



EUROPEAN COMMISSION  
EUROSTAT

Directorate F: Social statistics  
Unit F-3: Labour market and lifelong learning

# **Structure of Earnings Survey 2018 (SES 2018)**

## **Synthesis of National Quality Reports**

# Table of Contents

1 Introduction.....	4
2 SES – statistical concepts, definitions and classifications.....	5
2.1 Statistical concepts and definitions.....	5
2.2 Classifications .....	6
2.2.1 International standard classifications used.....	6
2.2.2 Enterprise size classes .....	7
3 Overview of designs and methods used for SES 2018 .....	8
3.1 Coverage.....	8
3.2 Reference period .....	8
3.3 Sampling design and sampling frames .....	9
3.4 Methods of data collection and data sources .....	9
4 Relevance .....	13
5 Accuracy .....	15
5.1 Sampling errors .....	15
5.2 Non-sampling errors.....	16
5.2.1 Coverage errors .....	16
5.2.2 Measurement errors .....	16
5.2.3 Processing errors .....	17
5.2.4 Non-response errors.....	42
6 Timeliness and punctuality.....	43
7 Accessibility and clarity .....	44
8 Coherence and comparability .....	60
8.1 Comparability over time .....	60
Annex I: Legal basis.....	71

Annex II: SES 2018 overview ..... 72

Annex III: Coefficients of variation (%) - gross earnings in the reference month ..... 74

Annex IV: Coefficients of variation (%) – average gross hourly earnings in the reference month ..... 75

Annex V: Data transmission overview..... 41

Annex VI: Country abbreviations..... 77

## 1 Introduction

The Structure of Earnings Survey (SES) is a large enterprise survey, conducted in the Member States of the European Union (EU), in the European Free Trade Association (EFTA) countries and the European Union candidate countries.

It provides comparable and EU-wide harmonised structural data on gross earnings, hours paid and annual days of paid holiday leave, as well as the detailed and comparable information at EU level on relationships between the level of earnings, individual characteristics of employees (sex, age, occupation, length of service, educational level) and their employer (economic activity, size of the enterprise, etc.). The data is available for reference years 2002, 2006, 2010, 2014 and 2018. The data generally refer to enterprises with at least 10 employees in the areas of economic activity defined by NACE Rev.2 sections B to S excluding O. The inclusion of section O, as well as the information on enterprises with less than 10 employees remains optional.

The SES represents a rich microdata source for European policy-making and research purposes. [Access to microdata](#) is granted to recognised researched entities, according to specific conditions and respecting statistical confidentiality.

The SES collects the earnings actually received by an employee of a business in the reference month and year. The information collected relates to the earnings paid to each "job holder". It does not cover earnings by the same employee elsewhere in a second or third job.

The data collection is based on legislation (see Annex I) and data become available approximately 2 years after the end of the reference period. According to its legislation, the survey is taking place every four years and its aggregated results are published in [Eurostat's on-line database](#).

This document represents the synthesis of the information collected through national standard quality reports for the 2018 Structure of Earnings Survey (SES 2018). This report covers the relevant quality information for 27 EU Member States, 2 EFTA countries<sup>1</sup> (Iceland and Norway) as well as the candidate countries (Albania and Serbia).

The structure of this report follows the chapters on the quality of statistical outputs of the European Statistics Code of Practice of the European Statistical System. All the quality concepts of statistical outputs are considered: *relevance, accuracy and reliability, timeliness and punctuality, coherence and comparability, accessibility and clarity*. Many concepts have sub-concepts which are explained at the beginning of each section. The acronym SES largely used in the report stands for Structure of Earnings Survey.

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<sup>1</sup> At the time of drafting this document, the quality report of Switzerland was still missing. Although they transmitted their SES2018 data, the United Kingdom, North Macedonia and Turkey did not transmit their quality reports.

## 2 SES – statistical concepts, definitions and classifications

### 2.1 Statistical concepts and definitions

**Employees** are all persons who have a direct employment contract with the enterprise or local unit and receive remuneration, irrespective of the type of work performed, the number of hours worked (full or part-time) and the duration of their contract (fixed or indefinite).

**Low-wage earners** are defined as those employees (excluding apprentices) earning two-thirds or less of the national median gross hourly earnings in that particular country.

**Median earning** is defined so that half of the population earns less than this value and the other half earns more.

The main indicators presented in [Eurostat's on-line database](#) are split into 3 main subsets containing:

- ✓ **Hourly gross earnings** - defined as gross earnings in the reference month divided by the number of hours paid during the same period. Number of hours paid includes all normal and overtime hours worked and remunerated by the employer during the reference month. Hours not worked but nevertheless paid are counted as 'paid hours' (e.g. for annual leave, public holidays, paid sick leave, paid vocational training, paid special leave, etc.).
- ✓ **Monthly gross earnings** in the reference month cover remuneration in cash paid before any tax deductions and social security contributions payable by wage earners and retained by the employer, and are restricted to gross earnings which are paid in each pay period during the reference month.
- ✓ **Annual gross earnings** also cover 'non-standard payments', i.e. payments not occurring in each pay period, such as: 13th or 14th month payments, holiday bonuses, quarterly or annual company bonuses and annual payments in kind. In the case of employees not having worked the whole year, annual data is adjusted to 52.14 weeks in order to account for earnings on an annual basis. On the other hand, employees working less than 30 weeks in a year are not taken into account in the calculation of annual earnings.

In SES, gross annual earnings cover remuneration in cash and in kind paid during the reference year before any tax deductions and social-security contributions payable by wage earners and retained by the employer. The main difference between annual and monthly earnings in the SES is that annual earnings are not only the sum of the direct remuneration, bonuses and allowances paid to an employee in each pay period. Annual earnings hence usually exceed the figure produced by multiplying the 'standard monthly package' by 12. The 'standard monthly package' includes those bonuses and allowances which occur in every pay period, even if the amount for these 'regular' bonuses and allowances varies, but excludes bonuses and allowances not occurring in every pay period. Furthermore, monthly earnings leave payments in kind out of

consideration. However, annual earnings also cover all 'non-standard payments', i.e. payments not occurring in each pay period, and payments in kind.

Earnings of part-time employees are adjusted into full-time units (FTU) using variable B271, which represents the % share of a full-timer's normal hours.

## 2.2 Classifications

### 2.2.1 International standard classifications used

Data on earnings collected through SES are broken down by:

- ✓ **Economic activity** - The [Statistical classification of economic activities in the European Community, \(NACE\)](#), is the classification of economic activities in the European Union (EU); the term NACE is derived from the French Nomenclature statistique des activités économiques dans la Communauté européenne. Version currently in force is NACE Rev. 2 – **data are transmitted at the level of divisions (2-digit level) of NACE Rev. 2 sections B to S. Section O remains optional.**
- ✓ **Occupation** - [The International standard classification of occupations](#) (ISCO); pages 3-34, is an international classification under the responsibility of the International Labour Organization (ILO) for organising jobs into a clearly defined set of groups according to the tasks and duties undertaken in the job. Version currently in force is *ISCO-08* - **data are transmitted at the two-digit level and, if possible, at the three-digit level**
- ✓ **Education** - [The International Standard Classification of Education \(ISCED\)](#); section 9., pages 71-72, is the reference international classification for organising education programmes and related qualifications by levels and fields. Version currently in force is ISCED 2011 – **data are transmitted ONLY for the (4) main group codes (G1 – G4):**
  - G1 Group 1: Basic education (0 Less than primary; 1 Primary; 2 Lower secondary)
  - G2 Group 2: Secondary education (3 Upper secondary; 4 Post-secondary (non-tertiary) )
  - G3 Group 3: Tertiary education (up to 4 years) (5 Short-cycle tertiary; 6 Bachelor or equivalent)
  - G4 Group 4: Tertiary education (more than 4 years) (7 Master or equivalent; 8 Doctoral or equivalent)
- ✓ **Regions** - [The Nomenclature of territorial units for statistics, \(NUTS\)](#) is a geographical nomenclature subdividing the economic territory of the European Union (EU) into regions at three different levels (NUTS 1, 2 and 3 respectively, moving from larger to smaller territorial units). Above NUTS 1, there is the 'national' level of the Member States. It is a common classification of territorial units for statistics. Version currently in force is NUTS 2016.

### 2.2.2 Enterprise size classes

The size of the enterprise to which the sampled enterprise/ local unit belongs to (in terms of number of employees) should be assigned to one of the following bands:

Size code	Enterprise size
E1_9	less than 10 employees
E10_49	10 - 49 employees
E50_249	50 - 249 employees
E250_499	250 - 499 employees
E500_999	500 - 999 employees
E1000	1000 or more employees

Although the data for size band E1\_9 (less than 10 employees) remains optional, in SES 2018, 14 MSs (BG, CZ, DE, EE, IE, ES, CY, LV, LT, HU, NL, PL, SI and SK) as well as 1 EFTA country (NO) provided the data.

## 3 Overview of designs and methods used for SES 2018

### 3.1 Coverage

The SES data with the reference year 2018 is available for 35 countries: 27 EU Member States, 3 EFTA countries (Iceland, Norway and Switzerland) and 4 candidate/ potential candidate countries (North Macedonia, Albania, Serbia and Turkey). The data for the United Kingdom is also available. All the territories of participating countries are covered.

The SES 2018 samples are composed of enterprises/ local units as described by [Commission Regulation \(EU\) No 1738/2005](#) in terms of size and economic sectors. Survey preparation, training, fieldwork and processing had been carried out by National Statistical Authorities (NSAs) –National Statistical Institutes – in permanent cooperation with and following the recommendations made by Eurostat.

### 3.2 Reference period

The reference year is 2018. For most countries, the financial year corresponds to the calendar year. In some countries, however, the accounting year does not necessarily coincide with the calendar year and therefore for these countries the financial year, which gives the best match with the calendar year 2018 should be used.

The reference month is October for the majority of the countries, this being the month which is assumed to be least affected by absences related to annual leave or public holidays or irregular payments considered as earnings (e.g. holiday bonuses). The choice of another month is acceptable if the month can be justified as being representative.

Following table provides information on MSs that have chosen another month as reference:

Country	Reference month
CZ	'average month'
DK	'reference month'
DE	April
FR	'average month'
HU	May
SE	September
NO	September

### 3.3 Sampling design and sampling frames

The majority of National Statistics Authorities (NSAs) used a two-stage stratified random sample design.

A *stratified sample* is a sample made of several layers or 'strata'. It is needed when it is important to take into account specificities of sub-groups within the sample assumed to be homogenous regarding the observed characteristics. Regions (NUTS 2, NUTS 3) or nationally defined areas, size groups of the enterprises and the economic sectors are common stratification variables. Random selection is performed in each stratum and sampling rates may differ from stratum to stratum.

Two stages of sampling mean that first a random sample of enterprises/ local units is selected, followed by a sample of employees within the selected enterprise/ local unit.

The most commonly used sampling frame was the business register/ database, with a few exceptions:

Country	Sampling frame
DK	data is collected in a census of public and private sector enterprises with 10 employees and more
DE	data on NACE Rev.2 sections O and P (partially) are based on model-based estimations
HU	the compulsory annual Structure of Earnings Survey, with May being the reference month, includes a sample of employees working in enterprises with more than 50 employees, a 20% random sample of employees working in enterprises with less than 50 employees as well as 8% representative sample of micro enterprises (2-5 employees)
IE	one stage random sample of employees from the Earnings Analysis using Administrative Data sources (EAADS)

### 3.4 Methods of data collection and data sources

In SES 2018, 23 countries used a stand-alone dedicated survey to collect required data, namely: BG, DE, EE, EL, ES, HR, IT, CY, LV, LT, LU, MT, NL, AT, PL, PT, RO, SI, SK, SE, IS, AI and RS. In all those countries dedicated survey is conducted every 4 years except in PL where it takes place every 2 years.

Nine countries reported annual availability of the SES data, namely: BE, CZ, DK, IE (part of the data taken from administrative data source), FR, HU, SK, FI and NO.

A combination of different methods (survey + use of administrative data) to collect the data was used in 8 countries: BE, IE, IT, CY, LU, NL, PT and FI.

The most common data collection method is paper/ pen interview but using the internet in different ways (e.g. web-survey) is also widespread.

More and more exploration and use of administrative data sources is being used in different countries. Following table gives an overview of different data sources used across different countries:

Country	Data source
BE	<p>The Belgian SES makes use of three different administrative sources:</p> <ul style="list-style-type: none"> <li>✓ The national statistical register of enterprises (DBRIS)</li> <li>✓ The earnings and working hours database of the National Office for Social Security (ONSS)</li> </ul> <p>The national register of individuals (RN)</p> <p>A tailor-made questionnaire (NSI) is still necessary for obtaining the information that isn't available in existing registers.</p>
CZ	<p>The 2018 SES stemmed from three sources: the regular survey of the business sphere (ISPV-MZS), the regular survey of the non-business sphere (ISP) and the survey of micro-subjects of business sphere.</p>
FR	<p>The SES 2018 survey is based on the following sources: the annual Structure of Earnings Surveys (SES 2017 and SES 2018), the four-yearly supplementary survey of State civil service employees (FPE 2018) and comprehensive administrative sources.</p>
IE	<p>The SES 2018 is based on Administrative data sources (including employee tax data) and the Structure of Earnings survey 2018, which was carried out to collect additional information not available from Administrative sources, for a sample of employees.</p>
IT	<p>The public sector data is derived only from available registers and data sources.</p>
CY	<p>A sample survey was conducted in order to collect the requested data on earnings, the Structure of Earnings Survey 2018. The data were collected mainly by means of computer assisted personal interviews (CAPI).</p> <p>Administrative sources were also used for the collection of data:</p> <ol style="list-style-type: none"> <li>1. Treasury of the Republic: Payroll information for salary earners on wages, overtime earnings, fixed allowances and information on unpaid absence or maternity leave, in electronic form. Data regarding the hours of such employees were calculated based on the normal and overtime rates applicable in the public sector (these were also provided by the Treasury of the Republic).</li> <li>2. Treasury of the Republic: Payroll information for wage earners in electronic form.</li> <li>3. Public Service Committee: Information on the education level of permanent salary earners, excluding the education sector.</li> <li>4. Education Service Committee: Information on the education level, date of entry in employment, holiday leave entitlement for permanent salary earners in the education sector.</li> <li>5. Cyprus Police: Payroll information and information on hours of work, holiday leave</li> </ol>

Country	Data source
	<p>entitlement, occupation, for police officers and firefighters.</p> <p>6. Social Insurance Archive: Information regarding the gender date of birth, nationality, total monthly earnings of employees in the public and private sector. This source could not be used to cover all the variables of the survey regarding earnings, because there is no breakdown available to normal salary, fixed allowances, overtime payments and shift work payments. Therefore, the relevant information had to be collected directly from the enterprises/organisations in the sample. The database was used for checking purposes or for the calculation of total earnings for the year (or monthly) in cases where the relevant information was not available from the enterprises (e.g. employees who left the company, temporary employees for which no records were kept, etc.)</p>
LU	<p>The Luxembourg SES makes use of three different sources:</p> <ul style="list-style-type: none"> <li>✓ National register of enterprises (used to draw the enterprise sample)</li> <li>✓ Social Security records (IGSS) (used to draw the employee sample and provides most variables on working hours and remunerations)</li> <li>✓ The Survey (covering only those variables that could not be provided by social security records (on the enterprise level : form of control, coverage by a collective pay agreement ; on the employee level : mainly ISCO and ISCED codes, PT/FT, special payment for shift work)</li> </ul>
NL	<p>The 2018 SES of the Netherlands is not based on a single questionnaire but on a combination of multiple sources:</p> <ul style="list-style-type: none"> <li>✓ The Statistic on Employment and Wages (SEW);</li> <li>✓ The Labour Force Survey (LFS);</li> <li>✓ Educational Attainment File (EAF);</li> <li>✓ The population register (PR);</li> </ul>
AT	<p>The SES 2018 was conducted as a combination of primary and secondary statistics (business register, survey, social security data, education register, wage tax data)</p>
PT	<p>The Structure of Earnings Statistics 2018 in Portugal was obtained through the combination of:</p> <p>(a) an administrative source, in existence since 1981, which provides microdata on enterprises, local units, and employees, covering all the SES required information on monthly earnings and hours paid, as well as the information characterizing the employee, ;</p> <p>(b) a specific survey to collect the missing information, regarding the variables on an annual basis and also Social Security and Income taxes;</p> <p>(c) a specific survey for public bodies of Sections P, Q, R and S of NACE Rev. 2, to collect all required information, monthly and annual, on employees and wages.</p>
FI	<p>Data sources include several survey-based data and register data.</p> <p>The earnings data from private sector is collected by Finnish employer organisations (around 10 000 enterprises) and by Statistics Finland which conducts a sample survey (2 500 enterprises)</p>

Country	Data source
	<p>among industries where unionization rate was under 70 percent at the given year. The private sector data is supplemented by Tax Authority's dataset containing micro enterprises (n = 12 000). The data from the public sector is attained by Statistics Finland's own data collection (local government sector) and from State Treasury (central government sector.) The Provincial Government of Åland collects data on the autonomous territory of the Åland Islands.</p> <p>This database is supplemented with data from other registers. Data on characteristics of enterprise is obtained from Business Register. Information on a wage or salary earner's education is obtained from Statistics Finland's Register of Completed Education and Degrees, and information on an employee's local unit gathered from Employment statistics.</p>

## 4 Relevance

Relevance is the degree to which statistics meet current and potential user needs. It shows whether all statistics that are needed are produced and the extent to which concepts used (definitions, classifications etc.) reflect the user's needs.

The main users of SES data may be classified into the following categories:

- *Policy makers:* government institutions, ministries (education, labour and others), international institutions;
- *Researchers entities:* universities, research institutions, vocational institutions, students;
- *Enterprises:* enterprises, training companies, management consultants;
- *Social actors:* social partners (e.g. trade unions), multi-national organisations;
- *Media.*

Within their quality reports, countries have given their evaluation of the relevance of the main SES statistics at national level. Among users' needs and user satisfaction, they have covered also completeness. Completeness means the extent to which all statistics that are needed are available. All the EU MSs have provided all the mandatory SES variables. Some of them also provided optional variables. The following table gives overview of the optional variables transmitted to Eurostat:

Country	Optional variables								
	A16	A17	B24	B29	B34	B412	B423	B4231	B4232
BE	NA	NA	NA	NA	NA	NA	NA	NA	NA
BG	+	NA	NA	NA	NA	+	+	+	+
CZ	NA	NA	NA	NA	NA	NA	NA	NA	NA
DK	NA	NA	NA	NA	NA	NA	NA	NA	NA
DE	NA	NA	NA	NA	NA	NA	NA	NA	NA
EE	NA	NA	NA	NA	NA	NA	NA	NA	NA
IE	+	NA	NA	NA	NA	NA	NA	NA	NA
EL	+	+	+	+	+	+	+	+	+
ES	+	NA	NA	NA	NA	+	+	+	+
FR	+	+	+	+	NA	NA	NA	NA	NA
HR	NA	NA	NA	NA	NA	NA	NA	NA	NA
IT	NA	+	+	+	NA	NA	NA	NA	NA

Country	Optional variables								
	A16	A17	B24	B29	B34	B412	B423	B4231	B4232
CY	NA	NA	NA	NA	NA	NA	NA	NA	NA
LV	+	+	+	+	NA	+	NA	NA	NA
LT	+	NA	NA	NA	NA	NA	NA	NA	NA
LU	NA	NA	NA	NA	NA	NA	NA	NA	NA
HU	NA	NA	NA	NA	NA	NA	NA	NA	NA
MT	NA	NA	NA	NA	NA	NA	NA	NA	NA
NL	NA	NA	NA	NA	NA	NA	NA	NA	NA
AT	NA	NA	NA	NA	NA	NA	NA	NA	NA
PL	+	NA	NA	NA	NA	NA	NA	NA	NA
PT	+	NA	NA	NA	NA	+	NA	NA	NA
RO	+	NA	NA	NA	+	+	+	+	+
SI	NA	NA	NA	NA	NA	NA	NA	NA	NA
SK	NA	NA	NA	NA	NA	NA	NA	NA	NA
FI	NA	NA	NA	NA	NA	NA	NA	NA	NA
SE	NA	NA	NA	NA	NA	NA	NA	NA	NA
IS	+	+	+	+	NA	+	+	+	+
NO	+	NA	NA	NA	NA	NA	NA	NA	NA
AL	+	NA	NA	NA	NA	NA	NA	NA	NA
RS	+	NA	NA	NA	NA	NA	NA	NA	NA

+ available

NA not available

## 5 Accuracy

*The accuracy of statistical outputs in the general statistical sense is the degree of closeness of computations or estimates to the exact or true values that the statistics were intended to measure.* Variability (caused by random effects) and bias (average differences caused by systematic effects) are the reasons for differences between the statistical estimates and the true values.

Sampling errors apply only to sample surveys: they are due to the fact that only a subset of the population is selected, usually randomly. Non-sampling errors apply to all statistical processes and encompass: coverage errors, measurement errors, processing errors, etc.

### 5.1 Sampling errors

Sampling errors occur in situation when not all units of the frame population can be surveyed. The variability of an estimator around its expected value may be expressed by its variance, standard error, coefficient of variation or confidence interval. The indicators available from the national SES 2018 quality reports are coefficients of variation.

*Coefficient of variation (CV)* is the ratio of the square root of the variance of the estimator to its expected value. It is estimated by the ratio of the square root of the estimate of the sampling variance to its estimated mean. Both numerator and denominator of the ratio defining the coefficient of variation should be provided, together with the resulting coefficient of variation. The estimation of the sampling variance must take the sampling design into account.

According to Commission Regulation (EU) No 698/2006 countries should calculate and transmit the coefficient of variation shall be calculated and transmitted for the variables 'Gross earnings in the reference month' and 'Average gross hourly earnings in the reference month'.

Apart from the coefficients of variation for the population as a whole, separate coefficients of variation should also be made available for both variables for the following individual breakdowns:

- full-time (separately for men and women) and part-time employees,
- NACE section,
- occupation (ISCO-08 at the 1-digit level),
- age band (under 20, 20-29, 30-39, 40-49, 50-59, 60 and over),
- NUTS level 1 (if appropriate),
- level of education (ISCED 0 to 6),
- size band of the enterprise (1-9 (if appropriate), 10-49, 50-249, 250-499, 500-999, 1 000+).

The breakdown by level of education is optional.

The coefficients of variation for the variable 'Gross earnings in the reference month' are provided in the table in *Annex III* of this document and for the 'Average gross hourly earnings in the reference month' in *Annex IV* of this document. Both tables provide coefficients of variation for the following breakdowns: working time, NACE sections, occupation, age bands and the size band of the enterprise.

## 5.2 Non-sampling errors

### 5.2.1 Coverage errors

Coverage errors (or frame errors) are due to divergences between the frame population and the target population. The *frame population* is the population used to draw the sample and the target population is a sub-set of the latter, which is of particular interest for the topics tackled by the survey. The estimates and conclusions from the survey are therefore made for the *target population*. Main types of coverage errors are under-coverage (target population units that are not accessible via the frame) and over-coverage (units accessible via the frame which do not belong to the target population). Multiple listings or misclassification are types of frame deficiency.

