not requested by Reg. 28/2004

12.5.1 Weighting procedure

Design factor	Non-response adjustments	Adjustment to external data	Final cross sectional weights
In the sample persons aged 16 years and over are selected. Hence the probability of selecting a household is equal to the number of persons aged 16 and over in the household. The design factor for households and for all household members is the inverse of the number of adult household members.	PB060: Personal cross-sectional weight for selected respondent The probability of selection is the same for all selected respondents. Weights are only calculated to take into account non-response. Results are not calibrated to external sources. Weights are calculated by stratifying the gross sample according to information in registers on sex, age, education and family size. There are five categories of age: 16-24 years, 25-44 years, 45-66 years 67-79 years and 80 years and over. There are five categories of education: lower secondary and lower; upper secondary; post-secondary but non-tertiary; tertiary; missing information. There are also five categories for family size: 1, 2, 3, 4 and 5 and more persons. The weights are then calculated as 'gross sample n / net sample n' in each stratum. DB090: Household cross-sectional weight This is constructed as the household design weight (DB080) times the personal cross-sectional weight for the selected person (PB060). The household design weight is the inverse of the number of persons 16 years and older in the household (age is age per 31.12.2010). RB050: Personal cross-sectional weight RB050 is equal to DB090. PB040: Personal cross-sectional weight for all household members aged 16 and over PB040 is equal to DB090. RL070: Children cross-sectional weight The weights are calculated as the number of children in each one-year group (0-12 years) in the population divided by the number of children in one-year groups in the households interviewed.	No adjustments are made, except for children's weights.	See Non-response adjustments

12.5.2 Estimation and imputation

Imputation procedure used	Imputed rent	Company car
In the Norwegian EU-SILC there is no imputation procedure used for item non-response.	Imputed rent is calculated (linear regression equation) by using data from the Norwegian rental survey 2010, where about 10 000 renters were interviewed about their rent. The households are post-stratified by region and dwelling size, and values are imputed according to the same method as used in the national HBS. The regions used are Oslo (1), the county of Akershus and cities Stavanger, Bergen Trondheim and Tromsø (2), other densely populated areas with 20 000 or more inhabitants (3), other densely populated areas with 2000 – 19999 inhabitants (4), and finally other areas not included in 1-4 (5). In Oslo, we also separate households with dwellings more and less than 100 sqm. The imputed values (per month) in 2010 are as follows: Area 1 and less than 100 sqm: HY030 = 4 124,94 + (76,89 * sqm) Area 1 and 100 sqm or more: HY030 = 8 352,74 + (42,87 * sqm) Area 2: HY030 = 3 859,35 + (49.61 * sqm) Area 3: HY030 = 3 468,63 + (33,51 * sqm); Area 4: HY030 = 3 909,22 + (16,45 * sqm); Area 5: HY030 = 3 886,76 + (8,0 * sqm);	The value of having a company car is retrieved from registerdata,therefor no estimation or imputation is needed.

12.6 Adjustment

Not requested by Reg. 28/2004

13 Comment

National questionnaire is available in Circa BC at: https://circabc.europa.eu/

Please select EU SILC section and then select the folder called "06 National Questionnaire" in the library list.

Annexes	Description