

New trends in the dissemination of statistical services

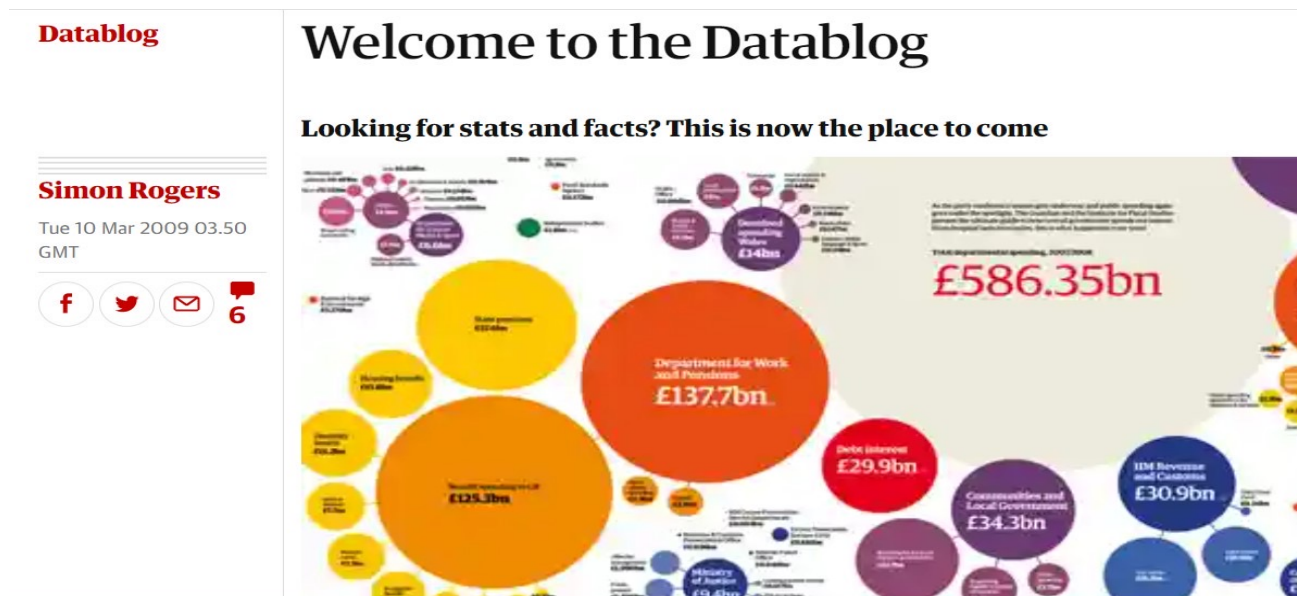
Outline

- Introduction
- What is driving these innovations?
- Users' information needs and key audiences
- Examples of dissemination services
- Open data and Linked open data
- Big data
- Web publishing
- Conclusions

***"It's one of the worst websites
in the world...
but there's gold in there"***

Simon Rogers

Former Head of the Guardian datablog



***"The best visualizations cause
you to see something you
weren't expecting"***



**DATA
STORIES**

Amanda Cox

Data Journalist, New York Times

Introduction

- Times change and so do the users of statistical information
- Everyone today can participate in communication processes
- There is an accelerated growth in demand for information and data
- Dissemination tools must be adapted

A clear and well-defined dissemination and communication strategy is therefore essential

Introduction

- Important to use new technologies so as not to decrease your chances of reaching your target audience
- Dissemination has become data sharing thanks to web 2.0
- Consumers have become Prosumer

Introduction

Imperative to communicate effectively to achieve three important dissemination goals:

- inform the public about the latest releases of official statistics on various economic and social phenomena
- demonstrate to all recipients the relevance of the statistical information
- increase public awareness

What is driving these innovations?

- The richness of information provided by Big Data
- Increasingly advanced software and technologies
- Innovative methods of disseminating statistical information (Open Data, Linked Open data)
- Web publishing products realized with technologies that simplify the interaction with the reader

Principle of statistical dissemination

At European level there are six shared principles regarding the dissemination of statistical information. They are:

- Relevance
- Confidentiality
- Independence and objectivity
- Timeliness
- Accessibility and transparency
- Coherence

Users' information needs & key audiences

Users' needs

Essential to always improve the accessibility of existing official statistical data in order to meet a wider range of user needs and encourage the continued use of statistics in their choices

Starting with key audiences

What do we know about our key audiences?

- Do we know our potential users well enough?
- Who are our users?
- How intensively do they use our services?
- Are they satisfied or dissatisfied?



"I see your problem."

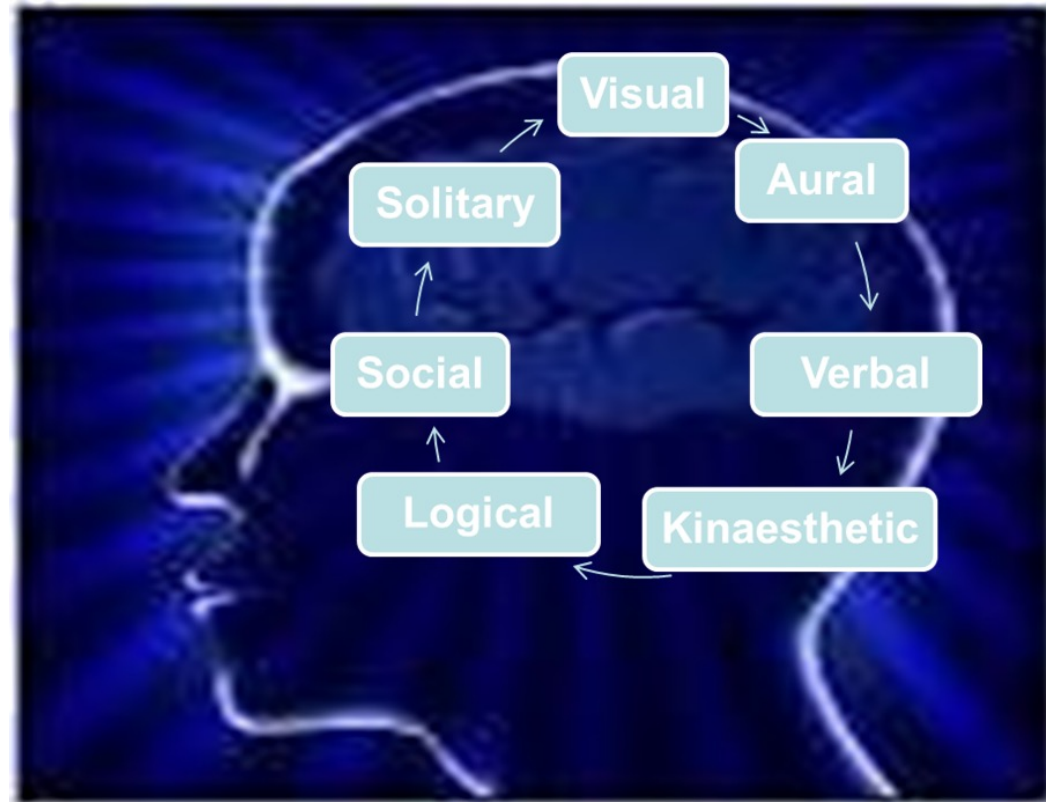
Key audiences for statistical information

