

Towards enhancing the accuracy and relevance of statistics

Instructions: Click on the link to access each author's presentation.

Chair: Dominika Rogalinska

Participants:

Monika Rozkrut:* An in-depth assessment of the impact of metrology on the economy: recommendations for official statistics systems

Baiba Zukula: Challenges and innovations in data production. Graduates monitoring - an innovative statistical product for decision-making processes in education

Said Mohammed:* The elimination of infectious diseases caused by climate change in the United States

Renata Bielak: Innovative methods of producing and communicating SDG data disaggregation in Poland

<u>Alfredo Mendoza González:</u> Engaging young minds: Analyzing the importance of bringing official statistics to children

^{*} Work presentation not available or non-existent









GRADUATES MONITORING - AN INNOVATIVE STATISTICAL PRODUCT FOR DECISION-MAKING PROCESSES IN EDUCATION

BAIBA ZUKULA

DIRECTOR OF SOCIAL STATISTICS DEPARTMENT CENTRAL STATISTICAL BUREAU OF LATVIA







Role of social statistics

- > Fit for purpose now and in the future
- Elevating the role in the eyes of data users and producers
- Increase the impact in the design and implementation of policies
- Demanded by decision makers for timely and granular data for decision making
- Provide timely estimates disaggregated by characteristics of national interest
- Respond to data needs related to planning exercises from key stakeholders



Importance of data on graduates

- Improve learning outcomes, the employability of graduates
- Ensure social inclusion in education
- Provide insight into the extent to which graduates' knowledge match the needs of the economy and society
- Present the information about the future progress of higher education graduates in order to ensure data-based decision-making at the individual, educational institution, municipal, regional and national level
- Administrative data = annual data



Graduate monitoring as a tool

- Potential students
 - informed career choice
- Educational institutions
- Policy makers, state institutions
 - data-based policy, incl. improving educational content
- Industry representatives
 - demand for specialists needed in the national economy





Legal basis

- Cabinet of Ministers Regulation (25 June 2019) «Regulation of the state education information system»
- Order of the Cabinet of Ministers On the Government's action plan for the implementation of the Declaration on the planned activities of the Cabinet of Ministers
- Order of the Cabinet of Ministers Education Development Guidelines 2021-2027





MoES CSB CSB

MoES

CSB receives individual data

15thsd graduates annually



MoES

CSB receives individual data

15thsd graduates annually CSB

CSB

MoES

Data preparation on income, employment

Data linkage



MoES

CSB receives individual data

15thsd graduates annually CSB

Data preparation on income, employment

Data linkage

CSB

Data tabulation

Every university, every person – 10 years after graduation

Data quality





MoES

CSB receives individual data

15thsd graduates annually CSB

Data preparation on income, employment

Data linkage

CSB

Data tabulation

Every university, every person – 10 years after graduation

Data quality



Submit tabulated data

Data for researchers



Available data

2019

2017 graduates
Economic activity end
of 2018
Income 2018

2020

2017, 2018 graduates
Economic activity end
of 2019
Income 2019

2021

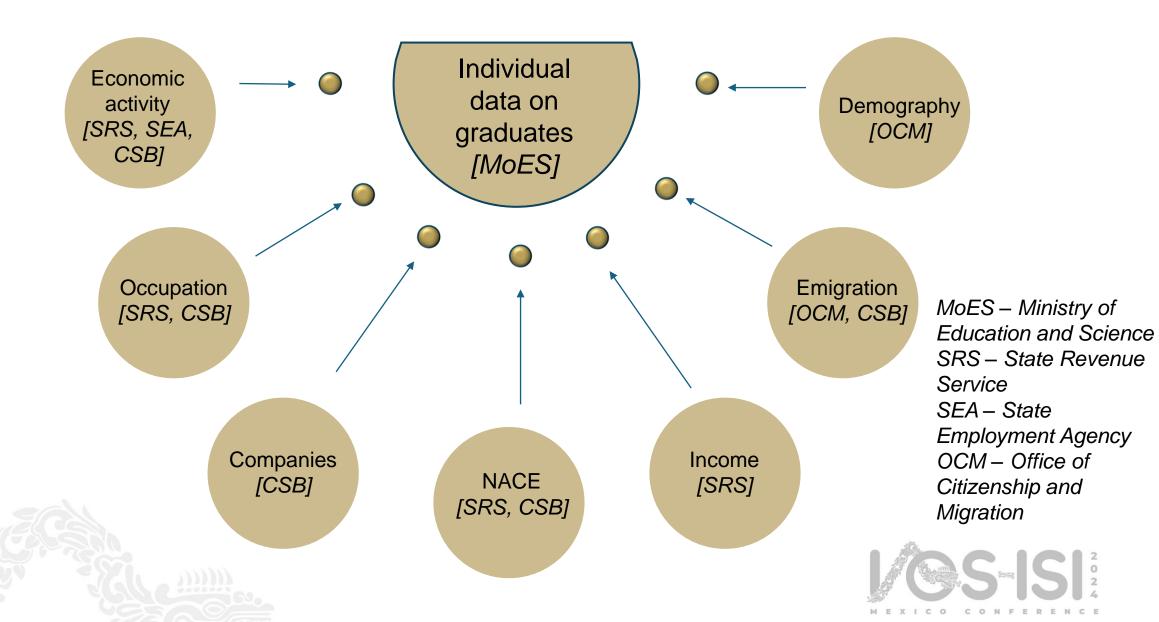
2017, 2018, 2019
graduates
Economic activity end
of 2020
Income 2020

