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METHODOLOGY
OF THE ANNUAL STATISTICAL SURVEY "THE SITUATION REGARDING
THE USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY
PRODUCTS"
(NR.1-ICT)

2023

Contents

- I. General provisions
- II. Objectives of the SURVEY
- III. Basics/definitions
- IV. Legal basis
- V. Classifiers used
- VI. Reference population
- VII. SURVEY design
- VIII. Data sources. The SURVEY toolkit. Data collection
- IX. Data processing
- X. Estimation of statistical indicators
- XI. Data quality assurance
- XII. Data review
- XIII. Confidentiality procedures
- XIV. Dissemination of data
- XV. Software used
- XVI. Limitations
- XVII. Bibliography

I. General provisions

1.1. Purpose of the methodology

The purpose of this methodology is to describe the main rules and methods used in the process of developing statistical SURVEY on the use of information and communication technology products, from the collection of data from entities to their dissemination to users.

1.2. A Brief History

In order to monitor the computerisation process and to comply with the provisions of the 'Project, Director of Computerisation of Society in the Republic of Moldova' adopted by Government Decision No 155 of 6 March 1995, statistical SURVEY 'Situation of computerisation and computer equipment' has been implemented in national statistics since 1996. Since 2015 – statistical SURVEY 'State of play on computerisation and Internet connection'.

In 2021, as part of the EU funded Project ENI/2019/406-262 'Technical Assistance to Support the National Bureau of Statistics of the Republic of Moldova', the National Bureau of Statistics received methodological assistance from the INSEE Romania expert in order to achieve harmonisation with international standards and methodologies. Thus, for the reference year 2022, a new statistical survey No 1-tic 'Situation of the use of information and communication technology products' harmonised with EU requirements was implemented.

II. Objectives of the SURVEY

The dynamics of the penetration of information and communication technology (ICT) in everyday life and the transformations of society and the economy are unprecedented and global. ICT plays an increasingly important role in the economic and social development of the country, and the Government is developing ICT policies to take advantage of the opportunities offered by the rapid development of information technologies.

The production of statistics on the use of information and communication technology products is therefore essential for the development, monitoring and evaluation of such policies.

The main objective of statistical SURVEY on the state of use of ICT products is the production of statistics describing the information society as well as the establishment of the database on how ICT products are used.

SURVEY on the use of ICT products shall be carried out on an annual basis.

The main users of data on the use of ICT products are central and local public authorities, other public institutions, non-governmental organisations, academia, business, media, citizens, as well as international organisations.

III. Basics/definitions

Broadband (eng. 'broadband') is a telecommunications technology that provides a data transmission capacity of at least 256 kbps in at least one direction. Examples of broadband connections are xDSL (ADSL, SDSL, etc.), UMTS, GPRS, LTE (mobile phone), WiFi, fiber optic, etc.

Cloud computing is a model of computing system in which the end user does not own his own computing resources, but rents them from suppliers and accesses them remotely using the Internet or VPN. The provider is responsible for ensuring the proper functioning of the computing resources and the beneficiary pays only the amount of resources actually used.

There are three models of cloud computing services: Operating System as a Service (SaaS), Platform as a Service (PaaS) and Infrastructure as a Service (IaaS).

Cloud computing can include **VPN** (Virtual Private Network) connections.

E-commerce (e-commerce) is the sale or purchase of goods or services through a computer network using specific methods designed for the purpose of receiving or placing orders. Goods or services are ordered by these methods, but the delivery or payment of the goods or services does not need to be made online. In sales of goods or services in e-commerce, the order is placed through websites, applications or EDI-type messages for the purpose of receiving orders by specially designed methods. Web sales are distinguished from EDI sales.

Fixed connection is telecommunications technology that provides access to the Internet or interconnection of networks through the use of electrical cables or optical fibers.

Wireless connection is telecommunications technology that provides access to the Internet or the interconnection of networks through the use of electromagnetic waves.

Mobile broadband connection is the telecommunications technology that provides broadband Internet access using mobile telephone networks. For access to the network, users use portable modems.

Customer Relationship Management (CRM) is based on the concept that places the customer at the heart of the business, based on the intensive use of ICT products for the collection, integration, processing and analysis of customer information.

EDI (Electronic Data Interchange) refers to the structured transmission of data or documents between organizations or businesses by electronic means.

EDI e-commerce. Commands initiated with EDI messages. EDI (Electronic Data Exchange) is an e-business tool for exchanging different types of business messages. EDI is used as a generic term for sending or receiving business information in an agreed format suitable for automated processing (e.g. EDIFACT, XML, etc.) and without the individual message being typed manually. 'EDI e-Commerce' is limited to EDI messages that place an order.

Entities using social networks are entities that have a user profile, account or user license depending on the requirements and type of media network.

Enterprise Resource Planning (ERP) refers to one or more sets of software applications (e.g.: 1C-Accounting software) that integrates and processes information for various functions/departments within the entity. ERP products integrate information related to planning, sourcing, sales, marketing, finance and human resources.