- Researchers and data analyst
- Data journalists
- Policy makers
- Public administrations
- Companies
- Citizens



Some data

- approximately **65%** of the population are visual learners
- the brain processes visual information **60,000** faster than text
- **90%** of information that comes to the brain is visual



Tailored dissemination services

To serve this full range of different user needs producers of statistical information have to use integrated web-based tools that are:

- usable, responsive and accessible, suitable for mobile devices, that can support interactive content, conform to taxonomies and structured semantics of web-design, taking into account web analytics and user research on search engines

Integrated web-based tools

- Web services and APIs (application programming interfaces) based on shared standards and open formats
- Data visualization dissemination tools
- Digital editing consistent with innovation in content, formats and production processes, to be released on e-store

Integrated web-based tools

- Mobile applications and widgets
- Social media
- Web services for accessing microdata
- Multimedia to disseminate statistical information, such as videos on key information areas based on integrated statistical data
- Multifunctional and technology-driven blogs

Tailored dissemination services

| USERS | TAILORED SERVICES & PROUCTS |
|---|---|
| Heavy data users, data suppliers | Massive download tools, Linked Open Data, Microdata, Statistics in a machine-readable open data format |
| Researchers, analysts, financial community, data journalists | Microdata, Visualization, Digital Library |
| Institutions, policy/decision makers, central/local goverment | Statistical Reports with at regional level, Visualization, Census microdata |
| Old and new Media | Press releases, Videos, Infographics, Training for data journalists, Social media, On line press room, podcast, app |
| Prosumers, influencers | Apps, Reusable contents to embed and comment, Social media |
| Large audience, general public, pupils, teachers, citizens | Web publishing, Social media, Infographic, On line press room, podcast, dedicated web section |
| Statistical producers / statistical community, Internal staff | E-learning system, Sharing platforms, Web seminars |

Examples of dissemination services

Web section



The screenshot shows the Eurostat 'Statistics Explained' website. At the top, there's a navigation bar with 'NAVIGATION -', 'ONLINE PUBLICATIONS -', and 'TOOLS -'. Below this, the main heading is 'Beginners: Statistics 4 beginners'. A search bar is visible with the text 'Search Statistics Explained'. A feedback message states: 'We would like to hear your views on this material or activity. Please click here to provide your feedback'. The main content area features a large graphic with the text 'statistics4beginners' in yellow, accompanied by illustrations of a book, a pie chart, a bar chart, a question mark, a pencil, and a ruler.

At first glance, statistics might be difficult to understand. The aim of the section **Statistics 4 beginners** in Statistics Explained is to make the world of statistics a bit easier both for pupils and students as well as for all those with an interest in statistics.

Statistical literacy:
an example of a
web section
dedicated to
simplify statistics to
students but also to
all those who have
an interest in
statistics, even if
they are not
experts in the field

https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Beginners:Statistics_4_beginners

Apps

Information disseminated to the media is also transforming with the times

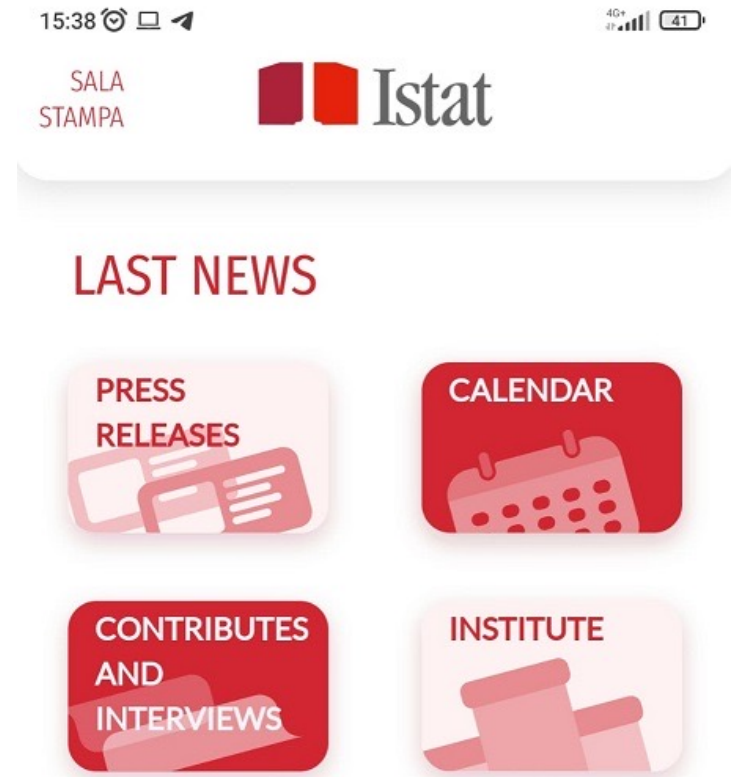
Today much of the communication travels via mobile phones, instant messaging

- In a single app the Italian National Institute of Statistics (Istat) makes its press room available
- A work tool designed for those who provide information, but available for everyone to download on smartphones equipped with Android and iOS platforms from the Istat store

Apps

From press releases to the weekly agenda, from multimedia content to corporate information, also available in English and with the possibility of navigating by tag among the various contents

(<https://play.google.com/store/apps/details?id=it.istat.salastampa>
<https://apps.apple.com/us/app/salastampa/id1510906760>)



