

## GUIDELINES FOR PREPARATION QUALITY REPORTS

- *revision* -

Podgorica, June 2021.

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Pursuant to Article 6 and 38 of the Law on Official Statistics and the System of Official Statistics ("Official Gazette of Montenegro", No. 18/12 of March 30, 2012), the Statistical Office issues

## **GUIDELINES FOR PREPARATION QUALITY REPORTS**

### **Subject**

#### **Article 1**

This Guideliness defines the activities on the preparation, filling and publication of the National Quality Report for users (hereinafter: quality reports for users) and guidelines for the preparation and storage of quality reports for producers.

### **Aim**

#### **Article 2**

The aim of this Guideline is to establish rules for the preparation and publication of quality reports for users and manufacturers. Defining the same rules will help the responsible persons from the competent statistical department in preparing the report using the same form for publication.

The main goal of developing the Guidelines is a unique understanding of each individual field of the meta-database by all departments for each individual survey.

### **Application**

#### **Article 3**

The application of the Instruction refers to statistical departments that preparing and publish quality reports, the Department for Dissemination and Management of Statistical Databases and Quality and the Department for Information and Communication Technology.

### **Metadata base**

#### **Article 4**

The source for quality reports is a metadata database (reference metadata database) that is populated through a special application for entering and updating metadata created for the purpose of filling in the metadatabase.

### **Quality reports for producers**

#### **Article 5**

The main purpose of the quality report for producers is to have all the information about the surveys in one place so that the person responsible for the statistical survey in the next survey can take all the steps to improve the quality of the data. As each statistical survey is conducted in several phases, the responsible person through the report defines the priority phases for undertaking statistical activity in order to increase the quality of the results of official statistics.

### **Quality reports for users**

#### **Article 6**

The quality report for users aims to inform users about the individual stages of data production and to indicate the basics of the methodology, with the aim that the user ultimately better understands the data

itself. The information in the Quality Report for users is the result of work on the research over a period of one year, regardless of the periodicity of conducting and publishing the research results. This means that the quality report is published once a year even though the survey is monthly, quarterly or annually.

## **Content of Quality Reports**

### **Article 7**

The Quality Report for Users is completed only for regular surveys, but not for pilot. As soon as the survey becomes regular and the data start to be published, it is necessary to fulfill and publish a quality report for the users.

The proposal of the content of the quality report for users was defined and proposed by the part of the working group that worked on the quality report through the regional IPA project. The ESS Handbook for quality reports and metadata was used to define the content of the quality report.

The content of the quality report for producers with explanations how to fulfill all is given in Annex 1 of this Instruction.

The content of the quality report for users are given in Annex 2 of this Instruction.

The quality report that is published on the official website is intended for users and therefore all fields must be explained in a way that is understood by each data user, not just the professional public.

## **Quality report preparation process**

### **Article 8**

The source for the content of the report is the meta-database. Once the metadatabase is populated, through the metadata entry and update application, it is possible to create a word document that is subject to change as needed.

After filling in the meta-database, a document for the selected statistical survey is created through IST<sup>1</sup>. In order to create a document, it is necessary to start IST and set the appropriate time point, which is crucial for further work. After selecting the row that MDSIMS has for the code and the METADATA SIMS STRUCTURE for the Name, IST takes over all the data for this area.

By selecting the option Selection of reports and procedures and then by selecting the options Generating quality reports and defined survey, get in the word generated Quality Report for users or Quality Report for producers.

From IST program, responsible person for survey need to mark the survey according to the method of data collection. Therefore, it is possible to generate quality reports for users:

- Sample survey;
- Compilation;
- Administrative source;
- Censuses
- Combination
- Price recording
- Reporting units - full coverage

Through same application responsible person can generate Quality Report on montenegrin and english language.

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<sup>1</sup> Integrated system

The quality reports contain 16 indicators defined in Handbook for quality reports and metadata<sup>2</sup> that are calculated for each statistical survey. Of the 16 indicators, 7 are published in quality reports for users and they are:

- Data completeness – rate
- Sampling error – indicators
- Unit non-response – rate
- Item non-response – rate
- Time lag - final results
- Punctuality - delivery and publication
- Length of comparable time series
- Data revision – average size

## **Formatting quality reports**

### **Article 9**

Equality in design, style and names must be maintained in all quality reports. The editing and numerical marking of their points must be as identical as possible.

After the person responsible for statistical survey generates the Quality Report, he / she starts compiling it. The Arial font is used to create the Quality Report.

The first page of the Quality Report contains the logo of the Statistical Office, name, address, e-mail and telephone number (see Annex 1). The title of the document is centered, as is the title of the survey. The font of the letter for the title is 16. The name of the responsible person and the name of the department are entered in the lower left corner.

The content is a systematic overview of the structure of the Quality Report that provides basic information about the parts of the report and where they are located. The content includes the main headings, subheadings and indicators (listed in full) and the corresponding homepage numbers. The title and page number are connected by dots for easy reference. It is recommended to create content automatically, which means the correct use of styles in the creation of the title (Heading1, Heading2 ...), already in the initial phase of creation.

