METHODOLOGICAL NOTES

The Structure of Earnings Survey (SES) for 2018 is carried out for the fifth time with a four-year periodicity according to the Council Regulation N530/1999, the Commission Regulation N1916/2000 (amended) and the Commission Regulation N1738/2005. The objective of this legislation is to provide accurate and harmonized data on earnings in EU Member States for policy-making and research purposes.

1. Goal of the survey

The Structure of Earnings Survey is aimed to give detailed and comparable at European Union level information on distribution and relationships between the level of remuneration, individual characteristics of employees and these of their employer.

2. Object, scope and units of the survey

Objects of the survey are: characteristics of employer (enterprise, local unit) – number of employees in the local unit, type of ownership, existence and type of collective pay agreement, size of the enterprise; individual characteristics of employees - age, sex, educational level, occupation, length of service, mode of employment (full-time/part-time), working hours per day, working days per week, type of employment contract, annual gross earnings, annual bonuses, annual payments in kind, annual days of paid holiday leave, monthly gross earnings, earnings related to overtime, earnings related to shift work, employee's compulsory social security contributions and income tax, number of paid monthly hours, number of paid overtime hours.

Economic activities covered: Mining and quarrying (B), Manufacturing (C), Electricity, gas, steam and air conditioning supply (D), Water supply, sewerage, waste management and remediation activities (E), Construction (F), Wholesale and retail trade; repair of motor vehicles and motorcycles (G), Transportation and storage (H), Accommodation and food service activities (I), Information and communication (J), Financial and insurance activities (K), Real estate activities (L), Professional, scientific and technical activities (M), Administrative and support service activities (N), Public administration and defense; compulsory social security (O), Education (P), Human health and social work activities (Q), Arts, entertainment and recreation (R), Other service activities (S).

Statistical units of the survey are:
1) Local units with 1 or more employees belonging to *enterprises* with 1 or more employees.

2) Employees with earnings during October 2018, having at least 1 working day paid by the employer at a full rate.

3. Reference periods

The reference year is the calendar 2018. For representative month is approved October as being the month that is least affected by absences owing to annual leave or public holidays.

4. Periodicity

The survey is to be carried out once per four years.

5. Sampling design and sampling size

The sampling procedure used for the SES contains two stages. In the first stage, a stratified random sample of local units without replacement is drawn. Stratification criteria used include:

- economic activity – divisions (2-digit level) of NACE Rev.2;
- the number of employees in the local unit :
  - 1 to 9;
  - 10 to 49;
  - 50 to 249;
  - 250 to 499;
  - 500 to 999;
  - 1000 and more employees.
- regional breakdown - level 1 of national Classification of Territorial Units for Statistical Purposes (NUTS) in Bulgaria, in force since 2009:

  BG3 - Severna i Yugoiztochna Bulgaria

  BG4 – Yugozapadna i Yuzhna Tsentralna Bulgaria.

Sampling rates for local units and employees by size classes

Number of employees	1- 9	10 - 49	50 - 249	250 - 499	500 - 999	1000+	Total
Size classes of local units	1	2	3	4	5	6	
Sampling rates for local units -%	7.9	8.2	32.6	63.5	100.0	100.0	9.1
Sampling rates for employees (planned total) - %	7.9	7.9	7.9	7.9	7.9	7.8	7.9
Sampling rates for employees (expected total after selection of local units) - %	8.7	8.2	8.5	12.8	12.5	7.7	8.8

At the <u>second</u> stage, a systematic sample of employees is taken within each of the selected local units.

Number of employees	1- 9	10 - 49	50 - 249	250 - 499	500 - 999	1000 -1999	2000+
Size classes of local units	1	2	3	4	5	6	7
Sampling rates for employees within local units - %	100.0	100.0	25.0	20.0	12.5	10.0	5.0

At the first sampling stage 19 182 local units were selected, from which 17 331 responded units provided data for approximately 217 500 employees.

6. Method of data collection

Survey tools used for purposes of data collection are as follows:

1. Dispatch note to each respondent about the purposes of the survey.

2. Statistical questionnaire: part A collecting information for sampled local units and part B collecting information for each sampled employee.

3. Explanatory notes for sampling of employees within the local units and instructions on information required.

The SES questionnaire was developed on paper and in electronic format, uploaded on the official web page of NSI.

7. Main definitions

Employees are all persons who have a direct employment contract with their employer and receive remuneration in cash or in kind for certain quality and quantity of work done, irrespective of the type of work performed, the number of working hours (full or part-time) and the duration of the employment contract (fixed or indefinite). Other categories of workers included are:

- apprentices and trainees <u>with</u> an employment contract with the reporting unit;
- seasonal or occasional workers who are working pre-defined hours on a contractual basis with the local unit or the enterprise;
- outworkers, but only if there is an explicit agreement that they are remunerated on the basis of the amount of hours worked;
- employees on maternity leave as long as they receive remuneration from the employer;

Categories of workers, which are excluded:

- employees *without* an employment contract with the enterprise/local unit;

- apprentices and trainees *without* an employment contract with the reporting unit (and who are considered to be government employees);
- seasonal or occasional workers which are employed without pre-defined working hours;
- persons wholly remunerated by way of fees, or commission;
- members of the board of directors of the enterprise;
- unpaid owners, directors or managers (who are paid by way of profit share or fee);
- employees of the observation unit who have been permanently working abroad (i.e. for more than one year) in an affiliated company;
- the self-employed;
- unpaid family workers;
- voluntary workers.