Apps



My region

European Union Produttività

3 PEGI 3

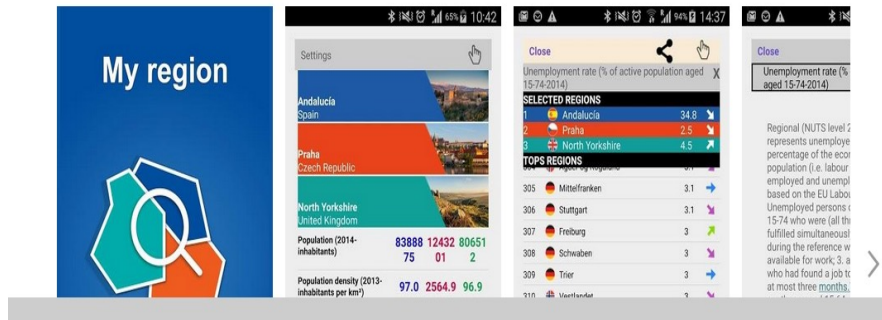
Questa app è disponibile per tutti i tuoi dispositivi

Aggiungi alla lista desideri

Installa

Another example: the
Eurostat app
"My Region"

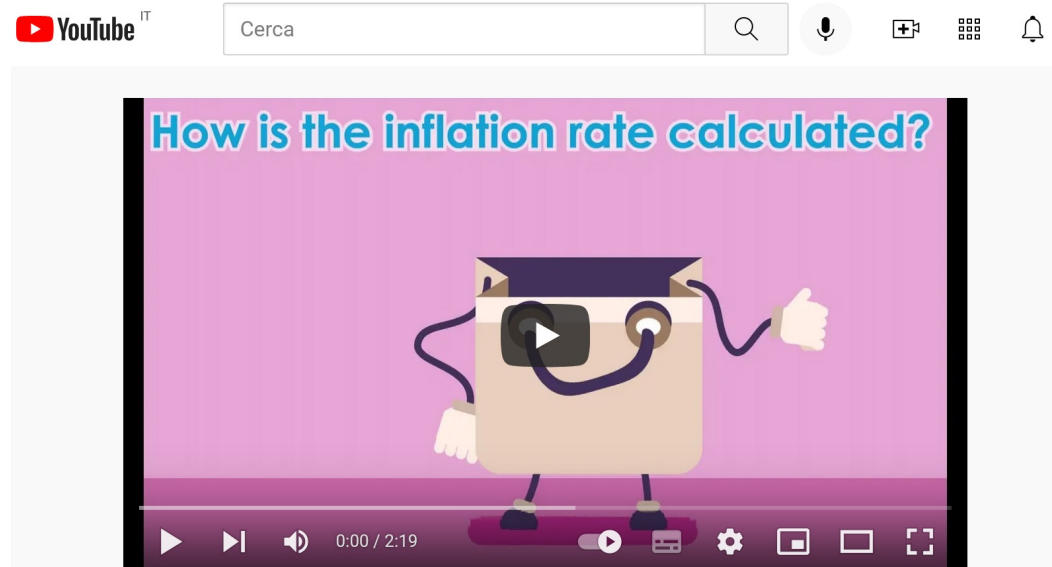
It gives mobile access to a
selection of annual regional
indicators at the NUTS 2
level for the EU-28, EFTA
and candidate countries



The app is available in three languages: English, French and German. The update function allows you to download the latest data from Eurostat's database

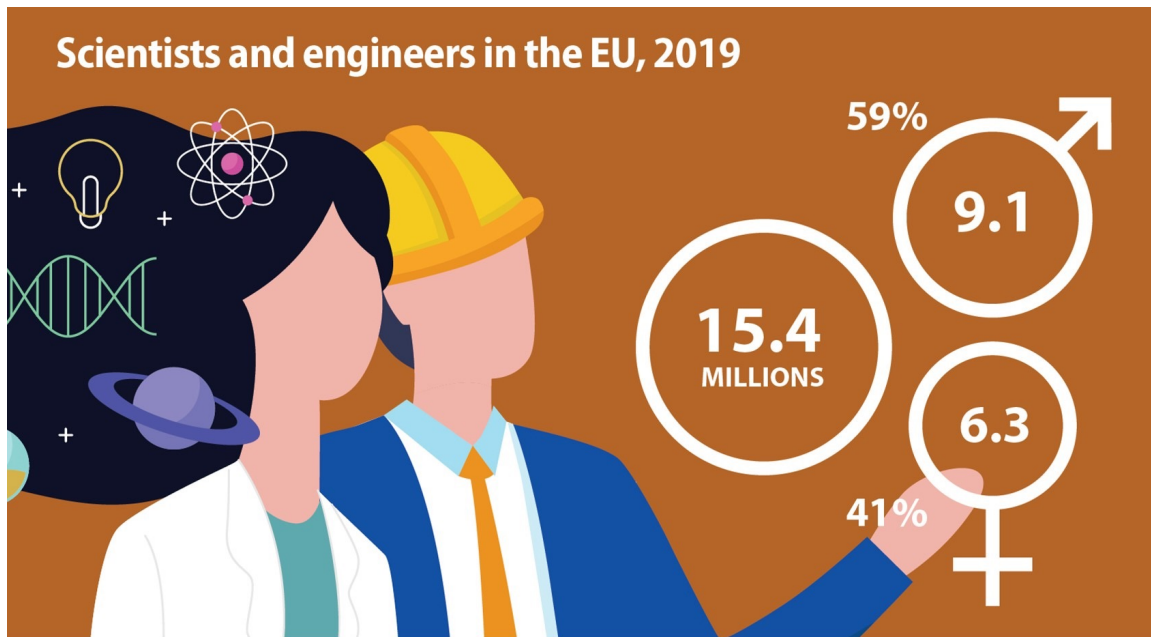
Videos

Videos are the other tool increasingly used to disseminate statistics through social media, blogs and websites



Eurostat, in its web section dedicated to statistical literacy, uses similar ones to explain inflation to non-experts in the field

Infographics



ec.europa.eu/eurostat 













Statistical
infographics to focus on data.
The layout and
graphic elements
will help you tell
the story behind
your data

<https://ec.europa.eu/eurostat/web/science-technology-innovation/visualisations>

Databases

- Statistics by theme
- Statistics A-Z
- COVID-19
- Experimental statistics
- Visualisation tools
- Bulk download
- ▼ Web Services
 - GISCO: Geographical Information and maps
 - Microdata
- ▲ Metadata
 - COVID-19: support for statisticians
 - ESS Reference Metadata Reporting Standards
 - Classifications
 - Code lists
 - Legislation and methodology
 - Concepts and definitions