The font 14 - bold is used for the main titles, the subtitle (in two digits) the font 11 - bold is used, then the subtitle (in three digits) the font 11 - Italic bold is used. The indicators do not contain a digit and use font 11 - Italic (see Annex 1). Font 11 is used for the text of the Quality Report.

The responsible person from the statistical department who prepares the quality report for the users is obliged to prepare the report in Montenegrin and English.

## **Approval of the Quality Report**

### **Article 10**

The user quality report is created by the person responsible for the statistical survey, who may make changes to it. After that, the responsible person submits the report for approval to the competent manager - the mayor, who after the control submits it to the assistant director for approval. After the final approval, it is published on the official website of the Statistical Office in the part where the domain statistics are in the pdf file.

A link to the quality report is also placed on the common part of the official QUALITY website, so that all reports are published in one place.

## **Publishing Quality Reports for users**

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<sup>2</sup> <https://ec.europa.eu/eurostat/documents/3859598/10501168/KS-GQ-19-006-EN-N.pdf/bf98fd32-f17c-31e2-8c7f-ad41eca91783?t=1583397712000>

## **Article 11**

The persons responsible for the statistical survey shall submit a report on the quality for users to the Department for Dissemination and Management of Statistical Databases and Quality no later than two weeks from the completion of the database metadata. The Department for Dissemination and Management of Statistical Databases and Quality, within two days from the day of receipt, publishes the report on the official website of the Statistical Office.

The periodicity of publishing quality reports is the same regardless of the periodicity of publishing data.

## **Transparency of the Quality Report for producers**

### **Article 12**

Producer Quality Reports are posted on the Bigdata / Producer Quality Reports exchange where there is a folder for each domain statistic.

Persons responsible for statistical surveys, regardless of the period of publication of data, are required to submit a quality report for producers no later than four weeks from the date of publication of data.

Quality reports for surveys with monthly or quarterly periodicity of data publication are set four weeks after the publication of the December announcement, ie the publication of the IV quarter.



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**QUALITY REPORT FOR (year)  
- for producers -**

*Name of survey*

**Responsible person:**

**Department:**

**Function of contact person:**

## Content:

<b><u>1. Introduction – Basic information about the survey</u></b> .....	<b>0</b>
<b><u>1.2 Update information</u></b> .....	<b>0</b>
1.2.1 Date of metadata certified .....	0
1.2.2 Date of metadata posted .....	0
1.2.3 Date of metadata last update .....	0
<b><u>1.3 Purpose, goal and subject of the survey</u></b> .....	<b>0</b>
1.3.1 Classifications .....	0
1.3.2 Sectors .....	0
1.3.3 Concepts and definitions .....	0
1.3.4 Statistical units .....	0
1.3.5 Statistical population .....	0
1.3.6 Referent geographical area .....	0
1.3.7 Coverage over time .....	0
1.3.8 Base period .....	1
1.3.9 Unit of measure .....	1
1.3.10 Reference period .....	1
1.3.11 Methodology .....	1
1.3.12 Source of data .....	1
1.3.13 Frequency of data collection .....	1
1.3.14 Method of data collection .....	1
1.3.15 Legal basis .....	1
1.3.16 Data sharing .....	1
1.3.17 Confidential policy .....	1
1.3.18 Treatment of confidential data .....	1
<b><u>1.4 Completeness</u></b> .....	<b>2</b>
Completeness rate .....	2
<b><u>1.5 Cost and burden</u></b> .....	<b>2</b>
<b><u>2. Relevance – Data users</u></b> .....	<b>2</b>
<b><u>2.1 User needs</u></b> .....	<b>2</b>
<b><u>2.2 User satisfaction</u></b> .....	<b>3</b>
<b><u>3. Accuracy and reliability</u></b> .....	<b>3</b>
<b><u>3.1 Accuracy – Overall remark</u></b> .....	<b>3</b>
<b><u>3.2 Sampling error</u></b> .....	<b>3</b>
Indicators of sampling error .....	3
<b><u>3.3 Non-sampling error</u></b> .....	<b>4</b>
3.3.1 Coverage error .....	4
Indicators of coverage error .....	5
Common units .....	5
3.3.2 Error of measurement .....	5
3.3.3 Non-response error .....	5
Unit non-response rate .....	6
Item non-response rate .....	6
3.3.4 Processing error .....	6
Imputation rate .....	6
3.3.5 Assumption error .....	7
Not relevant .....	<b>Error! Bookmark not defined.</b>
3.3.6 Seasonal adjustment .....	7
<b><u>3.4 Data revision</u></b> .....	<b>7</b>
3.4.1 Data revision policy .....	7
3.4.2 Data revision practice .....	7
3.4.3 Data revision – average size .....	7
3.5.1 Data validation .....	7
3.5.2 Data compilation .....	7

