

Data Democratization and Official Statistics: The Greek Paradigm



EUROPEAN CONFERENCE ON QUALITY IN OFFICIAL STATISTICS 2024 ESTORIL - PORTUGAL

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Data Democratization

- The process of making statistical data
accessible,
utilized
and
understandable
by a broader audience...
- Data democratization is a **transformative process** for National Statistical Offices (NSOs), aimed at making official statistics more **relevant** to a wider audience.



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Data Democratization

- The Hellenic Statistical Authority (ELSTAT), has been at the forefront of making statistical data accessible to the public since 2016.
- This presentation will explore how ELSTAT has embraced a data democratization strategy (#GreekDataMatter) following a **holistic approach** consisting of many distinct **actions** in order to
 - empower citizens,
 - support evidence-based policymaking, and
 - strengthen the role of official statistics in the society.



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Theoretical Framework

- Statistics, as a public asset, should serve the public good so that all users can benefit from them.
- The **new modes of communication** have changed the way that users are receiving and sharing statistical information, providing opportunities and challenges to NSOs.
- ***Visual information is a more effective form of communication for humans...***





Theoretical Framework

Data visualization:

- The visual representation of numerical values,
- A discovery process which moves from just looking at data to actually seeing them...
- Viewers/users go through a process of understanding involving three stages:
 - perceiving (what does it show?),
 - interpreting (what does it mean?) and
 - comprehending (what does it mean to me)
- Statistical data storytelling...





Transparency and impartiality in the use of infographics

- Many NSOs choose to present the results of their statistical surveys, using **infographics**.
- This practice may **promote data democratization** by making statistical information more accessible to the general public,

HOWEVER

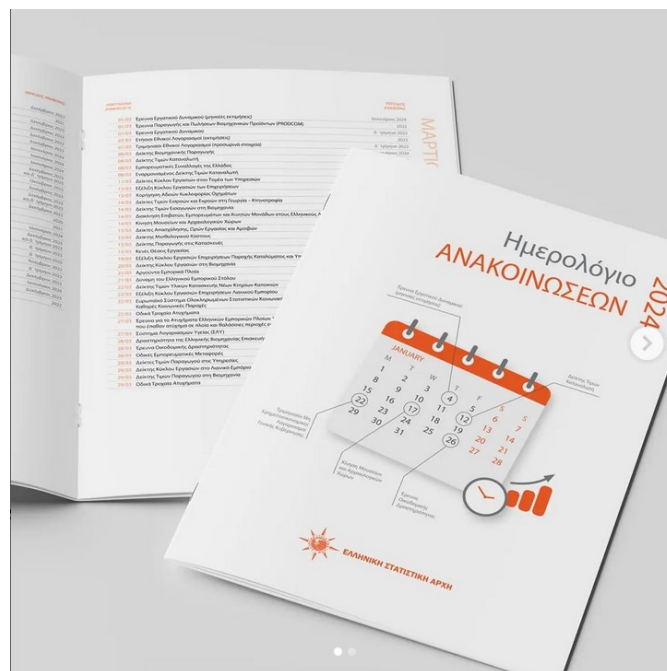
- **Raises questions regarding the impartiality of the presentation of statistical findings.**





Transparency and impartiality in the use of infographics

- While the **timing** of the release of official statistical data is typically predetermined and publicly disclosed through established calendars, the use of infographics does not always follow a standardized and well-documented process.



Release calendar

--All themes-- --All categories-- [Want to subscribe?](#)

< > today 1 – 5 January 2024 week list

Mon 01/01	Tue 02/01	Wed 03/01	Thu 04/01	Fri 05/01
	<p>Update of release calendar, 2024</p> <p>News article</p>	<p>Belgian Presidency of the Council of the European Union</p> <p>News article</p>	<p>Industrial Turnover, October 2023</p> <p>Data release</p>	<p>Flash Estimate inflation euro area, December 2023</p> <p>Data release Euro indicator release Statistics Explained</p>
			<p>Building permits, Sept 2023 - Q3/2023</p> <p>Data release</p>	<p>Industrial producer prices, domestic market, November 2023</p> <p>Data release Euro indicator release</p>
				<p>Tourism - domestic travel, 2022</p> <p>News article</p>

This calendar uses Europe/Luxembourg time zone (CET/CEST).