Gross earnings are the remuneration in cash paid to the employee directly and regularly by the employer at the time of each pay period, before deductions of any tax and social security contributions payable by employee and withheld by the employer.

The **gross monthly earnings** of employees *include*:
- basic wage or salary for work done or time worked in the reference month;
- earnings related to annual paid holiday leave and other periods of absences paid for entirely by the employer at a full rate;
- payment for overtime work;
- special payment for shift work – night shifts, week-end or public-holiday shifts;
- payments for seniority, harmful and other specific working conditions, high personal qualification or other collectively or individually agreed additional payments;
- bonuses and gratuities paid regularly in each pay period, even if the amount varies from month to month,

The following are *not included*:
- payments paid in this period but relating to other periods, such as advances, or pay for holiday or sickness absence outside reference period;
- periodic bonuses and gratuities not paid regularly at each pay date;
- payments for periods of absence paid by the employer at a reduced rate;
- statutory family allowances;
- the value of benefits in kind;
- allowances for work clothes or tools;

- Reimbursements or payments for traveling, subsistence etc. expenses incurred in carrying out the employer's business.

The annual gross earnings are the total amount of the regular payments in cash received by the employee for the work performed during the reference year, including:

• the value of annual payments in kind (goods and services) made available to employees by employer like:

- company products – free or at discount;
- meal vouchers;
- clothes;
- free or subsidized: travel to and from work, housing, mobile telephone, parking place, petrol, company car, dental services, etc.;

• all irregular payments as quarterly bonuses, 13th or 14th salaries and other gratuities not received at each pay period;

• remuneration for annual paid holiday leave

Net earnings are the amount received by the employee after deduction of the tax and compulsory social security contributions levied on the total gross earning in the reference period.

Employee social security contributions refer to the total amount of compulsory social security contributions payable by the employee and withheld by the employer from the total gross earnings in the reference month, including: health care, old-age pension, sickness, maternity and unemployment.

Excluded are: social contributions paid by the employee for his/her family members; social contributions for additional pension insurance paid voluntarily by the employee in a private insurance fund.

Employee income tax contribution is the amount of the tax levied on the total gross earnings of the employee in the reference month after deductions of the compulsory social security contributions and withheld by the employer according to the acting tax legislation.

Annual paid holiday leave includes annual total of all normal paid-leave days entitled to the employee for the calendar 2018 as agreed in the employment contract with the employer. The duration of annual paid holiday leave is in working days. *Excluded are* not taken days of annual paid leave lasted from previous years

Paid hours cover the total number of normal and overtime hours to which the gross monthly earnings in the reference month relate. The number of paid hours includes:

actually worked normal hours, worked and paid overtime hours, hours not worked but nevertheless paid by the employer at a full rate (annual leave, work stoppages and other hours paid such as for medical examinations). Hours not worked and paid at a reduced rate are excluded.

Normal working hours are the number of hours, which the employee is obliged to work in the reference month under the terms of the employment contract, regulation or rules in force in the local unit.

8. Classifications and nomenclatures

- Classification of Economic Activities 2008 – fully compliant with the European classification NACE Rev. 2.
- National Classification of Occupations and Duties 2011 – consistent with the International Standard Classification of Occupations ISCO - 08.
- Nomenclature of Educational Levels – in compliance with the International Standard Classification of Education ISCED 2011.
- Classification of Territorial Units for Statistical Purposes - in compliance with the European classification NUTS.

9. Main statistical indicators

The computed **arithmetic means** are weighted averages with the total number of employees in the observed population:

- average gross monthly earnings in October 2018;
- average amount of earnings related to overtime and average amount of earnings related to shift work in October 2018 – spread over the total number of employees;
- average net monthly earnings in October 2018;
- average number of paid hours in October 2018;
- average number of overtime paid hours in October 2018;
- average gross hourly earnings in October 2018;
- average gross hourly earnings related to overtime in October 2018;
- average annual gross earnings in 2018;
- average amount of earnings for annual paid holiday leave, average amount of irregular bonuses and average annual payments in kind in 2018 - spread over the total number of employees;
- average number of days of paid holiday leave;
- Median of gross (monthly, hourly, annual) earnings – takes the value of the gross earnings of the 50th percentile and is the value below which 50% of all employees fall.