3.5.3 Data adjustment .....	7
<b><u>4. Timeliness and punctuality</u></b> .....	<b>7</b>
<b><u>4.1 Timeliness</u></b> .....	<b>8</b>
Time lag of the first results .....	8
Time lag of the final results.....	8
<b><u>4.2 Punctuality</u></b> .....	<b>8</b>
<b><u>5. Availability and clarity</u></b> .....	<b>8</b>
<b><u>5.1 Release calendar</u></b> .....	<b>8</b>
<b><u>5.2 Release calendar access</u></b> .....	<b>9</b>
<b><u>5.3 User access</u></b> .....	<b>9</b>
<b><u>5.4 Frequency of dissemination</u></b> .....	<b>9</b>
<b><u>5.5 Release</u></b> .....	<b>9</b>
<b><u>5.6 Publication</u></b> .....	<b>9</b>
<b><u>5.7 Online database</u></b> .....	<b>9</b>
<b><u>5.8 Data table consultation</u></b> .....	<b>9</b>
<b><u>5.9 Availability of microdata</u></b> .....	<b>9</b>
<b><u>5.10 Other way of dissemination</u></b> .....	<b>10</b>
<b><u>5.11 Metadata consultation</u></b> .....	<b>10</b>
<b><u>5.12 Metadata completeness rate</u></b> .....	<b>10</b>
<b><u>Not available</u></b> .....	Error! Bookmark not defined.
<b><u>5.13 Quality documentation</u></b> .....	<b>10</b>
<b><u>5.14 Quality assurance</u></b> .....	<b>10</b>
<b><u>5.15 Quality assessment</u></b> .....	<b>10</b>
<b><u>6. Comparability and coherence</u></b> .....	<b>11</b>
<b><u>6.1 Comparability - geographical</u></b> .....	<b>11</b>
Asymetry for mirror flows statistics.....	11
<b><u>6.2 Comparability – over time</u></b> .....	<b>11</b>
Lenght of time series .....	11
<b><u>6.3 Coherence of different domains</u></b> .....	<b>12</b>
<b><u>6.4 Coherence in different periods</u></b> .....	<b>12</b>
<b><u>6.5 Coherence with National Accounts</u></b> .....	<b>12</b>
<b><u>6.6 Internal coherence</u></b> .....	<b>12</b>



# 1. Introduction – Basic information about the survey

## 1.2 Update information

### **1.2.1 Date of metadata certified**

Data checked on day dd / mm / yyyy by the mayor. This date represents the metadata control date and confirmation that they are OK even though the data has not changed.

### **1.2.2 Date of metadata posted**

Data published on dd / mm / yyyy. This date is usually filled in automatically with the publication of data on the website.

### **1.2.3 Date of metadata last update**

Data updated on day dd / mm / yyyy. This date represents information about the date when the data correction was last made

## 1.3 Purpose, goal and subject of the survey

Main characteristics and descriptions of the main variables produced as well as the inputs used for their production. The description should be given in an understandable way. More detailed descriptions of the variables will be given in the field "Statistical concepts and definitions"

### **1.3.1 Classifications**

List international and national classifications as well as other forms of classification used in data production

### **1.3.2 Sectors**

List the economic or other sectors covered by the survey. If necessary, add more detailed levels of division into areas, classes and more.

### **1.3.3 Concepts and definitions**

Give a list of main variables (input-output) with definitions. For each of them describe the differences in relation to ESS standards, if any. If relevant, describe the concept used in the research.

### **1.3.4 Statistical units**

List the units of statistical observation for which data are produced (these are, for example: enterprises, local units, households, etc.). Keep in mind that the observation unit may be different from the reporting units.

### **1.3.5 Statistical population**

Describe the target statistical population (one or more) to which the data set refers

### **1.3.6 Referent geographical area**

Geographical levels to which statistical data refer (state, municipalities, settlements).

### **1.3.7 Coverage over time**

The length of the time series for which data on the main survey indicators are available. If there is a break in the series, state and describe the reason.

### **1.3.8 Base period**

The period used as the basis for the index number to which the data series refers.

### **1.3.9 Unit of measure**

The unit of measure to which the data value refers when disseminating data. (eg Euro,%, number of persons). Also, there should be information on the size of the phenomenon here (in thousands, or in millions, which is in the tables that are published)

### **1.3.10 Reference period**

Period of time or moment to which the data refers (month, quarter, fiscal year, agricultural year, school year, calendar year, etc.). Emphasize if this period does not coincide with the period required by the ESS regulations.

### **1.3.11 Methodology**

Brief information on the methodology as well as a link where it is available. If methodology is not available - give a description. Indicate other documents, instructions, manuals related to the given research. A link to the national metadata can be described and given.

### **1.3.12 Source of data**

Characteristics of the source data used to produce the statistics.

### **1.3.13 Frequency of data collection**

Frequency of data collection from sources.

### **1.3.14 Method of data collection**

Describe how data is collected / provided

### **1.3.15 Legal basis**

List legal and other formal and informal regulations that have been signed in order to determine the responsibility for data collection, processing and dissemination (agreements, regulations, instructions, procedures, etc.). List relevant EU regulations.

### **1.3.16 Data sharing**

Indicate the national and international institutions that are official producers of statistics with which there is an established cooperation (agreement, procedure, request, etc.) for the exchange of data.

### **1.3.17 Confidential policy**

Indicate legal or other procedures related to confidentiality that do not allow a person or economic unit to be directly or indirectly identified. In addition to national laws and procedures, it is necessary to state EU regulations in this area. It is recommended to refer to Article 54 of the Law on Official Statistics and the System of Official Statistics, the Statement on Respect for the Principles of Employee Confidentiality and EU Regulation 223/2009.