### 5.2.2 Measurement errors

Measurement errors appear when the response provided differs from the real value in the data collection period; this type of errors can be related to the respondent, the interviewer, the questionnaire, the data collection method or the respondent's record-keeping system. The causes are commonly categorised as:

- *Survey instrument*: the form, questionnaire or measuring device used for data collection may lead to the recording of wrong values;
- *Respondent*: respondents may, consciously or unconsciously, give erroneous information;
- *Interviewer*: interviewers may influence the answers given by respondents.

Such errors may be random or they may result in a systematic bias if they are not random. This may cause both bias and extra variability of statistical outputs.

Among the measures taken to minimize wrong answers, one is that the questions can be tested in advance and additional explanations and clarifications can also be displayed along the questionnaire. To reduce measurement errors caused by the interviewers, emphasis on specific training for interviewers and supervision is given. These consist in controlling and monitoring of interviewer calls, provision of annual training and full instructions, etc. As for measurement errors attributed to the questionnaire, attention is given to continuous checking of its design by improving the questions, incorporating explanatory text, coding and testing.

### 5.2.3 Processing errors

Between data collection and the beginning of the statistical analysis for the production of statistics, data must undergo certain processing: data entry, data editing, coding, etc. Errors introduced at these stages are called *processing errors*. Just as measurement errors, they affect individual observations causing bias and variation in the resulting statistics.

Following table gives an overview of treatment of measurement and processing errors across different countries:

Country	Measurement and processing errors									
BE	<p>Measurement errors:</p> <p>In order to detect outliers and other quality problems, several aggregated checks are integrated in the procedure. More complicated inconsistency problems were solved internally or by contacting the local unit or the administration responsible for the register on a bilateral basis.</p>									
BG	<p>Measurement errors:</p> <p>To avoid measurement errors detailed explanatory notes with illustrative examples were attached to the questionnaire. To further help the respondents a list with contact information was posted on Internet and telephone consultations on methodological and technical issues were provided. The Regional Offices were also provided by the Head office of NSI with written and telephone guidance how to process data and deal with arising problems.</p> <p>Main sources of measurement and processing errors are:</p> <ul style="list-style-type: none"> <li>• way of asking questions in the survey questionnaire. E.g. Annual days of holiday leave - in some cases respondents provided the number of days actually taken not the total number of days due to be taken.</li> <li>• respondents keep data differently and do not make further efforts to comply to statistical requirements, or do not understand or read the explanatory notes. Example for such errors is var. 3.2 which is among most corrected items because instead of number of hours paid during the representative month respondents provided: paid days during the month; paid hours during the year; working hours per day; paid hours excluding paid overtime hours (when available).</li> <li>• data entry errors - these errors had very low proportion compared to the first</li> </ul> <p>Processing errors:</p> <p>The evaluation of quality at regional level was done by virtue of a questionnaire concerning number of issues. As regards measurement and processing errors Regional Offices were asked which variables have been most often corrected - wrong or missing. In the following table are listed variables that were reported by the 28 Regional offices (ROs) of NSI as being most problematic.</p> <p>SES2018 variables most often corrected by the 28 Regional offices of NSI</p> <table border="1" data-bbox="331 1720 1358 1877"> <thead> <tr> <th data-bbox="331 1720 906 1787">Variable number according to Reg.1738/2005</th> <th data-bbox="906 1720 1098 1787">Variable label</th> <th data-bbox="1098 1720 1358 1787">% of ROs that reported variables as problematic</th> </tr> </thead> <tbody> <tr> <td data-bbox="331 1798 395 1832">2.3</td> <td data-bbox="427 1798 667 1832">Occupation (ISCO08)</td> <td data-bbox="715 1798 778 1832">42%</td> </tr> <tr> <td data-bbox="331 1843 395 1877">3.1</td> <td data-bbox="427 1843 1098 1877">Number of weeks to which the gross annual earnings relate</td> <td data-bbox="1098 1843 1161 1877">74%</td> </tr> </tbody> </table>	Variable number according to Reg.1738/2005	Variable label	% of ROs that reported variables as problematic	2.3	Occupation (ISCO08)	42%	3.1	Number of weeks to which the gross annual earnings relate	74%
Variable number according to Reg.1738/2005	Variable label	% of ROs that reported variables as problematic								
2.3	Occupation (ISCO08)	42%								
3.1	Number of weeks to which the gross annual earnings relate	74%								

Country	Measurement and processing errors
	<p>3.2 Number of hours paid during the representative month 89%</p> <p>3.3 Annual days of holiday leave 63%</p> <p>In addition ROs reported that approximately 20% of responded units were contacted for reference on completeness, compliance and consistency of the data.</p> <p>Methods applied for correction of data that were identified as wrong (inconsistent, impossible values, missing values, not corresponding to definition, wrong format) differ depending on the type, seriousness of error and willingness of respondents to cooperate:</p> <ul style="list-style-type: none"> <li>• logical correction - applied when required information is available but format is wrong or the error is obvious - suitable correction was performed, e.g. format of data of entry into enterprise is not correct, overtime hours are not included in total hours paid in reference month, etc.;</li> <li>• reference to respondent - when problem is more complex inquiry for validity of data was undertaken, asking for confirmation of the nature of the error or for new delivery of given variables;</li> <li>• reference to other statistical sources – it is used to validate information received by surveyed units or when not possible to contact respondents, or respondents refuse to give further information. Possible sources of supporting information are Quarterly Survey on Labour and Annual Survey on Labour that provide data on total number of employees, existence of irregular bonuses, payments in kind, overtime earnings, distribution by occupations, distribution by sex, etc.</li> <li>• reference to administrative sources – it is used to validate information received by surveyed units or when not possible to contact respondents, or respondents refuse to give further information. In such cases the Register of socially insured persons in 2018 was employed. This source contains many of the key SES variables like sex, age, hourly, monthly and annual earnings, working time, paid hours, paid periods during the year.</li> <li>• deletion of the out of scope records (local units with no employees with earnings in reference month, employees without earnings in October, unreliable or many missing data).</li> </ul>
CZ	<p>Measurement errors:</p> <p>In the ISP, data are send via secured internet page of the Ministry of Finance, where basic check mechanisms are embedded. The data gathered this way are then send to the processor. More difficult communication is in the ISP, because the data are send through a submissioner. On the other hand, this system minimizes coverage errors. All the data are send electronically.</p> <p>The data of ISPV-MZS are collected from respondents in the form of databases; they include information on employer and employees. In more than 90 % cases, data stem directly from inter-enterprise information system on wages and personal information. About nine out of ten respondents use electronic mail for sending data, the rest use diskettes, rarely paper form.</p> <p>In the ISP, data are send via secured internet page of the Ministry of Finance, where basic check mechanisms are embedded. The data gathered this way are then send to the processor. More difficult communication is in the ISP, because the data are send through a submissioner. On the other hand, this system minimizes coverage errors. All the data are send electronically.</p>

Country	Measurement and processing errors																
	<p>In the survey on micro-subjects, data were sent electronically in 65 % cases and 35 % of respondents send data on paper questionnaires. The risk of wrong data was the biggest there. Revision was made by the processing firm during phone consultation with the respondent. In comparison with 2014 SES, the share of electronically sent data have risen by 7 p.p.</p> <p>All the data files (ISPV-MZS, ISP and micro-subjects) have been preserved in the seven data-stores. In the individual data-stores, there are saved original data from the respondents, data before the data-checks and data after the data-checks (both automatic and manual). Grossing-up to the whole population is made by applying weights for individual records on the final database file.</p> <p>Triple automatic check is made during the data collecting and processing. In addition, a visual check is made after that. Any mistakes found are dealt with in relation to their importance – either by contacting the respondent or directly by the processing company. Some help is obvious with coding of occupational classification since this task is the most difficult for the respondent; consultations by telephone are provided. After data entering, additional checks are made on the levels of regions and individual professions. Some checks are also made accordingly on the level of ESs. On the aggregated level, we search for changes in time and look for explanations. An example can be earnings level in the individual occupation in region – in case on change more than 20 % y-o-y the enterprise data are analysed.</p> <p>The very last stage is data check before their sending to Eurostat. 2,434,107 records passed all the checks, 20,767 have been erased. The most records erased didn't pass the check on the number of weeks to which the yearly earnings refers - 14,367; 3,769 records failed in the check on the number of paid hours in month.</p>																
DK	<table border="1"> <thead> <tr> <th data-bbox="330 1084 1059 1167">Common type of errors</th> <th data-bbox="1059 1084 1375 1167">Per cent of study population records</th> </tr> </thead> <tbody> <tr> <td data-bbox="330 1167 1059 1256">udd not in ('G1','G2','G3','G4') - No information on education, or it does not fit the format</td> <td data-bbox="1059 1167 1375 1256">2.0</td> </tr> <tr> <td data-bbox="330 1256 1059 1312">overbet&lt;0 - payments for overtime is less than 0</td> <td data-bbox="1059 1256 1375 1312">2.4</td> </tr> <tr> <td data-bbox="330 1312 1059 1368">B27='FT' and (B32-B321)&lt;130</td> <td data-bbox="1059 1312 1375 1368">2.0</td> </tr> <tr> <td data-bbox="330 1368 1059 1424">Error in the ISCO-coding</td> <td data-bbox="1059 1368 1375 1424">0,2</td> </tr> <tr> <td data-bbox="330 1424 1059 1480">ureglm&lt;0 - irregular payments are less than 0</td> <td data-bbox="1059 1424 1375 1480">0</td> </tr> <tr> <td data-bbox="330 1480 1059 1536">if B27='PT' and (B32-B321)&lt;(int(130*(B271/100))</td> <td data-bbox="1059 1480 1375 1536">1.5</td> </tr> <tr> <td data-bbox="330 1536 1059 1594"><b>All erroneous records during validation process 2</b></td> <td data-bbox="1059 1536 1375 1594"><b>8.5</b></td> </tr> </tbody> </table>	Common type of errors	Per cent of study population records	udd not in ('G1','G2','G3','G4') - No information on education, or it does not fit the format	2.0	overbet<0 - payments for overtime is less than 0	2.4	B27='FT' and (B32-B321)<130	2.0	Error in the ISCO-coding	0,2	ureglm<0 - irregular payments are less than 0	0	if B27='PT' and (B32-B321)<(int(130*(B271/100))	1.5	<b>All erroneous records during validation process 2</b>	<b>8.5</b>
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DE	<p>Measurement errors:</p> <p>Errors in collecting the data were kept as few as possible through detailed questionnaires and explanations of all variables. Payroll accounting definitions were adhered to closely, which means that the respondents were able to take most variables directly from the payroll.</p> <p>This included, in particular, the use of the code indicating activities in statutory social security reporting. The code must be used and maintained by employers for social security purposes with regard to all workers covered by social security (Data recording and transfer ordinance –</p>																

Country	Measurement and processing errors																										
	<p data-bbox="331 226 1358 443">DEÜV). The code had to be entered to all nine digits in the 2018 SES, making it unnecessary to use plain text to indicate occupation and education. This arrangement has considerably simplified matters for the respondents and statistical offices, but has made the quality of the survey variables obtained from the survey dependent on the quality of the code and its conversion into international classifications of occupation (ISCO-08) and education (ISCED 2011).</p> <table border="1" data-bbox="331 501 1374 1890"> <tbody> <tr> <td data-bbox="338 510 485 584">Variable</td> <td data-bbox="485 510 1367 584">Occupation (2.3)</td> </tr> <tr> <td data-bbox="338 584 485 712">Source of error</td> <td data-bbox="485 584 1367 712">The code indicating the activity carried out obtained from statutory social insurance accounting does not (any longer) match the current activity.</td> </tr> <tr> <td data-bbox="338 712 485 797">Impact</td> <td data-bbox="485 712 1367 797">Incorrect entry of the occupation</td> </tr> <tr> <td data-bbox="338 797 485 925">Correction</td> <td data-bbox="485 797 1367 925">None. Nor was there any check to ensure that the code number supplied was up-to-date.</td> </tr> <tr> <td data-bbox="338 925 485 1010">Variable</td> <td data-bbox="485 925 1367 1010">Occupation (2.3)</td> </tr> <tr> <td data-bbox="338 1010 485 1218">Source of error</td> <td data-bbox="485 1010 1367 1218">The five-digit code indicating the activity carried out from statutory social security reporting was adapted to the three-digit code of ISCO-08. The code was based on the German 2011 classification of occupations, without a 1:1 match with ISCO-08</td> </tr> <tr> <td data-bbox="338 1218 485 1303">Impact</td> <td data-bbox="485 1218 1367 1303">Inaccurate entry of occupation under ISCO-08.</td> </tr> <tr> <td data-bbox="338 1303 485 1388">Correction</td> <td data-bbox="485 1303 1367 1388">None.</td> </tr> <tr> <td data-bbox="338 1388 485 1473">Variable</td> <td data-bbox="485 1388 1367 1473">Highest successfully completed level of education and training, ISCED (2.5)</td> </tr> <tr> <td data-bbox="338 1473 485 1601">Source of error</td> <td data-bbox="485 1473 1367 1601">It was not (any longer) possible for the code for education from statutory social security reporting to reflect current education.</td> </tr> <tr> <td data-bbox="338 1601 485 1686">Impact</td> <td data-bbox="485 1601 1367 1686">Incorrect entry of education.</td> </tr> <tr> <td data-bbox="338 1686 485 1814">Correction</td> <td data-bbox="485 1686 1367 1814">None. Nor was there any check to ensure that the code number supplied was up-to-date.</td> </tr> <tr> <td data-bbox="338 1814 485 1890">Variable</td> <td data-bbox="485 1814 1367 1890">Type of employment contract (2.8)</td> </tr> </tbody> </table>	Variable	Occupation (2.3)	Source of error	The code indicating the activity carried out obtained from statutory social insurance accounting does not (any longer) match the current activity.	Impact	Incorrect entry of the occupation	Correction	None. Nor was there any check to ensure that the code number supplied was up-to-date.	Variable	Occupation (2.3)	Source of error	The five-digit code indicating the activity carried out from statutory social security reporting was adapted to the three-digit code of ISCO-08. The code was based on the German 2011 classification of occupations, without a 1:1 match with ISCO-08	Impact	Inaccurate entry of occupation under ISCO-08.	Correction	None.	Variable	Highest successfully completed level of education and training, ISCED (2.5)	Source of error	It was not (any longer) possible for the code for education from statutory social security reporting to reflect current education.	Impact	Incorrect entry of education.	Correction	None. Nor was there any check to ensure that the code number supplied was up-to-date.	Variable	Type of employment contract (2.8)
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Country	Measurement and processing errors	
	Source of error	It was not (any longer) possible for the code for the contract's duration from statutory social security reporting to reflect current status. In particular, employers tend to report to late or not at all about a job's indefinite duration if there was first a fixed duration.
	Impact	Incorrect entry of duration. There is overestimation of temporary/fixed duration.
	Correction	Some. There were some checks to ensure that the code number supplied was up-to-date.
	Variable	Number of weeks in the reference year to which the gross annual earnings relate (3.1)
	Source of error	To simplify matters, the number of working days under coverage of social security was requested rather than the number of weeks. In the case of persons in marginal part-time employment, however, only those (few) days that had been worked were reported (which was incorrect) in some cases.
	Impact	Because the number of weeks was calculated by dividing the number of days obtained in the survey by seven, if the number of days is too small, so is the number of weeks. Correction of gross annual earnings using the number of weeks leads to excessive annual earnings in such cases.
	Correction	Extreme cases have been corrected by imputing weekly figures derived from the relationship between annual and monthly earnings.
	Variable	Annual days of holiday leave (3.3)
	Source of error	For part-time employees respondents often do not follow closely the definitions of the questionnaire. They report the unadjusted entitlement instead of the entitlement adjusted according to the percentage of the normal full-timer's hours as requested.
	Impact	Overestimation of annual days of holiday leave for part-timers and for full-timers and part-timers together.
	Correction	Implausible values have been corrected by imputing figures derived from the legal entitlement of 20 days and the percentage of the normal full-timer's

Country	Measurement and processing errors		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"></td> <td>hours.</td> </tr> </table>		hours.
	hours.		
EE	<p>Measurement errors:</p> <p>Structure of earnings survey was conducted in the Statistics Estonia first time in 2002.</p> <p>In 2002 the structure of earnings pilot survey was the first survey based on individual level survey conducted by the Statistics Estonia. The main purpose of this pilot survey was to test the questionnaire. The pilot survey was conducted from March to May covering the calendar year 2001. All these steps helped to compile the SES questionnaire and the logic tests.</p> <p>In the main survey 2002, 2006, 2010, 2014 and 2018 the same problem as in the pilot survey follow-up again. From the variable “number of worked and paid days to which the gross annual earnings relate” the days of sick leave and the days not worked and not paid were not subtracted correctly by employers. At the same time the employees who have not been present the whole year the accounting of working time were not correct in lot of cases.</p> <p>There are some deviations from the list of the variables in the regulation. For instance paid hours but not worked are estimated through paid days but not worked and through standard for working time in a week according to internal work procedure rules in an enterprise or statutory normal working time.</p> <p>For estimation paid hours but not worked we used the following additional information or breakdowns: total number of days of annual leave of employees in October and days not worked in October but nevertheless paid and standard for working time in a week according to internal work procedure rules in enterprise or statutory normal working time in a week. Total number of hours paid during the October was calculated to the database as variable through the formula.</p> <p>For estimation the total number of weeks in the year to which the gross annual earnings relate we used the following additional breakdowns: number of worked and paid days in the year to which the gross annual earnings relate, annual days of holiday leave and days not worked in the year but nevertheless paid. The numbers of weeks in the year to which the gross annual earnings relate were calculated to the database as variable through the formula.</p> <p>Variables which needed the most of cases of correction were occupation code, overtime hours, days of holiday leave in October, days not worked in October but nevertheless paid, earnings paid for overtime hours, payment for days not worked in October, number of worked and paid days in the year to which the gross annual earnings relate.</p> <p>The logic test also includes the relation between the gross earning in October and gross annual earnings. Through this test lot of errors were find which needed correction like variable payments for actually worked time in October (irregular bonuses were included).</p> <p>Above mentioned variables were under extra priority during the checking process.</p> <p>The logic test has revealed all errors of magnitude made by respondents and during the data entry by NSI staff. After contacts with respondents and corrections the logic tests were used again.</p>		
IE	<p>Measurement errors:</p> <p>The majority of responses were through e-form which contained controls for data entry</p>		

Country	Measurement and processing errors
	<p>including specific characters or ranges of values.</p> <p>Processing errors:</p> <p>Although processing errors may occur there has not been an overall measurement of the extent of processing errors.</p>
EL	<p>Measurement errors:</p> <p>The questionnaires are filled in through personal interviews in the enterprise. The method which is used ensures high-quality data since the statistical interviewers assist the respondents to fill in the questionnaire and /or they fill in themselves the data on employees (questionnaire form 2) and they check very carefully the filled in questionnaires before leaving the enterprise. The statistical interviewers are normally external survey workers and, if necessary, experienced permanent employees of ELSTAT. The interviewers are duly trained during seminars before the conduct of the survey. The purpose of the training seminars is to enable the interviewers to</p> <ol style="list-style-type: none"> <li>a) fully understand the definitions and the variables of the survey,</li> <li>b) correctly fill in the survey questionnaire and</li> <li>c) check the questionnaires for any errors through logical checks.</li> </ol> <p>The structure and the size of the questionnaire make it friendly to statistical interviewers and respondents. The questions are clearly stated using the appropriate language and terminology. Furthermore, the compiled guidelines cover analytically all the survey variables.</p> <p>The support and supervision of the collection of questionnaires were decentralized in the Regional Statistical Offices (RSO) of ELSTAT. The checking for the detection of measurement errors was carried out in the RSO. The RSO were also provided by the central office of ELSTAT with written and telephone guidance on how to process data and deal with arising problems.</p> <p>The main problem for interviewers is that respondents who keep data differently, do not make further efforts to make them suitable for statistical requirements, or do not understand or read the explanatory notes.</p> <p>After receiving the questionnaires, the statistical office recorded them, and separate valid questionnaires from those to be revised. If they are not thoroughly completed and corrected, the questionnaire is returned to the interviewer in order to contact the enterprise again, otherwise, it cannot be considered valid.</p> <p>There is a debugging procedure that assures not missing data, coherence among individual characteristics (age, length of service, level of education, etc), and coherence among economic data (monthly and annual earnings related to the hours paid etc).</p> <p>If extreme values in data are detected during this phase, a telephone call is made to the respondent for clarifications.</p> <p>All the above ensure the fact that the collected questionnaires are complete and correctly filled in, thus eliminating any measurement errors.</p> <p>Processing errors:</p> <p>Once the data are gathered in the headquarters of ELSTAT, the following statistical actions take place:</p> <ul style="list-style-type: none"> <li>• Codification,</li> </ul>

Country	Measurement and processing errors
	<ul style="list-style-type: none"> <li>• Data entry</li> <li>• Data validation (checks of completeness and plausibility checks)</li> <li>• Logical checks</li> <li>• Quality checks are carried out on the collected data in order to identify any extreme values. Any outliers and errors are identified and duly corrected.</li> <li>• Comparison with other sources of statistical information as with the corresponding data of the former relevant survey (reference year 2014) and all possible high differences were investigated.</li> <li>• After the tabulation, the results obtained were analysed in order to know whether they were coherent with the available short-term statistics on labour and wage costs.</li> </ul> <p>These activities were carried out by expert, permanent staff of the Section in charge of the survey.</p>
ES	<p>Measurement errors:</p> <p>Before sending the questionnaires to the units, the telephone numbers and addresses for the units were checked and updated.</p> <p>The filled questionnaires were given back to the statistical office by mail, in the enclosed postage paid envelope, or electronically, to which purpose a registration and transmission format on Internet was designed.</p> <p>It was also possible to fill in the questionnaire by Internet using an identification number provided in the questionnaire.</p> <p>Debugging errors</p> <p>After receiving the questionnaires, the statistical office recorded them, using an ad hoc computer application, which at the same time made a first debugging for the questionnaire's internal consistency.</p> <p>This first debugging consists in using filters that allow to separate valid questionnaires from those with inconsistencies to be revised.</p> <p>The filters are of two kinds: those detecting type I and type II errors.</p> <p>Type I errors:</p> <p>If they are not thoroughly corrected, the questionnaire cannot be considered as valid.</p> <p>Type II errors:</p> <p>They involve norms regarding the coherence of the data. The non-satisfaction of these norms does not necessarily mean that the questionnaire is not valid, but the apparent incoherence must be explained. In case of doubt, a telephone call is made to the respondent to elucidate the question.</p> <p>The questionnaires are filtered a first time during the recording and a second time by the team responsible for the results of the survey (this team is different from the recording one).</p> <p>There are more than four hundred rules checked in each employee data. They assure:</p> <ul style="list-style-type: none"> <li>• not missing data (partial non-response is not allowed)</li> <li>• coherence among individual characteristics: age, length of service, level of education,</li> </ul>

