

# ISTAT STATISTICAL DISSEMINATION SYSTEM

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ISTAT - DIRECTORATE FOR COMMUNICATION, INFORMATION AND  
SERVICES FOR CITIZENS AND USERS

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## SUMMERY

<b>INTRODUCTION .....</b>	<b>3</b>
<b>1. PRINCIPLES .....</b>	<b>3</b>
<b>2. CONTENT OF DISSEMINATION AND TOOLS USED .....</b>	<b>4</b>
2.1 Microdata (elementary data).....	4
2.2 Macrodata (aggregated data) .....	6
2.2.1 Dissemination platforms .....	6
2.2.2 Data tables .....	7
2.2.3 Data visualization .....	7
2.3 Metadata .....	8
2.4 Publishing.....	9
<b>3. CONTACT CENTRE .....</b>	<b>10</b>
<b>4. LIBRARY .....</b>	<b>11</b>
<b>5. STATISTICAL INFORMATION CENTRES OVER THE TERRITORY .....</b>	<b>11</b>
<b>6. USER SATISFACTION.....</b>	<b>12</b>
<b>7. SERVICE CHARTER FOR DISSEMINATION AND COMMUNICATION.....</b>	<b>13</b>

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## INTRODUCTION

This paper aims to describe the contents of dissemination performed by Istat and the ways in which statistical information is released.

In more detail the paper makes reference to the principles underlying the dissemination and communication of statistical information and to the different ways for disseminating data. These ways are presented considering dissemination contents (microdata, macrodata and metadata) as well as the means by which Istat meets users' requests (*what does Istat disseminate and how?*).

The places where statistical data and information can be found are distinguished between online places (dissemination platforms, Contact Centre and in general the institutional website) and on site places (ADELE Laboratory, Library, Statistical Information Centers over the territory) (*where does Istat disseminate data?*).

The last part is devoted to users (*for whom does Istat disseminate data?*). In particular, the main aspects of the National Statistical Institute's Dissemination and Communication Service Charter - which is the guide to services for users - are described, as well as the user satisfaction survey regarding some specific dissemination products.

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## 1. PRINCIPLES

The publication and dissemination of data, analyses and studies carried out by the Institute is one of Istat's tasks (Art. 15 (g) of Legislative Decree No. 322/1989).

Dissemination must be carried out in compliance with the legislation on the protection of personal data: data can be disseminated outside the National Statistical System (Sistan) only in aggregate form, in such a way that no reference is made with regard to identifiable persons (Art. 9, paragraphs 1 and 2, Legislative Decree No. 322/1989). However, the legislation provides for the possibility of distributing, where available and upon reasoned request, collections of elementary data, rendered anonymous and devoid of any reference that would allow their connection with individual persons.

Based on this normative, Istat's dissemination strategy provides for the publication of macrodata and, upon reasoned request and to specific individuals, also provides access to elementary data collections (microdata).

Since official statistics serve the entire community, Istat's dissemination has to satisfy the needs of different user groups: European institutions, public administrations, research institutes, enterprises, media and citizens. In order to achieve this goal, it is necessary to identify and to frame the actual and potential users of individual products to be released and, therefore, to employ the most appropriate dissemination channels and tools.

In addition, disseminated products must be in accordance with European quality standards. The quality of disseminated products is measured in particular by the degree of relevance, accuracy and reliability, timeliness and consistency of the statistics, their comparability across different territorial or thematic realities and over time, and the ease of access for users.

Statistical information produced by Istat over the years has grown greatly in quantity and variety, and it has evolved considerably, following changes in user needs and the opportunities offered by technological development.

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## 2. CONTENT OF DISSEMINATION AND TOOLS USED

Istat offers a set of channels in data dissemination with different content that is:

- Microdata (elementary data from statistical surveys and registers);
- Macrodata (aggregate data and indicators), in some cases integrated with comments;
- Metadata (descriptions and definitions useful for interpreting the data).