### **1.3.18 Treatment of confidential data**

Describe rules for the treatment of micro and macro data to ensure statistical confidentiality. Be sure to state that no individual data is published. Example of other rules: aggregation of data at a higher level, use of "z" for low frequencies of occurrence and more.

## 1.4 Completeness

Describe the required data that are not produced in this area. Also classify: international and national data requirements.

### Completeness rate

The ratio of the number of data cells (entities to be specified by the Eurostat domain manager) provided to the number of data cells required by Eurostat or relevant. The ratio is computed for a chosen dataset and a given period.

For producers:

$$R1_{PDR} = \frac{\# A_D^{rqd}}{\# D^{rqd}}$$

D *rqd* in the denominator is the set of data cells required (i.e. excl. derogations/ confidentiality) and # *AD rqd* in the numerator is the corresponding subset of available/provided data cells. The notation # D means the number of elements in the set D (the cardinality).

For users:

$$R1_U = \frac{\# A_D^{rel}}{\# D^{rel}}$$

D *rel* in the denominator is the set of relevant data cells (full coverage, i.e. excl. only those entities for which the data wouldn't be relevant like e.g. fishing fleet in Hungary) and *AD rel* in the numerator is the corresponding subset of available/ provided data cells. The notation # D means the number of elements in the set D (the cardinality).

## 1.5 Cost and burden

Provide information on the cost of research and the workload of reporting units. Break down the cost of research into major components. Also, state the assessment of the workload of the reporting units, as well as the activities undertaken in connection with its reduction. List the measures that are planned to be taken in order to reduce the cost and burden of reporting units, such as - change of sources (use of administrative data, data collection by CAPI method, etc.).

## 2. Relevance – Data users

### 2.1 User needs

List the main data users. Classify: international, national and if data are used to produce other statistics. Indicate the plans, if any, with the aim of producing the data in the following period that the users requested.

#### International users:

- *Eurostat;*
- *World Bank;*
- *UN organizations;*
- *International Monetary Fund.*

#### National users:

- *Ministries and other public administration bodies;*
- *Local government, and other local government bodies;*
- *Central bank;*
- *Non-governmental organizations;*
- *Students;*

- Researchers;
- Media.

## 2.2 User satisfaction

Describe the User Satisfaction Survey - total or sectoral, which is conducted, as well as other consultations held with users and give the results of the last conducted Customer Satisfaction Survey.

## 3. Accuracy and reliability

Describe the required data that are not produced in this area. Also classify: international and national data requirements.

### 3.1 Accuracy – Overall remark

Give a description of the main source of random or systematic error of the statistical result. Provide a summary assessment of all errors with special reference to the impact on key results. Evaluation bias can be given in qualitative and quantitative terms, or both. This description aims to better understand the problem and take action to reduce bias. Aspects of data revision may be mentioned here if relevant.

The ratio of the number of data cells (entities to be specified by the Eurostat domain manager) provided to the number of data cells required by Eurostat or relevant. The ratio is computed for a chosen dataset.

The rate of available data is applicable:

- to all statistical processes (including those using administrative data);
- to users and producers, with different focus and calculation formula a given period.

For producer:

$$R1_{PDR} = \frac{\# A_D^{rqd}}{\# D^{rqd}}$$

$D^{rqd}$  in the denominator is the set of data cells required (i.e. excl. derogations/confidentiality) and  $\# AD^{rqd}$  in the numerator is the corresponding subset of available/provided data cells. The notation  $\# D$  means the number of elements in the set  $D$  (the cardinality).

For users:

$$R1_U = \frac{\# A_D^{rel}}{\# D^{rel}}$$

$D^{rel}$  in the denominator is the set of relevant data cells (full coverage, i.e. excl. only those entities for which the data wouldn't be relevant like e.g. fishing fleet in Hungary) and  $AD^{rel}$  in the numerator is the corresponding subset of available/ provided data cells. The notation  $\# D$  means the number of elements in the set  $D$  (the cardinality).

### 3.2 Sampling error

Sampling error is defined as the difference between the value of the indicator in the total population and the estimated value of the same indicator obtained by a random sample, which must exist since the data were collected only from a small part of the population.

*Indicators of sampling error*

Sampling errors indicator are applicable:

- to statistical processes based on probability samples or other sampling procedures allowing computation of such information.
- to users and producers, with different level of details given.

$$CV_e(\vartheta) = \frac{\sqrt{\hat{V}(\vartheta)}}{\vartheta}$$

The length of the interval, which is  $2d$ , depends on the confidence level (e.g. 95%), the assumptions concerning the distribution of the estimator of the parameter, and the sampling error. In many cases  $d$  has the form below, where  $t$  depends on the distribution and the confidence level.  $d = t\sqrt{V(\vartheta)}$  In case of totals, means and ratios, formulas for aggregation of coefficients of variation at EU level can be found in the third reference below.

### - 3.3 Non-sampling error

Description of the error in the estimates based on the sample but which are not conditioned by the sample. Non-response errors, measurement errors, errors in research instruments, errors of interviewers or answering persons, errors caused by not answering certain questions, data processing errors, data corrections, encryption and imputations, errors caused by data modeling.

