

	LABOUR COST SURVEY QUALITY REPORT 2016	
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Reference metadata
<ul style="list-style-type: none"> 1. Contact 2. Statistical presentation 3. Statistical processing 4. Quality management 5. Relevance 6. Accuracy and reliability 7. Timeliness and punctuality 8. Coherence and comparability 9. Accessibility and clarity 10. Cost and Burden 11. Confidentiality 12. Comment <p>Related Metadata Annexes (including footnotes)</p>

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2. Statistical presentation

2.1. Data description

Labour Cost Survey (LCS) is a business statistical sample survey carried out at national level **annually** in accordance with the recommendations and standards of the European Union under the European Parliament and Council Regulation no 530/1999 concerning structural statistics on earnings and labour costs and Commission Regulation no 1737/2005 amending Commission Regulation no 1726/1999 as regards the definitions and transmission of information on labour costs. LCS was implemented and carried out for the first time at the national level in 1994.

The main objective of the survey is to obtain the necessary information to determine the average number of employees, the average earnings achieved, as well as the level, the structure and the evolution of the labour cost.

This complex survey provides to the users the elements needed to perform analyzes on the evolution of the different components of labour cost and the correlations between them, while providing the necessary elements for calculating the gross and net size, monthly and hourly, of earnings structured by activities of the national economy, forms of ownership and size classes of enterprises, legal forms, gender, macro-regions, development regions and counties.

The survey organization and data processing is performed in order to develop and fulfil the national statistical information necessary for developing strategies and policies on labour cost and to ensure comparability of statistical indicators provided by all EU countries.

2.2. Classification system

Standard classifications used:

- **Classification of Activities in the National Economy (CANE Rev. 2)**, harmonized with the European classification in the field (**NACE Rev. 2**);
- The **size classes of enterprises** correspond to the size classes described in the Council Regulation no 530/1999 concerning structural statistics on earnings and labour costs;
- **Nomenclature of territorial units for statistics (NUTS 2013)** classification for the macro-region level (**NUTS1**).

2.3. Coverage - sector

Labour Cost Survey covers **all economic sectors** (section A to S, except section T according to NACE rev.2) at national level. According to the regulations, sections B to S were transmitted to Eurostat.

2.4. Statistical concepts and definitions

The **concepts and definitions** of Labour cost survey 2016 **variables** were developed and adopted in accordance with European standards (Commission Regulation (EC) no 1737/2005 amending Commission Regulation no 1726/1999 as regards the definitions and transmission of information on labour costs, but also taking into account the national legislation and features.

2.5. Statistical unit

The **unit of selection** was the **enterprise** defined according to the communitarian rules for enterprises statistics as: “the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit”.

Taking into account the headquarters of the enterprise according to the situations in which they fall, they can be:

- units operating in a single locality in the county declared on the registration certificate;
- units operating in several localities in the county declared on the registration certificate;
- units operating in a single county, other than the one stated in the registration certificate;
- units operating in several counties (inter-county activity).

The last three categories of units provide data in an annex questionnaire for all **local units** in the territory.

2.6. Statistical population

The **Romanian Business Register (REGIS)** was used as a sampling frame. The Business Register was

designed and implemented based on the administrative files and statistical sources in addition. The main administrative source of data for REGIS is the Fiscal Register. The Trade Register is used as a consultation data source in order to improve the quality of the register. Other files used as source of data for the REGIS in Romania are: Balance Sheet files, VAT files, REGIS survey for the new enterprises regarding their main activity and size and so on, feedback from other surveys, used as consultation data sources for improving the quality of the register data.

According to the Council Regulations, REGIS contains the following types of statistical units: legal unit, enterprise, and local unit. All the enterprises having the main activity in the section A to S of NACE Rev.2, whatever their size (number of employees or turnover) are covered.

The Romanian Business Register contains all enterprises, authorities and organisations as well as their local units in Romania that carry out any economic activity irrespective of their size or if they belong to the private or public sector. There are covered the following institutional sectors:

- Non-financial corporate and quasi-corporate enterprises
- Central and local administration
- Social security institutions and private non-profit institutions serving households

In respect to the budgetary institutions and public administration REGIS is the most complete register in Romania, based on Official Journal and the collaboration with many administration institutions.

The sampling frame for the Labour Cost Survey was selected from the REGIS and comprises: all enterprises created before the reference year, which were still active and belonging to the statistical population of interest, all new enterprises created during the reference year, which were still active and belonging to the statistical population of interest.

2.7. Reference area

Labour Cost Survey data are available and published at the national level (NUTS0), macro regions (NUTS1), development regions (NUTS2) and county level (NUTS3)¹. The micro data files transmitted to Eurostat are coded at NUTS1 level (as the regulation requests).

2.8. Coverage - Time

Labour Cost Survey data are available every year, starting with 1994 at national level and every four years starting with 2000 (2000, 2004, 2008, 2012 and 2016) at EU level.

2.9. Base period

Not the case

3. Statistical processing

3.1. Source data

Labour Cost Survey is a **business statistical survey**.

3.2. Frequency of data collection

Labour Cost Survey is carried out every year, starting with 1994 at national level and every four years starting with 2000 (2000, 2004, 2008, 2012 and 2016) at EU level.

3.3. Data collection

The method used for Labour Cost Survey data collection was self-registration.

The variables were collected on-line (for about 60% of the respondent units) using a web based application http://www.insse.ro/cms/files/Site_eSOP_v2/index.html or collected on paper questionnaires (posted on the INS website² <http://www.insse.ro/cms/en/content/statistics-earnings>) and transmitted by post/email to territorial statistical offices.

If completed **on line**, the data were collected until 12.03.2017.

If completed **on paper**, the data were collected until 31.01.2017.

The survey tools consist of the main **questionnaire** and an annex. Besides the chapters for collecting statistical information, the questionnaires also contain methodological explanations on the concepts,

¹ Data disaggregated at county level by NACE Rev.2 divisions shows a reduced degree of reliability

² For the more recent reference year

definitions and scope of the required indicators as well as instructions on how to fill in the data. The structure of the labour cost survey questionnaire is as follows:

Unit identification data (unit name, SIRUTA code, Unique Identification Code, type of ownership, legal form, main activity code class NACE Rev.2, number of counties and number of localities in which the unit operates).

