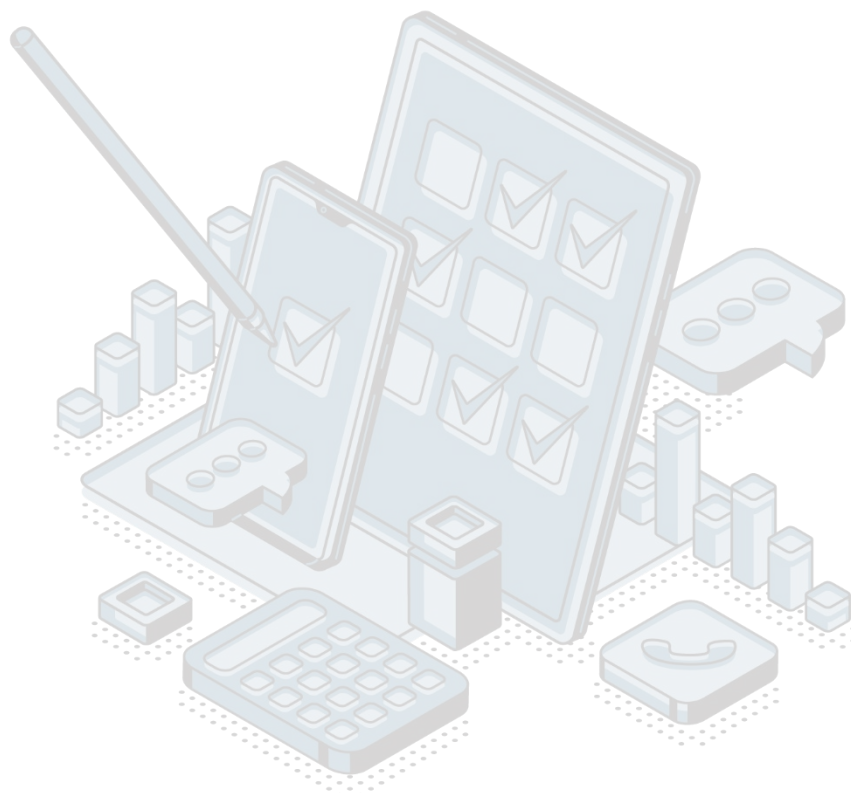


## QUALITY REPORT

# Use of information-communication technology in households and by individuals 2022



**Responsible person:** Milos Maltez

**Department:** Statistics of Innovation, Household Consumption and  
ICT Survey Department

**Content:**

<b>1. Introduction – Basic information about the survey .....</b>	<b>3</b>
1.1 Purpose, goal and subject of the survey .....	3
1.2 Legal basics.....	3
1.3 Statistical units.....	3
1.4 Coverage and scope of survey .....	3
1.4.1 Sectors.....	3
1.4.2 Statistical population.....	3
1.5 Referent geographical area.....	3
1.6 Concepts and definitions.....	4
1.7 Classifications .....	4
1.8 Frequency of data collection.....	4
1.9 Frequency of data dissemination.....	4
1.10 Methodology .....	5
1.11 Base period .....	5
1.12 Unit of measure .....	5
1.13 Source of data .....	5
1.14 Method of data collection.....	5
<b>2. Relevance – Data users .....</b>	<b>5</b>
2.1 User needs .....	5
2.2 User satisfaction .....	5
<b>3. Accuracy and reliability .....</b>	<b>6</b>
3.1 Accuracy – Overall remark.....	6
3.2 Sampling error .....	6
Indicators of sampling error.....	6
3.3 Non-sampling error .....	6
3.3.1 Coverage error .....	6
Indicator of coverage error .....	6
3.3.2 Error of measurement.....	7
3.3.3 Non response error.....	7
Item non-response rate .....	7
3.3.4 Data processing error.....	7
Imputation rate.....	7
3.4 Seasonal adjustments.....	7
3.5 Data revision.....	7
3.5.1 Data revision policy .....	7
3.5.2 Data revision practice .....	7
3.5.3 Data revision - average size .....	8
<b>4. Timeliness and punctuality .....</b>	<b>8</b>
4.1 Timeliness.....	8
4.2 Punctuality .....	8
<b>5. Availability and clarity.....</b>	<b>8</b>
5.1 Statistical Release Calendar.....	8
5.2 Access the data Release Calendar .....	8
5.3 Releases.....	9
5.4 Publication .....	9
5.5 On-line databases.....	9
5.6 Access to micro data.....	9
5.7 Metadata occupancy.....	9
<b>6. Comparability .....</b>	<b>9</b>
6.1 Comparability - geographical.....	9
6.2 Time comparability.....	9

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

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

The main objective of the survey on the use of information and communication technologies in households and by individuals is to collect information from individuals about the following characteristics:

- access and use of the Internet by individuals and households;
- use of the Internet for various purposes by individuals and households;
- ICT security, security and protection;
- ICT skills and needs for ICT skills;
- barriers to the use of ICT, the Internet and other electronic networks;
- access to and use of the Internet in order to obtain information and services from public administrations;
- access and use technologies that allow you to connect to the Internet or other networks from anywhere at any time.