### 2.1 Microdata (elementary data)

In order to satisfy requests for detailed statistical information, Istat, like other national statistical institutes, grants access to elementary data coming from statistical survey through two means:

1. *elementary data files* appropriately processed through methods that, by limiting the original information content, make it possible to restrain the risk of breaching the confidentiality of data subjects. Requirements and conditions for the release of these files vary depending on the parties requesting them, and they are subject to the signing of specific user agreements. Elementary data files include:

(a) [Public use files](#) (PUFs): developed for an array of surveys starting from the corresponding scientific use file, to which methods of statistical disclosure control have been applied to reduce the risk of identification of statistical units. PUFs are freely available on a dedicated section of Istat website, upon acceptance of the conditions of use and registration;

b) [Scientific use files](#) (SUFs) are released for the purposes of scientific research only, and they refer to some statistical surveys on individuals, households and enterprises. These files, with no direct identifiers, have been subject to control methods to protect confidentiality. SUFs may be requested exclusively for specific research projects by researchers belonging to Entities recognised as research institutions by the Committee for the guidance and coordination of statistical information (Comstat) or included in the list of research Institutions recognised by Eurostat;

(c) [Standard files](#): represent an earlier type of elementary data files, produced by Istat since the 1990s with reference to a number of statistical surveys on individuals and households. They do not contain any direct identifiers and are processed using procedures that do not allow them to be linked to individual respondents. Standard files have been progressively replaced by SUFs, which use new and more robust confidentiality protection methodologies. Standard files are released upon reasoned request, for study and research purposes;

(d) [Files for Sistan](#) are sets of microdata reserved to the Statistical offices or entities belonging to the National Statistical System (Sistan). They include data collected for statistical purposes to which no further control methods are applied for confidentiality protection. The purposes of the request may be the implementation of the National Statistical Programme or the processing of statistical data related to the institutional activity or territorial scope of the entity. The request for accessing to these files must specify the nature of the data, the subject matter and the purpose of the request;

2. *the Laboratory for the Analysis of ELEmentari Data* ([ADELE Laboratory](#)) is the data research centre where Istat provides access for scientific purposes to *secure use files*, which are microdata files coming from surveys free of direct identifiers or special categories of personal data and/or data related to criminal convictions and offenses (Art. 9 and 10 EU Regulation 2016/679). Access to the ADELE Laboratory is granted at Istat headquarters and at all territorial offices of the Institute. It is a secure environment, controlled and supervised by Istat staff, where researchers from academia and research institutes can independently conduct statistical analyses of microdata. Processing results are checked by Istat for compliance with statistical confidentiality and personal data protection regulations before releasing them to researchers. Rules and protocols for accessing microdata are included in the [ADELE Laboratory Guidelines](#).

Elementary data files are provided free of charge. Access to ADELE Laboratory is also free of charge.

Microdata can be accessed as well under special research agreements within research projects conducted jointly by Istat and recognized research organizations (Research Protocols stated by Comstat Directive No. 11 of November 7, 2018).

With reference to new ways of accessing elementary data files<sup>1</sup>, Istat completed an experimental project for remote access, i.e., the possibility for recognized Research Institutions to conduct statistical processing of elementary data from an "external workstation" physically located at an accredited subject and remotely connected to Istat's secure server on which data are stored. This experimentation led to the opening of a remote elementary data access laboratory at the Bank of Italy headquarters. Istat shall consider the activation of additional remote laboratories based on own technical, organizational and economic sustainability. However, the request for the activation of a remote laboratory by

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<sup>1</sup> As defined in Article 5-ter of Legislative Decree No. 33/2013 "Access for scientific purposes to elementary data collected for statistical purposes" (introduced by Legislative Decree No. 97/2016, no. 97).

interested entities can only be made following a notice of availability from Istat, publicized on the institutional website.

## 2.2 Macrodata (aggregated data)

The dissemination of aggregated data by Istat is carried out in ways that vary both in content and in the technologies used:

- dissemination platforms (such as I.stat, the new IstatData and thematic sites);
- data tables;
- tools for interactive data analysis and visualization.

### 2.2.1 Dissemination platforms

[I.Stat's corporate data warehouse](#) disseminates all statistical macrodata based on socio-demographic and economic surveys as well as aggregated information on permanent censuses of population, enterprises and institutions. Special attention is paid to socio-demographic issues accessible through specific [thematic dissemination systems](#) covering aspects related to youth, the elderly, human capital and gender violence. I.Stat is organized in a hierarchical navigation tree that provides access to tables of pre-computed aggregate data (queries) collected in multidimensional data structures (hypercubes). To date, the system makes available more than 2,600 queries in the generalist system and nearly 4,000 by including thematic systems, for a total of about 500 hypercubes.

In addition to the traditional visualization system, the network of domestic and foreign institutional users can take full advantage of the open open data warehouse constituted by the [Single Exit Point](#), based on the international data transfer standard Statistical Data and Metadata Exchange (SDMX). This system enables a dialogue between national and international organizations such as the World Bank, International Monetary Fund, OECD, Eurostat and involves many producers of official statistics at the national level. All the information currently contained in the corporate data warehouse is accessible through this machine-to-machine communication channel.