Chapter I - Average number of employees (excluding apprentices) and working time in the reference year - for the main activity and each of the secondary activities of the unit, for the total number of employees and separately for women, the following indicators:

- the number of employees at the end of the year;
- the average number of full-time, part-time and average full-time employees;
- components of hours worked and paid hours corresponding to full-time or part-time employees.

Chapter II - Gross amounts paid (excluding apprentices) in the reference year - for the main activity and each of the secondary activities of the unit for the total number of employees and women, the following indicators are recorded:

- gross amounts paid out of the salary fund (including bonuses and payments in kind), the net profit or other funds;
- gross amounts paid for temporary work incapacity (excluding wage funds) from the budget of the National Health Insurance Fund and the Insurance budget for accidents at work and occupational diseases;
- arrears;
- individual contribution of the employees for: the unemployment insurance budget, the state social insurance, the health insurance;
- amounts representing the tax on the gross amounts paid.

Chapter III - Other categories of persons not included in Chapters I and II - are collected for:

- apprentices, respectively employees working abroad - the average number, hours worked and paid time, but not worked, gross amounts paid, individual contribution for: the unemployment insurance budget, the state social insurance, the health insurance, tax on the gross amounts paid
- gross amounts paid to board members, members of county and local councils.

Chapter IV - Other labour costs incurred by the unit in the reference year - includes the amounts paid by the employer throughout the year for employees and separately for apprentices, by components of indirect labour costs.

Annex contains in the first three chapters the indicators that are found in the main questionnaire (less the gross amounts paid to the members of the boards of directors, the members of the county and local councils), and in last chapter information on the distribution by economic activities of the average number of employees (excluding apprentices) from the localities (municipalities, towns, communes) in which the sub-units are located.

Detailed explanatory notes containing the definitions of the variables were annexed. Generally, the respondents were guided by the statisticians from the territorial statistical offices and in some cases, even assisted by them in how to fill in the questionnaires.

3.4. Data validation

The IT solution for the Labour Cost Survey was developed for the web portal (eSOP) to find out the measurement and processing errors occurred in different stages of the survey. The application was designed for on line data collection and validation.

The IT solution allowed performing on line data entry and validation at unit level. Also, the IT solution allowed to perform data entry and validation for questionnaires received on paper by post/email at county level (42 counties in total – NUTS3 level). The same application was used for data entry at respondent unit level and also for data validation at territorial statistical level and central level (INS headquarters - Bucharest).

Since 1994, when first Labour Cost Survey was performed in Romania, the largest part of the respondents is the same, especially the medium and big enterprises which are exhaustively surveyed each year. Thus, a certain routine and experience in respect of variables content occurred during the time.

The explanatory notes provided together with the questionnaires contain clear and detailed references for all cost variables. Generally no variable related to the labour costs posed special problems.

3.5. Data compilation

After validation, Labour Cost Survey data were analysed and corrected where necessary. In order to provide more accurate and reliable data comparisons among variables and/or with other data sources were made.

At national level Labour Cost Survey data were tabulated using Excel tables. For micro data transmission to Eurostat automatic codification of the national variables into the standard format was used.

3.6. Adjustment

Not the case

4. Quality management

4.1. Quality assurance

The quality of the Labour Cost Survey data is guaranteed in accordance with the ESS Code of Practice for each stage of the survey organisation and carrying out.

The questionnaire design, the detailed explanatory notes and the IT solutions developed had as result complete and of good quality data.

4.2. Quality management - assessment

All the standard statistical quality criteria are met (i.e. users' needs satisfied based on data usefulness and timeliness; various dissemination formats and breakdowns; national and Eurostat dissemination timetable respected).

5. Relevance

The main Labour Cost Survey data users may be grouped as following:

1. internal users:

- **governmental bodies:** Ministry of Labour and Social Justice, Ministry of Public Finances, National Commission for Prognosis, National Agency for Employment, Ministry of National Education, National Council for Adult Education and Training, Ministry of Health;
- **employers and employers' associations;**
- **trade unions;**
- **professional associations;**
- **research institutes and universities:** Research Institute of National Economy, Research Institute for Labour Force, Research Institute for Education, Romanian Academy, Academy for Economic Studies etc.
- **mass-media;**
- **students, doctorates.**

2. external users:

- European Union and international organisations: Eurostat, ILO, OECD, UNDP, World Bank, IMF;
- foreign research institutes;
- foreign employers.

5.1. Relevance - User Needs

1. internal users:

The Labour Cost Survey outcomes, in relation with the information provided by other surveys are used by policy makers in establishing the actions and measures for economic development strategies as well as for implementing the programs on active measures for reducing the unemployment and on remuneration system.

- Ministry of Labour and Social Justice and Ministry of Public Finances are interested in the

structure of total labour costs and of the direct costs in relation to the policies for improvements of the net remuneration by reducing the taxes and the compulsory contributions paid by the employee and by the employer.

- Same Ministries together with the National Commission for Prognosis pay a special attention to the structure of indirect labour costs. Several strategies were already applied for reducing some contributions that the enterprises have to pay by creating and increasing in exchange the number of jobs within the unit.
- Ministry of Labour and Social Justice, Ministry of Public Finances and National Commission for Prognosis also analyse the Labour Cost Survey data provided by regions (NUTS3). The information is used to measure the development level of different regions and to build up the strategies of supporting and improving the economic and social welfare of the poorest areas.
- Based on the Labour Cost Survey results of the last years, Ministry of Labour and Social Justice and National Agency for Employment have developed and implemented special programs with the aim of unemployment decreasing by offering special reductions on taxation and providing subsidies to the enterprises that would employ unemployed persons.
- The employers that employed graduates received special advantages (legal acts entered into force proposed by Ministry of National Education).
- National Council for Adult Education and Training has a high interest on the employers' expenses for vocational training as share of indirect costs, in order to improve the programs in this area. The aim is to reach a higher qualification of the existing labour force (instead of employing directly high educated staff), adequate to the high technologies and innovations.
- The labour cost level and structure are of interest when negotiations with trade unions are held. Labour Cost Survey results are key elements for the negotiation of collective agreements in relation not only with the direct remuneration, but as share of payments in kind and other advantages, pension scheme, social and health insurance, programs for vocational training (reconversion of the redundant employees, improvement of level of qualification etc.).
- Employers, employers' associations and professional associations carry out several comparative analysis of the labour cost among economic activities, ownership sectors and across the country.
- Research institutes and universities are interested in producing analysis on the labour cost level and structure by economic activities, ownership sectors, regional levels (on their own estimations); comparisons with other countries (either EU or non-EU member states).