Transparency and impartiality in the use of infographics

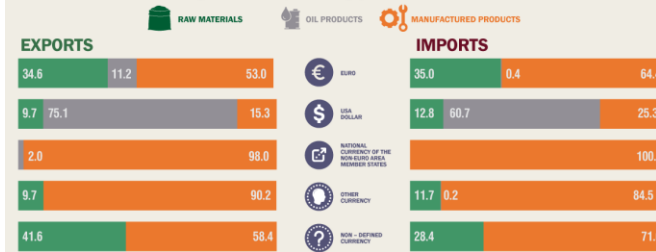
- (Potential) bias in the selection of statistical data to be presented as infographics. In cases where certain results are highlighted through infographics while others are not, there may be a lack of transparent and predefined criteria for such choices.

INTERNATIONAL TRADE IN GOODS STATISTICS WITH THIRD COUNTRIES BY INVOICING CURRENCY, 2023*



PERCENTAGE DISTRIBUTION BY INVOICING CURRENCY AND GROUP OF PRODUCTS

The percentages were calculated on the basis of the Total Groups of products of SITC Rev.4 (0-9) taking into account the product category SITC 9 "Products non-classified"



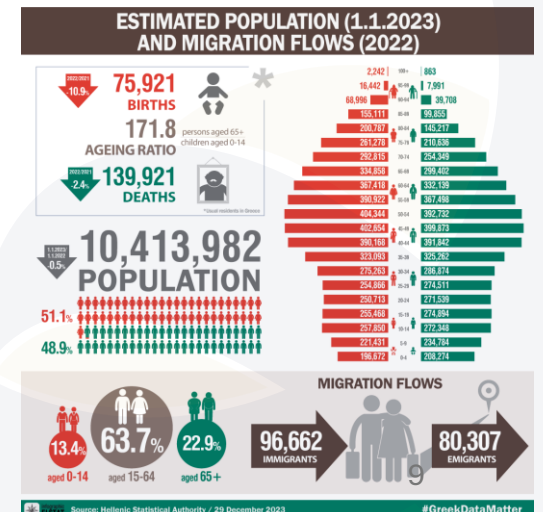
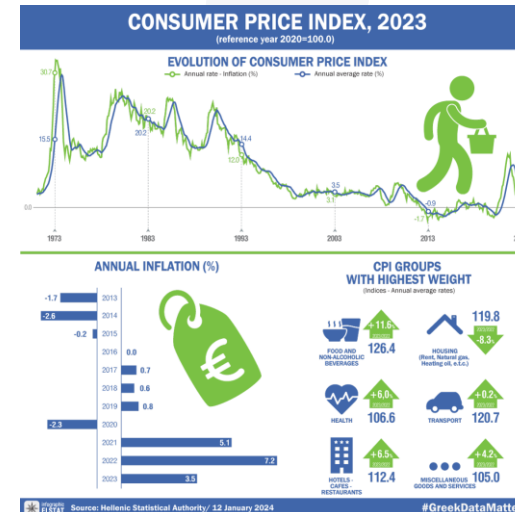
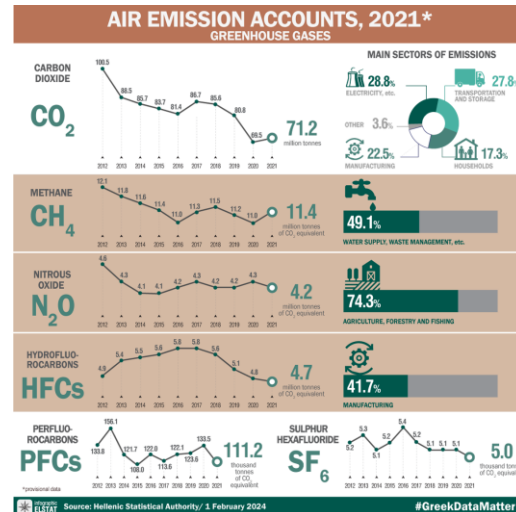
* provisional data
Source: Hellenic Statistical Authority / 30 April 2024 #GreekDataMatter