Istat is currently engaged in migrating the I.Stat corporate data warehouse to a new modular platform always based on SDMX standard. The new platform - called *IstatData* - allows users to browse the same content as in the previous I.Stat system, enriched with graphs, maps and dashboards.

The new platform also makes it possible:

- to customize tables and graphs and display them in full screen;
- to compare data tables by bookmark;
- to search for information through a combination of textual and thematic tools;
- to share the *url* of the selected data table;

- to download graph image and data in different formats (excel, sdmx, csv, json);
- to have a faster access to data, thanks to an innovative caching system;
- to browse data by individual territory;
- to access data by machine-to-machine communication channel.

The platform uses the open source tools "Data Browser" and "Meta & Data Manager" developed by Istat following the international SDMX.

Data currently on I.Stat will be progressively transferred to IstatData. [The first release](#), made on Oct. 20, 2022 covered 6 themes: National Accounts, Population and Households, Economic Conditions of Households, Agriculture, Enterprises, Welfare and Social Security. The migration is scheduled for completion in early 2023. Until the migration is completed, the new platform is expected to coexist with the old system. The new platform has also been implemented to disseminate the [results of the Permanent Census of Population and Housing](#), in December 2020.

All data disseminated through the Institute's dissemination systems, starting with the central I.Stat data warehouse, are downloadable in open format and freely re-processable by all users in non-proprietary formats.

## 2.2.2 Data tables

The data tables ([datasets](#)) are collections of macrodata disseminated without a regular frequency. They are generally produced when surveys are concluded, as a preliminary form of publication of data produced.

They are produced on a spreadsheet and accompanied by introductory and methodological notes, and are downloadable free of charge.

These data in tabular form can be disseminated in association with releases and publications or as a stand-alone product.

## 2.2.3 Data visualization

Through constant research in the field of data visualization, Istat has pursued graphic innovation with features aimed at improving the usability and immediate understanding of the information released. These features have grown over time, and different technological solutions have been experimented depending on dissemination products.

Advanced tools make it possible to publish individual charts integrated into web pages (Noi Italia and institutional site), giving rise to new forms of publishing for the web and the possibility of building panels of multiple charts that interact with each other, allowing a true visual analysis of data (dashboards). Some examples of dashboards are made for the

dissemination of ebooks, information systems and census data (SDGs, BES, Noi Italia, Deaths, Annual Report, PNRR).

In addition, Istat has developed a procedure for connecting and updating data to make internal chart production processes more efficient. The software procedure - designed and developed in-house in the R language - performs data extraction from Istat corporate data warehouse via the SDMX web service and enables the automatic generation and updating of interactive graphs (Dygraphs js library) and corresponding data files aimed at populating a dedicated page on the institutional website. Scripts have also been configured to run automatically with a task scheduler every day to make sure that all charts are updated in a timely manner. This innovation was designed to make updating charts for monthly and quarterly data more efficient, free up human resources, and reduce the risk of errors. Examples of interactive graphs can be found on the home page of Istat's institutional website and in [the specific area dedicated to interactive graphs](#) where the main graphs, monthly and quarterly, are automatically updated in line with the releases from Istat's dissemination platform.

Ongoing activities include the expansion of the areas currently involved in the production of interactive graphs with continuous updating (Prices, Industry and Services, Labor, Population, Culture Communication and Travel, Health and Health Care, Daily Life and Citizens' Opinion); the integration of the dissemination of major press releases with interactive graphs is also being evaluated.

## 2.3 Metadata

All dissemination products are accompanied by a documentation for data interpretation.

The corporate data warehouse (both I.Stat and the new IstatData platform) has referential metadata describing the underlying production process of each dataset (characteristics of the survey or reference register), taken from the information system on quality ([SIQual](#)), and descriptive metadata related to individual indicators or analysis dimensions.

Also the elementary data files on Istat's website are all accompanied by metadata that allow users to easily dispose of the necessary information.

Moreover, on the institutional website is also available a [Catalogue of surveys](#) conducted at Istat. The Catalogue offers information on the elementary data of Istat's surveys. These files are available both to Sistan Entities and to users accessing the ADELE Laboratory. For each survey, it is possible to find: the time series of available record tracks (variables, modes, classifications, etc.), the metadata present in SIQual, and the status, distinguishing between active, discontinued and suspended surveys.

## 2.4 Publishing

In the aim to provide decision-makers and citizens with the most complete and relevant information, Istat is devoting increasing resources and attention to the integration of statistical information, in production (making wide use of different administrative sources to complement surveys) and, complementarily, in dissemination. This is embodied in the use of multiple competing sources to represent individual phenomena and, often, an accompanying set of analyses.