2. external users:

- European Union and international organisations are usually expressing their needs by specific regulations and agreements and through the working groups held with a given periodicity (EUROSTAT) and through international meetings and regular (for updating of databases) and ad hoc requests sent to INS (ILO, OECD, World Bank);
- Foreign research institutes formulate their needs through the requests sent to INS, data being provided upon availability;
- Foreign employers (investors) are interested on labour cost level by economic activities for public and private sectors; upon request different levels of aggregated data are disseminated.

5.2. Relevance - User Satisfaction

1. internal users:

Before finalising a significant revision of the survey tools, the questionnaire and explanatory notes are sent to be studied by the main users: Ministry of Labour and Social Justice, Ministry of Public Finances and National Commission for Prognosis. After few weeks, agreed in advance, meetings are held and each item and variable is discussed.

Based on their comments and observations different changes (variables added, breakdowns of variables, updates of the legislation in force etc.) are operated before drafting the final version of the questionnaire and explanatory notes.

In Romania, the official statistics is under the responsibility of National Institute of Statistics (INS) but, in order to ensure the objective, transparent and scientific, character of the methodologies, indicators and classifications used in statistics, the Council of Co-ordinating the Statistical Activity is established.

The Council is composed by representatives of:

- Romanian Academy,

- specialised higher education system and research,
- ministries and other specialised bodies sub-ordinate to the Government,
- Romanian National Bank,
- trade unions,
- employers' associations,
- mass-media,
- professional associations.

The Council representatives meet in working groups by statistical fields quarterly or more frequently when necessary. During these meetings, the National Institute of Statistics receives strong feed-back from the users in terms of results already disseminated (including the level of details, breakdowns etc.) and requests for further needed information to be included in next statistical inquiries.

2. external users:

- European Union and international organisations: data are sent according to the format requested; when different levels of aggregations are asked, if it is possible, data are processed accordingly or, if not, the most appropriate are given with the needed explanations;
- Foreign research institutes: depending on their requests, either data are sent in the available format or are prepared to fulfil as much as possible users' needs;
- Foreign employers (investors): most of their requests are satisfied by the available data.

5.3. Completeness

According to the Commission Regulation no.1737/2005 (amending the Commission Regulation no.1726/1999) as regards the definition and transmission of information on labour costs, all EU member states had to conduct the Labour Cost Survey (LCS) in 2016, collecting and providing to Eurostat a number of 45 variables (36 mandatory and 9 optional), distributed by:

- Table A: **national data** by economic activities at section and division level of **NACE Rev.2**, for enterprises with **10 or more employees**,
 - Table B: **national data** by economic activities at section and division level of **NACE Rev.2** and **6 size classes** of the enterprises (1-9, 10-49, 50-249, 250-499, 500-999, 1000+ employees),
 - Table C: **regional data** by economic activities at section and division level of **NACE Rev.2** and **4 macro-regions** at NUTS1 level, for enterprises with **10 or more employees**,
- ✓ The mandatory variable foreseen by the regulation **D1112** (Payments to employees' saving schemes) was not covered by the Romanian survey, because such payments are not covered by the national legislation.
- ✓ Data for variable **D122** (Employers' imputed social contribution) cover only the variables: **D1221** (Guaranteed remuneration in the event of sickness), **D1223** (Payments to employees leaving the enterprise) and **D1224** (Other imputed social contributions of the employer).
So in this case: $D122 = D1221 + D1223 + D1224$
The optional variable **D1222** can not be broken down separately.
- ✓ The optional variables **D11141** (Company products), **D11142** (Staff housing), **D11143** (Company cars) can not be broken down separately, so in this case: $D1114 \geq D11145$
- ✓ The mandatory variable **D4** Taxes paid by the employer is not applicable for Romania.

The variables collected and provided by Romania answer to all Commission Regulation requirements, for data tabulation according to the classification schemes:

- **country level:** NUTS1 level – 4 macro-regions;
- **economic activities:**
 - section level **B – S (1-digit)**, division level **05 – 96 (2-digit)** according to **NACE Rev.2** and the aggregates **B_S, BSO, B_N, B_F, B_E, G_S, GSO, G_N, G_J, K_N, O_S, P_S**;
 - **size class of the enterprises:** **1-9, 10-49, 50-249, 250-499, 500-999, 1000 and more employees**;
 - **categories of variables:** number of employees (**A-variables**), hours actually worked (**B-variables**), hours paid (**C-variables**), labour cost (**D-variables**) and information on units (**E-variables**),
 - **categories of employees:** employees and apprentices.

No breakdown, in terms of **economic activities** or **size classes**, is missing from Labour Cost Survey 2016.

Furthermore, data for NACE Rev.2 section O were collected and provided by Romania for all tables

A, B and C. Also, data for the corresponding aggregates where section O was requested were provided in all tables.

Data for size class 1 – 9 employees were available and provided for Table B.

5.3.1. Data completeness - rate

Romania collected **34 mandatory variables** (94% from all mandatory variables) and **4 optional variables** (44% from all optional variables), meaning 84% of all variables requested by the Commission Regulation.

6. Accuracy and reliability

6.1. Accuracy - overall

Sampling design

The sampling frame used for the sample selection was drawn from the Romanian Business Register (REGIS), which contained all enterprises, authorities and organisations as well as their local units that carried out any economic activity irrespective of their size or if they belong to the private or public sector. The Business Register was updated, yearly, on the balance sheets and contains the latest information on each enterprise in the statistical population such as the identification items (unique identification code, address etc.), economic activity codes (NACE Rev.2), number of employees (giving the enterprise size class).