Non-sampling errors are basically of 4 types:

- 1) *Coverage errors* - errors due to divergences existing between the target population and the sampling frame.
- 2) *Measurement errors* - errors that occur at the time of data collection. There are a number of sources for these errors such as the information system, the interviewer and the mode of collection.
- 3) *Processing errors* - errors in post-data-collection processes such as data entry, keying, editing and weighting.
- 4) *Non-response errors* - errors due to an unsuccessful attempt to obtain the desired information from an eligible unit.

Two main types of non-response errors are considered:

- *Unit non-response* - refers to absence of information of the whole units (households and/or persons) selected into the sample and
- *Item non-response* - refers to the situation where a sample unit has been successfully enumerated, but not all required information has been obtained.

#### 3.3.1 Coverage error

Describe the coverage error that represents the difference between the population covered by the framework and the target population. Describe registers or other sampling frames: reference period, frequency of updating of the sampling frame, updating activities, differences that exist within the frame and other registers and other information that may be relevant to the survey result. Provide an assessment of the quality of the sampling frame, if possible quantitative, for over coverage or under coverage and activities to reduce bias as a result.

Coverage errors include:

- 1) over-coverage
- 2) under-coverage

*Over-coverage* represents the proportion of units from the sample frame that does not belong to the target population.

*Under-coverage* is a problem that arises due to under-coverage or non-eligibility of the sample selection framework (i.e. non-inclusion of newly built flats that are settled, as well as non-inclusion of persons who arrive at a place with the intention to remain there for a year and longer). The under-coverage rate is difficult to estimate because it is not possible to know which units are not included in the target population.

#### *Indicators of coverage error*

The rate of over-coverage is defined for probability surveys and is the proportion of units accessible via the frame that do not belong to the target population (are out-of-scope). The target population is the population for which inferences are made. The survey frame (or frames) is a device that permits access to population units. The survey population is the set of population units which can be accessed through the frame. The concept of a frame is mainly used for sample surveys but is also applicable for censuses and multisource processes involving probability surveys. Coverage deficiencies may be due to delays in reporting (typical for business statistics) and to errors in unit identification, classification, coding etc.

$$OCR_{rw} = \frac{\sum_o w_j + (1 - \alpha) \sum_Q w_j}{\sum_o w_j + \sum_E w_j + \sum_Q w_j}$$

O is the set of out-of-scope units (over-coverage, resolved and not belonging to the target population),

E is the set of in-scope units (resolved units belonging to the target population; eligible units),

Q is the set of units of unknown eligibility.

$w_j$  weight of unit  $j$ , described below,

$\alpha$  is the estimated proportion of cases of unknown eligibility that are actually eligible.

It should be set to 1 unless there is strong evidence at country level for assuming otherwise

#### *Common units*

The proportion of units covered by both the survey and data from an administrative source or sources in relation to the total number of units in the survey.

The proportion is applicable:

- to mixed statistical processes where some variables or data for some units come from survey data and others from administrative source(s)
- to producers.

$$Ad = \frac{\text{No. of common units across survey data and admin. sources}}{\text{No. of unique units in survey data}}$$

### **3.3.2 Error of measurement**

Describe errors that occur during data collection that can be caused by incorrect questionnaire design, insufficient or inadequate training of interviewers and other cases. Describe all activities that have been carried out to reduce this type of error.

### **3.3.3 Non-response error**

Describe the difference between the calculated data and the one that would be calculated when the missing values are excluded. Provide a qualitative assessment of non-response levels for units and emphasize the presence of variables that have a higher non-response (sensitive issues). Give suggestions on how to overcome this problem. Give an analysis by the cause of non-response.

Non-response errors are errors due to an unsuccessful attempt to obtain the desired information from an eligible unit. Two main types of non-response errors are considered:

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

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

#### *Unit non-response rate*

The ratio of the number of units with no information or not usable information (non-response, etc.) to the total number of in-scope (eligible) units. The ratio can be weighted or un-weighted.

Formula:

$$NRr_w = 1 - \frac{\sum_R w_j}{\sum_R w_j + \sum_{NR} w_j + \alpha \sum_Q w_j}$$

R is the set of responding eligible units,

NR is the set of non-responding eligible units

Q is the set of selected units with unknown eligibility (un-resolved selected units),

w<sub>j</sub> is the weight of unit j, described below

α is the estimated proportion of cases of unknown eligibility that are actually eligible.

It should be set equal 1 unless there is strong evidence at country level for assuming otherwise.

#### *Item non-response rate*

The item non-response rate for a given variable is defined as the (weighted) ratio between in-scope units that have not responded and in-scope units that are required to respond to the particular item.

Formula:

$$NR_{Yr}_w = 1 - \frac{\sum_{RY} w_j}{\sum_{RY} w_j + \sum_{NRY} w_j}$$

RY is the set of responding eligible units,

NRY is the set of non-responding eligible units

w<sub>j</sub> is the weight of unit j, described below

### **3.3.4 Processing error**

Describe the errors in the processing of the data applied and how the processing should have been performed. Describe all errors that occurred in the processes from fieldwork to final evaluation of results (encryption, input, logical computational controls, editing, imputations). Describe how the material was controlled, how errors were corrected, if any, and what measures were taken to minimize errors.