Country	Measurement and processing errors
	<p>type of contract, occupation, and so on.</p> <ul style="list-style-type: none"> <li>coherence among economic data: monthly and annual earnings, between themselves, and both related to the hours paid, to the economic activities, occupations, etc.</li> <li>the codes assigned for the level of education and the occupation exist in the classification used (ISCED-11 and ISCO-08) and are coherent with the variables, as economic activity, age, etc.</li> </ul> <p>Processing errors:</p> <p>The variables ‘level of education’ and ‘occupation’ were codified at the time of recording the questionnaires. Rules to assure that the code assigned exists in the classification were established. Moreover, the sample was divided in portions. Random subsamples were selected from each portion and the codification in it was revised. If the errors in the codification were higher than the 3% of the total number of employees in the subsample, the whole portion was recodified. This process was repeated until this percentage of errors was achieved.</p> <p>The processing, grossing up and tabulation of the data have been programmed and supervised by two different teams. After the tabulation, the results obtained were analysed in order to know whether they were coherent with the available short-term statistics on labour and wage costs.</p>
FR	<p>Measurement errors:</p> <p>Thanks to the data monitoring tool, inconsistencies can be detected and quickly corrected by the management team during the collection process (see also Section 3.4).</p> <p>The central variables of the survey (gross wage and number of paid hours) are mainly checked using individual data from the comprehensive statistical files from administrative sources (DSN or SIASP) and other variables of the survey, within the scope of a consistency analysis conducted at the individual level and potentially resulting in adjustments being made to the declared variables (and imputations where these are missing, see Section 6.3.3).</p> <p>A second adjustment is carried out following the above-mentioned adjustments and imputations to satisfy the constraints imposed by Eurostat, namely strict compliance with the limits for several variables (working hours and valuation of overtime, for example) and the absence of partial non-responses (removal of individuals for whom certain variables are still missing after imputation).</p>
HR	<p>Measurement errors:</p> <p>Each question in the questionnaire has a clear explanation of what should be included and also what should be excluded from data presented. All the data entered in application prepared for data entry are tested with logic control. Logic control contains a set of threshold values which the values of variables should not exceed.</p>
IT	<p>Measurement errors:</p> <p>Measurement errors are defined as errors occurring at data collection time, while processing errors are those occurred in post-data-collection processes. While little information is gathered on processing errors some considerations can be drawn on measurement errors. First, we define measurement errors those considered such by our Editing and Imputation procedures. As above sketched, as for the public sector, all variables have been derived from registers</p>

Country	Measurement and processing errors
	<p>directly or through estimation methods.</p> <p>In this section thus the focus is on the private sector. However since also the SES 2014 for the private sector is a mixed Register-Survey process it is important to describe how the editing process has been carried out. For the private sector most of the variables have been derived from the RACLI register. Some of them have been used to prefill the questionnaire and could be modified by the respondent. The variables not available in the registers have been moreover added to the questionnaire.</p> <p>All the variables, even those derived from the register, have then been passed to the editing and imputation procedures and edited when considered incorrect. Then the variables requested from the Regulation were obtained by adding and/or subtracting items. This implies that some of the target variables, those on total earnings and hours paid, are composed from a part derived from the register and a part derived from the questionnaire. The result of these procedures is that there are very different item imputation rates among the variables. In particular, the variables with the highest imputation rates are those completely not available in the register or those composed partially from the register and partially through the survey, since it is on them that the imputation of non respondents impact. However for the second group, since the part not available from the register is very small compared to the total, the imputation usually change the requested variable only slightly.</p> <p>In detail, in editing and imputation procedures used for the private sector the RACLI data play an important role. The private sector survey can be defined an “Admin data assisted survey”. RACLI data are used in several ways, limited to the respondents:</p> <ul style="list-style-type: none"> <li>- to supply the values applied in the edit rules to guarantee the consistency between the core component (from the register) and a sub-component (from the survey),</li> <li>- to build homogeneous edit groups,</li> <li>- to provide the matching variables in the minimum distance donor imputation.</li> </ul> <p>As concern the first item, the comparison between survey data and RACLI data represents the instrument for detecting and possibly correcting the former through deterministic rules. Whenever the prefilled values were changed by the respondents a first deterministic procedure is used to verify and correct the data against the RACLI values. In particular the procedure assesses:</p> <ol style="list-style-type: none"> <li>1) the accuracy of the type of contract (full-time, part-time) and its associated share of full-time hours,</li> <li>2) the precision of the quantitative variables as monthly wages, annual wages, number of workable hours in the month drawn from the survey and to quantify the possibly divergence. The procedure uses measures in level and per-hour data, and in case the survey data are out the chosen limits (cut-off), the Admin data substitute the survey ones and the sub-components are recalculated paying attention to preserve the existing proportion between the survey core variables and their sub-components.</li> <li>3) the precision of information on individual characteristics of the employee, as level of education, citizenship, managerial position, length of service in the enterprise, and in case of doubt substitute them with Admin data.</li> </ol> <p>In most cases the data provided by the enterprise is changed back to the admin data value.</p>

Country	Measurement and processing errors
	<p>A second probabilistic procedure, built around the BANFF system (Statistics Canada) is used for automated editing and imputation of quantitative data on earnings (e.i. Gross earnings for the reference month and Earnings related to overtime, Gross annual earnings in the reference year, Annual bonuses and allowances not paid at each pay period, Annual payments in kind) and working period (e.i. number of hours actually paid, number of overtime hours paid). To take into account critical differences among the employees, the main edit rules into the system were written distinguishing for specific group of employees (Education, Arts and entertainment, Transportation maritime, Managerial position) respect to the others, and for type of contract (full-time, part-time) and the imputation is run within groups of employees with the same position in the enterprise (white collar/blue collar) and economic activity.</p> <p>The table 6.3.2.2 shows, for each group of employee and type of contract, at the top the value of total observations submitted to Banff procedures (102230 total units) and its row percentage, in the center the value of observation failed each edit and at the bottom the value of observation donor imputed, beside to the incidence on total observations.</p> <p>The qualitative variables are submitted to SCIA system for automated editing and imputation of data affected by errors, that applies a generalization of the error localization method of Fellego and Holt (1976). The variables undergone to the procedure consist of individual characteristic of each employee (age, managerial position, level of education, length of service in the enterprise, occupation according ISCO classification). The table 6.3.2.3. shows the number of imputed units for each variable and the percentage calculated on 102230 total units treated.</p> <p>In this framework, the records for the employees belonging to non respondent enterprises have been compiled on one side from the variables available from the registers RACLI and on the other with values imputed through minimum distance donor methods. All this procedure has been applied to the questionnaire scheme.</p> <p>As the set of core information and the extra information from the subsample (respondents of private sector) have already been edited and imputed and that no consistency edits need to be applied, they are so used to estimate the non respondents. On 142075 total observations of private sector, the share of 28% represents the non respondents. The availability of the set of core information (Gross wages in the month, Gross wages in the year, number of hours paid in the month) for the entire sample drawn from RACLI lets to perform a massive imputation on the non respondents to obtain the extra components.</p> <p>For each group of employees with the same economic activity, position in the enterprise (white collar/blue collar) and type of contract (full-time, part-time), the share between the core variables and their components measured on respondents are donated to the non respondents with a massive imputation from the valid observation that is most similar to it according to matching fields (Gross earnings for the reference month, Gross annual earnings in the year, number of hours paid in the month).</p>
CY	<p>Measurement errors: Survey Instrument Errors</p> <p>The SES 2018 was the fifth survey of the series conducted in Cyprus. Therefore, the questionnaire designed, was actually an improvement of the previous questionnaires, accommodating all suggestions for improvement in the layout received from the feedback of</p>

Country	Measurement and processing errors
	<p>the previous surveys.</p> <p>The questionnaire contained all the compulsory variables defined in the regulation for the SES 2018 and a number of optional variables. In order to prevent any misunderstandings concerning the data requested, explanatory notes were prepared for the enumerators and the supervisors of the survey, providing detailed explanations on all the variables, as well as guidance on what to include and what to exclude from each variable.</p> <p>Mode of Data Collection Errors</p> <p>Data for the SES 2018 were collected by means of computer assisted personal interviews (CAPI). The enumerators/interviewers were trained specifically for the Structure of Earnings Survey (both the concepts/definitions of the survey and the use of the data entry programme for the data collection). As instructed, they got in touch with the enterprises in the sample, in order to arrange appointments and pay them a visit (or more if needed) to collect the data.</p> <p>In most cases an employee of the enterprise would co-operate with the interviewer from the Statistical Service and provide the necessary information. In such cases, the errors were kept to a minimum, since the interviewers were familiar with both the questionnaire and the information needed for the survey.</p> <p>In other cases the enterprise would provide the interviewer with administrative sources (accounts, payrolls, etc.) and ask them to locate and record the information needed without any further help. In these cases, since the questionnaires were completed by the interviewers the errors were minimised. However, some mistakes occurred in cases where the information provided by the enterprises was not fully understood by the interviewers. This was dealt with by the supervisors of the interviewers.</p> <p>In even fewer cases, the interviewers made the necessary explanations to the contact person from the enterprise and then, the enterprise would take the responsibility of filling out the questionnaires. In such cases the control over the data was even smaller, and the probability of errors in the data was larger. Such cases were reviewed by supervisors and the managers of the survey.</p> <p>In order to minimise the occurrence of errors, there were built-in controls in the data entry programme (which was designed using the BLAISE software) so that errors during data entry would be avoided (values out of range, uncompleted fields, etc). Additionally, the completed questionnaires were checked for any inconsistencies by supervisors and if needed, the enterprises were contacted again in order to clarify or correct the information given. At a later stage a full set of validation and consistency checks was ran on the data for more thorough checking.</p> <p>Respondent Errors</p> <p>Respondent errors are most common in surveys where questionnaires are filled out by the respondents. Since in the SES 2018 the method used was that of personal interviews, such errors were minimised. Nevertheless, in the few cases where the respondents filled out the questionnaires, the interviewers and the supervisors were extra careful in order to identify and correct any misleading data or mistakes.</p> <p>In addition to the above, consistency checks were designed in order to identify any inconsistencies in the data, which might have resulted from the provision of wrong information</p>

Country	Measurement and processing errors
	<p>by the enterprises.</p> <p>Information System Errors</p> <p>These errors occur when the information system of the enterprise is unable to provide the data required for a specific survey. The information system of most enterprises in the sample could not provide accurate information on the following variables:</p> <ol style="list-style-type: none"> <li>1. Highest completed level of education</li> <li>2. Number of weeks to which the gross annual earnings relate</li> <li>3. Annual payments in kind (optional variable which must be included in the gross annual earnings in the reference year)</li> </ol> <p>The main source of these problems was that some enterprises did not keep proper records of their employees, especially with regard to their education level and annual payments in kind. This problem was more common in economic activities such as the construction or industry sector, and mainly in small enterprises (under 10 employees). It was also quite problematic to obtain the information in large enterprises such as hotels where the records for the employees were stored in the central offices and (not at the actual sampled enterprise/local unit). This required a significant amount of additional efforts and time by our employees.</p> <p>Another problem that was quite common was that if the employees had left the enterprise by the time the data were collected, some enterprises usually did not keep their records.</p> <p>Such problems were dealt with, in the following ways:</p> <ul style="list-style-type: none"> <li>• In the cases where the data were not available at the local unit, but it was possible to locate the information needed from other administrative sources, then the interviewers would collect the data available from the local units, and then complete the missing data from the administrative sources.</li> <li>• In cases where the employees selected in the sample had left the enterprise by the time the data were collected, they were replaced by other employees. It was therefore possible to obtain information from the records of the newly-selected employees.</li> <li>• Concerning information not readily available from the information system of enterprises, such as the “Number of weeks to which the gross annual earnings relate” and the “Annual payments in kind”, a secondary document was prepared requesting auxiliary information (maternity leave taken, sick leave not paid, etc.) in order to estimate the main variables.</li> <li>• In the cases where it was impossible to obtain data on the above mentioned variables, the enterprises were asked to provide representative estimates.</li> </ul> <p>Interviewer Errors</p> <p>Interviewers were hired and trained to collect data specifically for the Structure of Earnings Survey. Any questions arising during data collection were answered by supervisors and the managers of the survey.</p> <p>Processing errors:</p> <p>Data entry</p> <p>Processing errors due to data entry were limited, and were mainly identified through validation and consistency rules applied during and after the stage of data entry, using specialised</p>

Country	Measurement and processing errors
	<p>software.</p> <p>Coding</p> <p>The coding of the questionnaires was performed by employees who were specifically trained for this purpose. Special dictionaries were embedded in the application used for coding, which helped to minimise any judgment errors. Additionally the final validation and consistency checks applied to the data file also helped to reduce even more any kind of coding errors.</p> <p>Editing</p> <p>Editing of the data was either done during the data entry (first checks of the questionnaire) or after the first run of the validation and consistency rules. In each case, the edited data were checked/ rechecked by the first/second run of the validation and consistency checks.</p>
LV	<p>Measurement errors:</p> <p>The questionnaire for SES 2018 was designed in such a way to eliminate the survey instrument (questionnaire) errors providing explanatory notes directly in questions and detailed explanations in the supplemented instruction for filling in the questionnaire.</p> <p>The SES 2018 data processing had been carried out using the Integrated Statistical Data Management System (ISDMS) where statistical metadata is the key element. The metadata module ensures maintenance of validation rules of statistical survey. Each validation rule description contains validation rule code, error message text and description of validation rule, validation rule conditions. It is possible to generate validation procedure automatically for each questionnaire directly after the entry of questionnaire. Main validation rules, both arithmetical and logical, were available during filling in e-questionnaire via website of CSB.</p> <p>The validation programme consisted of 168 arithmetical and logical controls. After executing the validation procedure of respondent survey, data form with list of validation errors is available. This form contains the following information for each error – error number, error description, type (acceptable, unacceptable, not marked), error type reason (for some errors it is necessary to describe the acceptability reason).</p> <p>Every statistician had a definite number of enterprises from which the questionnaires have to be collected, entered and verified. The responsible person could not finish the data entry of the questionnaire in case if any answer on the questionnaire’s variable was missed, or (according to the rules implemented in the data entry programme) filled in incorrectly. In these cases the responsible person contacted the enterprises once more and made the necessary changes in the questionnaire.</p>
LT	<p>Measurement errors:</p> <p>The SES questionnaires were collected from respondents using electronic questionnaires (online, .ffdata format).</p> <p>The first verification of data was made in the regional statistical offices. Every statistician has a definite number of enterprises from which the questionnaires have to be collected. Then the collected data were entered, checked and corrected. Each questionnaire was validated according to the validation program. The validation program consists of the arithmetical and logical controls.</p> <p>The respondents were contacted via phone or e-mail. The second control of the data was</p>

Country	Measurement and processing errors
	<p>accomplished at the Labour Statistics Division in Statistics Lithuania. Enterprises were re-contacted and the required corrections were made in the primary database in cases when errors had been found.</p> <p>Due to the heavy reporting burden respondents made many errors, although detailed explanatory notes were attached to the SES questionnaire with the aim of minimising errors. The total number of errors made up 19 345. The variables that have been corrected most often are the following:</p> <ul style="list-style-type: none"> <li>• number of hours paid in October 2018 – 15.8 per cent compared to all errors;</li> <li>• duration of working time (share of a full-timer’s normal hours) – 15 per cent compared to all errors;</li> <li>• annual gross remuneration in 2018 – 12.1 per cent compared to all errors;</li> <li>• gross remuneration in October 2018– 11.8 per cent compared to all errors.</li> <li>• occupation of an employee – 10.6 per cent compared to all errors</li> </ul>
LU	<p>Measurement errors:</p> <p>Due to the new methodology introduced for the 2014 wave, there have been few inconsistencies between variables, as most variables had been drawn from social security registers.</p> <p>The main issues concerned:</p> <p>-Variable B271 (Share of a full-timer’s normal hours), where the values filled in by the enterprises in the questionnaire were inconsistent with the number of hours paid in the reference month drawn from social security.</p> <p>-Variable B422 (Special payments for shift work), where the values filled in by the enterprises in the questionnaire were inconsistent with the overall special payments in the reference month drawn from social security</p> <p>The inconsistencies on these variables were corrected via direct follow-up with the local units.</p> <p>The variable on Annual Holiday Leave (B33) had to be imputed based on legal minima and minima set by (known) collective agreements. As a result, the values of the variable B33 are likely to be underestimated.</p> <p>In the public sector (O and the public part of P), variable B25 'Highest successfully completed level of education' is based on the diploma a person must normally have to access the post in question. Actual diplomas held by the person might in some cases be higher (and in rare cases also lower) than the level reported, but this information is not available in the administrative data.</p> <p>Data for sector O covers all of NACE 84 subdivisions except 84.112 Administrations of local bodies (communes), 84.250 Fire service activities, and 84.3 Compulsory social security activities.</p>
HU	<p>Measurement errors:</p> <p>In the survey measurement errors are mainly reporting errors. The most important sources of measurement errors include:</p> <ul style="list-style-type: none"> <li>• Erroneous coding of the firm identification number or the activity code;</li> </ul>

Country	Measurement and processing errors
	<ul style="list-style-type: none"> <li>• Data entry errors by respondents;</li> <li>• Data entry errors during the recording process;</li> <li>• Annual premiums and bonuses and payments in kind are reported for the previous reference year, therefore, real reference year data differ from the reported ones.</li> </ul> <p>In the validation process measurement errors are checked, validated and if necessary corrected by the data providers.</p>
<p><b>MT</b></p>	<p>Measurement errors:</p> <p>NSO tried to minimise measurement errors during different stages of the data collection.</p> <p>Accounting of measurement errors from the questionnaire</p> <p>NSO's initial objective was to have a questionnaire which was easy to understand without creating excessive respondent burden. For SES variables the Office opted for a combined questionnaire for all sampled employees. This was deemed to be a more suitable option for the local context since employers could fill in data on various employees simultaneously.</p> <p>Respondents were also provided with additional assistance by staff working within the Labour Market Statistics Unit. Such assistance was mostly provided via telephone and email. In a number of cases on-site meetings were also held with enterprises in order to explain the method in which data had to be collected and to assist in the compilation of information.</p> <p>Accounting for Respondent errors</p> <p>Use of administrative data was made in order to minimise response burden. Data for public sector employees which were included in the SES sample, was totally derived from a combination of administrative sources. The following variables were found to be difficult to retrieve from enterprises' records:</p> <ul style="list-style-type: none"> <li>• education of employees</li> <li>• annual days of absence</li> <li>• annual bonuses and allowances</li> </ul> <p>Additional efforts intended to reduce respondent errors concerned the variable Length of Service in the enterprise. Since this variable was bound to produce biases in information provided, respondents were asked to provide the Office with the Date of Entry into service with the enterprise and the Date of Termination (if applicable). The difference between these two dates was in turn used to work out the variable Length of Service in the enterprise.</p> <p>Processing errors:</p> <p>Processing errors were minimised through the use of automatic validations. Any errors which were identified through this procedure were checked by the Labour market personnel. Since the survey was highly based on electronic submissions, the chances of processing errors were minimised.</p>
<p><b>NL</b></p>	<p>Measurement errors:</p> <p>Three vintages of LFS (2018, 2017 and 2016) were used to derive a sample size large enough to fit the standards. This does mean however that the variable 'occupation', which is based on the LFS, might be outdated in regards to the corresponding earnings, hours and educational attainment, which in turn were based on register data regarding the year 2018.</p>

Country	Measurement and processing errors
	<p>Usually, official register data are of a high quality. Nevertheless, administrative errors do occur. When registers are processed at SN, for instance to create the SEW, extensive analyses and editing rules usually are applied. Many automatic rules are applied to check and correct for inconsistencies at micro-level. Additionally, the data is analyzed by researchers using a top down method. This ensures the resulting data is of very high quality on meso and macro aggregate levels and usually also on micro-level. However, some administrative errors on micro-level might not get caught in the processing and still persist in the end result.</p>
AT	<p>Measurement errors:</p> <p>To prevent measuring errors, the already tried and tested web-based questionnaire was used for the primary survey. The submitted data were subjected to several layers of plausibility testing at both micro and macro levels for the ex-post identification of any measuring errors (see point 3.4. Data validation).</p> <p>The secondary data were, in general, of very high quality. The business register was continually improved in order to make it more comprehensive and up-to-date (see point 6.3.1. Coverage error). The social security data came from monthly notifications to the social security institutions, meaning that employment relationships could be recorded precisely to the day. Tests were carried out upstream in the Statistics Austria database system to ensure the good quality of these data. For wage tax, data from the Austrian wage tax statistics were used which had already been verified by the tax statistics department of Statistics Austria. In this way, optimum data quality could be ensured in the calculation of gross annual earnings and annual bonuses and allowances.</p> <p>The data from the education register were based on data from the 2001 census, which were constantly updated and supplemented according to the information sent by schools, universities and other educational establishments. The ongoing qualification of employees from other countries could be taken into account only if the training was completed in Austria, if the qualification was officially recognised, if the Public Employment Service Austria (AMS) provided the information or if an academic degree was entered in the Central Register of Residents (ZMR) (see point 6.3.3.2. Item non-response).</p> <p>Processing errors:</p> <p>Due to the complete changeover to a web-based questionnaire that incorporates plausibility tests on the individual characteristics, it was possible to reduce the item non-response of the survey data. On the other hand, administrative data showed a slight increase of missing values.</p>
PL	<p>Measurement errors:</p> <p>Measurement errors are divided into: the survey instrument (questionnaire) errors, the respondent errors, the information system and the mode of data collection errors.</p> <p>As for the survey instrument-questionnaires errors, the questionnaire in the SES is designed in such way to eliminate these types of errors because the detailed explanatory notes are attached to this questionnaire to increase its clarity.</p> <p>Variables that are corrected very often are following:</p> <ul style="list-style-type: none"> <li>• overtime hours;</li> <li>• basic wages;</li> </ul>