### **1.2 Legal basics**

The Law on Official Statistics and Official Statistical System (Official Gazette of Montenegro No 18/12 and 47/19) defines provisions for collection, processing, and dissemination of data. The Law provides to the Statistical Office clear and wide legal powers to collect and access the data necessary for the implementation of Programme and Annual Plan. The Law gives a priority to the use of administrative data and right of access to individual data that are a result of survey of other official statistical producers. As an annex to legal provisions, Statistical Office has signed several memoranda on cooperation with administrative data providers.

### **1.3 Statistical units**

- (1) Households with at least one persons aged between 16 and 74;
- (2) Persons aged between 16 and 74.

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

#### **1.4.1 Sectors**

Not relevant.

#### **1.4.2 Statistical population**

All households in Montenegro with at least one person aged between 16 and 74 years.

### **1.5 Referent geographical area**

Montenegro.

## **1.6 Concepts and definitions**

GPRS standard for data transmission in mobile telephony is a transition to the 3G standard. GPRS allows faster data transfer, compared with the classical standard, but not so fast as in 3G.

Handheld computer -PDA (manual a computer) is a computer that can be used while holding and keeps in a small bag, or for example in your pocket. The personal digital assistants (PDAs) are another term for the hand PC. PDA uses a pen instead of a keyboard. Some PDAs can also be used for mobile telephony, ie. these PDA devices can be used for mobile phone, as well as for hand-held computer.

Modem (dial-up access over normal telephone line) connects households over a dial-up via analog modem. ISDN (dial-up access over normal telephone line) connects households via dial-up modem ISDN (Integrated Services Digital Network).

DSL (Digital Subscriber Line) is the designation for a technology that transports data at high speeds (eg. Equal to or greater than 144 kbit / s) over existing copper networks. DSL technology is a type of Internet connection that is significantly faster than dial-up and therefore indicates as broadband. Importantly DSL technologies include:

ADSL: This term is used for DSL which is given greater bandwidth for download from uploading (Asymmetric DSL).

SHDSL: The same speed download and upload (symmetric DSL).

Cable Internet: This technology enables high-speed Internet access through cable television networks or cable systems. As DSL technology, data is transferred over existing copper networks.

The third generation (3G) mobile technology enables greater access speed compared to GPRS.

Tablet is computer with a touch screen, for example. Apple, iPad, Touch Screen PC. Speed of data transfer via the mobile phone is still limited, whereby the second generation (2G) mobile technology, such as GPRS (General Packet Radio Service), a low-capacity speed compared to 3G.

Frame Relay is a standardized wide area network technology that defines the physical and logical connection of layers of digital telecommunication channels, using switching methodology.

UMTS is a third generation (3G) mobile technology for networks based on the GSM standard.

CDMA200 belongs 3G mobile technology standards. It uses CDMA channel access for sending voice, data and signaling data between mobile phones and mobile sites.

HSDPA is a communication protocol used in mobile networks third generations as part of the HSPA family of communication protocols that networks based on UMTS technology enables an increase in the flow rate data and network resources.

GSM Global System for Mobile Communications is the most widely used standard for mobile phones.

EDGE - the goal of technology is to increase the transmission speed and capacity of the system and allow the new applications.

## **1.7 Classifications**

NUTS, ISCED 2011.

## **1.8 Frequency of data collection**

Annually.

## **1.9 Frequency of data dissemination**

Data are annually published.

## **1.10 Methodology**

The methodology of Eurostat is used for conducting survey [Methodological manual for statistics on the Information Society](#) and regulation [Regulation \(EU\) No 2019/1700](#)

### **1.11 Base period**

Not relevant.

### **1.12 Unit of measure**

The unit of measurement in the survey are percentages (%).

### **1.13 Source of data**

Survey on ICT usage in households and by individuals is based on a sample. Survey is conducted on a two-phase stratified sample. Size sample is on a annually basis 1 800 households, with 1 800 individuals.

### **1.14 Method of data collection**

Data collection is done using the face-to-face interview, where interviewers use a computer / tablet (CAPI method of data collection).

## **2. Relevance – Data users**

### **2.1 User needs**

#### 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**

The Statistical Office has adopted the Quality Management Strategy, the Guidebook to the Implementation of the Quality Management Strategy, as well as the Plan for the Implementation of the Quality Policy. In order to measure the degree to which fulfills obligations towards users and within the new quality policy, the Statistical Office conducted User satisfaction survey. Data collection was realized through a web survey, in the period from September 1 to October 20, 2017. The results of the survey are available on the Statistical Office website, link:

### 3. Accuracy and reliability

#### 3.1 Accuracy – Overall remark

In ICT usage survey results are based on the sample of population they are subject to the usual types of errors associated with sampling techniques and interviews, such as sampling errors, non-sampling errors, measurement errors, processing errors, and non-response.