DATABASE

- 📁 Data navigation tree
- 📁 Database by themes
 - 📁 General and regional statistics
 - 📁 European and national indicators for short-term analysis (euroind) 
 - 📁 Business and consumer surveys (source: DG ECFIN) (ei_bcs) 
 - 📁 Consumer surveys (source: DG ECFIN) (ei_bcs_cs)
 - 📄 Consumers - monthly data (ei_bscs_m)   Updated
 - 📄 Consumers - quarterly data (ei_bscs_q)   Updated
 - 📁 Business surveys - NACE Rev. 2 activity (source: DG ECFIN) (ei_bcs_bs)
 - 📁 Balance of payments (ei_bp)
 - 📁 Consumer prices (ei_cp) 
 - 📁 Housing price statistics (ei_hp)
 - 📁 International trade (ei_et) 
 - 📁 Industry, trade and services (ei_is) 
 - 📁 Labour market (ei_lm)
 - 📁 Monetary and financial indicators (ei_mf) 
 - 📁 National accounts (ei_qna) 
 - 📁 Regional statistics by NUTS classification (reg)
 - 📁 Regional statistics by typology (reg_typ) 
 - 📁 Degree of urbanisation (degurb)

Data Visualization



Business investment



Business profit share



Current account balance



GDP



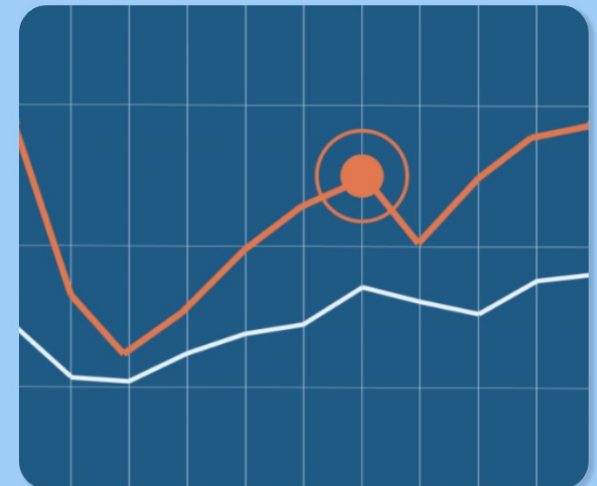
Government debt



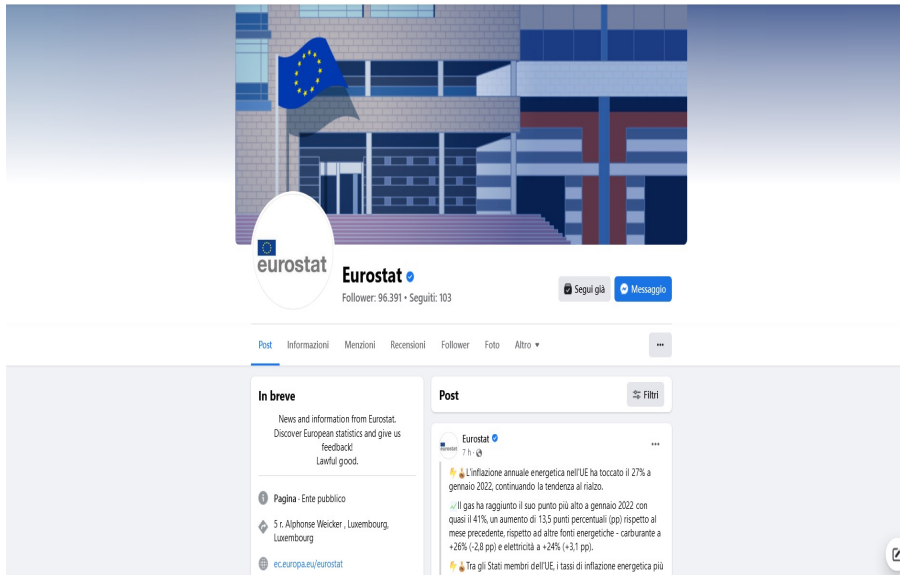
Economic trends

Visualise latest trends & compare countries

Get a quick and easy overview of the most recent development of Eurostat's Euro indicators & see how your country compares to others.



Social media



<https://www.facebook.com/EurostatStatistics/>

Social media now are an almost unavoidable part of our society and even official statistical organizations have landed on these channels to communicate with their users and disseminate statistics from official sources

Social media

However, social media are also a public platform, anyone post anything without being accountable for fact-checking

SOCIAL MEDIA

FAKE NEWS

It's left to users to distinguish in their feeds
misinformation vs. **disinformation**

Social media

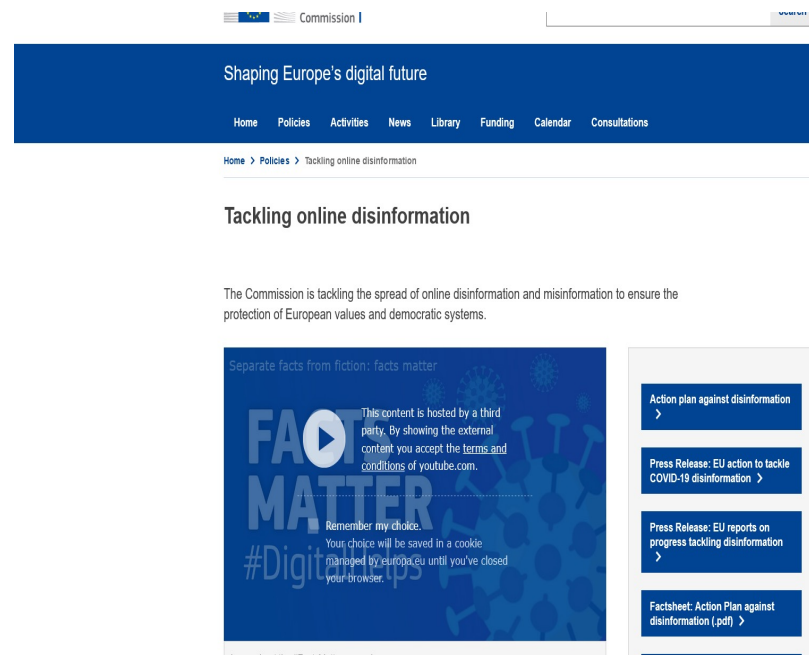
If you represent an official organization that uses social media as a platform for dissemination, it's **important to keep your posts consistent with your brand**, share things on your timeline that build relationships with users, align with your values, showcase original content

Fake news on social media may be inevitable, but you can help stop the spread by thinking critically

Fight disinformation

Disinformation, misinformation and fake news can also be contrasted through the use of targeted videos

See the Eu example of the **#FactsMatter** campaign




<https://digital-strategy.ec.europa.eu/en/policies/online-disinformation>

Fight disinformation

Web sections can also be a great tool to combat misinformation on certain topics. This is what happened, for example, with the Covid-19 pandemic

Official website of the European Union - How do you know?