#### *Imputation rate*

Imputation is the process used to assign replacement values for missing, invalid or inconsistent data that have failed edits. This includes automatic and manual imputations; it excludes follow-up with respondents and the corresponding corrections (if applicable). Thus, imputation as defined above occurs after data collection, no matter from which source or mix of sources the data have been obtained, including administrative data.

This indicator is influenced both by the item non-response and the editing process. It measures both the relative amount of imputed values and the relative influence on the final estimates from the imputation procedures.

The unweighted imputation rate for a variable is the ratio of the number of imputed values to the total number of values requested for the variable. The weighted rate shows the relative contribution to a statistic from imputed values; typically a total for a quantitative variable. For a qualitative variable, the relative contribution is based on the number of units with an imputed value for the qualitative item

Unweighted on the statistical process and variable level:

$$A7_{uv} = \frac{n_{AV}}{n_{AV} + n_{OV}}$$

nAV and nOV are the numbers of assigned values and observed values, respectively.

The contribution of imputed values is calculated in an analogous way, but weighted and with variable values.

$$A7_w = \frac{\sum_{AV} w_j y_j}{\sum_{AV} w_j y_j + \sum_{OV} w_j y_j}$$

Here, AV and OV are the sets of units with assigned and observed values, respectively. In addition,  $w_j$  is the weight (normally the weight used for estimation takes into account the sample design as well as adjustment for unit nonresponse and final calibration) of unit  $j$  with value  $y_j$ . In case of a qualitative variable,  $y_j=1$  if the  $j$ th unit has a given characteristic and 0 otherwise.

### **3.3.5 Assumption error**

Describe errors due to the use of specific data modeling. Modeling is most often applied in the imputation or weighting phase.

### **3.3.6 Seasonal adjustment**

Describe the process of seasonal adjustment if any

## **3.4 Data revision**

### **3.4.1 Data revision policy**

Provide information on revision policy, for the office or to the sector if any. Provide a link where it is published.

### **3.4.2 Data revision practice**

Information on how the revision policy is implemented for a specific statistical survey

### **3.4.3 Data revision – average size**

Revision implies the difference between the original and the revised data, regardless of whether it is preliminary or erroneous data. Calculate indicator A6:

The number of releases (K) of a key item (number of times it is published) is fixed and specified in the revision policy. Usually, revisions involve a time series: when publishing an estimate of the key indicator referring to time  $t$ , it is a common practice to release the revised version of the indicator referring to a set of previous periods.

### **3.5.1 Data validation**

Description of the method of data validation which ensures the quality of the data

### **3.5.2 Data compilation**

Description of compilations - the process carried out to produce new statistics (if any)

### **3.5.3 Data adjustment**

Give a description of the adjustment (if done seasonally or otherwise)

## **4. Timeliness and punctuality**



## 4.1 Timeliness

Provide a description and information on the date of publication of the data and the period / moment to which the data relates. Here take into account the national publication of data. Describe the TP2 indicator

### *Time lag of the first results*

The time lag of preliminary results indicator represents time between the date of the last day of reference period and the date of publication of preliminary data.

This indicator is applicable:

- to all statistical processes with preliminary data releases;
- to producers

$$TP1 = d_{frst} - d_{ref}$$

$d_{frst}$  is the release date of first results;

$d_{refp}$  is the last day (date) of the reference period of the statistics

### *Time lag of the final results*

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

The time lag of final results indicator represents time between the date of the last day of reference period and the date of publication of final data.

$$TP2 = d_{finl} - d_{ref}$$

$d_{finl}$  is the release date of final results;

$d_{refp}$  is the last day (date) of the reference period of the statistics

## 4.2 Punctuality

Punctuality is the time lag between the delivery/release date of data and the target date for delivery/release as agreed for delivery or announced in an official release calendar, laid down by Regulations or previously agreed among partners.

The punctuality indicator represents the time difference between the actual publication of the data and the planned publication of the data.

$$P3 = d_{act} - d_{sch}$$

$d_{act}$  is the actual date of the effective provision of the statistics,

$d_{sch}$  is the scheduled date of the effective provision of the statistics

## 5. Availability and clarity

### 5.1 Release calendar

The Law on Official Statistics and Official Statistical System (Official Gazette of Montenegro No 018/12) stipulates that official statistical producers prepare, update and publish Statistical Release Calendar. It is published on the website of Statistical Office not later than 20 December for the next year, for all official statistical producers that includes date of releasing statistical data. Any change in date of releasing in the Calendar is published in advance in accordance with the Procedure on Unplanned Revisions.

Describe the procedure for publishing data, taking into account the pre-determined schedule of publication according to the calendar. It is necessary to state whether the calendar has been made public. Example: Data are published on a date defined by the Statistical Release Calendar. The calendar is publicly available.

## **5.2 Release calendar access**

Provide a link where the calendar can be found.

## **5.3 User access**

General aim of official statistical producer is to meet the needs of users, and to make an access to statistical data to users in an understandable manner, simultaneously and under the same conditions. Statistical Office is obliged to produce and disseminate official statistics in objective, transparent and professional manner, so that all users are equally treated.

## **5.4 Frequency of dissemination**

Given the time interval in which the data are published during a certain period, e.g. Monthly, quarterly, annually. The frequency of data transmission to Eurostat should be mentioned.