ERP systems shall have the following characteristics:

- are designed for a client-server environment (traditional or web-based);
- integrates most of the entity's processes;
- processes the vast majority of transactions at the level of the entity (enterprise, organisation);
- use databases that store each piece of information only once;
- Allows access to real-time data.

The Internet is a global system of interconnected data transport networks that uses the set of TCP/IP protocols for communication between networks and devices. It is a network of private, public, academic, business and government networks from the local to the global level, linked by a wide range of electronic, wireless and optical network technologies.

Information security comprises the measures, controls and procedures applied to ICT systems in order to ensure the integrity, authenticity, availability and confidentiality of data and systems.

Social Media defines a group of technological tools (websites, applications) that work with the help of an Internet-connected terminal (computer, laptop, tablet, smartphone).

Information and Communication Technology (ICT) is the technology required for the processing (procurement, processing, storage, conversion and transmission) of information.

Web sales cover orders and reservations placed by customers through:

- **websites or applications:**
 - online store (webshop)
 - web forms
 - Extranet (webshop or web forms)
 - reservations (applications for services)
 - applications for mobile devices or computers
- **websites or applications for the e-commerce market** (used by several entities to market goods or services).

Web and EDI sales are defined by the ordering method:

- Sales at WEB: the customer places the order on a website or through an application;
- EDI sales: **an EDI command message is created from the client system.**

VPN – virtual private network – technology used to interconnect two or more private networks using a public network for transporting data or connecting a user to a private network, as well as using a public network for transporting data. Encryption algorithms are used when transmitting data, thus ensuring data confidentiality.

Wi-Fi is a set of wireless network protocols based on IEEE 802.11. specifications. Wi-Fi was originally designed to interconnect equipment in local wireless networks, but is now often used for Internet access.

IV. Legal basis

- Regulation (EU) 2019/2152 of the European Parliament and of the Council of 27 November 2019 on European business statistics.
- Commission Implementing Regulation (EU) 2020/1197 laying down technical specifications and arrangements pursuant to Regulation (EU) 2019/2152 of the European Parliament and of the Council on European business statistics.

V. Classifiers used

The rankings used in the SURVEY are published on the NBS website at <https://statistica.gov.md/pageview.php?l=ro&idc=385&>

- Classification of Activities in the Economy of Moldova (CAEM-2), harmonized with NACE Rev.2, approved by the Order of the National Bureau of Statistics no.28 of May 7, 2019.
- Classifier of administrative-territorial units of the Republic of Moldova (CUATM), approved by the Decision of the Department of Moldova-Standard no. 1398-ST of 03.09.2003.
- Nomenclature of Territorial Units for Statistics (NUTS) approved by the Government Decision of the Republic of Moldova no.570 of 19 July 2017.

VI. Reference population

The reference population represents the entities, regardless of the economic activity carried out, the ownership form and the organizational-legal form.

Companies and organisations on the left bank of the Dniester and the municipality of Bender are excluded from the reference population.

The reference period shall be **the calendar year**.

VII. SURVEY design

The general survey base, created on the basis of the Statistical Register, is compiled on an annual basis. The survey base serves as a framework for all statistical SURVEYs, from which the following units are selected and exhaustively SURVEYed:

- economic entities with 10 or more employees;
- public institutions regardless of the number of employees;
- entities holding the residence status of Moldova IT Park.

Circle of coverage - about 11.5 thousand entities annually.

VIII. Data sources. The SURVEY toolkit. Collection

SURVEY no. 1-tic is carried out through the questionnaire approved by the NBS Order and placed on the webpage of the institution under the heading *Forms and classifications* → *Statistical forms* → *Communications and information technology*

<https://statistica.gov.md/pageview.php?l=ro&idc=635&id=7250>

The questionnaire, concepts and definitions used can be downloaded from the NBS website: [www.statistica.md/formulations and classifications](http://www.statistica.md/formulations_and_classifications)

The questions/indicators of Questionnaire 1-tic are structured in 7 (seven) chapters:

1. General information about ICT systems, Internet access and use.
2. Use of website and social media.
3. Use of cloud computing services.
4. ICT security.
5. Using the Internet to interact with public authorities.
6. e-commerce.
7. Exchange of information by electronic means within the entity.

Chapters 5, 6 and 7 are to be completed only by economic entities with the main type of activity according to CAEM-2 falling under Sections C, D, E, F, G, H, I, J, L, M, N, Group S95.1

Entities included in the SURVEY may complete Questionnaire 1-tic in 2 (two) ways: through the electronic reporting system - *the electronic one-stop shop* www.raportare.gov.md, or submitted on paper to the territorial statistical body (TSB) by 30 April after the reporting period. The questionnaire is recommended to be filled in by the accounting officer of the entity assisted by the person in charge of ICT.

The data collection and processing flow is as follows:

From the application on the NBS website 'What forms should I submit?' <http://webapp.statistica.md/repForm/>, the entity shall, at the beginning of the year, document the list of statistical reports/surveys to be submitted or the TSO shall notify the undertaking of the need to submit the questionnaire.