Fighting disinformation



31/03/2020

Disinformation on the coronavirus is thriving. It is important that you get updated information from authoritative sources only.

We suggest that you follow the advice of [your public health authorities](#), and the websites of relevant EU and international organisations: [ECDC](#) and [WHO](#). You can also help by not sharing unverified information that comes from dubious sources.

The fight against disinformation is a joint effort involving all European institutions. The EU is working in close [cooperation with online platforms](#) to encourage them to promote authoritative sources, demote content that is fact-checked as false or misleading, and take down illegal content or content that could cause physical harm.

All our efforts to fight disinformation, misinformation and foreign interference have been stepped up and outlined in a [Joint Communication](#) by the Commission and the High Representative.

Here, the example
of the Eu website

Open data, Linked Open Data and Big data

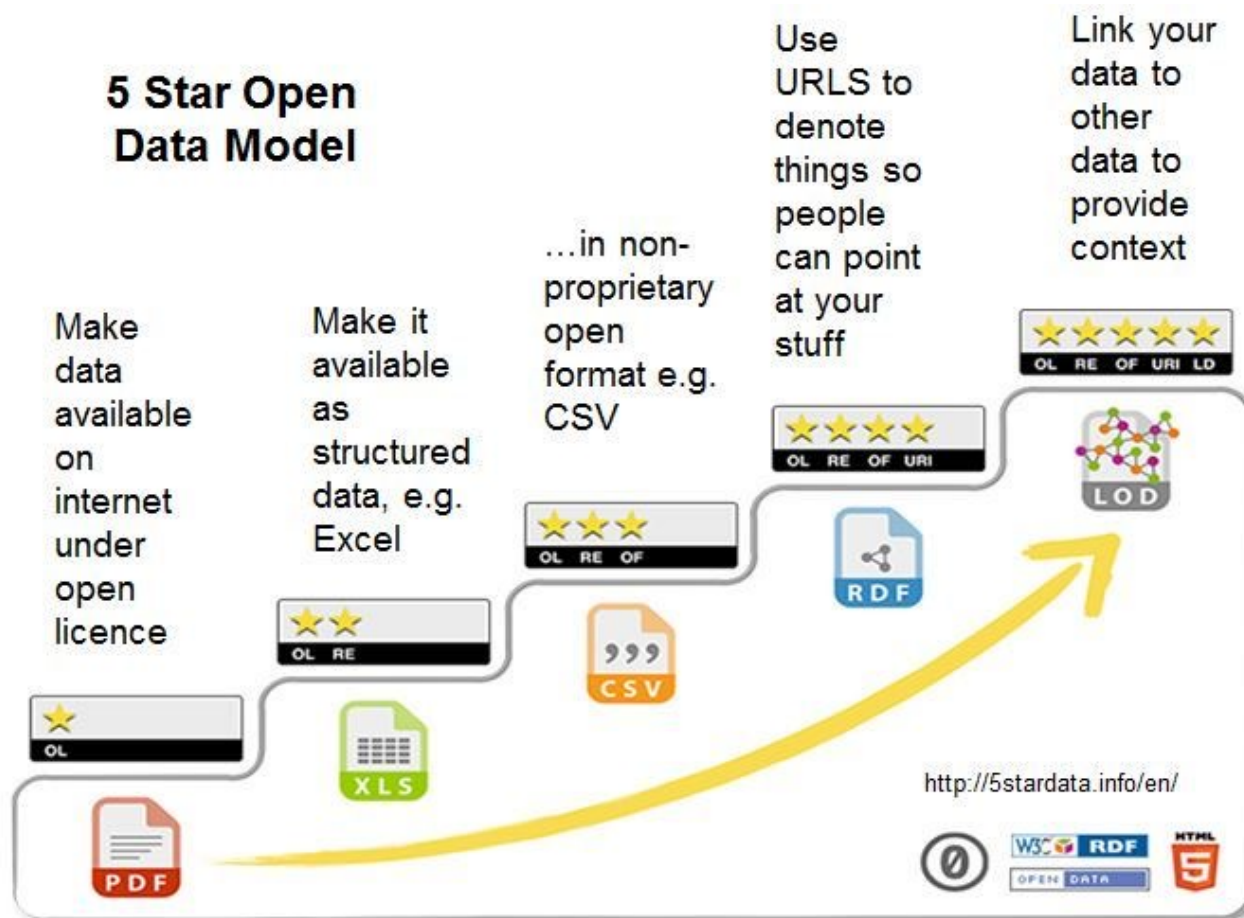


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Open Data (Tim Berners-Lee)





Navigation bar with links: Home, Data, Studies, data.europa academy, News, Contact.

Timeline of EUDATATHON'22 events:

- 7 February 2022: Launch of competition
- 31 March 2022: Deadline to submit ideas
- 25 April 2022: Preselected teams announced
- 26 June 2022: Deadline to submit full proposals
- 15 July 2022: Finalist teams announced
- 20 October 2022: Competition finals

#eudatathon | op.europa.eu/eudatathon | 20 OCTOBER 2022 | EUDATATHON'22



EUROPEAN
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The official portal for European data

170 Catalogues
36 Countries
1 399 388 Datasets

Trending datasets ②

- Consolidated list of persons, groups and entities subject to EU financial sanctions
- Number of COVID-19 people killed by age
- CORDIS - EU research projects under Horizon 2020 (2014-2020)
- The European Commission's Oil Bulletin
- Taxpayer Identification Number (TIN)

Search datasets

Search datasets

Search datasets

Icons representing various data categories:

- Economy & Finance
- Education, Culture & Sport
- Energy
- Environment
- Government & Public Sector
- Health
- International Issues
- Justice, Legal System & Public Safety
- Population & Society
- Regions & Cities
- Science & Technology
- Transport

> DATA CATALOGUES

> ALL DATASETS

> EU INSTITUTIONS DATASETS

<https://data.europa.eu/en>

Linked data

- They are structured data interconnected with other data in a way that becomes more useful through semantic queries
- The linked data system builds on standard Web technologies such as HTTP, RDF, and URI
- **Linked data can also be open data**, in which case they are usually described as **linked open data (LOD)**