Country	Measurement and processing errors						
	<ul style="list-style-type: none"> <li>• prizes and bonuses;</li> <li>• annual bonuses that should be given on our form in the amount of 1/12th part of total annual bonuses (they are calculated for October 2018).</li> </ul> <p>Below are presented variables that were often corrected by following reasons:</p> <table border="1" data-bbox="331 443 1359 1388"> <thead> <tr> <th data-bbox="338 443 513 526">Reasons</th> <th data-bbox="513 443 1353 526">Type of variables according to Polish methodology</th> </tr> </thead> <tbody> <tr> <td data-bbox="338 526 513 728">questions with burden</td> <td data-bbox="513 526 1353 728">           It refers to:           <ul style="list-style-type: none"> <li>• compiling of components on gross earnings and hours paid</li> </ul> </td> </tr> <tr> <td data-bbox="338 728 513 1379">questions that were the most difficult</td> <td data-bbox="513 728 1353 1379">           It refers to:           <ul style="list-style-type: none"> <li>• data obtained from such reporting units as high schools, research institutes, theatres because employees from these units as teachers, artists, scientists (as was indicated above) have different regulation on working conditions than other occupation groups. Below, there is the list of variables that are the most difficult to complete for mentioned persons:</li> <li>• nominal hours;</li> <li>• hours worked in overtime;</li> <li>• direct remuneration;</li> <li>• overtime payments.</li> </ul> <p>Detailed explanations how should be completed data for these occupational groups are given in briefings and instructions sent to staff of Statistical Office in Bydgoszcz.</p> </td> </tr> </tbody> </table> <p>The variables that were corrected very seldom refer to: work seniority bonuses, the year of birth, sex, level of education.</p> <p>Processing errors:</p> <p>Processing errors are errors in post-data-collection processes such as data entry, coding, keying, editing, weighting and tabulating.</p> <p>As for errors deriving from data compiling and processing, there are some problems with coding. The code of occupation is given by reporting units on the basis of the name of performed occupation. The code is checked with the corresponding nomenclature but in some cases descriptions given by reporting units are not enough clear to establish the right code. In these cases additional explanations are required. There are not problems with keying, editing, weighting, tabulating because wrong controlling assumption in a computer program or wrong interpretation of the results are removed immediately during the phase control and data are</p>	Reasons	Type of variables according to Polish methodology	questions with burden	It refers to: <ul style="list-style-type: none"> <li>• compiling of components on gross earnings and hours paid</li> </ul>	questions that were the most difficult	It refers to: <ul style="list-style-type: none"> <li>• data obtained from such reporting units as high schools, research institutes, theatres because employees from these units as teachers, artists, scientists (as was indicated above) have different regulation on working conditions than other occupation groups. Below, there is the list of variables that are the most difficult to complete for mentioned persons:</li> <li>• nominal hours;</li> <li>• hours worked in overtime;</li> <li>• direct remuneration;</li> <li>• overtime payments.</li> </ul> <p>Detailed explanations how should be completed data for these occupational groups are given in briefings and instructions sent to staff of Statistical Office in Bydgoszcz.</p>
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Country	Measurement and processing errors
	<p>tested again in conducted surveys. It is very difficult to control an occupation with adequate level of education. We apply elastic approach to this matter because in practice, people with the long work seniority have the high position that is not in accordance with their low educational level.</p> <p>Sometimes, vocational and elementary education is linked with an occupation ISCO 3 (technicians and associate professionals) or tertiary education is linked with occupations: ISCO 7 (craft and related trades workers), ISCO 8 (plant and machine operators and assemblers), ISCO 9 (elementary occupations). All such cases are checked and explained by the staff of Statistical Office in Bydgoszcz.</p>
PT	<p>Measurement errors:</p> <p>The form used for the administrative source is in place for 30 years, with some minor changes during this period. Enterprises are used to it and, with the comprehensible use of electronic data transmission, they have a better knowledge of the classifications involved.</p> <p>As the electronic data transmission does not allow for non-response for the variables needed for SES, and also the survey did not allow for non-response, the imputation rate for demographic variables and wages was 0.</p> <p>Processing errors:</p> <p>The form used for the administrative source is in place for 30 years, with some minor changes during this period. Enterprises are used to it and, with the comprehensible use of electronic data transmission, they have a better knowledge of the classifications involved.</p> <p>As the electronic data transmission does not allow for non-response for the variables needed for SES, and also the survey did not allow for non-response, the imputation rate for demographic variables and wages was 0.</p> <p>Regarding the monthly earnings, the rate of imputation (for employees that were not at work for part of the reference month and consequently did not receive complete earnings for that month) was 10 %. The imputation was made on the basis of the contractual hours per month and the earnings hourly rate for the period they had worked and had been paid during the reference month.</p>
RO	<p>Measurement errors:</p> <p>The information given below refers only to the errors and cases corrected at central level (INS), after the data files were received from all over the country. Statistics on the first level of checking (local level) are not available.</p> <p>One error might need several variables to be corrected or, if the figures correspond to reality due to unusual phenomena, figures were accepted as such and no changes were operated.</p> <p>Most frequent errors that occurred during data checking period:</p> <ul style="list-style-type: none"> <li>• 9.50% for the tests checking the correlation among working program, period of payment and number of hours paid;</li> <li>• 8.85% for the tests checking the personal deductions;</li> <li>• 8.80% for the tests checking the correlation among working program, period of payment and basic salary;</li> </ul>

Country	Measurement and processing errors
	<ul style="list-style-type: none"> <li>• 8.50% for the tests checking the correlation between the annual gross amounts paid and the monthly gross amounts multiplied with the period of time worked during the year;</li> <li>• 7.50% for the tests checking the correlation between the basic salary and the minimum wage (according to the national legislation in force);</li> <li>• 7.30% for the tests checking the employee taxes related to the gross amounts paid;</li> <li>• 6.85% for the tests checking the correlation between the number of overtime hours paid and the gross amounts paid for the overtime;</li> <li>• 6.60% for the tests checking the correlation between the annual of days paid but not worked due to special events holidays and the number of months worked;</li> <li>• 5.90% for the tests checking the correlation between the gross amounts paid from the insurance schemes and the annual days of sick leave;</li> <li>• 5.85% for the tests checking the employee contribution for statutory social related to gross monthly amounts;</li> <li>• 5.25% for the tests checking the employee contribution for health insurance related gross monthly amounts;</li> <li>• 4.50% for the tests checking the correlation between the occupation code and the level of education code, respectively age and the level of education code;</li> <li>• 3.80% for the tests checking the correlation between the annual number of holidays and the number of months worked;</li> <li>• 3.55% for the tests checking the correlation between the economic activity for public administration, education, health and social insurance, and the employee managerial/supervisory position, respectively the specific occupations for these activities;</li> <li>• 1.25% for the tests checking the correlation between the occupation code and managerial/supervisory position.</li> </ul> <p>The number of cases needed to be corrected was not so significant to have an impact on the accuracy of the final results</p> <p>For the microdata transmitted to Eurostat the plausibility checks were applied and different inconsistencies explained. Not all the “plausibility checks” were fulfilled, but the number of these cases is not significant (all of these cases representing about 1.6% from the total number of records):</p> <ul style="list-style-type: none"> <li>• the cases for which the condition <math>14 \text{ years} \leq (2018\text{-var.2.2}) \leq 80 \text{ years}</math> is not fulfilled, are accepted for these cases and certain occupations.</li> <li>• the cases for which the condition if <math>\text{var.2.7}=\text{FT}</math>, then <math>(\text{var.3.2}\text{-var.3.2.1}) &gt; 215</math> is not fulfilled, are accepted due to the fact that, for certain cases and occupations, the contractual working was more than 8 hours/day, respectively more than 10 hours/day. All hours are paid in the reference month, but not considered overtime.</li> <li>• the cases for which the condition <math>\text{var.3.2.1} &lt; 0.65 * (\text{var.3.2}\text{-var.3.2.1})</math> is not fulfilled, are accepted due to the fact that, for certain cases and occupations, the number of overtime hours paid are higher than 65% of the normal number of hours paid.</li> <li>• the cases for which the condition <math>\text{var.4.1} &gt; (\text{var.4.2}\text{-var.4.2.1}) * 0.7 * \text{var.3.1} / (4.345238)</math> is not fulfilled, are accepted due to different economical development of certain enterprises</li> </ul>

Country	Measurement and processing errors
	<p>during the year (production or receipts depending on orders and contracts, seasonality) and consequently different remuneration (either higher gross amounts paid in October or lower payments according to volume of work performed in other months).</p> <ul style="list-style-type: none"> <li>• the cases for which the condition <math>\text{var.4.1.2} &lt; 0.2 * \text{var.4.1}</math> is not fulfilled, are accepted due to fact that the employees were rewarded significant payments in kind when the enterprise encountered financial difficulties. Also, there are cases where different payments in kind are stipulated in the collective pay agreements.</li> <li>• the cases for which the condition <math>\text{var.4.2} &gt; \text{var.4.2.3}</math> is not fulfilled, are accepted due to fact that the monthly gross earnings (according to Eurostat definition) exclude the occasional bonuses, net profit and payments in kind. The compulsory social contribution and taxes paid by the employer on behalf of the employee are calculated to all gross amounts paid to the employee in month October (including occasional bonuses, net profit and payments in kind). For these cases the plausibility check is not relevant because the amounts paid for irregular bonuses and payments in kind were so significant that the relation is no longer true.</li> <li>• the cases for which the condition <math>\text{If } \text{var. 3.2.1} &gt; 0 \text{ and } \text{var.4.2.1} &gt; 0 \text{ then } (\text{var.4.2.1}/\text{var.3.2.1}) \geq (\text{var.4.2}-\text{var.4.2.1})/(\text{var.3.2}-\text{var.3.2.1}) * 0.60</math> is not fulfilled, are accepted due to fact that the payments related to overtime are calculated in relation with the basic salary and not with the actual earnings. Also, there are different rates for the overtime payments.</li> <li>• the cases for which the condition <math>\text{var.4.2.3.1} &lt; \text{var.4.2} - (\text{var.4.2.1} + \text{var.4.2.2})</math> is not fulfilled, are accepted due to fact that the monthly gross earnings (according to Eurostat definition) exclude the occasional bonuses, net profit and payments in kind. The compulsory social contribution and taxes paid by the employer on behalf of the employee are calculated to all gross amounts paid to the employee in month October (including occasional bonuses, net profit and payments in kind). For these cases the plausibility check is not relevant because the amounts paid for irregular bonuses and payments in kind were so significant that the relation is no longer true.</li> <li>• the cases for which the condition <math>\text{var.4.2.3.2} &lt; \text{var.4.2} - (\text{var.4.2.1} + \text{var.4.2.2})</math> is not fulfilled, are accepted due to fact that the monthly gross earnings (according to Eurostat definition) exclude the occasional bonuses, net profit and payments in kind. The compulsory social contribution and taxes paid by the employer on behalf of the employee are calculated to all gross amounts paid to the employee in month October (including occasional bonuses, net profit and payments in kind). For these cases the plausibility check is not relevant because the amounts paid for irregular bonuses and payments in kind were so significant that the relation is no longer true.</li> <li>• in Romania the part-timers still represent a very small part of the total number of employees (in the Structure of earnings Survey are about 3%) and their remunerations have not a coherent behaviour (depends on the specificity of economic activity and the occupation owned, but also on the enterprise characteristics). That is why sometimes the hourly/monthly gross earnings for part-timers can exceed the ones of the full-times.</li> </ul> <p>Processing errors:</p> <p>About 200 logical tests and correlations were performed for data checking.</p> <p>Logical tests were focused on key variables such as: sex, date of birth, occupation,</p>

Country	Measurement and processing errors
	<p>management/supervisory position, education level, type of contract, number of hours paid, monthly gross amounts paid, individual contributions, annual gross amounts paid, number of annual days of absence (holidays, sick leave, special events, vocational training).</p> <p>The correlations were focused on:</p> <ul style="list-style-type: none"> <li>• different indicators from the same chapter (e.g. occupation – level of education, year of birth – level of education or length of service, gross amounts paid for overtime – number of overtime hours, etc.);</li> <li>• similar indicators by different reported periods (ex. gross amounts paid monthly and annually, bonuses paid monthly and annually, etc.);</li> <li>• common indicators from other surveys in the domain (total number of employees at the end of the month, the distribution of employees by occupation groups, etc.).</li> </ul> <p>Also, the checks focused on:</p> <ul style="list-style-type: none"> <li>• the plausibility between contractual hours, number of hours in a standard working month and the number of hours actually paid;</li> <li>• plausibility between the number of overtime hours and the payments for overtime and also the number of weeks to which the gross earnings relate, for employees starting in 2018.</li> </ul> <p>Same tests were conducted at local level (territorial statistical offices) as well as at central level (INS). The largest part (about 75%) of the errors found was solved at local level. The figures were corrected after re-contacting the corresponding respondents.</p> <p>Furthermore, the same global and plausibility checks as described in the “SES 2018 Implementing arrangements” were applied for the microdata sent to Eurostat. Where the tests not passed, explanatory notes were provided at data transmission (see point 6.3.2).</p>
SI	<p>Measurement errors:</p> <p>Data were collected electronically by AJPES. Every question in the questionnaire contains the definition of what must be included in and excluded from the data. Methodology and definitions were published on SURS and AJPES internet sites. First logic control was built in application of data collection where mistakes were hard or soft (colored in red or yellow). Data could not be transferred with hard mistakes. Mistakes are described in the following table. In case of unit non-response reporting units were notified to send the data.</p> <p>All hard mistakes detected through the system of logical controls were corrected by the companies themselves. Where a lot of soft mistakes occurred companies were contacted and data were double checked. Variables from existing sources were not controlled; they have their own checking system. Data from existing sources were put through code list to check possible miscoding.</p>
SK	<p>Measurement errors:</p> <p>Resulting from experiences with the regular data collection since 1996, the errors of measurement are considered as negligible.</p> <p>The data collection errors occurred directly from bookkeeping software.</p> <p>The data were evaluated and revised on the basis of Global Checks and Plausibility Checks, indicated in EUROSTAT’s arrangements for the implementation of both, the Regulation (EC) No</p>

Country	Measurement and processing errors
	530/1999 and the Regulation (EC) No 1738/2005.
FI	<p>Measurement errors:</p> <p>The basic data for the Structure of Earnings statistics are obtained from different sources. The statistical reference month varies to some extent from September to December. The main body of data hails from September or October and thus the measurement error hailing from the inaccurate months is deemed to be negligible.</p> <p>The validity of the production process and the representativeness of the reference period have been ensured by comparing the SES -data (the gross monthly earnings for the reference month plus periodic bonuses for the year) to annual taxable gross earnings for the same persons in administrative data. For example, the annual taxable gross earnings for those in the same full-time employment for the full year were 0,6 percent lower compared to the calculated gross annual earnings based on SES. The reason for this is a consequence of the reference period. Earnings in October are a bit higher compared to earlier calendar months.</p> <p>Processing errors:</p> <p>There has not been an overall measurement of the extent of processing errors. The quality of the national base data has been controlled during the whole data processing from the data capturing to publishing by branch-specific checking and validation rules. Observations not accepted by the national or Eurostat-validation process have been usually rejected. In general, their share has been somewhat insignificant.</p>
SE	<p>Measurement errors:</p> <p>Besides the questionnaire, all respondents receive guidance with explanations to all questions in the questionnaire. To further help the respondents, the guidance includes FAQs and contact information.</p> <p>All data has been validated both on micro and macro level. In the validation process, different kinds of logical tests were carried out. In the yearly earnings survey these tests have been evaluated during the years, and are now considered to reveal most errors in the data. The method for validation of the data from the annual bonuses survey has been changed due to analysis of previous data. In both surveys, respondents were contacted in order to validate errors and collect correct data.</p> <p>The municipalities are coded with their main economic activity even if they have more economic activities. They cannot be disaggregated with NACE because the data are not based on local units. Some municipalities are coded as P and some as Q even if the sections P and Q are both fairly large in the municipalities.</p> <p>The variable "Length of service in enterprise" is obtained from a register which extends only back to 1989. Because of this, the maximum value of this variable is 29. For some employees, the figure may be higher.</p> <p>Other possible sources of errors may be information in administrative registers, at Statistics Sweden or other agencies, which are used in the survey. This may have an impact on for example level of education, gross annual earnings and number of weeks to which the gross annual earnings relate.</p> <p>Measurement errors have not been evaluated further and it is difficult to estimate the impact</p>

Country	Measurement and processing errors
	they may have on the results of the survey.
IS	<p>Measurement errors:</p> <p>In spite of the data collection method some measurement errors can occur. The main concerns relate to the educational level and length of service in the enterprise. These two variables are coded in the ISWEL survey but the accuracy of the coding is not satisfactory. To get a better estimation of these two variables data were sought from other sources, both registers and other surveys conducted by Statistics Iceland. However, the educational level might be underestimated as many people seek higher education in other countries and therefore do not appear in registers in Iceland. The length of service in the enterprise might be underestimated as data are only available back to 1998 in registers in a format that can be used at this time.</p> <p>In addition, the inclusion process for the data for Ministry of Finance is not complete and thus some errors in ISCO classification of employees in the central government can occur.</p> <p>Annual bonuses and allowances not paid in each pay period (variable 4.1.1), could be under-estimated as corrections on such payments are not included in the variable. Nevertheless, these corrections are included in, gross earnings in the reference month (variable 4.1).</p> <p>Lastly, by using number of weeks which the gross annual earnings relate to (variable 3.1) and the share of a full-timer's normal hours in the reference month (variable 2.7.1) to gross up the annual earnings to a full year earning an error can occur. This is the case as working hours in the reference month do not necessarily represent hours worked in other months of the year, due to seasonality in the labour market. This is especially true for part-time workers. In order to correct for this the variable 3.1 has been adjusted as explained in the attachment in chapter 2.4.</p> <p>Processing errors:</p> <p>The data are collected directly from the software each business unit uses for calculating wages. Taking advantage of data collection by direct access minimises the bias caused by recording.</p>
NO	<p>Measurement errors:</p> <p>Measurement errors are defined as a discrepancy between the value of a variable reported by the respondent and the 'true' value. Some errors might occur due to incorrect reporting of the information (measurement error). Such errors mainly arise because the respondent lacks the information or finds it difficult to calculate the value. This may be due to the following:</p> <ul style="list-style-type: none"> <li>• In his daily work, the respondent uses other unit definitions than those used as a basis for the statistics for example other payment periods</li> <li>• The respondent does not have the information that is requested</li> <li>• The respondent himself has incorrect information</li> <li>• The respondent misunderstands or fails to read the instructions. The respondent may misinterpret the content of the variables, or is imprecise in checking off on the form that will be read optically</li> </ul> <p>However, the use of a-ordningen for reporting statistics has reduced the amount of measurement errors in reporting. This standard basically retrieves wage data directly from the enterprises' wage and personnel systems, thus eliminating several possible sources of error</p>

Country	Measurement and processing errors								
	<p>that arise when using traditional forms. However, since differences between formal tax-oriented definitions concerning transactions of remuneration may arise, but such differences should be handled through correct calculation and the fact that Statistics Norway also utilize information regarding all months of the year.</p> <p>Processing errors:</p> <p>Processing errors are errors that can arise during computer processing of the reported data from the respondent and up to the point the statistics are completed. This applies to factors such as data transmission, registration, encoding, and error correction. Several controls and automatic measures are performed by Statistics Norway to reduce processing error at minimum.</p>								
AL	<p>Measurement errors:</p> <p>Measurement errors may result due to the reporting units and interviewers. Errors in interviewing are identified whenever survey follow-ups are conducted. These errors are fixed accordingly. Other errors are captured during data editing and coding stage, or at the data cleaning stage. Imputations are used to fix these errors accordingly.</p> <p>Processing errors:</p> <p>Processing errors result from codification errors. National occupation codes (according to ISCO-08), Level of Education (ISCED2011) and Economic activity codes (NACE Rev2) are inserted based on the free text option in the questionnaire (job title and description of the job; economic activity description and name of the place of work, and the highest successfully completed level of education and training variables) are carefully checked.</p>								
RS	<p>Measurement errors:</p> <p>The reporting units were enabled by SORS to enter necessary data via a web questionnaire. Respondents were not allowed to send the questionnaire until they filled in all required fields and corrected all 'hard' mistakes - mathematically and logically incorrect data, thus the measurement error is reduced to a minimum. Also, employees in the SORS regional departments entered data from the received printed questionnaires into a computer application, which has built-in logical control. In order to correct the observed mistakes, colleagues from the regional departments contacted the reporting units, and later the statistical experts in the SORS carried out additional controls.</p> <p>The most common measurement errors in SES 2018 were recorded for the variables listed below.</p> <table border="1" data-bbox="331 1563 1361 1888"> <thead> <tr> <th data-bbox="331 1563 1110 1648">Code and name of the variable</th> <th data-bbox="1110 1563 1361 1648">% of cases corrected</th> </tr> </thead> <tbody> <tr> <td data-bbox="331 1648 1110 1733">4.2 Gross earnings for the reference month</td> <td data-bbox="1110 1648 1361 1733">1.4</td> </tr> <tr> <td data-bbox="331 1733 1110 1818">4.1 Gross annual earnings in the reference year</td> <td data-bbox="1110 1733 1361 1818">1.4</td> </tr> <tr> <td data-bbox="331 1818 1110 1888">4.2.1 Earnings related to overtime</td> <td data-bbox="1110 1818 1361 1888">1.1</td> </tr> </tbody> </table>	Code and name of the variable	% of cases corrected	4.2 Gross earnings for the reference month	1.4	4.1 Gross annual earnings in the reference year	1.4	4.2.1 Earnings related to overtime	1.1
Code and name of the variable	% of cases corrected								
4.2 Gross earnings for the reference month	1.4								
4.1 Gross annual earnings in the reference year	1.4								
4.2.1 Earnings related to overtime	1.1								

Country	Measurement and processing errors	
	2.3 Occupation in the reference month	0.9
	2.5 Highest successfully completed level of education and training	0.9
	3.2 Number of hours actually paid during the reference month	0.3
	3.3 Annual days of holiday leave	0.1
Processing errors: Processing errors were corrected during the editing process and process of data validation.		

### 5.2.4 Non-response errors

Non-response is the failure of a sample survey to collect data for all data items, from all the population units designated for data collection. Non-response causes both an increase in variance, due to the decrease in the effective sample size and/or due to the use of imputation and may cause bias as the non-respondents and respondents generally differ with respect to the characteristics of interest.

The difference between the statistics computed from the collected data and those that would be computed if there were no missing values is the *non-response error*. There are two types of non-response:

- *Unit non-response*: no data are collected for a given enterprise in the sample which was meant to provide answers;
- *Item non-response*: data only on some but not all the survey variables are collected for a given enterprise of the survey.

One of the key elements for a successful data collection is a low non-response rate (especially for the unit non-response).

For the response rates, by countries see *Annex II* of this document.

## 6 Timeliness and punctuality

The *timeliness* of statistical outputs is the time lag between the event or phenomenon they describe and their availability.

*Punctuality* is the time lag between the release date of data and the target date on which they were scheduled for release as announced in an official release calendar, laid down by regulations or previously agreed among partners.

Following table shows the fieldwork period for the SES 2018 for each country:

Country	Fieldwork	
	Start date	End date
BE	May 2019	December 2019
BG	8 May 2019	19 July 2019
CZ	NA	NA
DK	Public sector: February 2018 – January 2019 Private sector: December 2018	Public sector: April 2019 Private sector: April 2019
DE	January and February 2019	31 March 2019; varied from mid March to the end of April
EE	NA	NA
EL	July 2019	June 2020
ES	April 2019	December 2019
FR	March 2019	31 December 2019
HR	1 May 2019	15 June 2019
IE	NA	NA
IT	31 October 2019	23 March 2020
CY	NA	NA
LV	NA	2 March 2019
LT	30 December 2018	20 March 2019
LU	17 June 2019	13 December 2019
HU	NA	NA
MT	March – April 2019	July 2019
NL	NA	NA
AT	13 April 2019	10 September 2019
PL	NA	NA
PT	NA	NA
RO	February 2019	15th May 2019
SI	NA	NA
SK	3 January 2019	25 February 2019
FI	private sector: September 2018 government sector: October 2018	private sector: September 2018 government sector: October 2018
SE	NA	NA
IS	NA	NA
NO	NA	NA
AL	NA	NA
RS	NA	NA

NA – not available

DE - depending on the Land statistical office

DK – data for public sector is collected monthly

Data transmission overview by countries can be seen in Annex V of this document.