6.2. Sampling error

The sampling technique applied for the Labour Cost Survey was the stratified sampling and the selection method used was the simple random selection without replacement. The strata were defined by crossing the 42 counties with 20 sections according to NACE Rev. 2 (divisions 01-96) and 3 size classes of enterprises (less than 10 employees, 10-49, 50 or more employees).

All units with 50 employees and over were exhaustively observed irrespective of their economic activity or their location. The public units from the public administration (O), education (P), human health and social work (Q) activities were exhaustively included in the survey, except local public administration units, for which data at level of local communal councils were collected based on representative sample at level of county (about 820 units). The private units from the education (P), human health and social work (Q) activities were sampled.

The selection unit was the enterprise, but the observation unit was the local unit.

The sample size for the reference year 2016 was around 27800 enterprises.

The coefficients of variation for the key variables for the **total population** (size class 1+ employees) are:

- annual labour cost: 0.024776
- hourly labour costs: 0.004846

6.2.1. Sampling error - indicators

The coefficients of variation (CV) requested through the Commission Regulation No. 698/2006 are presented in the attached document **RO_Coefficients_of_variation.xlsx** - by NACE Rev.2, sections and size classes, according to tables sent to Eurostat. The computations of CVs have been produced using the variance programme PROC SURVEYMEANS, a SAS macro.

In order to improve the quality estimates and to increase the overall response rate, estimation methods were applied, by imputing the missing data from the statistical survey with the data reported in administrative sources (see item 6.3.4.1.).

6.3. Non-sampling error

Detailed description in the following items.

6.3.1. Coverage error

The under coverage rate was 0.61%, representing the proportion of new units not included in the sample frame at the time of sample selection in the total number of units from the updated sample frame.

The over coverage units are not counted in response set. To perform the adjustments of the over- and under coverage by weighting procedure a model assumption (about the over- and under coverage) was used, applied for each stratum:

- The over coverage rate among the respondents is the same as among the non-respondents.
- The number of over coverage enterprises in the frame is the same as the number of under coverage enterprises.
- The mean value of any variable of interest is the same in the accessible part of the target population as in the under coverage part.

In the attached document **RO_Misclassification.xlsx** are presented the measure of misclassification by size classes and NACE sections.

6.3.1.1. Over-coverage - rate

No over coverage was registered.

For all economic sectors (section A to S, except section T according to NACE rev.2) covered at national level, it encounters the existence of a 0.22% of unidentified enterprises after imputing the missing data from the statistical survey with the data reported in administrative sources. In the adjustment procedure the unidentified enterprises were assimilated to the non-response units.

6.3.1.2. Common units - proportion

All units covered by the statistical survey report information in the administrative sources in accordance with the scope of these sources.

6.3.2. Measurement error

The information below is an estimation of **errors and cases corrected at central level**. Statistics on the first level of checking (respondent and local level) are not available.

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 correction was made.

Most frequent errors that occurred during data checking period:

- **12.89%** of error coded A103 (in Romanian Logic tests); imputed social contributions of the employer should fall between 14.0% – 18.0% of total gross amounts from salary found;
- **12.06%** of error coded A20; the hours worked by full-time employees should fall between 1688 – 2056 hours/year (211 – 257 working days * 8 hours/day);
- **10.51%** of error coded A114; subsidies received by the employer should fall between 0.0% – 20.0% of total gross amounts from salary found;
- **9.19%** of error coded A55; the percentage for the tax is not correlated to the gross earnings;
- **7.31%** of error coded A18; number of full-time and part-time employees converted into full-time equivalent employees;
- **6.15%** of error coded A21; the yearly paid, but not worked hours for full-time employees should fall between 80-280 hours/year (10-35 days paid, but not worked days * 8 hours/day);
- **5.87%** of error coded A45; the employee contribution for health insurance should fall between 4.5% – 6.5% of total gross payments;
- **5.60%** of error coded A44; the employee contribution for statutory social security should fall between 8.0% – 110% of total gross payments;
- **4.24%** of error coded A43; the employee contribution for unemployment insurance should fall between 0.2% – 0.8% of total gross payments.

The number of cases needed to be corrected was not so significant to have an impact on the accuracy of the final results. In the attached document **RO_Percentage_of_cases_corrected.xlsx** are estimated the percentages in the total cases corrected at central level, by each variable.

For the data 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:

- ✓ In the following cases **STR_D1 > 100.00%** (but not more than 1 percentage point) due to the fact that **D5 > D2+D3+D4**. There were units that received subsidies from the state budget for stimulating the employment.
- ✓ **STR_D121 and STR_D1211** decreased in 2016 compared with 2012 mainly due to the national

legislation in force (the decrease of employers' contributions to social security fund).

- ✓ **D1212** is new collected in 2016 – supplementary contributions paid by the employer to pension's schemes, occupational pension schemes, sickness insurance schemes started to be covered by the national legislation.
- ✓ **A1** (Total number of employees) significantly decreased in 2016 compared with 2012 (with over 90%) in NACE X05 due to the structural changes over the years in the national economy and of the staff layoffs in this economic activity.
Other important decrease was registered in NACE X59 (with about 35%) due to structural changes over the years and in correlation with the significant increase noticed in NACE X62.
- ✓ **A1** (Total number of employees) significantly increased in 2016 compared with 2012 in NACE X62 (with over 100%), respectively in NACE X63 (with over 80%) due to fast development of the IT sector and changes in the related economic activities.
Other important increases (with over 30%) were registered in industry sector (mainly in NACE X29, X26 and X32), as well as in service sector (mainly in NACE X55, X56, X66, X70, X74, X77, X78, X82, X92, X93, X94 and X95) due to important development of these economic activities over the years.
- ✓ The average monthly labour cost increased in 2016 compared with 2012 in all economic activities, mainly based on the increasing of the direct labour costs.
- ✓ By economic activities and size classes/development regions, the average monthly labour cost registered decreases and some significant increases due to the structural changes over the years in the national economy.

6.3.3. Non response error

The treatment of non-response is regarding to the survey status of enterprises and its response. The non-response type used to the collection data phase is: refusal, unidentified units, out of scope units, units with not established contact, ceased units.