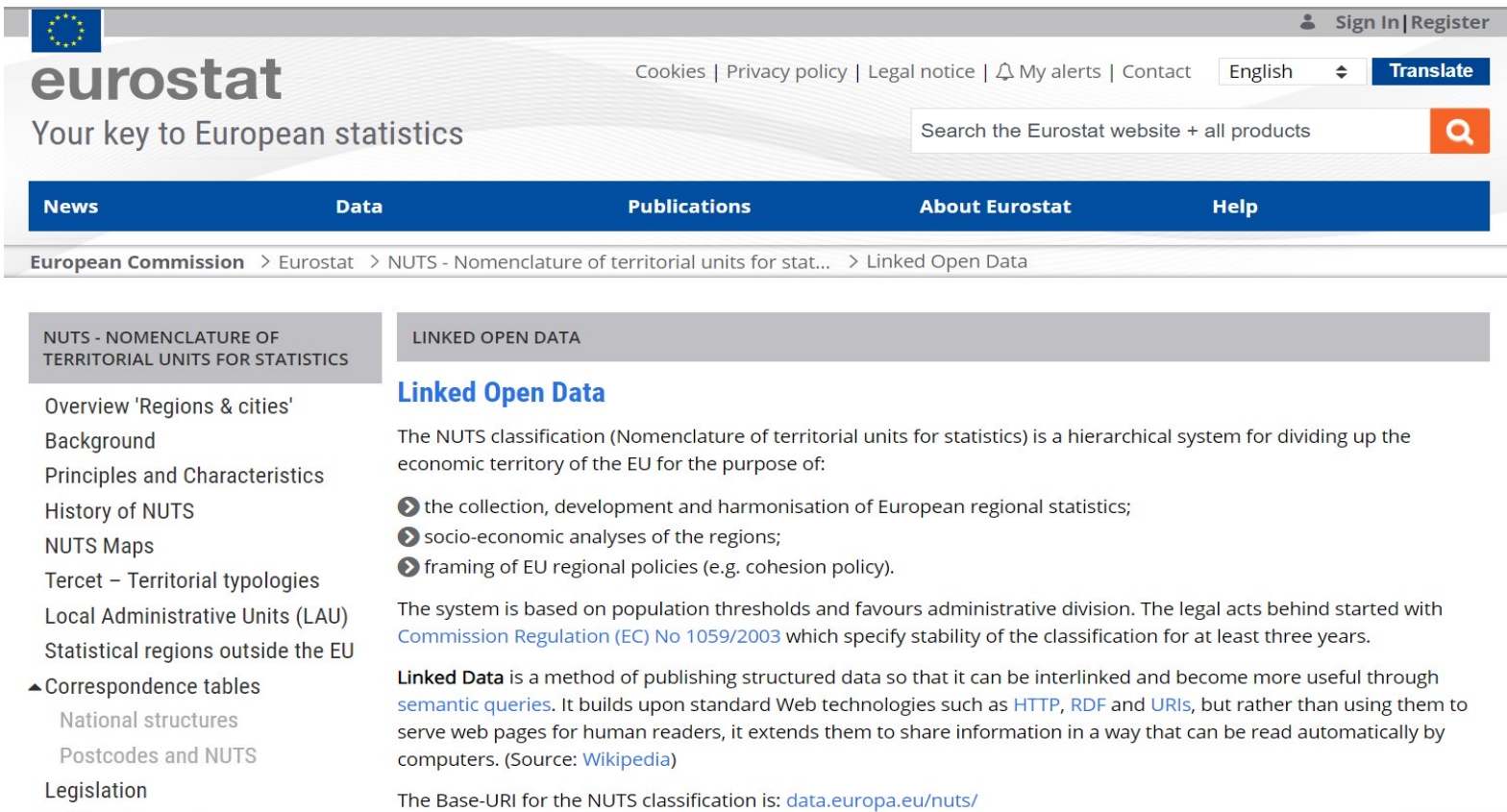
Linked Data (Tim Berners-Lee)

- Uniform Resource Identifiers (URIs) should be used to name and identify individual things
- HTTP URIs should be used to allow these things to be looked up, interpreted, and subsequently "dereferenced"
- Useful information about what a name identifies should be provided through open standards such as RDF, SPARQL, etc
- Publishing data on the Web, other things should be referred to using their HTTP URI-based names

Linked Open Data

- LOD support more flexible means of data dissemination, improved exploration of data across data sets, and allow linkage with other sources (e.g. within a national statistical system) while maintaining information about the provenance of the data
- Indirect benefits are that LOD projects promote internal consistency of data and metadata

Linked Open Data



The screenshot shows the Eurostat website interface. At the top, there's a navigation bar with the Eurostat logo, a search bar, and links for 'Sign In' and 'Register'. Below this is a secondary navigation bar with links for 'Cookies', 'Privacy policy', 'Legal notice', 'My alerts', 'Contact', and a language selector set to 'English'. A 'Translate' button is also present. The main navigation bar includes 'News', 'Data', 'Publications', 'About Eurostat', and 'Help'. The breadcrumb trail reads: 'European Commission > Eurostat > NUTS - Nomenclature of territorial units for statistics > Linked Open Data'. The left sidebar lists various NUTS-related topics, with 'Linked Open Data' highlighted. The main content area provides an overview of the NUTS classification, its purpose, and the linked data approach.

eurostat
Your key to European statistics

Sign In | Register

Cookies | Privacy policy | Legal notice | My alerts | Contact | English | Translate

Search the Eurostat website + all products

News Data Publications About Eurostat Help

European Commission > Eurostat > NUTS - Nomenclature of territorial units for statistics > Linked Open Data

NUTS - NOMENCLATURE OF TERRITORIAL UNITS FOR STATISTICS

- Overview 'Regions & cities'
- Background
- Principles and Characteristics
- History of NUTS
- NUTS Maps
- Tercet – Territorial typologies
- Local Administrative Units (LAU)
- Statistical regions outside the EU
- Correspondence tables
 - National structures
 - Postcodes and NUTS
- Legislation

LINKED OPEN DATA

Linked Open Data

The NUTS classification (Nomenclature of territorial units for statistics) is a hierarchical system for dividing up the economic territory of the EU for the purpose of:

- the collection, development and harmonisation of European regional statistics;
- socio-economic analyses of the regions;
- framing of EU regional policies (e.g. cohesion policy).