10. Accuracy

For each table with survey results are calculated coefficients of variation (relative standard errors) concerning total gross earnings as required in the Commission Regulation N 698/2006 concerning quality evaluation of structural statistics on earnings. Coefficients of variation are calculated by use of the following formulae:

$$CV_{x'_h} = \left(\sqrt{ \frac{ \left(\sum_{i=1}^{n_h} f_i * x_i^2 \right) * \left(\sum_{i=1}^{n_h} f_i \right) }{ \left(\sum_{i=1}^{n_h} f_i * x_i \right)^2 } - 1 } \right) * 100 * \left(\sqrt{ \frac{ \sum_{i=1}^{n_h} f_i - \sum_{i=1}^{n_h} n_i }{ \sum_{i=1}^{n_h} f_i * \sum_{i=1}^{n_h} n_i } } \right),$$

where

x'_h is estimate of the total gross earnings,

$$x'_h = \sum_{i=1}^{n_h} f_i * x_i$$

x_i - individual gross earnings of each sampled employee in strata h;

n_i - number of sampled employees in strata h;

f_i - individual grossing-up factor of each sampled employee in strata h,

$$f_i = \frac{M_h}{m_h} * \frac{N_{kh}}{n_{kh}};$$

M_h - total number of local units in the population in strata h;

m_h - number of sampled local units in strata h;

N_{kh} - total number of employees in the k-th sampled local unit in strata h;

n_{kh} - number of sampled employees in the k-th local unit.

11. Comparability with other surveys

There are other statistical sources that produce information on number of employees, earnings and working time:

• Quarterly Survey on Number of Employees, Time Worked, Wages and Salaries and Other Labour Costs - number of employees; wages and salaries; worked days and worked hours;

• Annual Survey on Employed Persons, Wages and Salaries and Other Labour Costs - number of employees; wages and salaries; worked days and worked hours;

- Labour Force Survey - number of employees; worked hours;
- National Accounts - number of employees; worked hours.

The results from the 2018 Structure of Earnings Survey are relatively comparable with from the above-sited surveys due to the following methodological characteristics of SES:

Coverage by economic activities: Agricultural sector is excluded (section A of NACE Rev.2).

Target population of employees: employees with earnings during October 2018, having at least 1 working day paid by the employer at a full rate. Excluded are all persons without earnings in the reference month but are nevertheless in labour relationship with their employer.

Gross monthly earnings: excluded are irregular bonuses and gratuities not paid regularly at each pay period.

Gross annual earnings: included are annual payments in kind received by employees during the year.

Working time: collected is information on paid days and paid hours (worked + not worked but paid days/hours).

Other methodological characteristics:
- individual monthly earnings of employees which have been influenced by periods of unpaid absence in October (due to sick, maternity, unpaid leave etc.) or because the employee joint or left the firm during the month, are grossed-up onto a full-month level. Total gross earnings in the representative month for a '**full month**' is estimated by a coefficient obtained from the ratio between the normal monthly working hours and the total number of hours actually paid reduced with the number of overtime hours paid in October 2018.
- individual annual earnings of employees which have been influenced by periods of unpaid absence (due to sick, maternity, unpaid leave etc.) or because the employee joint or left the firm during the year, are grossed-up onto a full-year level. Total gross earnings in the representative year for a '**full year**' is estimated by a coefficient obtained from the ratio between the total number of working weeks (52.14) in the calendar 2018 and the actual number of weeks to which the annual remuneration relate. In the calculation of average gross earnings are included only these employees who have received earnings from the sampled local unit at least 30 weeks in the reference year. In this way the number of employees to which the calculations of average annual gross earnings relates is reduced by 13 %.

Comparability between data from the 2018 Structure of Earnings Survey, SES 2002, SES 2006, SES 2010 and SES 2014

The basic discrepancies between the rounds of the survey are summarized in the table below and are due to change in the:

- coverage in terms of size of the enterprise;
- applied definitions;
- applied classifications.

	2002	2006	2010	2014-2018
Coverage in terms of size of the enterprise	10 + employees	1+ employees	1+ employees	1+ employees
Definition of gross annual earnings	**excluding** annual payments in kind	including annual payments in kind *	**including** annual payments in kind	**including** annual payments in kind
Classification of economic activities	NCEA - 2001 (in compl. with NACE Rev.1)	NCEA - 2003 (in compl. with NACE Rev.1.1)	CEA - 2008 (in compl. with NACE Rev.2)	CEA - 2008 (in compl. with NACE Rev.2)
Classification of occupations	NCO - 1996 (in compl. with ISCO - 88 COM)	NCOD - 2005 (in compl. with ISCO - 88 COM)	NCOD - 2005, NCOD - 2011 (in compl. with ISCO - 08)	NCOD - 2011 (in compl. with ISCO - 08)
Classification of territorial units for statistical purposes	NUTS1 - corresponds to national level	NUTS1 - Bulgaria is divided into two statistical zones (BG3, BG4)*	NUTS1 – Bulgaria is divided into two statistical zones (BG3, BG4)*	NUTS1 – Bulgaria is divided into two statistical zones (BG3, BG4)*

In compliance with Commission Regulation №1738/2005 providing definitions of the observed variables, the annual gross earnings includes the amount of the annual payments in kind.
*** The geographic location is added as stratification criteria for the local units sample.*

12. Publicity and clarity

Internet
Methodology and the basic results are published in section "Labour market", item 4.2. Structure of Earnings on the web site of NSI: http://www.nsi.bg/en.