The non-response type used to the collection data phase is presented broken down by economic activity (NACE Rev.2. 2 digits) and by size classes in the attached document **RO_Non-response rates.xlsx**.

To perform the adjustments of out of scope units by weighting procedure a model assumption was used. These assumptions are made for each stratum (to first sampling phase level) and are:

- The out of scope units' rate among the respondents is the same as among the non-respondents.
- The number of out of scope enterprises in the frame is the same as the number of in scope units but not included in the sampling frame.
- The mean value of any variable of interest is the same in the accessible part of the target population as in the inaccessible part.

In order to reduce the unit non-response the statisticians from the local statistical offices contact or re-contact the units/respondents who did not sent the data, irrespective of their size classes, but especially the ones with more than 50 employees, who are exhaustively surveyed. In the data collection phase, the on-line system automatically transmitted **reminders** to all enterprises in the survey sample.

6.3.3.1. Unit non-response - rate

The non-response type used to the collection data phase is presented broken down by economic activity (NACE Rev.2. 2 digits) and by size classes in the attached document **RO_Non-response rates.xlsx**.

The estimation method involves multiplying the value for each sampled business (y_i) by a combination of weights, one being outlier weight (w_{ih}), one resulting from the sample design (a_{ih}).

An outlier weight is computed as a Windsor weight. The units having the normal score (z score) out of interval $[-3, 3]$ are outlier units. The normal score, which determines the outlier units, is computed taking into account the stratification used in sample design.

In order to perform the adjustment of non-response is computed a weight resulting from the sample design, as the sample weight adjusted by the inverse of response probability:

$$a_{ih} = \pi_h \cdot v_h \quad \text{Where:} \quad \pi_h = \frac{N_h}{n_h} \quad \text{and} \quad v_h = \frac{n_h}{m_h}$$

N_h = sample frame size of stratum h

n_h = sample size of stratum h

m_h = number of responses in stratum h

So, for each response unit the final weight is:

$$weight_{ih} = w_i \cdot a_{ih} = w_{ih} \cdot \pi_h \cdot v_h$$

6.3.3.2. Item non-response - rate

Items of partial non-response were sent back to the respondent units for filling in the whole information. No item non-response was accepted.

6.3.4. Processing error

About 300 logical tests (for the main questionnaire and the annex, by the main variables and gender breakdowns) were designed for data entry and validation, data checking and correlation on the key variables, such as: number of employees, hours worked, hours paid, direct remuneration and other labour costs. **Since the same tests were conducted at respondent level, local level as well as at central level, the largest part of the errors found was solved from the beginning (at respondent and local level).** The figures were corrected after re-contacting the corresponding enterprises.

The logical tests for the data integrity and correctness are designed to check:

- the primary data from the questionnaires,
- the logical flows and data consistency among the questionnaire chapters,

and have the scope to:

- follow and check the logical flows of the questionnaire,
- correlate data from related chapters of the questionnaire,
- define and check certain limits to which different indicators must belong,
- find out the outliers or non-logical values.

The tests for data integrity check the identification information from the sample of units with the information from respondent files.

At central level besides the procedures developed for the web portal, there were developed IT programmes for:

- data validation, correctness and correlation,
- adjustment and weighting procedures,
- non-weighted and weighted data tabulation.

The tests applied at central level also checked for the data comparability with the previous survey and other surveys for common indicators:

- data comparability with the previous survey for the main and common variables,
- data comparability with other data sources for the common variables (i.e. Monthly survey on wages and salaries),
- data imputation from administrative sources in case of unit non-responses,
- preparation of counties databases,
- codification of the national variables accordingly to the variables stipulated in the regulation;
- automatic transformation of final results into the standard format for data transmission designed by Eurostat.

The questionnaire design, detailed explanatory notes and the IT solutions developed had as result a complete and of good quality data set.

No **item non-response** was finally recorded into the data. When discovered at local level, enterprises were re-contacted for filling in all missing variables.

Same tests were conducted at local level (territorial statistical offices) as well as at central level (INS). The largest part of the errors found was solved at local level. The data were corrected after re-contacting the corresponding respondents.

Furthermore, the same global and plausibility checks as described in the “LCS 2016 Implementing

arrangements” were applied for the data sent to Eurostat. Where the tests not passed, explanatory notes were provided at data transmission (see point 6.3.2).

6.3.4.1. Imputation - rate

Starting with year 2012 data from administrative sources was used for data survey completeness and to improve the response rates (in case of refusal, unidentified units in the survey data collection, dormant units in the survey but with data in administrative sources).

The administrative data sources used are provided by the Ministry of Finance and Ministry of Labour (Unique Fiscal Form and Social Security Register).

The two databases were matched and the selections were done for each legal unit (fiscal code), for the number of employees, the gross earnings paid to employees, the employees’ working time, the indirect costs of the employers in accordance with the types of insured persons.

For all economic sectors (section A to S, except section T according to NACE rev.2) covered at national level, the **initial response rate** was 92.65%³ and that of **refusal** 2.89%. In order to improve the quality estimates and to increase the overall response rate, estimation methods were applied, by imputing the missing data from the statistical survey with the data reported in administrative sources, having 2016 as reference year and increasing in this way the **overall response rate** at **98.24%**. The **imputation rate**⁴ was **5.59%**.

6.3.5. Model assumption error

In Romania, fiscal year fully corresponds to the calendar year. Thus, no adjustment is necessary.

Romanian Labour Cost Survey 2016 covered all enterprises irrespective of their size, including the small enterprises, with less than 10 employees.

According to Eurostat arrangements for implementing the Council Regulation no.530/1999 and the Commission Regulation no. 1737/2005, Romania provided data for:

1. **Table A** (national data by economic activities section and division level NACE Rev.2) - data refer to enterprises with 10 or more employees;
2. **Table B** (national data by economic activities section and division level NACE Rev.2 and by size class of the enterprise) - data refer to all size class enterprises (including small enterprises with less than 10 employees);
3. **Table C** (regional data by economic activities section and division level NACE Rev.2) - data refer to enterprises with 10 or more employees.