Year	Statistical Classification of Economic Activities (NACE Rev.2)	Description of Classification of Economic Activities	Product Code	Product Description	External trade nomenclature reference (HS/CN)	Section ⁽¹⁾	Volume Physic. Unit	Number of enterprises	Quantity of Production	Quantity of Sales	Value of Sales (euro)	Unit value
2022_25	Manufacture of fabricated metal	2599297400	Other articles of lead, n.e.c.	7806[00.10 + 80]	A	kg	2	(2)	(2)	(2)	(2)	(2)
2022_25	Manufacture of fabricated metal	2599298200	Bells, gongs, etc., non-electric, of base metal	8306 10	A	kg	2	(2)	(2)	(2)	(2)	(2)
2022_25	Manufacture of fabricated metal	2599298300	Iron or steel flexible tubing (excluding rubber tub)	8307 10	A	kg	1	(2)	(2)	(2)	(2)	(2)
2022_25	Manufacture of fabricated metal	2599298700	Base metal sign-plates, name-plates, address-plates	8510	A	kg	10	3 021 043	2 965 307	15 329 405	5 1696	(2)
2022_26	Manufacture of computer, electro	2611224000	Photosensitive semiconductor devices; solar cell	8541[42 + 43 + 49]	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2611228000	Mounted piezo-electric crystals (including quartz)	8541 60	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2611300600	Electronic integrated circuits (including multichip)	8542 31 90	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2611300600	Electronic integrated circuits (including multichip)	8542 31 90	B	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2611302300	Multichip integrated circuits; memories	8542[32.11 + 19]	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2611409000	Parts of integrated circuits and microassemblies	8542 90	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2611502000	Multilayer printed circuits, consisting only of co	8534 00 11	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2611505000	Printed circuits consisting only of conductor ele	8534 00 19	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	26112108000	Passive networks (including networks of resistor	8534 00 90	A	pi/st	2	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	26112300000	Smart cards	8523 52	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2620110000	Laptop PCs and palm-top organisers	8471 30	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2620150000	Other digital automatic data processing machin	8471 50	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2620160000	Keyboards	8471 60 80	A	pi/st	2	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	26304000000	Parts and accessories of the machines of HS	8473[80.20 + 80] + 50[20 + 8A]	A	pi/st	2	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2630232000	Machines for the reception, conversion and tran	8517 62	A	pi/st	2	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2630233000	Telephone sets (excluding line telephone sets	8517[18 + 49.10]	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2630237100	Other apparatus for the transmission or recep	8517[60.20 + 90]	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2630301000	Other parts of telephone sets, telephones for	8517 79	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2630508000	Electric burglar or fire alarms and similar app	8531 10 30	A	pi/st	4	211 319	204 232	5 252 248	25 717	(2)
2022_26	Manufacture of computer, electro	2640440000	Radio-telephony or radio-telegraphy receptio	8517 69 30B	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2640520000	Parts of radio receivers and transmitters	8529 80 30	A	pi/st	2	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2651180000	Instruments and appliances for navigation (inc	9014 80	A	pi/st	1	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2651208000	Radio remote control apparatus (including for	8526 92	A	pi/st	2	(2)	(2)	(2)	(2)	(2)
2022_26	Manufacture of computer, electro	2651430000	Instruments for measuring electrical quantities	9030[91 + 33][20 + 70]	B	pi/st	1	(2)	(2)	(2)	(2)	(2)



Transparency and impartiality in the use of infographics

- Additionally, the use of infographics may lead to an **emphasis on specific variables** or aspects of statistical results over others.
- This selective emphasis could unintentionally skew public perception and understanding of the significance of various statistical findings, potentially distorting the overall narrative.





Transparency and impartiality in the use of infographics

- Balancing the benefits of data democratization and accessibility through infographics with the need for transparency and impartiality in official statistics is a complex challenge.



- **Addressing this challenge requires careful consideration of the selection criteria for infographics and ensuring that these choices are made based on objective and predefined criteria rather than subjective interests.**



Statisticians vs Graphic Designers

- Successful data visualization requires collaboration between:
 - **statisticians**, who provide the data and insights and
 - **graphic designers**, who translate this data into visually appealing and accurate representations.