This type of approach has been represented for more than two decades in the Annual Report and, more recently, in some generalist ebooks (Noi Italia, [BES](#)), which also offer the possibility of easy access to the statistical data underlying the publications. The integration perspective has been further strengthened through the publication of new integrated thematic reports, with an extensive use of graphics and the possibility of directly accessing the underlying data through hyperlinks (the Report on knowledge, the Report on the Territory and the Report on enterprises).

Istat's thematic publications offer citizens and other stakeholders insights based on elaborations of official data, often integrating different sources. The analyses are almost always accompanied by statistical appendices, with downloadable, ready-to-use data and indicators. These products are disseminated on the Institute's website in the categories of periodic *Thematic Reports* (on Competitiveness, on the Labor Market, on fair and sustainable welfare (BES) in Italy, and on Sustainable Development Goals - SDGs), and of *Statistical Readings*. These latter have annual or occasional frequency, and include the following series: [Themes](#), [Territories](#) and [Methods](#).

They are all edited by Istat researchers, sometimes jointly with experts from other research institutions and universities.

In addition, Istat is the publisher of scientific series disseminated free of charge online: [Rivista di statistica ufficiale](#) (Review of Official Statistics) and [Istat Working Papers](#), discussion areas open to qualified external contributions. All submitted papers are subject to an evaluation process (dual and completely anonymous). The *Rivista di statistica ufficiale*, issued quarterly and included in the main bibliometric indices, welcomes papers written in English that focus on the analysis of economic, demographic, social and environmental phenomena, the construction of indicators and information systems, and methodological, technological or institutional issues of interest to official statistics. Some issues are organized around homogeneous themes, while others are cross-cutting issues. Istat working papers are devoted to sharing innovative and quality solutions for the production and dissemination of statistical information. They are mainly theoretical or applied writings, guidelines and best practices.

Press Releases are disseminated in different formats, based on the periodicity of dissemination and on the novelty of the information reported (Flash Statistics, Report Statistics, Focus Statistics).

Most of Istat's publishing products are exclusively digital (always accessible free of charge). Volumes are also in print only in a few cases, such as the two most popular general publications, the Italian Statistical Yearbook and the Annual Report. The dissemination catalogue is available on the Istat website and contains a complete list publications from 2000 onward.

Istat has also concluded a project to create a prototype self-publishing platform. This is a new flexible publishing format, developed natively for the web and capable of presenting different types of objects (text, images, graphics, data tables, multimedia) to the reader through an interface characterized by strong interactivity and such that portability to multiple devices is guaranteed. The tool provides authors with a facilitated and flexible means of composing a publication, so as to ensure its sustainability and avoid delays in output.

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### 3. CONTACT CENTRE

The [Contact Centre](#) is a multichannel platform through which users can request data, publications, elementary data files, maps, historical data and customized processing, as well as information on harmonized European data.

The system, recently reengineered, fully responsive and developed in compliance with current regulations on privacy, use of cookies and access to public services, is part of a broader project aimed at creating a "single point of contact". This will help to unify the institutional image in interactions with the public, as well as to improve and simplify the access to services. In particular, a unique solution was identified to expose services on a multichannel platform. This latter simplifies and improves the user experience, while gradually rendering users more autonomous in accessing the products and services offered. At the same time, operators have a console that allows the integrated management of each request through all phases of its life cycle and with all the actors involved, including the statistical production and the administrative and accounting structures of Istat.

In addition to the services already offered related to data search assistance, customized processing, historical and bibliographical research, and the provision of microdata, there are also services related to the purchase of paperback volumes, a media desk and the *citizens' desk*. The service dedicated to the release of microdata also provides guided and interactive forms for requesting files and the access to ADELE Laboratory.

For specific requests of statistical information produced but not disseminated by Istat, the Contact centre provides a customized processing. For each request, Istat verifies the feasibility of the processing (also with respect to the provisions on statistical confidentiality and personal data protection) and draws up the cost estimate, with no charge or commitment for the requester. The cost of each processing currently stands at 50.00 euros per man-hour (+VAT 22%) of estimated effort to fulfill the request.

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## 4. LIBRARY

Istat library provides access to national and international statistical information. It holds 600,000 volumes and 2,700 current periodicals, together with a collection consisting of 1,500 ancient volumes, published before 1900.

Since 1996 the library has been a member of the National Library Service (SBN), the network of Italian libraries promoted by the Italian Ministry of Cultural Heritage and Activities.