## **5.5 Release**

Information on the publication of the Press Release (regular or extraordinary) and a link where it can be found.

## **5.6 Publication**

Publication information Publications (regular or extraordinary) and a link where they can be found.

## **5.7 Online database**

Infomacija i link o dostupnosti baza podataka.

## **5.8 Data table consultation**

Number of consultations of data tables within a statistical domain for a given time period displayed in a graph.

Calculation:

$$AC1 = \#CONS$$

where #CONS denotes the absolute number of elements in the set CONS (this is also called cardinality of the set). In this case CONS represents the consultations of a data table for a specific subject-matter domain

## **5.9 Availability of microdata**

The Law on Official Statistics and Official Statistical System (Official Gazette of Montenegro No 018/12) regulates rules under which external users can obtain an access to individual data for needs of research. Article 58 defines types of scientific and research organizations that can obtain such data. Providing individual data without identifier is possible only upon a written request of scientific and research institutions, with purpose of performing scientific and research activities as well as international statistical organizations and statistical producers from other countries. Research entity signs the agreement with Statistical Office, and it signs the statement on respecting the confidentiality principle. Official statistical producers keeps a separate records on users and purpose of using the statistical data given to these users.

### **5.10 Other way of dissemination**

Describe if something is relevant for dissemination and has not been mentioned before.

### **5.11 Metadata consultation**

Number of metadata consultations within a statistical domain for a given time period.

By "number of consultations" it is meant the number of times a published metadata file is viewed.

Calculation:

AC2 = the ESS-MH files consulted for a specific subject-matter domain for a given time period.

### **5.12 Metadata completeness rate**

The ratio of the number of metadata elements provided to the total number of metadata elements applicable.

$$AC3C = \#ML / \#L$$

L in the denominator is the set of applicable metadata elements under consideration and M L in the numerator is the subset of L of available metadata elements. The notation # L means the number of elements in the set L (the cardinality).

### **5.13 Quality documentation**

Information on procedures related to quality management and quality assessment. Provide a link for availability to quality reports, quality management manual and other quality related documents. More details on quality will be given in sections 5.131 and 5.13 2

### **5.14 Quality assurance**

Describe all system activities that are done to meet the requirement of providing a quality product. Systemic activities are considered to be the activities listed in the Quality Management Manual (instructions, trainings, examples of good practice, self-assessment, quality studies, etc.)

Statistical Office has chosen the implementation of elements of TQM (Total Quality Management) model that foster development and improvement of functioning of:

- Institution,
- Official statistical result production and
- Individual.

Within middle-term deadline, Statistical Office has chosen the TQM implementation through the following objectives:

1. Strong commitment to users and other interested parties,
2. Quality statistical processes and products,
3. Professional orientation of staff members,
4. Constant improvements,
5. Reduction of overburden of reporting units.

### **5.15 Quality assessment**

General quality assessment based on standard criteria. List the improvements made in the current period and plans for future improvements. If there are, give preliminary quality assessments.

## 6. Comparability and coherence

### 6.1 Comparability - geographical

Describe the comparability of data in space. Emphasize and describe the problems of comparability with EU regulations or other international documentation.

#### *Asymmetry for mirror flows statistics*

General definition:

Discrepancies between data related to flows, e.g. for pairs of countries.

Specific definition (a few versions are provided) Bilateral mirror statistics:

The difference or the absolute difference of inbound and outbound flows between a pair of countries divided by the average of these two values.

Formula:

A – Country A

B – Country B

$$CC1A_B = \frac{OF_{AB} - mIF_{AB}}{(OF_{AB} + mIF_{AB})/2}$$

$$CC1B_A = \frac{OF_{BA} - mIF_{BA}}{(OF_{BA} + mIF_{BA})/2}$$

OFAB - outbound flow going from country A to country B, as published by country A

mIFAB – mirror inbound flow, as published by country B

Definitions of variables with suffix BA follow accordingly.

### 6.2 Comparability – over time

Description of data comparability over time. Emphasize why comparability has not been achieved, ie which activities have changed in the statistical process itself that have led to incomparability. There are three possibilities: 1. the data are fully comparable; There have been some changes in the methodology but the data are quite comparable; 3. Due to changes in the production process, the data are not comparable at all. Explanations need to be given for the second and third cases.

#### *Length of time series*

Number of reference periods in time series from last break.

Breaks in statistical time series may occur when there is a change in the definition of the parameter to be estimated (e.g. variable or population) or the methodology used for the estimation. Sometimes a break can be prevented, e.g. by linking.

$$CC2 = J_{last} - J_{first} + 1$$

Jlast is the number of the last reference period with disseminated statistics.

Jfirst is the number of the first reference period with comparable statistics.

### **6.3 Coherence of different domains**

Provide an overview of the main indicators from the statistical survey and from other sources or other statistical surveys if possible. In this case, describe the differences in definitions and concepts for the presented data. The magnitude of the difference should be highlighted as well as the impact of different data sources.

### **6.4 Coherence in different periods**

Give an overview of the main indicators in different periods (annually / quarterly / monthly). If they are significantly different, a description of the reasons is given.

### **6.5 Coherence with National Accounts**

Describe whether the data meet the definitions and needs of national accounts. If there are significant differences with national accounts, analyze the causes and describe them.