6.4. Seasonal adjustment

Not the case

6.5. Data revision - policy

Not the case

6.6. Data revision - practice

Not the case

6.6.1. Data revision - average size

Not the case

7. Timeliness and punctuality

7.1. Timeliness

All the activities carried out by INS during a year are scheduled through the Activity Plan with several months earlier. Annually, INS issues for the users a catalogue of statistical products and services containing the names, periodicity, short descriptions and release dates for all publications.

The length period of preparing and carrying out the Labour Cost Survey 2016 lasted at national level about one year (from mid-October 2016 to the end October 2017) and according to the Regulations in

³ Type of response taken into account: response, response given by another unit.

⁴ Type of non-response taken into account: refusal, units not identified, units not contacted, dormant or insolvency units at the end of the reference year (that reported data in administrative sources).

force for the data transmission to Eurostat and quality report, as described in the attached document RO_Timeliness.xlsx .
7.1.1. Time lag - first result
Transmission of Labour Cost Survey 2016 final results: 18.04.2018
7.1.2. Time lag - final result
Transmission of Labour Cost Survey 2016 final results: 18.04.2018
7.2. Punctuality
<p>The data collection period for Labour Cost Survey was lasted three months:</p> <ul style="list-style-type: none"> • about two months for enterprises to fill in the questionnaires on-line (20.01.2017 – 12.03.2017), or on paper and to send them to the territorial statistical offices (month January 2017); • about two and a half months for the territorial statistical offices to perform data entry for the questionnaires received on paper, for data checking and first validation (January - March 2017). The deadline for completing the data collection was 31st March 2017. <p>Since not all enterprises respected the deadline requested, a high proportion of questionnaires reached with delay the territorial statistical offices. Furthermore, due to the recalls necessary for additional information and corrections of the variables filled in by the enterprises, delays occurred in complete the data collection process.</p> <p>Only the information on the delays encountered in completing the data collection at central statistical level is available. Below are presented information on the proportion of data collection completion:</p> <ul style="list-style-type: none"> • before 31st March: 4.76% • 31st March: 83.33% • 31st March – 12th April: 11.90%. <p>The release dates at national level (18.08.2016 for the number of employees and earnings and 26.09.2016 for labour costs) were the same as the scheduled dates, no delays were registered.</p> <p>Also, the data transmission to Eurostat (Tables A, B, C) was in accordance with the legal requirements, as csv files, via eDAMIS, sent on the 18th April 2018 (the deadline stipulated by the Council Regulation no. 530/1999 is up to 30th June 2018).</p>
7.2.1. Punctuality - delivery and publication
No transmission or dissemination delays were recorded.

8. Coherence and comparability

8.1. Comparability - geographical

Comparability between national and European concepts on:

- **Definition of statistical units - There is no deviation from European concepts:**

The **unit of selection** was the **enterprise** defined according to the communautaire rules for enterprises statistics as: „the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit”.

The sampled enterprises provided data for each local unit, thus the **observation unit** of the Labour Cost Survey was the **local unit**, in accordance with the requirements of Council Regulation no. 530/1999 concerning structural statistics on earnings and labour costs.

- **Populations - There is no deviation from European concepts:**

The Romanian Business Register was designed and implemented based on the administrative files and statistical sources in addition (REGIS, which is the Fiscal Register updated annually, Trade Register, Balance Sheet files, VAT files, feedback from other surveys, used as consultation data sources for improving the quality of the register data).

According to the Council Regulations, REGIS contains the following types of statistical units: legal unit, enterprise, and local unit. All the enterprises having the main activity in the section A to S -

NACE Rev.2, whatever their size (number of employees or turnover) are covered.

The Romanian Business Register contains all enterprises, authorities and organisations as well as their local units in Romania that carry out any economic activity irrespective of their size or if they belong to the private or public sector. There are covered the following institutional sectors:

- Non-financial corporate and quasi-corporate enterprises
- Central and local administration
- Social security institutions and private non-profit institutions serving households

In respect to the budgetary institutions and public administration REGIS is the most complete register in Romania, based on Official Journal and the collaboration with a lot of administration institutions.

- **Reference times - There is no deviation from European concepts:**

The statistics on level and composition of labour cost were produced for the 2016 calendar year, but they have a yearly periodicity for national purposes.

- **Classifications - There is no deviation from European concepts:**

The national classification of economic activities is covered by CAEN Rev.2 fully harmonized with NACE Rev.2.

The size classes of enterprises correspond to the size classes described in the Council Regulation no. 530/1999 concerning structural statistics on earnings and labour costs.

- **Definitions of variables - There is no deviations from European concepts:**

The definitions of Labour Cost Survey 2016 variables were developed and adopted in accordance with European standards (Commission Regulation (EC) no 1737/2005 amending Regulation (EC) No 1726/1999 as regards the definition and transmission on labour costs), but also taking into account the national features.

8.1.1. Asymmetry for mirror flow statistics - coefficient

Not the case

8.2. Comparability - over time

The Romanian Labour Cost Survey has been carrying out annually since 1994 with 1993 as reference year. No significant changes in definitions, coverage or classifications used over the years. The improvements made from year to year refer only to the changes in variables collected and not to the content of the variables, as are presented below:

- For the period **1994 - 1998** the same type of questionnaire was used. No data on hours worked or paid hours were collected. Variable regarding the number of employees (converted into equivalent full units) was not broken down on full-time and part-time. Variables composing earnings (bonuses and grants for length in service, for shift work, for night shift, work in underground etc.) were detailed, reason for which and taking into account complaints of the enterprises, this part was afterwards simplified.
- In **1999** the chapter related to earnings composition was redesigned and the number of variables collected was reduced. Experimentally, for the first time variables on paid hours and hours actually worked were collected but only related to all employees (without any distinction by full time and part time or any other category).
- For Labour Cost Survey **2000** the questionnaire was significantly improved. Variables on the number of employees, hours worked and paid hours were broken down by full-time and part-time employees, according to the Council Regulation 530/1999 concerning structural statistics on earnings and on labour costs and Commission Regulation (EC) No 1726/1999 as regards the definition and transmission of information on labour costs. There still were some missing variables. First quality report was carried out according to the Commission Regulation (EC) No 452/2000 as regards quality evaluation on labour cost statistics.
- Labour Cost Surveys for 2001 - 2003 kept same questionnaire as for Labour Cost Survey 2000 and followed same methodology. The only changes operated from one year to another referred to the requirements of the national legislation in force.
- Labour Cost Survey **2004** was designed and carried out according to the Commission Regulation no 1726/1999. The data transmission for 2004 survey was done in accordance with the Commission Regulation (EC) no 1737/2005 amending Regulation (EC) No 1726/1999 as regards the definition and transmission on labour costs. The following

improvements were made:

- the breakdowns of average number of employees on full-time, part-time and in full-time equivalents were collected;
 - the breakdowns of the average number of employees, hours worked, hours paid and direct costs *by gender* were collected even if it was not required by the regulation;
 - the missing variables of *section D* were *introduced* in data collection: D1111 Direct remuneration and bonuses, D11111 Direct remuneration, D11112 Bonuses, D1113 Payments for days not worked, D1114 Wages and salaries in kind, D11144 Other, D1223 Payments to employees leaving the enterprise;
 - all variables related to the apprentices were collected, being covered by the legislation now.
- Labour Cost Surveys **2008, 2012 and 2016** were designed, carried out and data were transmitted according to the Commission Regulation (EC) no 1737/2005 amending Regulation (EC) No 1726/1999 as regards the definition and transmission on labour costs. No significant changes were adopted compared with the previous survey.

8.2.1. Length of comparable time series

The national Labour Cost Survey data are available annually starting with 1993 as reference year. The European Labour Cost Survey data are available every 4 years starting with 2004 as reference year (2004, 2008, 2012 and 2016).

8.3. Coherence - cross domain

Coherence with the statistics from Labour Force Survey

The comparison between the number of hours actually worked in 2016, expressed per employee (from Labour Cost Survey) and the average actual hours worked in the main job (excluding the employees that did not worked during the reference week) per year of the Labour Force Survey (LFS), expressed per employee shows differences for all NACE Rev.2 sections.

Apart from the clear difference in terms of indicators definitions, coverage, data collection procedures and survey methodology between LFS and LCS, the main reason for the discrepancies between the figures provided by the two data sources is the *proportion of informal sector and black market* in Romania that are covered only by LFS.

The hours worked from LFS are based on the self declaration of the household members (or proxy answers of other household members) and differ from the hours worked, collected through LCS, based on enterprises evidence.

The LCS do not cover employees from armed forces and assimilated, as well as other categories of employers, such as private organizations (trade unions, parties, professional unions/employers' associations, non-profit institutions, religious organisations, owners'/parents' associations), as well as private entrepreneurs (authorized persons, individual enterprises, family businesses, liberal professions).

Coherence with Structural Business Statistics

Taking into account the differences of the two surveys coverage, the figures on wages and salaries per employee follows the same trends.

SBS does not cover the section financial intermediation (section K), public administration (section O) and covers only the private sector for education (section P), human health and social work activities (section Q), arts, entertainment and recreation (section R) and section S (excluding division 94).

Furthermore, in SBS grossing up weights are used for the variable wages and salaries, including calibration based on Business Register (REGIS) information.

Information about the number of employees is based on the Business Register information.

This procedure it is not possible to be applied to LCS due to the fact that the results are disseminated before REGIS is updated with the information related to the survey reference year.

In the attached document **RO_Coherence_cross_domain.xlsx** is presented the coherence with LFS and SBS.

8.4. Coherence - sub annual and annual statistics

Coherence with Labour Cost Index

The comparison between the average annual growth rate of the hourly labour cost (D/B1) and the average annual growth rate of LCI was done by comparing year 2016 against 2012.

The differences between the two data sources are mainly due to the broader content of the total labour cost from LCS (that includes vocational training D2 and other expenditures D3).

LCI is composed based on the results of the monthly survey on wages and salaries. According to the national methodology, on short term statistics, for a “clean” indicator on wages and salaries, the payments belonging to other pay periods, the back-dated pay arrears that do not refer to the current year are excluded. These payments are included in the annual wages and salaries that are reflected in the LCS figures.

In the attached document **RO_Coherence_cross_domain.xlsx** is presented the coherence with LCI.

8.5. Coherence - National Accounts

The comparisons between the compensation of employees, expressed per employee, show some differences between Labour Cost Survey and National Account, and are due to the different coverage.

Main data sources for the National Accounts, by NACE sections are:

- Accounting statements of financial,
- Accounting statements of non-profit institutions serving households,
- Execution of state budget,
- Structural Business Survey,
- Labour Force Survey (for employment data only),
- Declaration on global income of self-employed persons and family associations.

NA estimates also the shadow economy that is not covered by LCS. Also, NA includes armed forces and similar staff. Thus, variable D1 in NA comprises as payments in kind also the meals, uniforms (militaries) and business travel expenses.

NA includes persons with other contract forms such as: civil conventions (special type of working arrangement – for performing specific services – but the staff involved is not considered as employees according to the national legislation, although the payment is done quite in similar way), author ownership rights and free lancers.

Starting with year 2012, the data on employment were estimated according to the final results of the Population and Housing Census 2011.

The LCS do not cover employees from armed forces and assimilated, as well as other categories of employers, such as private organizations (trade unions, parties, professional unions/employers' associations, non-profit institutions, religious organisations, owners'/parents' associations), as well as private entrepreneurs (authorized persons, individual enterprises, family businesses, liberal professions).

In the attached document **RO_Coherence_cross_domain.xlsx** is presented the coherence with NA.

8.6. Coherence - internal

Not requested by the CR No 698/2006 implementing Council Regulation (EC) No 530/1999 as regards quality evaluation of structural statistics on labour costs and earnings.