According to its legislation<sup>2</sup>, SES data have to be transmitted to Eurostat no later than 18 months after the end of the reference year, i.e. for 2018 data by the end of June 2020.

The following EU Member States and EFTA countries respected the deadline: Belgium, Czechia, Denmark, Germany, Estonia, Ireland, Spain, Lithuania, Luxembourg, the Netherlands, Poland, Romania, Slovenia, Slovakia, Finland, Sweden as well as Iceland. The United Kingdom transmitted data in time too.

3 countries transmitted SES 2018 within 1 week after the deadline: Bulgaria, Latvia and Portugal. 5 Member States, namely: France, Cyprus, Hungary, Malta and Austria as well as Norway (EFTA country) sent their data with a 1-2 months delay. Finally, as of 30. September, Eurostat had not received the final SES 2018 data from Greece, Croatia and Italy nor from Switzerland. In the case of Greece, a preliminary dataset was transmitted 31 days after the deadline but those data could not be published. Italian data were transmitted 3 months after the deadline and are still not cleared for dissemination at the time of drafting this document. Finally; Croatia informed Eurostat that they intend transmitting SES 2018 data by the end of October 2020.

## 7 Accessibility and clarity

Accessibility and clarity is the level of simplicity and ease when the users are trying to access statistics with the appropriate user information and assistance.

Eurostat published SES 2018 data in an [online database](#) organised in several dedicated subfolders containing data on the number of employees; hourly, monthly and annual earnings; hours paid and annual holidays.

The data are supplemented by [reference metadata](#) in Euro SDMX Metadata Structure (ESMS) format, giving background information on the survey and summarising methodological aspects.

Recognised research entities can request access to microdata by submitting their detailed research proposal to Eurostat Microdata Access team. Proposal is then sent to all Eurostat units concerned for validation. Once research proposal is evaluated on Eurostat's behalf the same research proposal is being sent to countries of researcher's interest specified in their proposal for bilateral consultations. More details can be found on Eurostat's dedicated [web page](#).

Most of the participating countries published the main results of their national SES on their official websites. In several countries, the data can be found in statistical papers and press releases.

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<sup>2</sup> See article 9 of [Council Regulation \(EC\) No 530/1999 of 9 March 1999](#).

Following table provides useful hyperlinks to nationally published SES 2018 data by country:

Country	Nationally disseminated data (hyperlinks):
BE	<p><b>News release</b></p> <p>Every year, Statistics Belgium publishes a press release to explain and illustrate the main results of the SES. This communiqué is generally broadly covered by Belgian newspapers and news agencies.</p> <p><b>Publications</b></p> <p>In Belgium, the SES is organised on a yearly basis and is therefore well-known by the general public. Nevertheless, each year we use several channels to disseminate the SES results.</p> <p>The results of the SES are also integrated in several publications. Some key results are included in the annual key figures published by Statistics Belgium. Also the annual Gender Pay Gap Report is worth mentioning. This elaborate publication describes the differences between men and women in the Belgian labour market. The SES is by far the most important source of this report.</p> <p><b>online database</b></p> <p>The main channel to communicate the results is the dedicated section on the website of Statistics Belgium. This webpage contains the most popular aggregated tables, but visitors can also compose their own tables with our dynamic application. The earnings information is one of the most popular sections of the website.</p> <p><b>microdata access</b></p> <p>Researchers can obtain microdata for their research project. On the website of Statistics Belgium, researchers can find more information on the procedure.</p> <p>The Belgian SES anonymised microdata are also accessible via CD-ROM by following the Eurostat procedure.</p> <p><b>other</b></p> <p>For users needing more detailed data, Statistics Belgium can produce tailor-made tables.</p>
BG	<p><b>News release</b></p> <p>None.</p> <p><b>Publications</b></p> <p>Specialized publication “Structure of Earnings 2018” containing methodology, review of the main results, graphs and detailed table results was prepared for publishing on paper and CD-ROM. The publication is bilingual – in Bulgarian and English language. It is planned to upload the electronic publication on Internet.</p> <p><b>online database</b></p> <p>In Bulgarian and English languages - section “Labour market”, domain “Structure of Earnings”: <a href="https://www.nsi.bg/en/content/4032/structure-earnings-%E2%80%93-national-level-4-year-periodicity">https://www.nsi.bg/en/content/4032/structure-earnings-%E2%80%93-national-level-4-year-periodicity</a>  <a href="https://infostat.nsi.bg/infostat/pages/module.jsf?x_2=95">https://infostat.nsi.bg/infostat/pages/module.jsf?x_2=95</a></p> <p><b>microdata access</b></p> <p>Access to the anonymised micro data is granted according to the Rules for granting access to anonymised micro-data for scientific and research purposes set by NSI.</p> <p><b>other</b></p>

	<p>Each of the respondents was informed in the dispatch note for the possibility to receive for free standard results from the SES. At about 100 sampled units expressed their will to receive results. The information is sent on a CD-ROM.</p>
CZ	<p><b>News release</b> NA</p> <p><b>Publications</b> See the Annex of the national Quality report.</p> <p><b>online database</b> NA</p> <p><b>microdata access</b> The SES data are accessible only by Eurostat.</p> <p><b>other</b> NA</p>
DK	<p><b>News release</b> In Danish - <a href="#">here</a>. As the SES is close to identical to the annual national survey of structural earnings – except for a slightly different combination of variables, the Danish figures from the European SES is not published.</p> <p><b>Publications</b> <a href="#">Publication on national SES 2018 results 'Statistical News' (Lønstruktur 2018)</a></p> <p><b>online database</b> The structure of earnings data is available in English via <a href="#">StatBank Denmark</a>. The earnings data can be found under Earnings and Labour Costs. The 2006 data was split in public and private earnings statistics while since 2010 the earnings statistics are combined and presented in the same tables. The key series are: (Earnings; LONS20, LONS30, LONS40, LONS50 and LONS11).</p> <p><b>microdata access</b> Authorised research environments and analysis institutes may be given access to the Common Earnings register. Access is always given on a need-to-know-basis to no identifiable micro data in accordance with Statistics Denmark's special external researchers' scheme. We grant such authorisation pursuant to a concrete assessment, and the authorised researchers have the same duty of confidentiality as Statistics Denmark staff members. For educational use, we supply non-confidential, sample survey-based datasets that are constructed in such a way that it is not possible to identify persons or businesses. Danish microdata on earnings can be accessed through <a href="#">Statistics Denmark's own service function for researchers</a> or via Eurostat.</p> <p><b>other</b> If a greater level of detail or tabular cross-tabulations is required, they can be produced on request. The register is at the level of individual employees and may be used in connection with compiling more detailed statistics or</p>

	<p>in coupling data from other statistics. <a href="#">Click here</a> for more information on these services.</p>
DE	<p><b>News release</b></p> <p><a href="#">Press release No. 060/2020</a> of the Federal Statistical Office on 27 February 2020: 'Number of minimum wage jobs continuously down between 2015 and 2018'.</p> <p><a href="#">Press release No. 238/2020</a> of the Federal Statistical Office on 26 June 2020: 'Just under two million jobs benefit from minimum wage increase in 2019'.</p> <p><a href="#">Press release No. 416/2020</a> of the Federal Statistical Office on 14 September 2020: '8 million low-wage jobs in 2018'.</p> <p><b>Publications</b></p> <p>Federal Statistical Office: <i>Verdienststrukturerhebung 2018</i> [Structures of Earnings Survey 2018]. Volume 16, Books 1 to 3, Wiesbaden: September 2018. The Books 1 to 3 refer to Germany, West Germany including Berlin, East Germany.</p> <p><b>online database</b></p> <p>NA</p> <p><b>microdata access</b></p> <p>The micro-data of the Structure of Earnings Surveys (or the former Surveys of Salary and Wage Structure) for 1990, 1992, 1995, 2001, 2006, 2010, 2014 and 2018 are provided by the research data centres of the Federal and <i>Land</i> statistical offices for academic research purposes. The surveys for all the years are available in-house the research data centres (visiting academics, remote data processing). A Public-Use-File is now available for survey years 2001 to 2014 and a Scientific-Use-File for survey years 2001 to 2014 (<a href="https://www.forschungsdatenzentrum.de/en">https://www.forschungsdatenzentrum.de/en</a>). A Scientific-Use-File for 2018 is coming soon.</p> <p><b>other</b></p> <p><a href="#">Online map</a> from 29 June 2020: 'Minimum wage: interactive map shows regions that are particularly affected'. The <i>Land</i> statistical offices publish own press releases and publications for regions. To a certain extend the Federal Statistical Office and the <i>Land</i> statistical offices provide tailor-made tables and analyses if requested by users. The reporting local units were sent the results only on request.</p>
EE	<p><b>News release</b></p> <p>NA</p> <p><b>Publications</b></p> <p>Statistical Office of Estonia analysed the data of SES and then the results were available on the website <a href="http://www.stat.ee">www.stat.ee</a> statistical database. The metadata and results of SES 2018 were available on the website since 3rd of July of 2020.</p> <p><b>online database</b></p> <p>Data are published under the heading „Economy/ Wages and salaries and labour costs/ Earnings” in the Statistical Database in <a href="https://andmed.stat.ee/en/stat">https://andmed.stat.ee/en/stat</a>.</p>

	<p><b>microdata access</b></p> <p>The dissemination of data collected for the purpose of producing official statistics is guided by the requirements provided for in § 34, § 35, § 36, § 37, § 38 of the Official Statistics Act. Access to micro-data and anonymisation of micro-data are regulated by Statistics Estonia's „Procedure for dissemination of confidential data for scientific purposes”: <a href="https://www.stat.ee/en/statistics-estonia/data-protection-privacy-policy">https://www.stat.ee/en/statistics-estonia/data-protection-privacy-policy</a>.</p> <p><b>other</b></p> <p>Data serve as input for statistical activity 50101 „Estonian regional development” and statistical activity 21108 'Gender Pay Gap'.</p>
EL	<p><b>News release</b></p> <p>A press release was published on November 27, 2020</p> <p><b>Publications</b></p> <p>NA</p> <p><b>online database</b></p> <p>There is no online database for the results of the Structure of Earnings Survey 2018. Data files are produced on ad hoc basis upon users' requests.</p> <p><b>microdata access</b></p> <p>Microdata, if not confidential, are made available to users after they submit a request to the: Statistical Data Dissemination Section; 46, Peiraios and Eponiton Str., 18510 Piraeus; Tel: +30 213 135 2022 Fax: +30 213 135 2312; e-mail: <a href="mailto:data.dissem@statistics.gr">data.dissem@statistics.gr</a></p> <p>For confidential reasons, users can have access to microdata, only under a confidentiality contract and with respect to the valid process.</p> <p><b>other</b></p> <p>NA</p>
ES	<p><b>News release</b></p> <p>NA</p> <p><b>Publications</b></p> <p>The tables, the document on the results and the methodological document are available for free on the INE web site. The release was sent to the main official users.</p> <p><b>online database</b></p> <p>The tables, the document on the results and the methodological document are available for free on the INE web site.</p> <p><b>microdata access</b></p> <p>A microdata standard anonymised file using a similar methodology as presented in the LAMAS Working Group on October 2020 is available for free at the web site.</p> <p>Moreover, it is possible to prepare customised anonymous survey files studying the variables requested and also, based on the basic statistical operations files, crosses other than those published may be carried out between variables, according to the needs of the user.</p> <p><b>other</b></p>

	<b>NA</b>
FR	<p><b>News release</b> NA</p> <p><b>Publications</b> SES 2018 will form the subject of national publications by INSEE and by the Official Statistical Service of the Ministry of Labour (DARES) from 2021.</p> <p><b>online database</b> See below</p> <p><b>microdata access</b> A file of anonymised individual SES 2018 data for France will be made available to researchers via the Eurostat “data centre”. Different individual files are made available at INSEE: – Each of the annual SES surveys and additional FPE surveys is made available to the Official Statistical Service (<i>Service statistique public</i> – SSP: INSEE and Ministerial Statistical Offices) for statistical purposes. – Production and research files (<i>fichiers de production et de recherche</i> – FPR) at the “employee” level regarding the SES and the FPE are made available to researchers via the Quêtelet centre; not only are these anonymised, but in order to guarantee the greatest possible confidentiality, certain variables are not available or are provided in an “aggregated” format (more aggregated level of the nomenclature for the business sector, for example). More complete files are also made available to researchers via the Remote Secure Data Access Centre (<i>Centre d’Accès Sécurisé Distant aux Données</i> – CASD), also known as the French datacenter, following the approval of the French Statistical Confidentiality Committee. These files will be available in 2021.</p> <p><b>other</b> Detailed tables on wage structure will be available on INSEE’s website in 2021 (INSEE-Résultats) and will accompany the publications mentioned in Section 9.2.</p>
HR	<p><b>News release</b> NA</p> <p><b>Publications</b> NA</p> <p><b>online database</b> NA</p> <p><b>microdata access</b> Anonymised microdata are available on CD-ROM for researchers, prepared by Eurostat.</p> <p><b>other</b> NA</p>
IE	<p><b>News release</b> Administrative data related to earnings is available on an annual basis. Earnings analysis from these sources are</p>

	<p>reported on in the <a href="#">Earnings Analysis using Administrative Data Sources (EAADS)</a>.</p> <p><b>Publications</b></p> <p>Administrative data related to earnings is available on an annual basis. Earnings analysis from these sources are reported on in the <a href="#">Earnings Analysis using Administrative Data Sources (EAADS)</a>.</p> <p>All details of national publications on the CSO website <a href="http://www.cso.ie/en/statistics/earnings/">http://www.cso.ie/en/statistics/earnings/</a></p> <p><b>online database</b></p> <p>SES 2018 results are available on Eurostat database.</p> <p>Administrative data related to earnings is available on an annual basis. Earnings analysis from these sources are reported on in the <a href="#">Earnings Analysis using Administrative Data Sources (EAADS)</a>.</p> <p>All details of national publications on the CSO website <a href="http://www.cso.ie/en/statistics/earnings/">http://www.cso.ie/en/statistics/earnings/</a></p> <p>Data published nationally are also available on <a href="#">PXTAT</a> (CSO statistics database).</p> <p><b>microdata access</b></p> <p>Requests for micro-data access are considered on a case by case basis and subject to CSO policies on data for researchers as set out here <a href="https://www.cso.ie/en/aboutus/lgdp/csodatapolices/dataforresearchers/">https://www.cso.ie/en/aboutus/lgdp/csodatapolices/dataforresearchers/</a></p> <p><b>other</b></p> <p>All details of national publications on the CSO website <a href="http://www.cso.ie/en/statistics/earnings/">http://www.cso.ie/en/statistics/earnings/</a> , data from which are typically also available on <a href="#">PXTAT</a> (CSO statistics database).</p>
IT	<p><b>News release</b></p> <p>NA</p> <p><b>Publications</b></p> <p>The online dissemination of the main results of SES 2018 will be available on the ISTAT website. The report will be published by April 2021, compatibly with the schedule of ISTAT publications currently being updated.</p> <p><b>online database</b></p> <p>Italian data provided to Eurostat are available from 20 November 2020 on the Eurostat Database – section Population and social conditions – Labour market – Earnings <a href="https://ec.europa.eu/eurostat/data/database">https://ec.europa.eu/eurostat/data/database</a></p> <p><b>microdata access</b></p> <p>The Italian SES unanonymised microdata (secure use files) can be accessed via the Safe Center at Eurostat's premises in Luxembourg as soon as available.</p> <p>At Istat, the microdata will be available to scholars through the ADELE secure Research Data Centre <a href="https://www.istat.it/en/information-and-services/researchers/laboratory-for-elementary-data-analysis">https://www.istat.it/en/information-and-services/researchers/laboratory-for-elementary-data-analysis</a>.</p> <p>The rules of access to the laboratory for data analysis may vary according to collective health protection measures.</p> <p>Furthermore, the microdata for a subset of variables (usually the variables provided to Eurostat) will be available in a repository of the Institute, called ARMIDA. Institutions belonging to the national statistical system can acquire these data because of a substantiated request. Independent researchers or other scholars may request anonymous micro-data by submitting a research project and by signing a declaration of commitment on the correct use of the data in compliance with statistical confidentiality.</p>

	<p><b>other</b> NA</p>
CY	<p><b>News release</b> NA</p> <p><b>Publications</b> The tables and press release are available in Greek and English. The relevant link is attached below.</p> <p><b>online database</b> NA</p> <p><b>microdata access</b> <b>Statistical micro-data from CYSTAT’s surveys (including SES) are accessible for research purposes only and under strict provisions as described below:</b> Under the provisions of the Statistics Law, CYSTAT may release microdata for the sole use of scientific research. Applicants have to submit the request form 'APPLICATION FOR DATA FOR RESEARCH PURPOSES' giving thorough information on the project for which micro-data are needed. The application is evaluated by CYSTAT’s Confidentiality Committee and if the application is approved, a charge is fixed according to the volume and time consumed for preparation of the data. Micro-data may then be released after an anonymisation process which ensures no direct identification of the statistical units but, at the same time, ensures usability of the data. The link for the application is attached below.</p> <p><b>other</b> NA</p>
LV	<p><b>News release</b> News releases on-line.</p> <p><b>Publications</b> The SES information is available in the collection of statistics “Results of the Structure of Earnings Survey 2018”, which is also available in CSB Information Centre and National Library of Latvia and on the CSB webpage.</p> <p><b>online database</b> Please consult free <a href="#">data on-line</a> or contact contact person.</p> <p><b>microdata access</b> NA</p> <p><b>other</b> NA</p>
LT	<p><b>News release</b> Statistical information is published on the <a href="#">Official Statistics Portal</a> according to the <a href="#">Official Statistics Calendar</a>. <a href="#">This new release</a> is not translated into English.</p>

	<p><b>Publications</b></p> <p>Statistical information is provided in publications '<i>Labour Market in Lithuania</i>', '<i>Lithuania in Figures</i>', '<i>Statistical Yearbook of Lithuania</i>' till 2020. Publications are accessible free of charge on the website of Statistics Lithuania.</p> <p><b>online database</b></p> <p>The information on the SES results, i.e. the number of employees, gross earnings by various breakdowns is accessible for everybody free of charge in the Database of Indicators on the Official Statistics Portal Lithuania at <a href="https://osp.stat.gov.lt/pradinis">https://osp.stat.gov.lt/pradinis</a></p> <p><b>microdata access</b></p> <p>NA</p> <p><b>other</b></p> <p>NA</p>
LU	<p><b>News release</b></p> <p>Results will be published in short thematic publications ('Regards') dispatched to all relevant media.</p> <p><b>Publications</b></p> <p><b>References for core results publications, including those with commentary in the form of text, graphs, maps, etc.</b></p> <ul style="list-style-type: none"> <li>• Results are released in different publications that can be found on Luxembourg's official statistics web site ("Portail des Statistiques du Grand-Duché de Luxembourg")</li> <li>• Tables will be published also on the "Portail des Statistiques"</li> </ul> <p><a href="http://www.statistiques.public.lu/">http://www.statistiques.public.lu/</a></p> <p><b>online database</b></p> <p>NA</p> <p><b>microdata access</b></p> <p>NA</p> <p><b>other</b></p> <p>NA</p>
HU	<p><b>News release</b></p> <p>NA</p> <p><b>Publications</b></p> <p>a) For the open public: some of the most important results are accessible for the public, free of charge, on the website of the National Employment Service under the following link: <a href="https://nfsz.munka.hu/tart/stat_egyeni_berek">https://nfsz.munka.hu/tart/stat_egyeni_berek</a></p> <p>b) For government organizations, trade unions and employers' organizations the results of model computations to prepare negotiations on minimum wage decisions and macro level wage agreements were also computed</p>

	<p>and were made available</p> <p>c) For selected important users (social partners, HCSO, Regional Labour Centres, universities, research institutes, ministries, libraries) a predefined set of tables are produced since 2002 that are available on request.</p> <p><b>online database</b> NA</p> <p><b>microdata access</b> Microdata for 2018 are accessible through the HCSO's system. In HCSO the following four data access channels are available only for researchers for scientific purposes. The HCSO performs a <a href="#">researcher accreditation</a> procedure for all data requests for these four data access channels.</p> <ul style="list-style-type: none"> <li>• <b><u>Safe Centre access</u></b> The HCSO offers access to deidentified microdata sets for scientific purposes in the safe environment of the Safe Centre operated by the HCSO in Budapest.</li> <li>• <b><u>Remote access</u></b> The offers access to deidentified microdata sets for scientific purposes in the safe environment of the remote access points operated by the HCSO under the same access conditions as the Safe Centre access.</li> <li>• <b><u>Remote execution</u></b> For scientific purposes, the HCSO produces the requested research outputs inside its own safe environment based on the specifications/syntax files provided by the researcher.</li> <li>• <b><u>Release of anonymised microdata sets</u></b> By using this data access channel the HCSO provides anonymised microdata sets for the researcher for scientific purposes.</li> </ul> <p><b>other</b> NA</p>
MT	<p><b>News release</b> At national level, results are intended to be published in 2021. These results will be published in the form of a news release and will be disseminated to the media and via the office's website.</p> <p><b>Publications</b> NA</p> <p><b>online database</b> NA</p> <p><b>microdata access</b> Micro data may be provided upon request. NSO has a specific set of regulations on the issue and data goes through a process of anonymisation before it is disseminated. (<a href="https://nso.gov.mt/en/Services/Microdata/Pages/Access-to-Microdata.aspx">https://nso.gov.mt/en/Services/Microdata/Pages/Access-to-Microdata.aspx</a>)</p> <p><b>other</b> NA</p>
NL	<p><b>News release</b></p>

	<p>NA</p> <p><b>Publications</b></p> <p>NA</p> <p><b>online database</b></p> <p>NA</p> <p><b>microdata access</b></p> <p>Under strict conditions, the microdata are available for researchers through Eurostat or SN (see 1. Contact).</p> <p><b>other</b></p> <p>NA</p>
AT	<p><b>News release</b></p> <p><a href="#">Press release (English version)</a>.</p> <p>Website (<a href="#">English version</a>) 'Structure of Earnings Survey'</p> <p>Statistical Yearbook: chapters 'Income; earnings" and 'Employment and the labour market' (print version, including CD ROM with tables in Excel format).</p> <p><b>Publications</b></p> <p>Article: 'Structure of Earnings Survey 2018: development and distribution of earnings' in Statistische Nachrichten 11/2020 (English summary).</p> <p>Forthcoming publication</p> <p>Print publication: 'Verdienststrukturerhebung 2018 – Struktur und Verteilung der Verdienste in Österreich' (Print version, including CD ROM with tables in Excel format; free PDF file available from our <a href="#">website</a>).</p> <p><b>online database</b></p> <p><a href="#">STATcube</a> – Statistical Database</p> <p><b>microdata access</b></p> <p>NA</p> <p><b>Other</b></p> <p>NA</p>
PL	<p><b>News release</b></p> <p>NA</p> <p><b>Publications</b></p> <p>Data are well documented in the form of:</p> <ul style="list-style-type: none"> <li>- publications – the SES publication consists of 248 pages, it covers methodological note, characteristics of basic measures on earnings by occupations and earnings structure, information on sampling scheme; the SES publication is disseminated every 2 years;</li> </ul> <p>The structure and level of average gross monthly and hourly wages and salaries and structure of wages and salaries by demographic and occupational characteristic.</p>