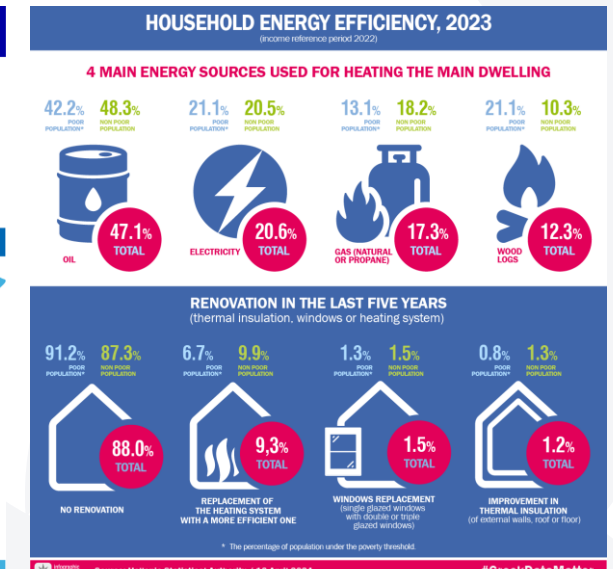
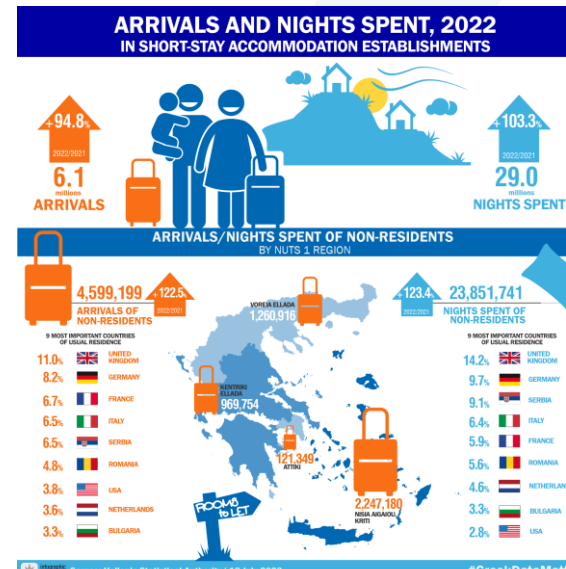
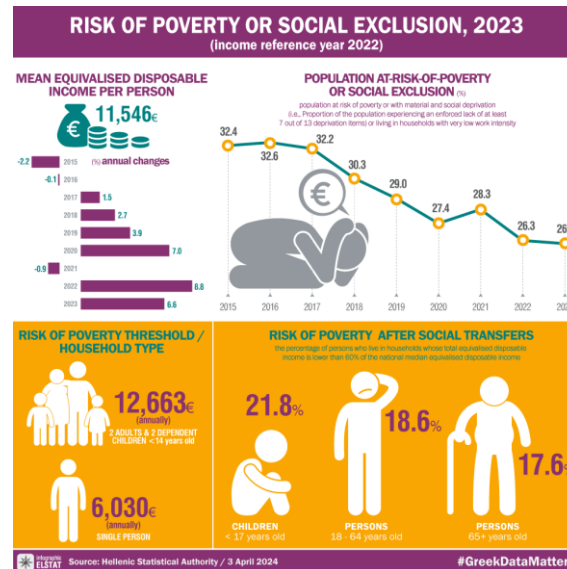


- This partnership between the analytical minds of statisticians and the creative flair of graphic designers is essential for the effective democratization of the statistical production.



Statisticians vs Graphic Designers

- By working together, statisticians and graphic designers can bridge the gap between data complexity and audience comprehension, ensuring that infographics effectively convey the intended message without sacrificing accuracy.





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Statisticians vs Graphic Designers

- Data visualization wield considerable power in shaping public perception so it is essential that they remain:
 - **inclusive,**
 - **neutral,** and
 - **sensitive** to various social groups or even nations.
- The design and content of infographics should be carefully crafted to **avoid** any potential harm, offense, or marginalization of individuals or communities.





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Statisticians vs Graphic Designers

- One crucial aspect of cultural sensitivity in data visualization is the **avoidance of selective or biased data presentation and stereotypes.**
- Every effort should be made to present a **complete and balanced picture of the data**, avoiding cherry-picking statistics that may serve (intentionally or not) a particular interests.
- This requires a **commitment to transparency in data selection** and representation, ensuring that all relevant information is included, regardless of its alignment with any preconceived notions.