The system is based on population thresholds and favours administrative division. The legal acts behind started with [Commission Regulation \(EC\) No 1059/2003](#) which specify stability of the classification for at least three years.

Linked Data is a method of publishing structured data so that it can be interlinked and become more useful through [semantic queries](#). It builds upon standard Web technologies such as [HTTP](#), [RDF](#) and [URIs](#), but rather than using them to serve web pages for human readers, it extends them to share information in a way that can be read automatically by computers. (Source: [Wikipedia](#))

The Base-URI for the NUTS classification is: data.europa.eu/nuts/

Big Data

- Big data is a collection of data that is so extensive in terms of volume, speed and variety that it requires specific technologies and analysis methods to extract additional information value from it



Big Data examples

Even the experimental statistics use new data sources (Big data)

Two examples of Big data-based Experimental Statistics are:

- Eurostat uses Wikipedia as a new source to produce statistics on visits to UNESCO World Heritage sites
- Italian statistical Institute uses Twitter (about 57,000 tweets per day) to elaborate the social mood on economy index

Big Data- Unece Classification

1. Social Networks (human-sourced information)

Social Networks

Blogs and comments

Personal documents

Pictures: Instagram, Flickr, Picasa

Videos: Youtube etc.

Internet searches

Mobile data content: text messages

User-generated maps

E-Mail

2. Traditional Business systems (process-mediated data)

Data produced by Public Agencies

Medical records

Data produced by businesses

Commercial transactions

Banking/stock records

E-commerce

Credit cards

3. Internet of Things (machine-generated data)

Data from sensors

Fixed sensors

Home automation

Weather/pollution sensors

Traffic sensors/webcam

Scientific sensors

Security videos/images

Mobile sensors (tracking)

Mobile phone location

Cars

Satellite images

Data from computer systems

Logs

Web logs

Big Data and Open data

Open data are certainly a subset of Big data, but the purposes and uses that characterize these two classifications of data are profoundly different:

- **Big data** are collected even without the knowledge of the person concerned to profile the tastes and trends of citizens and are used for private purposes and market analysis
- **Open data** are data collected as part of the actions of Public Administrations, must be online, reusable and made available to the community

Web publishing

What is Web Publishing?

The process of publishing original content on the Internet

- Web publishing includes:
 - personal, business and community websites
 - e-books
 - blogs

Web Publishing

The published content may include:



- text
- images
- videos
- other types of media

Web Publishing

To create a web publishing product:

- Website development softwares
- Internet connection
- A web server to host the website

Benefits

- Inexpensive because it does not require physical resources
- High potential to be visited, since the published content can be browsed by anyone who is authorized to access it



Eurostat example



The screenshot shows the Eurostat website interface. At the top is a navigation bar with links: Home, Macro-economic trends, Households, Businesses, Government, and a menu icon. The 'eurostat' logo is on the right. The main content area features a large background image of Euro coins. The title 'The European economy since the start of the millennium' is prominently displayed, followed by 'A STATISTICAL PORTRAIT | 2021 edition'. The text describes the publication's purpose: to show how main features of the economy of the European Union and its Member States have evolved since 2000 through a large range of statistical data. It mentions that the 2021 edition covers data up to 2020 and includes information on the COVID-19 crisis. A 'Feedback' link is visible on the right side of the page.

Home Macro-economic trends Households Businesses Government eurostat

The European economy since the start of the millennium

A STATISTICAL PORTRAIT | 2021 edition

Since the start of the millennium, the European economy has evolved and statistics can help to better perceive these structural changes.

The European economy since the start of the millennium — a statistical portrait aims to show how main features of the economy of the **European Union** and its Member States have evolved since 2000 through a large range of statistical data giving both a micro- and a macro-economic perspective.

This interactive publication does not describe the short-term trends of the European economy, but its purpose is to answer questions such as: How has our consumption behaviour changed? How has household income evolved? Are working patterns still the same? What is the share of services in the economy? What is the proportion of large enterprises? Has government employment increased or decreased?

This 2021 edition only describes the situation up to the year 2020 at the most. It is the first edition showing data from some sources for the initial impact (during 2020) of the COVID-19 crisis. For information on short-term indicators including COVID-19 related implications, please see our [dedicated website section](#).

The publication is divided into four parts focusing on specific areas:

Macro-economic trends: the publication starts with the main characteristics of the whole economy by showing long term trends for GDP, investment and consumption, trade, inflation, unemployment, employment, etc.

Households: this chapter informs about main developments in household income and spending. For instance, you can see where your income is situated compared with others in your country. It also shows how much households spend on different goods and services and how household's savings and debts have evolved.

Feedback



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Eurostat example



Large differences in price changes at detailed level

While the overall inflation rate can be considered as moderate in the EU since the start of the millennium (as shown in chapter 1.1), significant price variations are noticeable at a detailed level.

Between 2000 and 2020, prices in the EU have risen by 42 % overall. The highest increases were registered for "alcoholic beverages and tobacco" as well as for "education" where prices rose by more than 95 %. "Housing, water, electricity and gas" as well as "restaurants and hotels" followed with growth rates of 60 % or more. Prices for "clothing and footwear" remained nearly stable, while prices for "communications" decreased by 24 %.

Looking at detailed products, the highest increases were observed in particular for "tobacco" (+196 % between 2000 and 2020), "jewellery, clocks and watches" (+108 %), "newspapers and periodicals" (+98 %), "heat energy" (+97 %) and "gas" (+96 %). Lower increases were observed for e.g. "cars" (+13 %), furniture (+25 %), "books" (+31 %) and "wine" (+35 %). On the other hand, prices for "audio visual, photographic and information processing equipment" decreased by 73 %, "telephone equipment and services" by 28 % and "games, toys and hobbies" by 21 %.

Have a look at the interactive visualisation below to see how prices in your country have changed since 2000.

PRICE CHANGES



Total: Prices in the European Union have increased by 42.3% between 2000 and 2020.

Switzerland: Calculation 2000-2020 not possible as the time series only starts in 2005.
Data for the EU refer to the evolving composition of the European Union (EU) aggregate, meaning to the composition of the

Eurostat example



The life of women and men in Europe

2021 INTERACTIVE EDITION

At home, at work, at school...

... there are large differences between the lives of women and men in Europe, but there are also similarities. This interactive publication **The life of women and men in Europe** aims at comparing women and men in their daily lives. It also shows how similar or different the everyday life of women and men is in European countries.