	<p>Based on the results of the study, the breakdowns of employees according to the amount of remuneration are also prepared, as well as basic measures of wage differentiation.</p> <p>The results for October of an even-numbered year are generally disseminated as part of:</p> <ol style="list-style-type: none"> <li>1. Quicknews release containing basic preliminary data, indicators and breakdowns of gross and wages and salaries available in November of the year following the end of the reference year, where the end of the reference year takes place in February-March of the following year, i.e. after the payment of the thirteenth salary included in the amount of wages annual.</li> <li>2. Analytical publication entitled 'Structure of wages and salaries by occupations in October 2018' containing the general characteristics of the survey results and 16 tables and 29 charts presenting the result data in various sections and the calculated distributions of gross wage differentiation together with other selected measures illustrating the wage structure in Poland. It is available at <a href="https://stat.gov.pl/en/topics/labour-market/working-employed-wages-and-salaries-cost-of-labour/structure-of-wages-and-salaries-by-occupations-in-october-2018,4,6.html">https://stat.gov.pl/en/topics/labour-market/working-employed-wages-and-salaries-cost-of-labour/structure-of-wages-and-salaries-by-occupations-in-october-2018,4,6.html</a></li> </ol> <p>The surveys for the years 2004, 2006, 2008, 2010, 2012, 2014 and 2016 can be found on the above website in the Archive tab.</p> <p>The results of the survey are also published in the following collective publications of the Statistics Poland:</p> <ul style="list-style-type: none"> <li>• Statistical Yearbook of the Republic of Poland,</li> <li>• Concise Statistical Yearbook of Poland,</li> <li>• Yearbook of Labour Statistics,</li> <li>• Statistical Yearbook of Industry,</li> </ul> <p>and thematic publications, e.g. Gender pay gap in Poland in 2016, Differences in wages and salaries of women and men in Poland in 2016 or Human Capital in Poland in 2014-2018 or Selected aspects of the labour market in 2018.</p> <p><b>online database</b> NA</p> <p><b>microdata access</b> NA</p> <p><b>other</b> NA</p>
PT	<p><b>News release</b> NA</p> <p><b>Publications</b> The results of SES 2018 are disseminated by a Statistical Summary and a Publication (on the Internet Web site: <a href="https://www.mtsss.gov.pt/Sinteses/Publicacoes-Gabinete-de-Estrategia-e-Planeamento">Sínteses / Publicações - Gabinete de Estratégia e Planeamento (mtsss.gov.pt)</a>) Additional information can be provided on request to the users, in table format.</p> <p><b>online database</b> NA</p>

	<p><b>microdata access</b></p> <p>Microdata can also be delivered on request, for research projects, after anonymization.</p> <p><b>other</b></p> <p>NA</p>
RO	<p><b>News release</b></p> <p>The press release is available on INS web-site (both in Romanian and English) for all interested users:  <a href="https://insse.ro/cms/en/content/structure-earnings-survey">https://insse.ro/cms/en/content/structure-earnings-survey</a></p> <p><b>Publications</b></p> <p>The publication is available in the INS web-site (in Romanian) for all interested users:  <a href="https://insse.ro/cms/en/content/pay-gap-influence-factors-2018">https://insse.ro/cms/en/content/pay-gap-influence-factors-2018</a></p> <p><b>online database</b></p> <p>NA</p> <p><b>microdata access</b></p> <p>According to the Eurostat dissemination rules, Structure of Earnings Survey 2018 microdata can be accessed:</p> <ul style="list-style-type: none"> <li>• as anonymized data files for the scientific use of researchers;</li> <li>• as confidential data in the Safe center of Eurostat by researchers belonging to an institution.</li> </ul> <p><a href="https://insse.ro/cms/en/content/eurostat-access-microdata">https://insse.ro/cms/en/content/eurostat-access-microdata</a>  <a href="https://insse.ro/cms/en/content/nis-microdata-scientific-purposes">https://insse.ro/cms/en/content/nis-microdata-scientific-purposes</a></p> <p><b>other</b></p> <p>All the tables belonging to the national publication „Wage disparities – influences” are available in Excel files and can be accessed by all users.</p>
SI	<p><b>News release</b></p> <p>According to the SURS publishing policy, data were first published in First Release (18 June 2020) as provisional data, including explanations and short methodology.</p> <p><b>Publications</b></p> <p>More detailed results were published on 30 June 2020 in statistical database SISTAT.</p> <p><b>online database</b></p> <p>NA</p> <p><b>microdata access</b></p> <p>Individual data are also available in the safe room at SURS and from SES2014 onwards also on Eurostat's CD-ROM for researchers.</p> <p><b>other</b></p> <p>NA</p>
SK	<p><b>News release</b></p> <p>NA</p>

	<p><b>Publications</b></p> <p>The annual publication (Slovak and English version) is displayed on the Internet website of Statistical Office of the SR (<a href="https://www.statistics.sk">https://www.statistics.sk</a>). The publications include metadata, data and graphs.</p> <p>Key information on annual national data was issued in the publication titled Statistical Yearbook in the Slovak Republic in bilingual versions.</p> <p><b>online database</b></p> <p>The SES regional data with further economic and social indicators are available in the regional database of the SO SR (DATAcube).</p> <p>Key information on annual national data is also available at the SO SR's website under the online database DATAcube that is free of charge.</p> <p><b>microdata access</b></p> <p>NA</p> <p><b>other</b></p> <p>The SES data were used also for the ILO Yearbook of Labour Statistics Questionnaire 2019. On the basis of the SES data the structural indicator Gender Pay Gap has been calculated.</p>
FI	<p><b>News release</b></p> <p>NA</p> <p><b>Publications</b></p> <p>The data of the Structure of Earnings statistics are published as a statistical release twice a year on Statistics Finland's Internet page, <a href="https://tilastokeskus.fi/til/pru/index_en.html">https://tilastokeskus.fi/til/pru/index_en.html</a>. In addition, tables in the StatFin online service are published from these statistics.</p> <p><b>online database</b></p> <p>Online database can be found at <a href="http://www.stat.fi/til/pru/tau.html">http://www.stat.fi/til/pru/tau.html</a></p> <p><b>microdata access</b></p> <p>Microdata is available for researchers throughout the Statistics Finland Research Centre. Statistical legislation and data protection and confidentiality practices specified in legislation are applied in compiling and releasing the data. The data are subject to a charge.</p> <p><b>other</b></p> <p>NA</p>
SE	<p><b>News release</b></p> <p>NA</p> <p><b>Publications</b></p> <p>NA</p> <p><b>online database</b></p> <p>NA</p> <p><b>microdata access</b></p>

	<p>NA</p> <p><b>other</b></p> <p>NA</p>
IS	<p><b>News release</b></p> <p>NA</p> <p><b>Publications</b></p> <p>NA</p> <p><b>online database</b></p> <p>NA</p> <p><b>microdata access</b></p> <p>Via Eurostat’s microdata access or Statistics’ Iceland tailored statistics.</p> <p><b>other</b></p> <p>NA</p>
NO	<p><b>News release</b></p> <p>NA</p> <p><b>Publications</b></p> <p>NA</p> <p><b>online database</b></p> <p>In StatBank Norway - <a href="http://www.ssb.no/en/statistikbanken">http://www.ssb.no/en/statistikbanken</a>, you can find tables concerning earnings broken down by economic activity, sector, occupation, sex, age, working hours, study field and education.</p> <p><b>microdata access</b></p> <p>SES 2018 micro data will be released, anonymized, by Eurostat as SES scientific use files. Moreover, access to confidential data will be ensured through the Eurostat Safe center. Transfer of personal data outside the country’s borders is not allowed according to the statistics act. If you are a researcher at an approved research institution you can apply for access to data for a research project. In a situation where your institution is not on the list of approved research institutions, the institution must apply for approval. If your project will be processing personal data, you need a confidentiality permit.</p> <p>For details see: <a href="http://www.ssb.no/en/omssb/tjenester-og-verktoy/data-til-forskning">http://www.ssb.no/en/omssb/tjenester-og-verktoy/data-til-forskning</a>.</p> <p><b>other</b></p> <p>NA</p>
AL	<p><b>News release</b></p> <p>The press release contains information on key indicators provided by the survey such as Structure of employment, wages, hours of work, gender pay gap, etc. The press release is published online on INSTAT's website.</p>

	<p><b>Publications</b> The SES 2018 results are published on <a href="#">INSTAT website</a>.</p> <p><b>online database</b> SES data can be accessed through <a href="#">Statistical Database</a>.</p> <p><b>microdata access</b> Databases at the micro-level are not published due to confidentiality reasons. Aggregated data is the only type of data that is provided to external users. Even the micro data are not published they can be accessed based on the article 34, point 17 of Law <a href="#">No. 17/2018, "On official statistics"</a>.</p> <p><b>other</b> Users can submit specific requests for data from the SES survey through the INSTAT website, dedicated section: <a href="#">Data request</a></p>
RS	<p><b>News release</b> NA</p> <p><b>Publications</b> The bulletin '<a href="#">Structure of Earnings Survey, 2018</a>', for now only in Serbian, was published on the SORS website. Data from <a href="#">Pilot Survey on the Structure of Earnings for 2014</a> was published within special publication on the SORS website.</p> <p><b>online database</b> NA</p> <p><b>microdata access</b> Anonymized microdata are accessible at user's demand (scientific–research organizations, researchers and PhD students, as well as institutions conducting separate project financed by national or international research programs) in accordance with principles defined in <a href="#">Official Statistics Law</a> and rules defined by "<a href="#">Rulebook on the method of using and providing the data produced by the Statistical Office of the Republic of Serbia</a>". The request can be submitted at the e-mail address: <a href="mailto:stat@stat.gov.rs">stat@stat.gov.rs</a>, or sent to the postal address of SORS.</p> <p><b>other</b> NA</p>

## 8 Coherence and comparability

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 – classifications, definitions and target populations as well as harmonised methods.

Coherent statistical outputs can be combined validly and used jointly. Basic infrastructure (like population, time period and geographical location) needs to be equivalent in both outputs in order to achieve coherence between them. *Comparability* occurs as a special case of coherence when two or more waves of the same survey are compared (comparability over time) or when a given wave of one survey is compared across countries or regions (spatial comparability).

The reasons for a lack of comparability or coherence can be summarised under two aspects: differences in concepts and differences in methods. To ensure comparability of data the same reference definitions should be used by countries.

### 8.1 Comparability over time

Comparability over time is very important for all statistical outputs used and published in time series. It is influenced mainly by changes in definitions, coverage and methods as result of amendments of Community legislation as well as revisions of national methodologies. Following table gives an overview of important aspects of comparability over time by countries:

Country	Important aspects of comparability over time
BE	<p>Two major methodological changes took place between SES 2014 and SES 2018:</p> <ul style="list-style-type: none"> <li>• More variables are based on administrative files, including the core variables on monthly and hourly earnings and the number of hours worked;</li> <li>• From the SES 2018 on, Statistics Belgium also executes the second stage of the sampling, meaning that Statistics Belgium selects the workers wherefore the survey must be completed.</li> </ul> <p>Both changes result in a limited break in the series.</p>
BG	<p>The comparability over time is influenced mainly by changes in definitions, coverage, and methods as a result of amendments of Community legislation. The only change was undertaken by NSI after SES2002 that influences comparability between the other rounds of the SES is the extension of coverage of the survey to the enterprises with 1 or more employees. By recommendation of Eurostat NSI performed comparisons between SES2006, SES2010, SES2014, and SES2018 as regards three different structures: share of employees with less than 30 weeks during reference year; share of women; share of part-time employees; please consult attached file.</p>
CZ	<p>The time comparability of SES since 2002 are effected by following changes:</p> <ul style="list-style-type: none"> <li>- changes of the definition of reference population</li> <li>- changes of the grossing up and weighting methodology</li> </ul> <p><b>Changes of the definition of reference population</b></p> <ul style="list-style-type: none"> <li>• Reference population has been extended to include the employees of ESs with less than 10 employees. The ad-hoc surveys of micro-subjects has been carried out in the business sphere in 2007, 2011, 2015 and 2019. As for 2011, 2015 and 2019, the micro-subject survey covered also the ESs in the sectors of Households and Non-profit</li> </ul>

Country	Important aspects of comparability over time
	<p>organization.</p> <ul style="list-style-type: none"> <li>• Employees of non-profit organizations as well as of the entrepreneurs of the Households sector have been included in 2010, 2014 and 2018 SES.</li> </ul> <p><b>Changes of the grossing up and weighting methodology</b> In contrast with old ones (2002 and 2006), the grossing up to the entire employees population (incl. sectors of Households and Non-profit organizations) has been made since 2010 SES; the weights for the grossing up are harmonized with CZSO Enterprise Reporting.</p>
DK	<p>Variable 2.5, highest successfully completed level of education and training, is now based on the International Standard Classification of Education 2011 instead of the 1997 version. In 2014 there were some problems in making sure that all variables could be transformed to fit the new standard, and as a result a relatively large share of observations were excluded. The exact number of observations is reported under 6.3.2 Measurement Error in the SES 2014 metadata. There are no change in the variable between SES 2014 and SES 2018.</p>
DE	<p><b>Comparability over time is limited</b> and should be checked carefully.</p> <p><b>Do not compare between 2018 and before 2014:</b></p> <ul style="list-style-type: none"> <li>• any total number or sum of jobs, hours or earnings (due to A and B below)</li> <li>• any rate of change of a total number or sum of jobs, hours or earnings (due to A and B below)</li> <li>• rate of change of mean earnings or hours of part-time employees (due to A below)</li> <li>• rate of change of mean earnings or hours when full-time and part-time employees are taken together (due to A below)</li> <li>• rate of change of mean earnings of full-time employees in section P (due to A 2 below)</li> </ul> <p><b>Background and explanations for the limited comparability</b> For reference year 2014 the German SES sample survey was significantly improved to provide better data for the analysis of effects of the introduction of a general minimum wage in Germany 1 January 2015. Measures had been taken to reach full coverage of employee jobs and better coherence to other national statistics on employment.</p> <p><u>A) Changes in coverage limiting comparability over time</u> In 2014 for the first time the German SES covered NACE rev. 2 section A and local units of enterprise size class 1-9 employees. Generally, comparisons over time should be restricted to NACE rev. 2 sections B to S and enterprise size classes 10+ employees. But also for this population the coverage increased. In 2014, the SES sample survey covered 3 groups of jobs, not covered before:</p> <p>1) Local units which cross the 10+ threshold only after taking into account marginal employment Before 2014, the units of the sampling frame were defined as all units with at least 10 jobs. Marginal employment jobs (<i>Geringfügige Beschäftigung</i>) could not be taken into account because there was no information available. For SES 2014 this information was available. Consequently, more units passed the threshold of 10 jobs and made the 10+ sampling frame and survey population bigger. Compared to 2010 this increased the survey population by about 2.2 million jobs or 10%, most of them (naturally) marginal jobs. Almost all marginal jobs are part-time jobs. Therefore the change does not affect statistics on full-time employment.</p>

Country	Important aspects of comparability over time
	<p>2) Local units in NACE Rev. 2 activities P85.1 to P85.4 in private ownership  Before 2014, SES did not cover private kindergartens, schools and universities due to missing information in the sampling frame, the Statistical business register. For SES 2014 the missing information became available and the units were covered. Compared to 2010 this increased the survey population by about 0.4 million jobs or 2%.</p> <p>3) Local units with less than 10 jobs of enterprises with 10+ jobs  Before 2014, the SES sample was based on local units with 10+ jobs. Local units with less than 10 jobs but belonging to an enterprise with 10+ jobs were not covered. SES 2014 sample covered all sizes of local units. Compared to 2010 this increased the survey population by about 0.3 million jobs or 1%.</p> <p><u>B) Changes in methods limiting comparability over time</u>  Before 2014, SES was grossed-up by a simple Horvitz–Thompson method. No adjustment was done for weaknesses of the sampling frame as inactive or missing units. SES 2014 used a generalized regression estimator (GREG) for grossing-up. The auxiliary information used in the GREG was the number of jobs in the reference month in the local unit according to the social security register. This brought SES 2014 job count in coherence to other national statistics on employment (see chapter 8.3.). Compared to 2010 the method increased the population (sections B to S, size classes 10+ employees) by about 2.0 million jobs or 9%.</p> <p><b>Special national dataset preserving comparability</b>  The Federal Statistical Office of Germany has available a data set which preserves comparability between SES 2018 and before SES 2014. The data set allows setting back the changes A and B completely. The Federal Statistical Office uses this data set if comparability over time is essential for the analysis</p>
EE	Compared to the data of the previous period, there are no changes in coverage, definitions and methodology.
EL	<p>There are no significant differences in the definitions used in the surveys conducted in 2002, 2006, 2010, 2014, and 2018, apart from those provided by the relevant Regulations, such as the change in the statistical classifications of economic activities and occupations. The 2002 and 2006 surveys were conducted in accordance with Nace Rev.1.1 and ISCO_88. The 2010, 2014, and 2018 surveys were conducted with Nace Rev.2. and ISCO_08, yet, in order to ensure comparability with the surveys of 2002 and 2006, the 2010 survey was conducted in accordance with Nace Rev.1.1 and ISCO_88 as well.</p> <p>All the above surveys are in line with European principles.</p>
ES	<p>Since the first Structural Earnings Survey was conducted the coverage of the following surveys has been extended including different groups of units.</p> <p>Thus, in first SES 1995 units with ten or more employees in the activities of industry, building, commerce, hotels and restaurants, transport, communications, finance institutions and insurance were included. The second, which referred to the 2002, broadened the coverage to include the activities outlined in sections M, N and O of NACE Rev.1. The third with 2006 as a reference year, has as a main characteristic to include the small units (those with less than 10 employees) in the same activities than in 2002. And finally, SES 2010 uses NACE Rev.2 and</p>

Country	Important aspects of comparability over time
	<p>ISCO-08 as new classifications and includes partially section O. SES 2014 and 2018 have the same scope and coverage as SES 2010.</p> <p>As a consequence of the inclusion of the small units since SES 2006, there is a decrease of the average earnings compared with the general SES 2002 results. It is necessary to eliminate the size 1-9 employees from SES 2006 onwards to compare homogeneous results with SES 2002.</p> <p>The main difficulty to compare SES 2010 with the previous surveys is the change in the classifications used in last one. So, it is not possible to compare the results by economic activity or by occupation.</p> <p>SES 2010, SES 2014 and SES 2018 are fully comparable.</p>
FR	<p><b>Comparability Between the SES 2018 Survey and the SES 2014 Survey</b></p> <p><i>When compared with 2014, the SES 2018 surveys include the following:</i></p> <ul style="list-style-type: none"> <li>- New stratification of the establishment sampling frame to limit the dispersion of weights. A new grouping has been created using a new breakdown for the business sector variables.</li> <li>- New adjustment chain for employee data: improved control and readability of successive adjustment operations and improved monitoring of adjustments through the use of standardised monitoring variables.</li> <li>- The number of days of leave is imputed differently when compared with 2014. The implementation rules for SES 2018 clearly specify that a number of statutory leave days must be allocated to employees, “be they taken or not”. It is therefore these statutory leave days that are provided in SES 2018 rather than the number of days of leave actually taken, as was the case for SES 2014 (since the measurement of the latter was of poorer quality).</li> <li>- Improvements to the coding of occupations using ISCO classifications: a question concerning the main occupation of the employee has been added to the SES surveys to code occupations more finely and to improve the correlation within the survey between the national classification of occupations (PCS) and the international classification of occupations, which is required in SES 2018 (ISCO).</li> <li>- Change to the calibration margins for employee data:            Certain differences in the types of intersections on which calibration was carried out:           <ul style="list-style-type: none"> <li>– In 2018, statutory category * gender * full time/part time * whether paid a fixed rate or not * company size * NUTS. Versus: in 2014: statutory category * gender * (whether paid a fixed rate or not), business sector * company size * department * (whether paid a fixed rate or not), full time/part time * (whether paid a fixed rate or not).</li> <li>– Addition of full-time equivalents into the calibrated variables</li> <li>– Change to the calibration of NACE sections D and E. For SES 2018, calibration was performed separately in each of these two sectors rather than together as was the case in the previous edition.</li> </ul> </li> </ul> <p><i>In the survey of State employees:</i></p> <ul style="list-style-type: none"> <li>– Change to the calibration margins: In the FPE 2014 survey, only the number of employees was calibrated. In 2018, the calibration also extended to gross wages and hours.</li> </ul>

Country	Important aspects of comparability over time
HR	In comparison with SES 2014 all methods remained the same.
IE	<p>For the 2014 SES a Structure of Earnings Statistics Administrative Data Project (SESADP) was developed which matched data from the Employee Level Tax data with a range of other administrative sources. Hours for the SESADP were imputed using data from the Earnings, Hours and Employment Costs Survey (EHECS), which is conducted to meet EU requirements in relation to Labour Costs</p> <p>For the SES 2018 an employee survey was carried out to collect data on a range of variables, including hours worked.</p> <p>Given these changes in methodology results are not directly comparable over time.</p>
IT	<p>As for the private sector, SES 2018 and SES 2014 survey process is implemented according to the same approach based on the use of register data in all major survey (questionnaire design, sampling and editing &amp; imputation). These principles have guided the questionnaire design, the sampling design, and the procedures of E&amp;I, therefore these two editions should be comparable. These two editions are broadly comparable with the previous 2010 for what concerns large breakdowns on earnings variables, but some of estimates may have some problems of comparability due to the different approach used in SES 2010 edition when registers were not yet available to be used to support the survey.</p> <p>An area in which there might be problems of comparability between 2014 and 2018 is the public sector. Since 2014 the entire process is based on registers and administrative data but in 2018 edition many administrative sources have been added and all the entire process has been reviewed.</p> <p>As in SES 2014 in 2018 edition the hourly earnings (SES code B43) have been calculated, for the employees with a standard monthly payroll (that are the large majority of employees), dividing the monthly earnings (B42) by a measure of the hours that have been calendar adjusted, and not for the number of hours paid in the month (B32). This is allowed by the regulation that requests only that the hourly earnings must be consistent with the ratio of earnings and hours, not equal to that ratio, and compliant with the implementation arrangement 2018 that allows for a discrepancy between the hourly earnings and the ratio of earnings and hours of up to +-10%. At the same time this way of providing the data is a) compliant with the regulation that states in relation to the Number of hours actually paid during the reference month that “What is required here is the number of hours actually paid during the reference month, not the number of hours in a standard working month”; b) more respectful of Italian payment system that for the category of employees above mentioned establishes that the monthly earning does not depend on the calendar c) more in line with the spirit of the regulation that requires, according to us, a hourly earning that should not be dependent on the calendar.</p>
CY	<p>The definitions of variables for SES 2018 were according to the requirements of the Regulation. The coverage of the survey for 2018 was the same as that of year 2014. There was no change in the classification systems used between 2018 and 2014 data.</p> <p>A change in the classification system for highest completed level of education (from ISCED-97 to ISCED 2011) occurred between the 2010 and 2014 surveys, creating some problems in the comparability between the 2 surveys. However, if the appropriate education groupings are used, comparability over time is still achieved.</p>