Since 2000 it has been equipped with an online public access catalogue (OPAC), allowing users to access the bibliographic heritage catalogue by means of friendly search methods.

Since 2011 [the online catalogue](#) has been enriched with the Digital Library section where publications can be found in native digital format and a large and growing number of digitized print volumes and statistical yearbooks.

Searches can be conducted on:

- the documents present in the library catalog;
- the documents present in the official statistics digital holdings on all terms contained in the digitized files and converted to an indexed image using Ocr;
- bibliographies included in the catalog.

The Historical Archive, established in 2001, preserve the main documents produced by the Institute: official and administrative acts, methodological studies and researches, questionnaire templates, statistical analyses, preparatory material for surveys, reports and project analyses of collegial bodies, brochures and press releases, in paper or digital format.

Also a collection of photographic materials and items collected for historical exhibitions and scientific meetings organized during Istat's 90th anniversary celebrations, are available online.

Finally, it is being developed an integrated portal for browsing the library's catalogue and historical archive that will allow acces to digitized or native digital documentary resources alike.

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## 5. STATISTICAL INFORMATION CENTRES OVER THE TERRITORY

At [the 18 regional Statistical Information Centres and the Statistical offices of the Autonomous Provinces of Trento and Bolzano](#) it is possible to consult all Institute's publishing products, as well as to access a wide range of services, including:

- assistance for using the Institute's online databases;
- assistance from specialized staff for searching and selecting data, and to request customized statistical processing;
- assistance to undergraduate and PhD students;
- access to the local sites of the ADELE Laboratory.

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## 6. USER SATISFACTION

As stated by the Article 7 of the Digital Administration Code (CAD), and amended in December 2017, public administrations:

- provide for the reorganization and updating of online services, based on a prior analysis of real user needs;
- allow users to express satisfaction with respect to quality, including in terms of usability, accessibility and timeliness of the service rendered;
- publish the resulting data, including usage statistics, on their sites.

To this end, since 2013 Istat has been conducting an annual user satisfaction survey regarding some specific dissemination products offered on the institutional website.

Specifically, the questionnaire aims to find out which of the products available on the institutional site are most used and what is the level of satisfaction or reasons for dissatisfaction stated with respect to each of them. Another group of questions investigates the profile and demo-social characteristics of respondents. Finally, a free field allows to provide comments, suggestions, and reports of any kind. No question is mandatory and the information is collected anonymously.

The survey has been completely renewed in 2021:

- to investigate satisfaction regarding only the products offered on the institutional website (excluding the services reachable through the site);
- to collect information on data quality: timeliness (information is not sufficiently up-to-date), clarity (information is not presented clearly), relevance (the detail proposed is not adequate to the needs);
- to reduce the burden on respondents (only 10 questions).

In particular, [the survey conducted in 2021](#) showed a very high level of satisfaction with the products offered on the Istat website. The highest level of satisfaction was stated for volumes and editorial publications (92.1 percent of respondents are moderately or very satisfied) and press releases (89.1 percent are overall satisfied). The highest percentage of dissatisfaction is recorded for elementary data files (nearly 23% of those using them said they were little or not at all satisfied with the product).

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## 7. SERVICE CHARTER FOR DISSEMINATION AND COMMUNICATION

Istat [Service Charter of the dissemination and communication](#) is the guide to services for users, by which Istat communicates in a transparent and comprehensive manner the services it provides, how to use them, its commitments to users and the quality standards guaranteed.

The Service Charter, also inspired by the “Principles on the Provision of Public Services” stated by the Directive of the prime minister of January 27, 1994, aims to provide services in compliance with the criteria of:

- equality: service delivery is inspired by the principle of equal rights of users;
- impartiality: the service is provided with objectivity, fairness, justice and impartiality towards all those who use it;
- continuity: regular service is provided without interruptions, and if these occur, disruption time should be kept to a minimum;
- clarity and transparency: the user is guaranteed clear, complete and timely information on the procedures, timing and criteria for service delivery;
- efficiency and effectiveness: these are pursued by making explicit the timeframe within which the service is to be provided;
- accessibility: along with service availability, it is ensured through multichannel and differentiated access opportunities, and by adopting international guidelines in the case of documents (colors, text, etc.);
- participation: continuous discussion with users is ensured through reports and suggestions, the complaint tool and user satisfaction surveys.

The Service Charter for each of the 13 services provided to users reports four different dimensions of quality and related indicators - effectiveness, timeliness, transparency and continuity - for each of which the programmed value is declared.