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Statisticians vs Graphic Designers

- Data visualizations, should be created with a keen awareness of inclusiveness.
- Visual elements, **colors**, **symbols** and **maps** should be chosen thoughtfully to avoid inadvertently causing offense or misunderstanding.
- The inclusion of diverse perspectives and representation in infographics can help promote inclusivity and respect for various social groups.





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ELSTAT's Multi-Layered Strategy

- ELSTAT's strategy is multi-layered and aims to cover all the main factors for a successful data dissemination, as well as at the wider cultivation of a data democratization culture.
- The following aspects play an important role in the way of developing a data sharing culture



ELSTAT's Multi-Layered Strategy

Needs Assessment

- A thorough assessment of the data ecosystem is considered as the first step in identifying the specific (statistical) information needs of citizens, enterprises, policymakers, researchers and the users of statistical data in general.
- At the same time, an evaluation of the statistical literacy of the general population is also crucial.



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ELSTAT's Multi-Layered Strategy

Quality Assurance Framework

- Ensure data accuracy, reliability, and consistency.
- Implement rigorous quality control measures and adhere to international statistical standards. Transparency in data collection and processing is key to building public trust.



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ELSTAT's Multi-Layered Strategy

Data Accessibility



- Establish a user-friendly, online platform that hosts official statistics.
- Ensure that data are available in open, machine-readable formats, and use metadata to assist users in understanding datasets.
- ELSTAT disseminated the statistical information through 3 main channels: Printed, digital and social media, providing information in many different types such as editable excel, editable and non-editable pdf files, books and e-books, editable infographics as well as animated infographic videos.





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ELSTAT's Multi-Layered Strategy

Statistical Literacy and Communication Strategy

- ELSTAT has launched statistical literacy programs aimed at schools, universities, special groups and the general public to enhance data understanding.
- The "GreekDataMatter" communication strategy targets different audience groups through appropriate channels, such as social media, press releases, and interactive platforms.



#GreekDataMatter Strategy

	Social Media	Announcements / Press Releases	Seminars	Publicity Actions	Cooperation
General Public	X	X		X	
Politicians	X	X		X	
Journalists	X	X	X	X	
Heavy Users		X	X	X	
Enterprises		X		X	
Public Sector		X	X	X	X
Academia				X	X
Schools	X		X	X	



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ELSTAT's Multi-Layered Strategy

Storytelling with Data

- Transforming raw statistical data into compelling narratives is key to engaging the audience.
- Effective storytelling techniques in infographics highlight key data points and create a cohesive narrative that makes the information more relatable and easier to understand.



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ELSTAT's Multi-Layered Strategy

Focus on Data Disaggregation

- Disaggregated data is crucial for identifying regional trends and disparities, providing valuable insights for policymakers and stakeholders.
- ELSTAT uses disaggregated data to ensure detailed and localized insights, aiding better decision-making processes.



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ELSTAT's Multi-Layered Strategy

Statistical Confidentiality and Data Protection

- ELSTAT protects, in all the stages of statistical production, the secrecy of personal data collected from the statistical units and puts particular emphasis on the communication of its commitment to ethical and legally compliant personal data processing.



Case Study 1: 2021 Population- Housing Census Results

- The 2021 Census was a significant undertaking, providing crucial data on the population and housing conditions in Greece.
- ELSTAT used various visual elements, such as maps, icons, and charts, to present key findings in a user-friendly manner, enhancing public engagement and understanding.
- The design of Census infographics involved careful selection of colors, typefaces, and alignment to ensure clarity and visual appeal.
- Examples include population pyramids, bar charts, and pictograms, which made complex data accessible and engaging for the public.



Case Study 2: SDGs 2030

- ELSTAT plays a vital role in monitoring and reporting on the Sustainable Development Goals (SDGs).
- By using infographics, ELSTAT visually represents national indicators, highlighting progress on each goal.
- This approach makes it easier for stakeholders to track and understand advancements towards the 2030 agenda.
- Infographics for the SDGs use colors and logos in line with UN guidelines, ensuring consistency and recognizability.
- Images and charts are carefully selected to emphasize key findings, making the data clear and engaging for a broad audience.



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Ευχαριστώ πολύ
Thank you