### **6.6 Internal coherence**

If there is an internal inconsistency point out. This represents situations when "illogical" results are published from the same data set, ie. dependent phenomena do not have the same trend. Describe what led to that.



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## **QUALITY REPORT FOR USERS**

*Name of survey*

**Responsible persons:**

**Department:**

**Content:**

<b><u>1. Introduction – Basic information about the survey</u></b> .....	<b>15</b>
<b><u>1.1 Purpose, goal and subject of the survey</u></b> .....	<b>15</b>
<b><u>1.2 Legal basics</u></b> .....	<b>15</b>
<b><u>1.3 Statistical units</u></b> .....	<b>15</b>
<b><u>1.4 Coverage and scope of survey</u></b> .....	<b>15</b>
1.4.1 Sectors.....	15
1.4.2 Statistical population.....	15
<b><u>1.5 Referent geographical area</u></b> .....	<b>15</b>
<b><u>1.6 Concepts and definitions</u></b> .....	<b>15</b>
<b><u>1.7 Classifications</u></b> .....	<b>15</b>
<b><u>1.8 Frequency of data collection</u></b> .....	<b>15</b>
<b><u>1.9 Frequency of data dissemination</u></b> .....	<b>16</b>
<b><u>1.10 Methodology</u></b> .....	<b>16</b>
<b><u>1.11 Base period</u></b> .....	<b>16</b>
<b><u>1.12 Unit of measure</u></b> .....	<b>16</b>
<b><u>1.13 Source of data</u></b> .....	<b>16</b>
<b><u>2. Relevance – Data users</u></b> .....	<b>16</b>
<b><u>2.1 User needs</u></b> .....	<b>16</b>
<b><u>2.2 User satisfaction</u></b> .....	<b>16</b>
<b><u>3. Accuracy and reliability</u></b> .....	<b>16</b>
<b><u>3.1 Accuracy – Overall remark</u></b> .....	<b>16</b>
<b><u>3.2 Sampling error</u></b> .....	<b>16</b>
<i>Indicators of sampling error (A1)</i> .....	16
<b><u>3.3 Non-sampling error</u></b> .....	<b>16</b>
3.3.1 Coverage error.....	16
<i>Indicators of coverage error (A2)</i> .....	16
3.3.2 Error of measurement.....	17
3.3.3 Non response error.....	17
<i>Nonresponse rate (A4)</i> .....	17
<b><u>3.4 Seasonal adjustment</u></b> .....	<b>17</b>
<b><u>3.5 Data revision</u></b> .....	<b>17</b>
3.5.1 Data revision policy.....	17
3.5.2 Data revision practice.....	17
3.5.3 Data revision - average size (A6).....	17
<b><u>4. Timeliness and punctuality</u></b> .....	<b>17</b>
<b><u>4.1 Timeliness</u></b> .....	<b>17</b>
<i>Time lag of the first results</i> .....	17
<i>Time lag of the final results</i> .....	17
<b><u>4.2 Punctuality TP3</u></b> .....	<b>17</b>
<b><u>5. Availability and clarity</u></b> .....	<b>17</b>
<b><u>5.1 Release</u></b> .....	<b>17</b>
<b><u>5.2 Publication</u></b> .....	<b>17</b>
<b><u>5.3 Availability of microdata</u></b> .....	<b>17</b>
<b><u>6. Comparability</u></b> .....	<b>18</b>
<b><u>6.1 Comparability - geographical</u></b> .....	<b>18</b>
<b><u>6.2 Comparability - over time</u></b> .....	<b>18</b>

## **1. Introduction – Basic information about the survey**

### **1.1 Purpose, goal and subject of the survey**

### **1.2 Legal basics**

### **1.3 Statistical units**

### **1.4 Coverage and scope of survey**

#### ***1.4.1 Sectors***

#### ***1.4.2 Statistical population***

### **1.5 Referent geographical area**

### **1.6 Concepts and definitions**

### **1.7 Classifications**

### **1.8 Frequency of data collection**



## **1.9 Frequency of data dissemination**

### **1.10 Methodology**

### **1.11 Base period**

### **1.12 Unit of measure**

### **1.13 Source of data**

## **2. Relevance – Data users**

### **2.1 User needs**

### **2.2 User satisfaction**

## **3. Accuracy and reliability**

### **3.1 Accuracy – Overall remark**

### **3.2 Sampling error**

*Indicators of sampling error (A1)*

### **3.3 Non-sampling error**

#### **3.3.1 Coverage error**

*Indicators of coverage error (A2)*

### **3.3.2 Error of measurement**

### **3.3.3 Non response error**

*Nonresponse rate (A4)*

## **3.4 Seasonal adjustment**

## **3.5 Data revision**

### **3.5.1 Data revision policy**

### **3.5.2 Data revision practice**

### **3.5.3 Data revision - average size (A6)**

## **4. Timeliness and punctuality**

### **4.1 Timeliness**

*Time lag of the first results*

*Time lag of the final results*

### **4.2 Punctuality TP3**

## **5. Availability and clarity**

### **5.1 Release**

### **5.2 Publication**

### **5.3 Availability of microdata**

## **6. Comparability**

### **6.1 Comparability - geographical**

### **6.2 Comparability - over time**