Country	Important aspects of comparability over time
	<p>As from the reference year of 2010, the classification systems for occupations and economic activities changed for all EU member states (from NACE Rev.1.1 to NACE Rev.2 and from ISCO-88 Com to ISCO-08). This means that comparability with the previous surveys of 2002 and 2006 is not ensured when comparing data using any of these two variables.</p> <p>In comparison with the survey of 2002, the coverage was <i>extended</i>. More specifically, the 2006, 2010, 2014 and 2018 surveys cover all NACE sections requested by the Regulation (compulsory and non-compulsory), including Public Administration and enterprises of all sizes, including 1 or more employees. The survey of 2002, covered enterprises with 2 or more employees and did not cover the non-compulsory sections of NACE.</p>
LV	<p>In Latvian SES 2002 the enterprises were used as sampling units instead of local units. Sampling unit used in SES 2018 (as well as in 2006 and 2010 and 2014) was local unit, whereas in 2002 it was enterprise, and indicators (wages and salaries, number of employees) were calculated in breakdown by regions of Latvia.</p>
LT	<p>The time series of the indicator is not fully comparable. Data of the SES 2006 and 2002 are not directly comparable because the SES in 2002 did not cover individual enterprises. Data, excluding individual enterprises, are totally comparable. Surveys in 2002 and 2006 covered economic activities defined in sections from C to O of EVRK Rev. 1.1. The occupations of employees were classified according to the Lithuanian Classification of Occupations (LCO 2000 and LCO 2005), which is based on the International Standard Classification of Occupations (ISCO-88 and ISCO-88 (COM)). In the 2010,2014 and 2018 surveys, statistical data were collected from economic activities from B to S according NACE Rev. 2. Occupations of employees are classified according to the Lithuanian Classification of Occupations LCO 2008, which is based on the International Standard Classification of Occupations (ISCO-08). No specific changes in definitions, coverage and methods occurred in 2018 compared to previous surveys.</p>
LU	<p>The Structure of Earnings Surveys of 1995, 2002, and 2006 cover sections C to K of the NACE rev.1 classification. In 2006, the sections M, N, and O have been added. In 2010, the NACE rev2 classification is used. The sections B to N and P to S have been covered. In 2014, as in 2010, there has been an experimental coverage of NACE section O (public administration) with the collection of data from the central governmental administration based on a small sample.</p> <p>In 2018, full data for O and public P have been available and transmitted.</p> <p>For section P (Education), there is a break in series as section P covered only private educational institutions up to the 2010 collection, but covers also public educational institutions since 2014.</p> <p><b>Survey Design</b></p> <p>The Structure of Earnings Surveys of 1995 onwards relies on a two-stage sample design. In the first stage, a sample of local units is drawn, and in the second stage, the salaried workers are sampled within these local units.</p> <p>In 1995 and 2002, the local units were asked in the second stage to draw themselves a representative sample of their workers, the size of this sample being fixed by STATEC.</p> <p>Since 2006, the second-stage sample was directly drawn from social security records, using simple random sampling.</p>

Country	Important aspects of comparability over time
HU	SES data in Hungary are comparable since 2002 except for data by occupations and NACE classes. The Hungarian survey was harmonized with EU regulations concerning SES in 2002. The scope of the survey was extended, new variables were introduced. However, when the ISCO and NACE classifications changed, data were not revised retrospectively and were not published according to the new classification systems.
MT	NA
NL	The Dutch Structure of Earnings Survey vintages 2002, 2006, 2010, 2014 and 2018 can be found on the online Eurostat database. These vintages are largely comparable over time, however it needs to be noted that (re)sources and methods to compile the SES have changed slightly over time. Trend breaks between two following vintages have been analyzed, but trend breaks over longer periods have not.
AT	<p>The changes to the definitions between the 2002, 2006, 2010, 2014 and 2018 surveys are mainly the result of amendments to legal acts and classifications (NACE, ISCO, ISCED). Pursuant to Article 3 of Regulation (EC) No 530/1999, the inclusion of Sections M – O of NACE Rev. 1 was optional for the SES 2002. Furthermore, a derogation from Article 6 has been in force for Austria in 2002, whereby the statistical unit could relate to the enterprise rather than to the local unit.</p> <p><b>Coverage</b></p> <ul style="list-style-type: none"> <li>• 2002 Sections C-K of NACE Rev. 1</li> <li>• 2006 Sections C-K and M-O of NACE Rev. 1.1</li> <li>• since 2010 B-N and P-S of NACE Rev. 2</li> </ul> <p><b>Statistical units</b></p> <ul style="list-style-type: none"> <li>• 2002 enterprises</li> <li>• since 2006 enterprises/local units</li> </ul> <p><b>Weighting</b></p> <ul style="list-style-type: none"> <li>• 2002 enterprises/employees</li> <li>• since 2006 local units/employees by sex</li> </ul> <p><b>Classifications</b></p> <ul style="list-style-type: none"> <li>• 2002 NACE Rev. 1, 2006 NACE Rev. 1.1, since 2010 NACE Rev. 2</li> <li>• 2002 / 2006 ISCO-88, since 2010 ISCO-08</li> <li>• 2002 / 2010 ISCED 97, since 2014 ISCED 11</li> </ul>
PL	<p><u>As for the comparability over time</u>, we changed the size of units covered by the SES namely:</p> <ul style="list-style-type: none"> <li>• the SES for October 1999 covered units employing 6 and more persons;</li> <li>• the SES for October 2001, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016 and 2018 covers units employing 10 and more persons.</li> </ul> <p>Taking into account these circumstances we can state that changes in the size of units have the impact on the employees but they have not significant impact on the level of earnings by occupations and their structure. Thus, we can compare data for October 1999, 2001, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016 and 2018 with regard to level of earnings by occupations and earnings structure.</p>
PT	<p>The coverage, statistical units and definition of the common variables are identical to those used for the previous 1995, 2002, 2006, 2010 and 2014 SES.</p> <p>The variable “payments for shift work” was introduced in the administrative source from the year 2009 onwards but was not available before.</p>

Country	Important aspects of comparability over time
	<p>The variable “payments in kind” was transmitted to Eurostat for the year 2010 (and not in 2006), although there are very few responses available. Expenses such as “company cars” when they exist, are not considered to be of personal use to the employee but as used in the service of the company.</p> <p>The data collection methodologies and procedures (administrative source combined with a specific survey to collect annual variables and information on income taxes and social security taxes, for the private sector) was also maintained.</p> <p>Public institutions data was directly collected from the institutions for the year 2010 onwards, contrary to the year 2006, when they were estimated on the basis of an administrative instrument carried out for 2005.</p>
RO	<p>The Romanian Structure of Earnings Survey was carried out every four years since the reference year 2002.</p> <p>No significant changes registered as compared to the previous survey in terms of definitions (except the national legislation updates, presented below), coverage or classifications used. <i>According to the national legislation provisions in force (GEO No. 79/2017, as subsequently amended and supplemented), the social security contribution and the social health insurance contribution paid by the employer were transferred to the employee; thus, <b>starting with the reference year 2018</b>, these contributions are <b>borne entirely by the employee</b>, and reflected in the gross amount of the nominal earnings.</i></p> <p><i>Consequently, the indicators „<b>the average gross hourly earnings</b>”, „<b>the average gross monthly earnings</b>”, respectively „<b>the average gross annual earnings</b>” produced and disseminated <b>starting with the reference year 2018</b> are no longer comparable to previous data series.</i></p> <p><i>These legal provisions do not affect the data series comparability for „<b>the average net hourly earnings</b>”, respectively „<b>the average net monthly earnings</b>”.</i></p> <p><i>In accordance with the legal provisions in force, the employees working in the field of research, development and innovation, respectively in the activity of creating computer programs, are tax exempted.</i></p> <p>By comparison with 2014 survey, improvements related to more detailed methodological notes which accompanied the survey questionnaire were made.</p>
SI	<p>n comparison with previous SES almost all methods were the same. There were small changes in data collection regarding more logic controls.</p> <p>SES2018 data were collected in accordance with EU regulations with some exceptions listed below:</p> <ul style="list-style-type: none"> <li>• Also business entities with less than 10 employees were included because of national purposes. In Slovenia there are many small business entities; for SES2018 85.2% of all business entities, which represents 21.1% employees.</li> <li>• Apprentices were excluded due to negligible phenomena and because units would face a problem filling the data.</li> <li>• By the regulation payments paid by employer at a reduced rate are to be excluded. In Slovenia there are a lot of payments at a reduced rate because all sickness leave which is paid by employer (up to 30 days) is paid at a reduced rate (except in case of injuries at work). Therefore data on monthly and annual earnings were collected separately</li> </ul>

Country	Important aspects of comparability over time
	<p>for total and payments at a reduced rate. For EU purposes payments at a reduced rate were deduct from total payments (the same procedure was applied for paid hours and paid hours at a reduced rate).</p> <ul style="list-style-type: none"> <li>• Holiday bonus in Slovenia is not treated as earning component. In tables for Eurostat holiday bonus was included but for national purposes holiday bonus was excluded from annual earnings data and shown separately.</li> </ul> <p>Wages in kind in Slovenia are not treated as earnings component though wages in kind in Slovenia represent high share in total costs because of payments for costs for meals and payments for travel between home and work. In Slovenia all employees are entitled for costs for meals and most of employees are entitled to receive payments for travel between home and work (e.g. as cash payments, bus or train tickets). In tables for Eurostat payments in kind were included but for national purposes payments in kind were excluded from annual earnings data and were shown separately.</p>
SK	<p>Since 2002, the SES has been interconnected with the annual statistical sample survey – The average earnings information system. The enlargement of the number of statistical units occurred during the creation of the sample in 2002 - 2018. The scope of the sample has been enlarged from 2 500 units in 2002 to 9 942 units in 2018. The enlargement of the sample was realised for the provision of higher data representativeness, comparability and completeness on the territorial basis as the SES data are used also in the regional statistics.</p> <p>The SES was adapted according to the Regulation (EC) N° 1738/2005 and it was enlarged by variables as follows:</p> <ul style="list-style-type: none"> <li>1.5 Collective pay agreement</li> <li>2.3 Occupation in the reference month (ISCO-08)</li> <li>2.5 Highest successfully completed level of education and training (ISCED 2011)</li> <li>2.6 Length of service in the enterprise</li> <li>2.7.1 % share of a full-timer's normal hours</li> <li>2.8 Type of employment contract</li> <li>3.1 Number of weeks in the reference year to which the gross annual earnings relate</li> <li>3.2 Number of hours actually paid during the reference month <ul style="list-style-type: none"> <li>3.2.1 Number of overtime hours paid in the reference month</li> </ul> </li> <li>3.3 Annual days of holiday leave</li> <li>4.1 Gross annual earnings in the reference year <ul style="list-style-type: none"> <li>4.1.1 Annual bonuses and allowances not paid in each pay period</li> </ul> </li> <li>4.2 Gross earnings in the reference month <ul style="list-style-type: none"> <li>4.2.1 Earnings related to overtime</li> <li>4.2.2 Special payments for shift work</li> </ul> </li> <li>4.3 Average gross hourly earnings in the reference month</li> </ul>
FI	<p>Comparability over time is sound. Differing from the SES2002, the SES2006 contained hourly earnings for teachers working for the local government and the local government sector wage and salary earners with reduced wages. In addition to these revisions also minor updates to production were made, namely regarding the method of calculating payments of shift work and adjustment for non-response.</p> <p>SES2010 added to the coverage of employees for the first time data and earnings for air</p>

Country	Important aspects of comparability over time
	transport activities. SES2014 was produced akin to SES2010, however, there was a reduction of coverage regarding the shipping industry. SES 2018 was produced akin to SES2010.
SE	<p>Statistics Sweden has carried out the SES six times; for the reference years of 1995, 2002, 2006, 2010, 2014 and 2018. The survey design was rather different in 1995, surveying only a portion of employees in the sampled enterprises. In 2002 information from two surveys was used in combination with data from different administrative registers. The survey 2006 was extended to include the public sector.</p> <p>Comparisons between the surveys should be done with caution, since the survey design has changed since 1995.</p> <p>Since SES 2010 ISCO-08 is used for classifying occupations.</p> <p>SES 2014 and SES 2018 includes employees in the age of 18 to 66 years. SES 2002, 2006 and 2010 include employees in the age of 18 to 64 years.</p>
IS	<p>he ISWEL survey, which SES 2018 is based on, has not undertaken major changes in methods or definition of variables since 1998. Still, all processes and quality checks are under constant revision in order to improve the quality of the data and thus some changes has been made to the processing and editing of data. The economic activities C, F, G and H, in the private sector, are included since 1998, in 2002 part of J was included, in 2005 the section K was included, in 2008 sections D and E were included, and in 2018 economic activity I was added. Inclusion of the public sector is almost complete. The definition of full-time employment has changed a little since SES 2010, and is now more in line with the SES definition. Before, both normal hours and overtime hours where considered, but now only normal hours are included in the definition of full-time employment.</p>
NO	<p>Statistics Norway has carried out the SES five times; for the reference years of 2002, 2006, 2010, 2014 and 2018.</p> <p>SES 2018 has been compiled using census data from <i>a-ordningen</i>, whilst sample surveys were conducted for all years before 2015. Data utilized for SES 2018 are more complete and differences with earlier years derive from survey sampling errors and sample design.</p> <p>Comparisons between the years can be done but caution is advised, consult documentation for all comparisons with data from before 2015.</p> <p>Since SES 2010 ISCO-08 is used for classifying occupations.</p> <p>Since SES 2014 the International Standard Classification of Education, 2011 version is used for classifying education.</p> <p>Comparable national annual statistics on earnings were established for most industrial sections in 1997, a few sections were included later. The statistics are comparable from 1997 and are uniform and comparable among the sections. There has not been any change in the definitions of variables since 1997. The applied methods and models have however been subject to ongoing improvement based on increased knowledge and new requirements since they were established. These ongoing improvements have not affected comparability.</p>
AL	Not applicable. SES is conducted for the first time in INSTAT.
RS	For the second time, the SORS conducted the Structure of Earnings Survey, SES 2018. It was first conducted in 2015 as a pilot survey for the reference year 2014. Compared to the SES 2014, there were no significant changes in the definitions, classifications and sample design.

Country	Important aspects of comparability over time
	The main difference is in the scope of the survey, where, in contrast to SES 2014, SES 2018 also includes CA (2010) section O - Public administration and defence; compulsory social security.

## Annex I: Legal basis

SES 2018 finds its legal basis in the following regulations:

- [COUNCIL REGULATION \(EC\) No 530/1999 of 9 March 1999 concerning structural statistics on earnings and on labour costs](#)
- [Commission regulation \(EC\) No 1738/2005 of 21 October 2005 amending regulation \(EC\) no 1916/2000 as regards the definition and transmission of information on the structure of earnings](#)
- [COMMISSION REGULATION \(EC\) No 698/2006 of 5 May implementing Council Regulation \(EC\) No 530/1999 as regards quality evaluation of structural statistics on labour costs and earnings](#)

In addition to these European regulations, technical document (Structure of Earnings Survey 2018 Eurostat's arrangements for implementing the Council Regulation 530/1999, the Commission Regulations 1916/2000 and 1738/2005) was prepared and made available to data providers. This document provides following information:

- ✓ main methodological information concerning definitions of variables
- ✓ sampling design
- ✓ scope of the survey
- ✓ technical format and transmission of the SES microdata
- ✓ description of data validation and rules applied in Eurostat when data is validated
- ✓ description of the treatment of confidentiality

## Annex II: SES 2018 overview

Country	Referent month	Size coverage		NACE Rev. 2 sections covered		Sampling		Data collection				Coefficient of variation		Response rate
		1+	10+	B to S	B to S (excl. O)	enterprises	local Unit	annual data	dedicated survey (every 4 years)	pure administrative data	combination: survey + administrative data	'Gross monthly earnings' for the whole population (%)	Gross hourly earnings' for the whole population (%)	
Belgium	October		√		√		√	√			√	0.270	0.220	87.00%
Bulgaria	October	√		√			√		√			0.200	0.190	95.00% (for 1+) 96.40%(for 10+)
Czechia	'average month'	√		√			√	√				0.006	0.006	87.20%
Denmark	'reference month'		9+		√	√		√				not applicable	not applicable	100.00% (census)
Germany	April	√		√			√		√			0.240	0.200	96.80%
Estonia	October	√		√		√			√			0.210 (for F)	0.220 (for F)	81.80%
Ireland	October	√		√			√	√			√	0.420	0.750	33.10%
Greece	October		√		√		√		√			1.20	0.80	45.90%
Spain	October	√		√			√		√			0.400	0.350	88.00%
France	'average month'		√	√			√	√				0.002	0.002	75.80%
Croatia	October		√	√		√	√		√			1.07	1.06	56.33%
Italy	October		√	√		√			√		√	0.300	0.300	60.40%
Cyprus	October	√		√		√			√		√	0.900	0.900	91.16%
Latvia	October	√		√			√		√			0.770	0.690	89.95%
Lithuania	October	√		√			√		√			0.700	0.600	98.00%
Luxembourg	October		√	√			√		√		√	0.500	0.400	90.00%
Hungary	May	5+		√			√	√				0.725	0.722	55.00% (all) 65% (excl. 5+ enterpr.)
Malta	October		√	√		√			√			0.690	0.650	94.50%
Netherlands	October	√		√		√			√		√	0.200	0.100	not applicable
Austria	October		√		√	√			√			0.280	0.230	98.00%

Country	Referent month	Size coverage		NACE Rev. 2 sections covered		Sampling		Data collection				Coefficient of variation		Response rate
		1 +	10 +	B to S	B to S (excl. O)	enterprises	local Unit	annual data	dedicated survey (every 4 years)	pure administrative data	combination: survey + administrative data	'Gross monthly earnings' for the whole population (%)	Gross hourly earnings' for the whole population (%)	
Poland	October		9+	√			√		every 2 years			0.807	0.809	54.50%
Portugal	October		√		√		√		√		√	0.100	0.100	64.60%
Romania	October		√	√		√	√		√			0.007	0.007	97.77%
Slovenia	October	√		√			√		√			0.500	0.500	85.70%
Slovakia	October	√		√			√	√	√			*0.050 (for FT employees)	*0.050 (for FT employees)	96.90%
Finland	September/October	5+		√			√	√			√	0.090	0.080	77.00%
Sweden	September		√	√		√				√			0.300	0.300
Iceland	October		√	√		√	√		√			1.130	1.260	89.00%
Norway	September	√		√		√	√	√				not applicable	not applicable	100.00%
Albania	October	-	√	-	√	√	-	-	√	-	-	0.100	0.100	80.70%
Serbia	October	-	√	√	-	√	-	-	√	-	-	0.710	0.690	91.80%
Portugal	October		√		√		√		√		√	0.100	0.100	64.60%

**NOTES:**

Romania: armed forces as well as assimilated personel are excluded from NACE Rev. 2 section O

Finland: reference month differs - September for service sector and non-manual workers in manufacturing; October for central and local government sector.

Switzerland: by the time of drafting this overview national QR was still not transmitted.