The questionnaires can be presented:

On-line (e-reporting) – the company fills in the questionnaire on the e-reporting portal (www.raportare.gov.md <http://www.raportare.giv.md>);

Paper-based – the questionnaires are distributed to all entities included in the SURVEY through the TSOs, according to the lists drawn up by the NBS. The questionnaires shall be returned to the TSOs within the set deadlines.

Data processing takes place in 2 stages:

Stage I - at TSO level:

- entering the data in the CIS2 application;
- control of the integrity of information;
- checking the data in the questionnaire;
- checking the correlations between chapters;
- coding the causes of non-response;
- logical control, correction of possible errors and validation of data at questionnaire level.

II stage - at NBS level:

- validation of each report and correction of any errors;
 - comparison with the previous reporting period;
 - data aggregation and analysis;
 - generation of final tables by economic activities/territorial aspect;
- Dissemination of results.

At central level, data are compiled/aggregated as a whole country, economic development regions, districts, economic activities (at class level (4 signs)).

IX. Data processing

For the data validation phase, the analysis of aggregated data on consistency with previous periods shall be performed. There are no quality reports.

X. Estimation of statistical indicators

SURVEY 1-tic data is not estimated, data compilation/extrapolation is not performed.

At the analysis stage of the aggregated data, the correlation of the indicators in Report No 1-tic on *Turnover from web sales of goods and services* and *Turnover from EDI-type sales of goods and services* (Chapter 6 e-commerce) with the indicator *Sales revenue, total, reported by entities in the Annual Financial Statements* is verified.

XI. Data quality assurance

The quality assurance of statistical data is based on the observance of the Fundamental Principles of Official Statistics, approved by the General Assembly of the United Nations on January 29, 2014, as well as stipulated in the Law of the Republic of Moldova on Official Statistics no. 93 of 2017.

Quality assurance measures are carried out at each stage of the statistical process: in the process of organizing statistical SURVEY, collecting, processing and elaborating statistical information. Important efforts are made to ensure the fullness and quality of data presentation by respondents included in statistical SURVEY.

Erroneous data, inconsistencies and suspicious data shall be revealed in order to verify and correct them. Primary data are checked and analysed for internal (in the questionnaire) and temporal coherence (with data for previous periods).

In order to ensure the quality of the raw data, meetings (seminars) are organised with the respondents/TSO specialists to explain the definitions, the correct way of filling in the questionnaires, especially in case of changes or their implementation.

XII. Data review

Annual data are final at first dissemination. The results are not subject to seasonal adjustments. Comparability of data over time for some indicators is ensured.

XIII. Confidentiality procedures

In order to ensure the protection of confidential statistical data in accordance with the Law on Official Statistics no. 93/2017, all regulatory, administrative, technical and organizational measures are taken for the protection of confidential data and the non-admission of their disclosure.

Thus, staff, including those employed on a temporary basis, who, in accordance with their duties, have direct access to individual data, are required to respect the confidentiality of those data during and after their duties.

Pending the dissemination of statistical data, they shall be checked for compliance with data protection requirements. If the aggregated statistical data contains fewer than three statistical units, their dissemination shall not be carried out and the data shall be aggregated to the minimum level available (more than three statistical units) ensuring data protection.

XIV. Dissemination of data

The data shall be disseminated in compliance with confidentiality requirements. Dissemination of SURVEY results shall be carried out on an annual basis. Annual data are final at first dissemination.

The annual time series, for some indicators, are available in the publications and on the NBS website - since 2000.

The deadline for data dissemination shall be indicated in the Statistical Work Programme <https://statistica.gov.md/pageview.php?l=ro&idc=323&> and the Calendar for electronic dissemination of statistical information <https://statistica.gov.md/pageview.php?l=ro&id=5861&idc=213>.

Data from SURVEY 1-tic are disaggregated by:

- Districts, municipalities and ATU Gagauzia (35), economic development regions (mun. Chisinau, North, Center, South, ATU Gagauzia);
- Economic activities at class level (4 signs) CAEM.

The data of SURVEY no. 1-tic are disseminated in the following formats:

- Statistical publications (Statistical yearbook, Territorial statistics, Statistical breviary)
- Databank STABANK <http://statbank.statistica.md>, domain Economic statistics / Information technology
- Official website of the NBS: <http://www.statistica.gov.md> under Statistics by domain / Economic statistics / Information technology
- International Questionnaire, annual – Questionnaire on ICT usage by enterprises and on the ICT sector, United Nations Conference on Trade and Development (UNCTAD)
- Eurostat annual questionnaire for data collection on Statistical cooperation with candidate and potential candidate countries, ENP-East and ENP-South (ENPE) countries.

XV. Software used

The IT solution (CIS2 program) allows:

- logical input and control of data;
- obtaining the final tables.

XVI. Limitations

There are no administrative data sources or statistical SURVEY comparable (definitions, scope, reference period) to 1-tic SURVEY data and it is therefore not possible to reconcile SURVEY results with other data sources. The data collected is based on the free declaration of the investigated entities.

XVII. Bibliography

- Eurostat, 'Methodological Manual for Statistics on the Information Society', version 2.1, May 2007

https://ec.europa.eu/eurostat/ramon/statmanuals/files/isoc_meth_manual_2007_EN.pdf