The publication includes three chapters:

Living & ageing : This chapter focuses on demography and health, including for example data on life expectancy, single mothers and fathers and how we perceive our health. This chapter also shows that, despite our differences, both women and men in Europe are similarly satisfied with their lives.

Learning & earning : This chapter includes data on education levels, reconciliation of work and family life, full-time and part-time work, the gender pay gap, female and male managers, etc. It highlights not only structural differences but also inequalities between women and men.

Eating & surfing : This part focuses on nutrition, sport practice and online practices, including for example data on consumption of fruit and vegetables, alcohol consumption, body mass index, use of social networks and online shopping. A final part is dedicated to childcare, housework and cooking

This interactive publication containing short texts, interactive visualisation tools, infographics, photos, etc. has been developed by Eurostat in collaboration with the National Statistical Institutes of the EU Member States and the EFTA countries.



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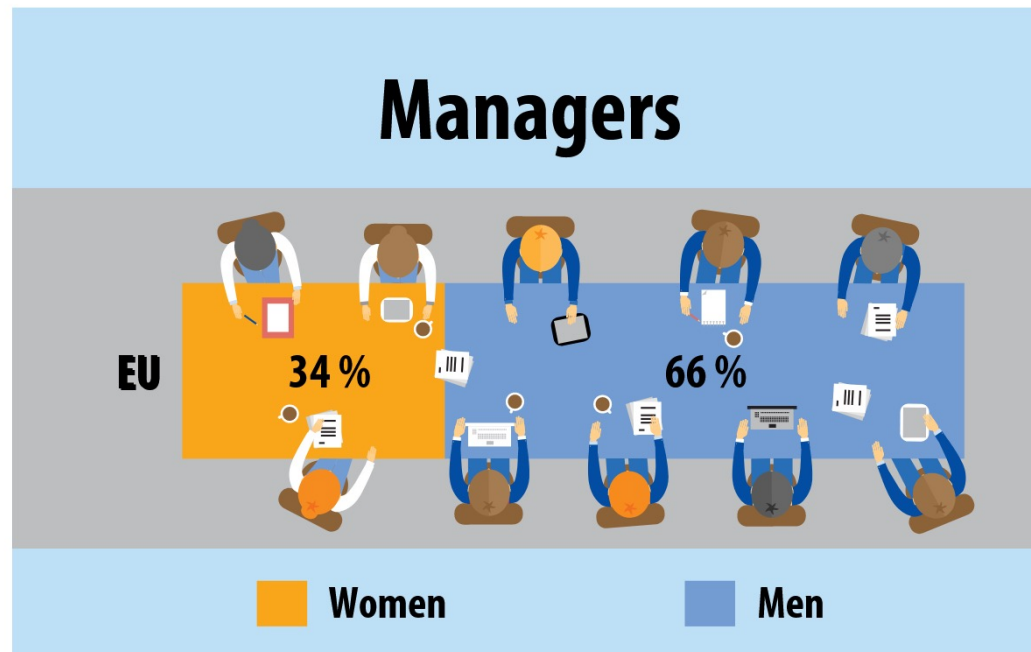
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Eurostat example



Around a third of managers in the EU are women

When working, men generally occupy higher positions than women. For example, one can see that a third (34 %) of **managers** in the EU in 2020 were women. The share of women in this position was not over 50 % in any of the Member States: the largest proportions were observed in Latvia (47 %), Poland (43 %), Sweden (42 %), Bulgaria (41 %) and Slovenia (40 %). On the other hand, the smallest shares were found in Cyprus (24 %), the Netherlands (26 %), Luxembourg and Italy (both 27 %).



Feedback

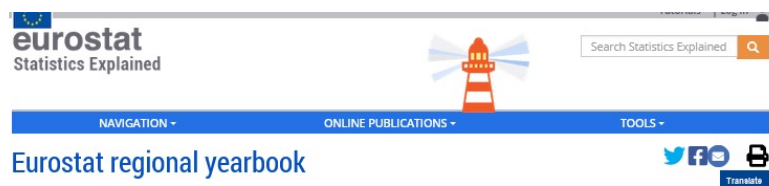


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Eurostat Statistics explained



The *Eurostat regional yearbook* is an online Eurostat publication, also downloadable in PDF format (ISBN: 978-92-76-37762-7, ISSN: 2363-1716, doi: 10.2785/894358, cat. number: KS-HA-21-001-EN-N) and available in print (ISBN: 978-92-76-37761-0, ISSN: 1830-9674, doi: 10.2785/762788, cat. number: KS-HA-21-001-EN-C).

The articles in this online publication are updated or replaced once a year (the present versions are based on a set of data that was extracted in March and April 2021).

All maps can be explored interactively using Eurostat's statistical atlas (see user manual ¹⁸).

Table of contents

Foreword

Acknowledgements

Introduction

People and society

1. Population

2. Health

3. Education

4. Labour market

5. Living conditions

6. Digital society

Economy and business

7. Economy

8. Business

9. Research and development

10. Tourism

Environment and natural resources

11. Transport

12. Environment

13. Agriculture

Alphabetical index of all articles

Categories: Online publications | Regional yearbook



https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Eurostat_regional_yearbook

Tools

There are many web publishing tools available

Some of them are marketing and design oriented,
others are more interested in news publishing

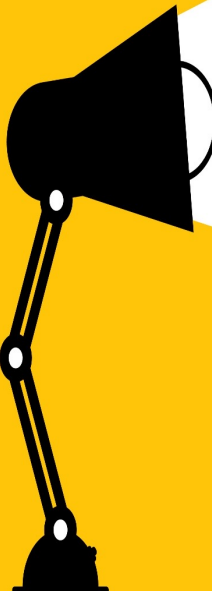
Thus, how to select the best one for us?

Tools

Some factors to consider in order to identify the web publishing tool that best suits our needs:

- SEO optimization options
- Web analysis
- Offline support
- Subscription-based web publishing models

Conclusions



We have seen and reiterated the importance of adapting one's data dissemination strategy to the main new IT tools that are available today

To re-cap, what are the main steps to follow?

Conclusions

- identify your users
- work to meet the needs and expectations of your users
- provide quality data and present your information in a clear and user-friendly way, in accordance with the statistical dissemination principles shared at European level
- finally, choose among the various dissemination tools available those that best suit our needs and those of our users



‘Only statistics that are used are useful statistics’ (Petteri Bae)

Thanks for the attention!

Any questions?