9. Accessibility and clarity

9.1. Dissemination format - News release

The main results are disseminated through a **press release** posted on INS web-site, both in Romanian and English language (<http://www.insse.ro/cms/en/content/labour-costs-year-2016>)

9.2. Dissemination format - Publications

The main publication of Labour Cost Survey results is the “**Annual earnings and labour costs**”, available only in Romanian language and contains the following chapters:

- Survey methodology and organization;
- Data analysis,

<ul style="list-style-type: none"> • Results tables. <p>The publication is available on-line (http://www.insse.ro/cms/en/content/earnings-and-labour-cost-2016) and at the INS library.</p> <p>The main results of the Labour Cost Survey are published in the Statistical Yearbook, which is available in printed form, on CD-ROM and on-line (www.insse.ro), both in Romanian and English language.</p> <p>Also, the results are disseminated through out:</p> <ul style="list-style-type: none"> ▪ synthesis publications such as: Social Trends, Regional economic and social benchmarks, Women and men working and living partnership and Romania in Figures (http://www.insse.ro/cms/en/publicatii-statistice-in-format-electronic) ▪ other on line data base (i.e. Sustainable Development Indicators – broken down at territorial level (NUTS1, NUTS2 and NUTS3). (http://www.insse.ro/cms/en/content/sustainable-development-indicators)
<p>9.3. Dissemination format - online database</p>
<p>Also, the national database (TEMPO), available on INS website (http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table), both in Romanian and English language, contains data on annual earnings and labour costs. On request, data are provided to a variety number of other users (internal and international).</p>
<p>9.3.1. Data tables - consultations</p>
<p>Not available</p>
<p>9.4. Dissemination format - microdata access</p>
<p>Not the case</p>
<p>9.5. Dissemination format - other</p>
<p>Based on the Labour Cost Survey results three detailed copybooks (on the number of employees, on earnings and on labour costs) are prepared and disseminated to the main users (about 25), in electronic format:</p> <ul style="list-style-type: none"> • Romanian Presidential Administration; • Romanian Parliament (including several Commissions oriented on labour, social protection policies); • governmental bodies: Ministry of Labour and Social Justice, Ministry of Public Finances, National Commission for Prognosis, National Agency for Employment, Ministry of Economy, Ministry of Internal Affairs, Ministry of Education, Ministry of Health, Ministry of Foreign Affairs, Ministry of Defence, Ministry of Agriculture etc.; • employers and employers' associations; • trade unions; • professional associations; • research institutes and universities: Research Institute of National Economy, Research Institute for Labour Force, Research Institute for Education, Romanian Academy, Academy for Economic Studies etc. <p>The three copybooks are available only in Romanian language, in printed and electronic format.</p>
<p>9.6. Documentation on methodology</p>
<p>The Labour Cost Survey data are disseminated together with comprehensive and clear metadata, irrespective of the release form or user category.</p> <p>The copybooks contain:</p> <ul style="list-style-type: none"> • a brief description of the survey (scope, coverage, periodicity, sample size, non-response rate), • definitions of the main indicators, • detailed results tables on the main indicators: <ul style="list-style-type: none"> • number of employees, • earnings, • labour costs, <p>by economic activities (section and division level), ownership forms, legal status of the enterprises,</p>

size classes of the enterprises, regions of economic development.

The publication “**Annual earnings and labour costs**” is structured in three chapters:

1. *Survey methodology and organization*: provides information on the survey objectives, coverage, unit of selection/observation, periodicity and reference period, sampling design, concepts and definitions of the collected and derived indicators, classifications used,
2. *Data analysis*: contains tables, graphs and analysis of the main indicators obtained – number of employees, hourly and monthly average earnings, working time, hourly and monthly average labour cost, labour cost structure – by economic activities, ownership forms, legal status of the enterprises, size classes of the enterprises, regions of economic development.
3. *Results tables*: contains detailed tables of the main indicators by economic activities (section level), ownership forms, legal status of the enterprises, size classes of the enterprises, and regions of economic development.

The **press release** contains the main results of the survey and comparative analysis by economic activities, gender, territorial distribution and over time. Also, methodological explanations are available and tables with detailed results.

The tables with data in the **Statistical Yearbook** are accompanied by methodological notes describing the data sources, the concepts and definitions of the indicators presented.

The **databases** are also accompanied by metadata on the released indicators, data sources, survey coverage, periodicity, sample size.

The users are informed by the INS on the publications that are to be issued over the year, through the “Catalogue of statistical products and services”, which is available on printed form, but also on-line (www.insse.ro). The catalogue contains the INS yearly publications, periodicals, quick information, electronic publications, publication in stock and statistical services.

9.7. Quality management - documentation

The quality reports on Labour Cost Survey are available on INS web-site (both in Romanian and English) and contain the same information as in the ESS MH (<http://www.insse.ro/cms/en/content/quality-reports>).

9.7.1. Metadata completeness - rate

100%

9.7.2. Metadata - consultations

No information is available

10. Cost and Burden

No information is available

11. Confidentiality

11.1. Confidentiality - policy

All statistics collected and published by INS are governed by the statistical Law no. 226/2009 regarding the organisation of official statistics, published in Romania's Official Journal First part, no. 397/11.06.2009, with further amendments. The Law specifies that: the official statistical services are authorised to ask for and receive free of charge statistical data and information from all natural and legal persons who are located on the Romanian territory, hold any kind of capital or carry out any type of activity.

Also under the provision of this law, INS cannot publish, or otherwise make available to one individual or organisation, statistics that could enable the identification of data for any individual person or entity.

INS has been officially recognised by the government as fully independent organisation: it decides by itself which data to collect, which methodology to use, and which results, methodological notes and

commentaries are published.

The most important aspects on the organisation of the official statistics in Romanian are posted on the National Institute of Statistics Internet website (<http://www.insse.ro>). Copies of the statistical laws are available in Romanian from the library of the National Institute of Statistics, 16, Libertatii Avenue, Bucharest, District 5.

11.2. Confidentiality - data treatment

According to the Eurostat confidentiality criteria as described in the “LCS 2016 Implementing arrangements”.

12. Comment

No further comments

Related metadata

<http://colectaredate.insse.ro/metadata/public.htm?locale=en>

Annexes

[RO_Coefficients of variation.xlsx](#)

[RO_Misclassification.xlsx](#)

[RO_Percentage of cases corrected.xlsx](#)

[RO_Non-response rates.xlsx](#)

[RO_Timeliness.xlsx](#)

[RO_Coherence cross domain.xlsx](#)