#### 3.2 Sampling error

Sample errors occur due to the analysis of the sample of a part of population. Sample error size may be controlled by the size and design of the sample. Significant sample errors may lead to the unreliable data when related to some smaller domains (levels or data groups) that have insufficient number of units in the sample.

##### *Indicators of sampling error*

Indicator	Estimated proportion,%	Standard error, %	Confidence Interval (95%)	Coefficient of variance, %
Proportion of households having access to the Internet at home	81.0	0.01	80.98-81.01	0.01
Proportion of individuals regularly using the Internet	99.7	0.01	99.68-99.71	0.01
Proportion of individuals having ordered goods or services for private use over the internet in the last 12 months	29.9	0.01	29.88-29.91	0.03

#### 3.3 Non-sampling error

Non sampling errors are following: over-coverage, under-coverage, measurement errors, processing errors, editing, imputation, and non-response errors.

##### 3.3.1 Coverage error

Coverage error are: Over-coverage occur due to the inclusion of non-existent or uninhabited houses or the population that no longer lives in the country. Under-coverage is a problem that arises due to under-coverage or non-eligibility of the sample selection framework (e.g. 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.

##### *Indicator of coverage error*

The over-coverage rate for 2022 is 4.6%.

### 3.3.2 Error of measurement

Measurement errors are usually due to questionnaire, survey mode, interviewers, response errors, data entry, data editing and imputation.

### 3.3.3 Non response error

Not getting an answer - it's often unavoidable to refuse or not contact. In this case, there is a difference between the data obtained from the collected data (usually part of the planned sample) and those that would calculate that the complete sample was realized.

#### *Unit non-response rate*

Non-response rate for 2022 is 31.8%.

#### *Item non-response rate*

Not available.

### 3.3.4 Data processing error

The collected data goes through a several process before the final evaluation, such as: encryption, data entry, editing, imputations, weighting, tabulation, etc. Errors made in these phases are called processing errors.

#### *Imputation rate*

Not applicable.

## 3.4 Seasonal adjustments

Not relevant.

## 3.5 Data revision

### 3.5.1 Data revision policy

Statistical Office has adopted the revision policy and it is available on the website:

<http://www.monstat.org/eng/page.php?id=1411&pageid=3>

### 3.5.2 Data revision practice

Published data are considered final except in the case of methodological changes and the introduction of new classifications, as a result which are subject to revision.

### 3.5.3 Data revision - average size

Not relevant.

## 4. Timeliness and punctuality

### 4.1 Timeliness

The final data are published 7 months after the end of the reference period. Timeliness of final data: T + 7 months after the end of the reference period. The data are published in accordance with Statistical Release Calendar (7 months after the end of the reference period).

#### *Time lag of the first results*

Not relevant

#### *Time lag of the final results*

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. The final data are published seven months after the completed reference year. Timeliness of final data: T + seven months after the end of the reference year.

### 4.2 Punctuality

Accuracy indicator represents the time difference between Actual date of the effective provision of the statistics and Scheduled date of the effective provision of the statistics. Deadlines of dissemination of the ICT data at the website are defined in the Statistical Release Calendar. Indicator TP3 (punctuality) is 0, there is no difference between the planned and the actual publication. That means that the Release is published in accordance with Statistical Release Calendar.

## 5. Availability and clarity

### 5.1 Statistical Release Calendar

The Law on Official Statistics and Official Statistical System (Official Gazette of Montenegro No 18/12 and 47/19) 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.

### 5.2 Access the data Release Calendar

<http://www.monstat.org/eng/page.php?id=12&pageid=12>



### 5.3 Releases

Releases are published annually and they are available at following links:

<http://www.monstat.org/eng/page.php?id=318&pageid=1>

### 5.4 Publication

Statistical Office publishes the following regular publications:

1. Statistical Yearbook;
2. Montenegro in Numbers.

All publication published by Statistical Office are available at the following link:

<http://monstat.org/eng/publikacije.php>

### 5.5 On-line databases

Not available.

### 5.6 Access to micro data

The Law on Official Statistics and Official Statistical System (Official Gazette of Montenegro No 18/12 and 47/19) 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.

### 5.7 Metadata occupancy

Not available.

## 6. Comparability

### 6.1 Comparability - geographical

The data at the national level are comparable with countries that carry out the survey on the ICT usage according to the Eurostat methodology, Regulation (EU) 2019/1700 and EU Regulation which are changed in accordance on the year of survey.

### 6.2 Time comparability

The data from ICT usage survey in households and by individuals are comparable in the period from 2011 to 2022 year.

#### *Time comparability indicator*

Not relevant.