### Annex III: Coefficients of variation (%) - gross earnings in the reference month

breakdowns	BE	BG	CZ	DE	EE (M, FT)	EE (F, FT)	EL	ES	FR	HR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK*	FI	SE	IS	AL	RS	
<b>Total</b>	0.27	0.20	0.006	0.24	0.23	0.21	1.20	0.40	0.002	1.07	0.30	0.90	0.77	0.80	0.50	0.72	0.69	0.20	0.28	0.807	0.01	0.007	0.51	0.05	0.09	0.30	1.26	0.10	0.71	
<b>Full-time men</b>	0.48	0.30	0.007	0.29	NA	NA	1.80	0.66	0.003	1.24	0.60	1.34	0.93	1.00	0.60	0.78	0.57	0.20	0.31	0.874	0.01	NA	0.62	0.07	0.14	0.40	4.03	0.20	0.88	
<b>Full-time women</b>	0.48	0.24	0.005	0.27	NA	NA	1.60	0.71	0.002	1.15	0.60	0.98	0.68	1.00	0.60	0.61	0.72	0.40	0.44	0.659	0.01	NA	0.58	0.06	0.11	0.30	1.78	0.20	0.73	
<b>Part-time men</b>	2.5	1.40	NA	NA	NA	NA	5.60	NA	0.013	NA	1.50	NA	NA	NA	NA	0.92	NA	NA	1.28	0.950	0.04	NA	5.09	0.79	0.56	1.30	1.26	1.10	6.02	
<b>Part-time women</b>	0.51	1.89	NA	NA	NA	NA	5.20	NA	0.005	NA	0.70	NA	NA	NA	NA	0.71	NA	NA	0.52	0.684	0.04	NA	2.45	0.26	0.28	0.80	1.07	1.40	3.76	
<b>NACE</b>	<b>B</b>	5.52	0.77	0.028	1.57	1.27	3.45	3.38	4.24	0.048	9.66	5.10	25.43	4.22	1.40	NA	0.73	0.52	4.00	1.28	0.402	0.04	0.030	0.79	0.44	2.38	0.90	NA	1.30	2.04
	<b>C</b>	0.53	0.28	0.013	0.42	0.36	0.39	1.55	0.60	0.005	2.73	1.13	3.03	1.25	1.00	NA	0.67	0.60	0.50	0.36	0.780	0.01	0.014	0.59	0.07	0.23	0.60	1.90	0.30	1.29
	<b>D</b>	2.16	1.05	0.063	2.30	1.47	2.40	11.47	1.89	0.013	5.46	1.46	4.30	2.64	2.70	NA	0.72	0.90	2.00	1.16	0.503	0.04	0.020	1.36	0.20	0.97	1.20	4.54	0.60	1.36
	<b>E</b>	1.46	0.90	0.024	1.14	1.29	2.31	4.11	1.17	0.013	2.55	0.96	12.00	3.16	1.50	NA	0.53	0.44	1.70	0.78	0.512	0.04	0.021	2.07	0.26	0.90	1.10	1.51	0.50	2.93
	<b>F</b>	0.69	0.82	0.022	0.72	0.62	2.04	4.25	1.09	0.006	2.41	1.95	1.86	4.35	3.40	0.70	0.67	0.53	0.60	0.77	0.813	0.02	0.023	2.53	0.51	0.39	1.20	0.43	0.50	3.08
	<b>G</b>	0.73	0.56	0.015	0.84	0.73	0.57	3.78	1.54	0.008	3.25	1.23	1.60	2.55	2.80	1.50	0.77	0.73	0.50	0.83	0.974	0.03	0.017	2.10	0.21	0.38	1.60	2.85	0.30	2.62
	<b>H</b>	0.81	0.87	0.034	1.13	0.82	1.01	4.94	1.56	0.005	6.79	0.87	7.67	1.79	2.70	2.10	0.61	0.91	0.70	1.08	0.750	0.04	0.022	2.24	0.13	0.41	1.10	14.78	0.90	1.68
	<b>I</b>	1.36	0.71	0.025	1.06	1.79	0.87	4.61	2.25	0.017	3.41	1.26	2.90	4.09	3.30	1.30	0.62	0.73	1.00	1.13	0.893	0.02	0.032	2.16	0.49	0.46	3.90	1.17	0.50	4.84
	<b>J</b>	1.00	0.79	0.027	1.00	0.86	1.06	4.18	1.76	0.009	3.99	1.18	7.00	1.91	2.40	1.60	0.74	0.53	0.90	1.16	0.854	0.03	0.030	3.17	0.29	0.38	1.10	2.08	1.20	3.85
	<b>K</b>	1.26	1.05	0.019	1.56	1.60	1.06	10.56	1.55	0.011	3.24	0.97	3.05	1.36	1.80	1.10	0.79	0.71	1.10	1.13	0.935	0.02	0.021	1.86	0.23	0.61	1.70	7.74	0.80	1.31
	<b>L</b>	5.69	2.26	0.034	1.50	2.32	2.79	6.39	3.43	0.019	6.62	2.69	13.21	7.69	5.10	NA	0.90	0.78	2.10	1.89	0.683	0.07	0.072	4.19	0.88	1.22	2.20	NA	3.60	8.07
	<b>M</b>	1.02	1.13	0.026	0.92	1.10	0.86	6.41	1.52	0.011	5.37	1.45	3.48	5.20	3.50	1.70	0.79	0.76	0.80	1.37	0.829	0.04	0.035	3.49	0.43	0.40	1.30	NA	0.70	4.51
	<b>N</b>	0.72	0.85	0.029	1.37	1.11	1.13	2.93	1.62	0.009	4.06	0.78	3.67	4.09	3.20	NA	0.82	0.66	0.50	1.70	0.780	0.02	0.018	2.80	0.39	0.43	1.20	NA	0.50	2.94
	<b>O</b>	NA	0.62	0.001	0.04	0.96	0.68	NA	1.33	0.004	2.72	0.47	1.51	0.54	2.70	0.40	0.68	0.37	0.40	NA	0.506	NA	0.006	0.78	0.08	0.24	0.30	0.46	NA	3.90
	<b>P</b>	1.42	0.41	0.009	0.58	1.47	0.45	1.74	1.62	0.005	1.45	0.21	1.19	1.40	2.00	0.70	0.44	0.43	0.50	1.61	0.429	0.01	0.008	1.34	0.13	0.21	0.80	0.44	0.20	2.31
	<b>Q</b>	0.44	0.70	0.008	1.03	2.59	0.69	3.25	0.85	0.003	1.71	0.38	2.56	2.00	1.90	1.20	0.54	0.68	0.40	1.11	0.610	0.02	0.022	1.03	0.14	0.17	0.30	0.46	0.40	1.04
	<b>R</b>	1.47	2.15	0.016	5.79	1.56	0.90	7.16	4.39	0.024	2.93	13.62	8.95	1.97	2.20	NA	0.86	0.67	1.70	1.29	0.486	0.08	0.016	3.09	0.37	0.74	2.60	NA	1.10	3.39
<b>S</b>	2.04	1.27	0.033	1.63	2.59	1.49	5.31	1.69	0.016	8.86	1.91	4.93	7.75	4.60	NA	0.64	0.72	1.40	1.01	0.778	0.07	0.040	6.16	0.47	0.69	2.70	NA	1.20	4.93	
<b>Occupation</b>	<b>1</b>	2.79	0.80	0.013	1.09	0.82	8.20	3.61	0.007	2.94	3.18	3.95	1.94	2.90	1.40	0.81	0.74	0.80	0.98	0.972	0.02	0.024	2.09	0.32	0.54	0.90	2.53	0.70	2.11	
	<b>2</b>	0.91	0.38	0.009	0.43	0.51	0.37	1.93	1.07	0.003	1.32	0.60	1.17	0.95	1.60	0.50	0.58	0.53	0.30	0.68	0.585	0.01	0.016	0.71	0.09	0.13	0.30	0.54	0.20	1.58
	<b>3</b>	0.79	0.51	0.006	0.39	0.46	0.38	8.64	1.38	0.003	1.80	1.01	1.60	1.47	2.80	0.60	0.54	0.64	0.40	0.47	0.574	0.02	0.027	0.80	0.09	0.13	0.80	1.44	0.50	1.27
	<b>4</b>	1.00	0.41	0.015	0.43	0.84	0.46	2.87	1.07	0.008	1.57	0.87	1.22	1.54	3.70	0.70	0.51	0.50	0.50	0.58	0.410	0.01	0.028	0.87	0.11	0.21	0.40	1.33	0.40	0.92
	<b>5</b>	1.25	0.26	0.012	0.50	0.70	0.31	3.30	1.26	0.004	1.75	0.91	1.13	1.60	3.30	0.70	0.31	0.51	0.40	0.76	0.434	0.01	0.021	1.04	0.08	0.14	0.70	1.55	0.30	2.01
	<b>6</b>	NA	4.82	0.034	2.89	1.94	1.42	NA	8.83	0.069	6.04	9.31	6.90	3.83	51.90	4.50	0.40	0.36	5.30	NA	0.361	0.04	0.073	4.58	0.77	1.09	2.80	NA	0.80	8.93
	<b>7</b>	1.97	0.36	0.011	0.47	0.34	0.56	5.05	1.07	0.004	1.88	2.00	1.42	2.72	2.40	0.50	0.40	0.47	0.50	0.44	0.463	0.01	0.022	0.96	0.08	0.22	0.60	1.19	0.30	1.59
	<b>8</b>	1.41	0.32	0.011	0.59	0.38	0.51	4.58	1.48	0.005	2.43	1.77	2.67	1.65	2.70	0.70	0.38	0.39	0.70	0.65	0.448	0.01	0.020	0.98	0.06	0.21	0.70	1.65	0.30	1.36
	<b>9</b>	1.00	0.29	0.012	0.82	0.60	0.44	3.25	1.32	0.006	1.41	1.20	1.20	1.72	3.30	0.60	0.44	0.47	0.80	0.60	0.357	0.01	0.019	0.73	0.11	0.26	1.30	0.76	0.30	1.37
	<b>0</b>	NA	NA	NA	1.05	2.16	6.67	NA	NA	NA	NA	1.50	NA	3.80	22.20	2.40	0.34	NA	2.10	NA	NA	NA	NA	0.16	0.07	0.70	NA	NA	NA	NA
<b>Age</b>	<b>&lt; 20</b>	4.79	1.53	0.018	1.64	2.13	1.51	19.98	7.65	0.007	1.56	12.15	6.59	11.00	3.80	4.10	0.37	0.51	1.30	1.16	0.320	0.02	0.098	1.90	0.39	1.14	4.50	1.74	0.70	3.55
	<b>20-29</b>	0.81	0.48	0.007	0.50	0.42	0.46	3.11	1.39	0.003	1.19	1.78	1.85	0.98	1.00	0.40	0.49	0.52	0.40	0.45	0.518	0.01	0.021	0.77	0.08	0.19	0.60	0.76	0.20	1.39
	<b>30-39</b>	0.66	0.43	0.008	0.37	0.40	0.44	2.18	0.86	0.004	1.16	1.02	1.22	1.05	1.10	0.50	0.67	0.63	0.30	0.41	0.727	0.01	0.015	0.74	0.09	0.16	0.40	1.09	0.30	0.98
	<b>40-49</b>	0.64	0.39	0.007	0.40	0.52	0.44	1.96	0.72	0.004	1.38	0.76	1.36	1.28	1.20	0.70	0.79	0.73	0.40	0.43	0.856	0.01	0.014	0.67	0.10	0.18	0.40	1.33	0.30	0.96
	<b>50-59</b>	0.55	0.37	0.007	0.38	0.54	0.44	2.31	0.96	0.007	1.29	0.75	2.14	1.31	1.10	0.90	0.73	0.68	0.40	0.53	0.893	0.01	0.016	0.66	0.10	0.18	0.40	2.66	0.30	1.05
	<b>≥ 60</b>	2.32	0.54	0.008	0.24	0.63	0.52	4.55	1.70	0.060	1.40	1.30	3.14	1.52	1.40	5.70	0.80	0.95	0.80	1.83	0.893	0.02	0.034	1.59	0.23	0.33	0.50	1.32	0.70	1.59
<b>Size</b>	<b>E1-9</b>	NA	0.64	0.0																										

## Annex IV: Coefficients of variation (%) – average gross hourly earnings in the reference month

breakdowns	BE	BG	CZ	DE	EE (M, (F, FT)	EL	ES	FR	HR	IT	CY	LV	LT	LU	HU	MT	NL	AT	PL	PT	RO	SI	SK*	FI	SE	IS	AL	RS		
<b>Total</b>	0.27	0.19	0.006	0.20	0.25	0.22	0.80	0.35	0.002	1.06	0.30	0.90	0.69	0.70	0.40	0.72	0.65	0.10	0.23	0.809	0.01	0.007	0.49	0.05	0.08	0.20	1.13	0.10	0.69	
<b>Full-time men</b>	0.34	0.30	0.008	0.30	NA	NA	1.20	0.66	0.003	1.24	0.50	1.38	0.93	0.90	0.60	0.78	0.52	0.30	0.30	0.882	0.01	NA	0.61	0.07	0.14	0.40	3.41	0.20	0.87	
<b>Full-time women</b>	0.25	0.24	0.005	0.27	NA	NA	0.80	0.71	0.002	1.16	0.50	1.06	0.67	0.80	0.50	0.61	0.70	0.40	0.45	0.694	0.01	NA	0.57	0.06	0.11	0.30	1.40	0.20	0.74	
<b>Part-time men</b>	0.38	1.33	NA	NA	NA	NA	2.50	NA	0.019	NA	1.40	NA	NA	NA	1.00	NA	NA	0.87	0.900	0.05	NA	3.87	1.49	0.43	0.60	2.78	1.10	6.60		
<b>Part-time women</b>	0.66	0.84	NA	NA	NA	NA	2.40	NA	0.005	NA	0.70	NA	NA	NA	0.67	NA	NA	0.39	0.713	0.04	NA	2.11	0.26	0.23	0.40	4.02	1.40	3.06		
<b>NACE</b>	<b>B</b>	1.49	0.77	0.023	1.68	1.63	3.79	3.07	4.35	0.047	9.87	4.73	25.68	4.29	1.20	NA	0.75	0.90	4.00	1.26	0.385	0.04	0.030	0.94	0.43	2.39	0.90	NA	1.20	2.07
	<b>C</b>	0.59	0.28	0.016	0.40	0.38	0.41	1.32	0.57	0.005	2.72	1.11	2.98	1.25	1.00	NA	0.68	0.60	0.50	0.35	0.788	0.01	0.014	0.58	0.07	0.23	0.60	3.00	0.30	1.28
	<b>D</b>	2.04	1.12	0.069	2.02	1.63	3.94	11.62	1.89	0.013	5.40	1.42	4.23	2.51	2.60	NA	0.72	0.84	2.30	1.05	0.507	0.04	0.020	1.42	0.20	0.95	1.20	4.16	0.60	1.32
	<b>E</b>	2.36	0.92	0.023	1.03	1.74	2.55	3.03	1.11	0.013	2.36	0.95	11.70	2.38	1.40	NA	0.54	0.52	1.70	0.80	0.517	0.04	0.021	2.13	0.26	0.85	1.00	0.47	0.50	2.91
	<b>F</b>	0.59	0.79	0.022	0.58	0.91	2.20	3.42	1.06	0.006	2.42	1.89	1.73	4.06	3.10	0.80	0.66	0.52	0.60	0.65	0.818	0.02	0.023	2.42	0.53	0.37	1.20	1.57	0.50	3.07
	<b>G</b>	0.75	0.54	0.014	0.63	0.79	0.62	1.92	1.39	0.008	3.31	1.15	1.57	2.67	2.70	1.40	0.77	0.69	0.40	0.72	0.980	0.03	0.017	2.02	0.21	0.30	1.10	3.55	0.30	2.65
	<b>H</b>	1.45	0.83	0.032	0.91	1.00	1.11	3.89	1.43	0.005	7.14	0.86	7.67	1.52	2.50	2.10	0.61	0.82	0.90	0.95	0.793	0.04	0.022	2.15	0.14	0.36	1.00	8.14	0.90	1.76
	<b>I</b>	1.3	0.63	0.021	0.37	2.02	1.19	3.77	1.42	0.016	3.34	1.11	2.89	2.42	2.50	1.10	0.63	0.66	0.70	0.66	0.897	0.02	0.032	1.82	0.49	0.32	1.40	3.10	0.50	4.89
	<b>J</b>	1.09	0.78	0.027	0.85	0.90	1.24	3.31	1.66	0.009	3.77	1.16	6.79	1.90	2.30	1.50	0.73	0.49	0.80	1.00	0.854	0.03	0.030	3.07	0.29	0.36	1.10	1.94	1.10	3.81
	<b>K</b>	1.2	1.04	0.020	1.31	1.71	1.37	2.35	1.55	0.010	3.24	0.97	3.01	1.37	1.60	1.10	0.79	0.70	1.00	1.03	0.936	0.03	0.020	1.89	0.23	0.59	1.70	6.96	0.80	1.41
	<b>L</b>	3.96	2.27	0.032	0.88	2.71	3.02	5.05	3.05	0.018	6.69	2.61	12.29	7.53	4.20	NA	0.91	0.76	3.40	1.67	0.684	0.06	0.071	2.71	0.86	1.16	2.10	NA	3.50	7.95
	<b>M</b>	1.13	1.09	0.024	0.71	1.17	0.91	5.86	1.41	0.012	5.33	1.41	3.46	3.01	3.00	1.70	0.79	0.70	0.90	1.16	0.829	0.04	0.034	3.31	0.42	0.37	1.30	NA	0.70	4.66
	<b>N</b>	0.85	0.79	0.026	0.70	1.16	1.32	2.23	1.31	0.008	4.43	0.75	3.50	4.11	3.00	NA	0.84	0.55	0.40	1.15	0.773	0.01	0.018	2.55	0.37	0.35	1.60	NA	0.50	2.24
	<b>O</b>	NA	0.61	0.001	0.07	1.32	0.78	NA	1.22	0.004	2.72	0.47	1.49	0.56	2.60	0.40	0.67	0.38	0.60	NA	0.505	NA	0.006	0.79	0.08	0.24	0.20	0.51	NA	3.80
	<b>P</b>	0.99	0.40	0.009	0.54	1.57	0.54	1.36	1.36	0.009	1.37	0.25	1.16	0.99	1.80	0.60	0.42	0.46	0.40	1.02	0.548	0.01	0.008	1.36	0.13	0.19	0.50	1.12	0.20	1.95
	<b>Q</b>	0.4	0.71	0.007	0.84	2.71	0.75	1.39	0.77	0.003	1.45	0.37	2.41	1.96	1.60	1.10	0.48	0.70	0.30	0.93	0.574	0.02	0.023	0.88	0.14	0.17	0.20	1.24	0.40	1.19
	<b>R</b>	1.97	2.02	0.015	3.87	1.67	1.03	3.66	3.72	0.023	2.91	12.93	8.88	2.12	1.50	NA	0.85	0.56	1.30	1.10	0.499	0.08	0.017	2.11	0.36	0.61	1.20	NA	1.10	3.13
	<b>S</b>	2.21	1.08	0.028	0.98	3.31	1.68	2.40	1.29	0.014	8.73	1.79	4.62	3.32	3.70	NA	0.64	0.58	1.20	0.78	0.755	0.06	0.040	5.72	0.47	0.63	2.30	NA	1.20	4.76
	<b>Occupation</b>	<b>1</b>	0.53	0.77	0.013	1.11	0.88	1.01	4.43	3.51	0.008	2.91	3.10	3.94	1.62	1.50	1.40	0.81	0.73	0.70	0.95	0.975	0.02	0.024	1.98	0.32	0.53	0.90	2.36	0.70
<b>2</b>		0.27	0.37	0.007	0.39	0.55	0.43	1.08	1.00	0.004	1.26	0.48	1.19	0.90	0.90	0.50	0.55	0.48	0.30	0.52	0.526	0.01	0.016	0.67	0.09	0.13	0.30	0.54	0.20	1.51
<b>3</b>		0.17	0.51	0.006	0.32	0.60	0.49	5.80	1.35	0.003	1.84	0.97	1.53	1.47	1.40	0.60	0.53	0.56	0.40	0.40	0.587	0.02	0.027	0.76	0.09	0.12	0.60	1.75	0.50	1.25
<b>4</b>		0.2	0.38	0.012	0.34	0.94	0.54	1.33	1.06	0.007	1.54	0.82	1.17	1.36	1.40	0.60	0.49	0.49	0.30	0.46	0.405	0.01	0.029	0.80	0.11	0.17	0.40	2.21	0.40	0.91
<b>5</b>		0.29	0.24	0.012	0.30	1.25	0.40	1.27	1.09	0.004	1.80	0.84	1.07	1.42	1.20	0.60	0.28	0.49	0.30	0.40	0.432	0.01	0.021	0.98	0.08	0.09	0.20	4.02	0.30	1.71
<b>6</b>		NA	4.18	0.032	2.09	3.09	1.89	NA	8.60	0.051	5.96	9.20	8.09	3.91	8.40	4.40	0.39	0.33	4.20	NA	0.354	0.04	0.074	2.26	0.71	0.91	1.70	NA	0.90	9.43
<b>7</b>		0.43	0.35	0.013	0.45	0.38	0.55	1.93	1.07	0.003	1.89	1.91	1.24	2.50	1.50	0.50	0.38	0.39	0.40	0.39	0.439	0.01	0.022	0.93	0.07	0.17	0.50	1.28	0.30	1.53
<b>8</b>		0.29	0.31	0.012	0.47	0.51	0.55	1.81	1.45	0.005	2.35	1.74	2.33	1.59	1.60	0.60	0.35	0.36	0.80	0.59	0.419	0.01	0.020	0.89	0.05	0.17	0.50	2.08	0.30	1.23
<b>9</b>		0.2	0.26	0.011	0.22	0.68	0.59	1.07	1.28	0.006	1.29	1.08	1.08	1.16	1.20	0.40	0.42	0.30	0.40	0.34	0.333	0.00	0.019	0.59	0.11	0.16	0.60	1.99	0.30	1.18
<b>0</b>		NA	NA	NA	0.66	2.79	8.48	NA	NA	NA	NA	1.50	NA	3.90	6.90	2.50	0.36	NA	1.90	NA	NA	NA	NA	0.16	0.07	0.74	NA	NA	NA	NA
<b>Age</b>		<b>&lt; 20</b>	0.73	1.23	0.017	0.86	1.98	1.64	7.01	10.05	0.013	1.56	11.23	4.41	10.07	2.40	3.30	0.35	0.39	0.90	0.89	0.298	0.01	0.098	1.86	0.37	0.46	1.40	8.32	0.80
	<b>20-29</b>	0.35	0.46	0.008	0.38	0.46	0.56	1.39	1.38	0.003	1.18	1.64	1.82	0.91	0.90	0.40	0.48	0.46	0.20	0.28	0.510	0.01	0.021	0.71	0.07	0.13	0.30	1.58	0.20	1.40
	<b>30-39</b>	0.26	0.42	0.008	0.31	0.44	0.51	1.38	0.84	0.004	1.14	0.94	1.25	0.98	1.00	0.50	0.66	0.61	0.30	0.34	0.715	0.01	0.015	0.69	0.09	0.14	0.30	1.38	0.30	0.94
	<b>40-49</b>	0.35	0.38	0.008	0.31	0.57	0.48	1.09	0.70	0.004	1.38	0.69	1.42	1.17	1.10	0.60	0.79	0.69	0.30	0.37	0.851	0.01	0.014	0.64	0.10	0.17	0.40	1.57	0.30	0.98
	<b>50-59</b>	0.37	0.37	0.007	0.32	0.64	0.50	1.52	0.94	0.007	1.29	0.67	2.18	0.96	1.00	0.80	0.72	0.64	0.30	0.46	0.904	0.01	0.016	0.63	0.10	0.18	0.40	2.31	0.30	1.01
	<b>≥ 60</b>	1.09	0.50	0.008	0.20	0.85	0.60	2.67	1.54	0.500	1.38	1.14	3.18	1.40	1.20	4.90	0.80	0.93	0.80	1.36	0.894	0.02	0.033	1.53	0.22	0.30	0.40	1.04	0.70	1.65
<b>Size</b>	<b>E1-9</b>	NA	0.59	0.010	0.44																									

## Annex V: Data transmission overview

SES 2018	Data Transmission		number of revisions	Publication	Quality Report
	1st transmission	final transmission		published on (date)	sent on
Belgium	25/06/2020	03/09/2020	2	01/10/2020	22/12/2020
Bulgaria	07/07/2020	07/07/2020	1	01/10/2020	04/12/2020
Czechia	06/05/2020	09/06/2020	2	01/10/2020	27/10/2020
Denmark	23/03/2020	22/06/2020	2	01/10/2020	09/12/2020
Germany	15/06/2020	15/06/2020	1	01/10/2020	17/11/2020
Estonia	29/06/2020	17/07/2020	3	01/10/2020	18/12/2020
Ireland	30/06/2020	13/11/2020	3	30/11/2020	30/12/2020
Greece	31/07/2020*	02/07/2021	7	30/11/2020	31/12/2020
Spain	23/06/2020	29/06/2020	1	01/10/2020	17/12/2020
France	31/07/2020	12/11/2020	6	01/10/2020	22/12/2020
Croatia	13/11/2020	13/11/2020	3	30/11/2020	30/12/2020
Italy	30/09/2020	10/11/2020	2	30/11/2020	30/12/2020
Cyprus	31/07/2020	25/09/2020	5	01/10/2020	30/12/2020
Latvia	01/07/2020	30/07/2020	3	01/10/2020	29/11/2021
Lithuania	18/06/2020	25/06/2020	2	01/10/2020	23/12/2020
Luxembourg	29/06/2020	26/11/2020	3	01/10/2020	08/09/2020
Hungary	02/08/2020	12/01/2021	4	01/10/2020	19/01/2021
Malta	31/07/2020	14/10/2020	4	30/11/2020	29/12/2020
Netherlands	25/06/2020	18/08/2020	7	30/11/2020	18/12/2020
Austria	23/07/2020	28/07/2020	2	01/10/2020	23/12/2020
Poland	25/06/2020	25/06/2020	1	01/10/2020	30/12/2020
Portugal	03/07/2020	23/09/2020	3	01/10/2020	21/12/2020
Romania	17/06/2020	01/09/2020	2	01/10/2020	03/12/2020
Slovenia	30/06/2020	30/06/2020	1	01/10/2020	28/12/2020
Slovakia	22/05/2020	11/06/2020	2	01/10/2020	08/09/2020
Finland	30/06/2020	02/11/2020	4	01/10/2020	29/10/2021
Sweden	12/05/2020	10/06/2020	2	01/10/2020	15/12/2020
Iceland	11/08/2020	29/10/2020	4	01/10/2020	20/12/2020
Norway	04/08/2020	05/11/2020	6	01/10/2020	23/12/2020
Albania	29/06/2020	01/07/2020	2	01/10/2020	25/11/2020
Serbia	25/09/2020	08/10/2020	3	30/11/2020	31/12/2020

\* preliminary data

## Annex VI: Country abbreviations

BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FR	France
HR	Croatia
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom
NO	Norway