2022

2017, 2018, 2019, 2020 graduates Economic activity end of 2021 Income 2021 2023

2017, 2018, 2019, 2020, 2021 graduates Economic activity end of 2022 Income 2022







Economic activity



Method developed for 2021 registerbased Census



- Employed
- Unemployed
- Economically inactive



Status in November



SRS, SEA, other registers



Occupation, NACE



Occupation, NACE for the same job



Several jobs – main job according to SRS data:



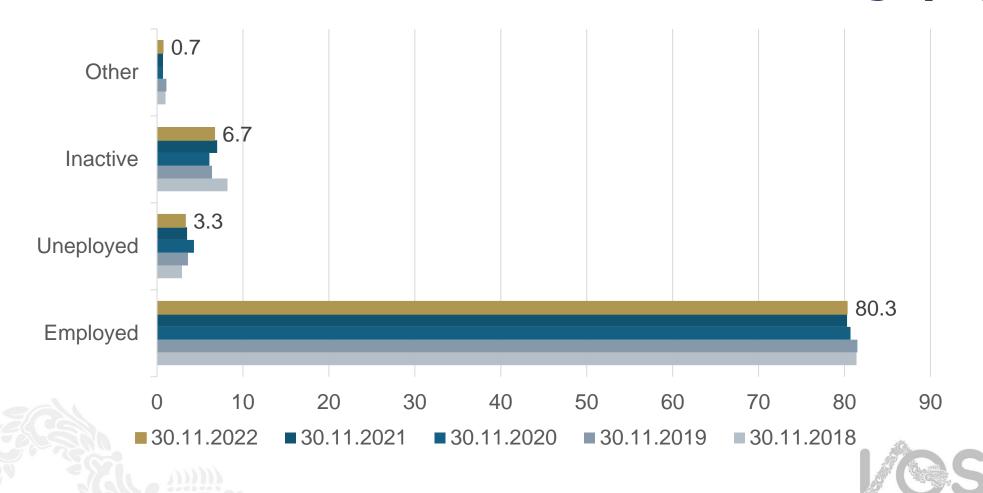
- 1. time spent
- 2. income



SRS, other registers

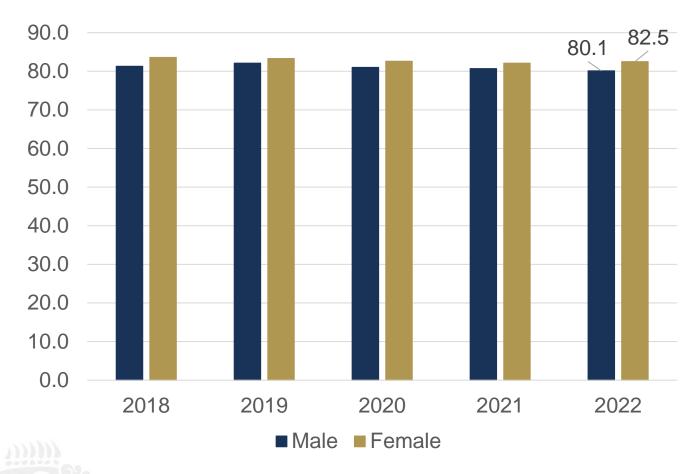


Graduates 2017 – economic activity (%)





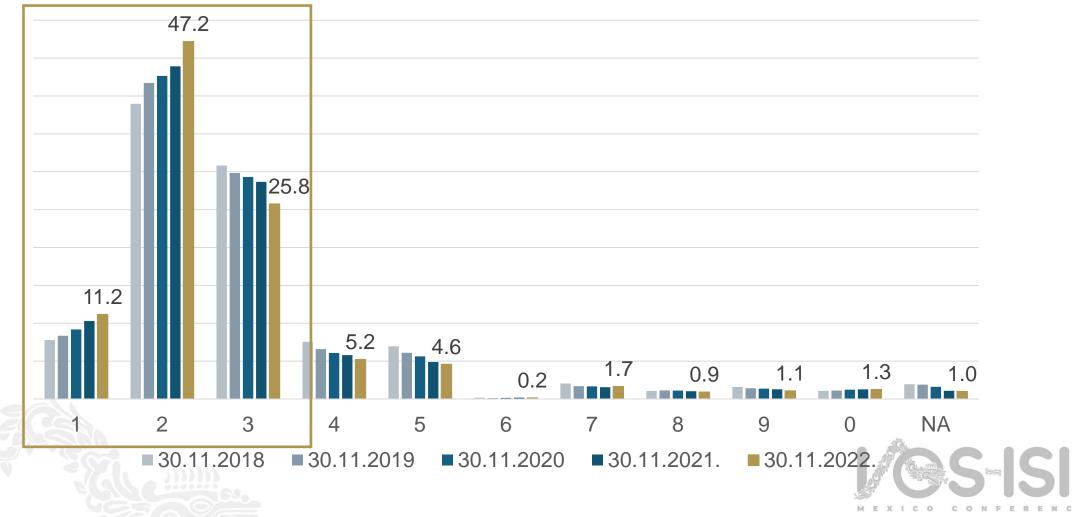
Graduates 2017 – economic activity by sex (%)







Graduates 2017 – occupations (%)



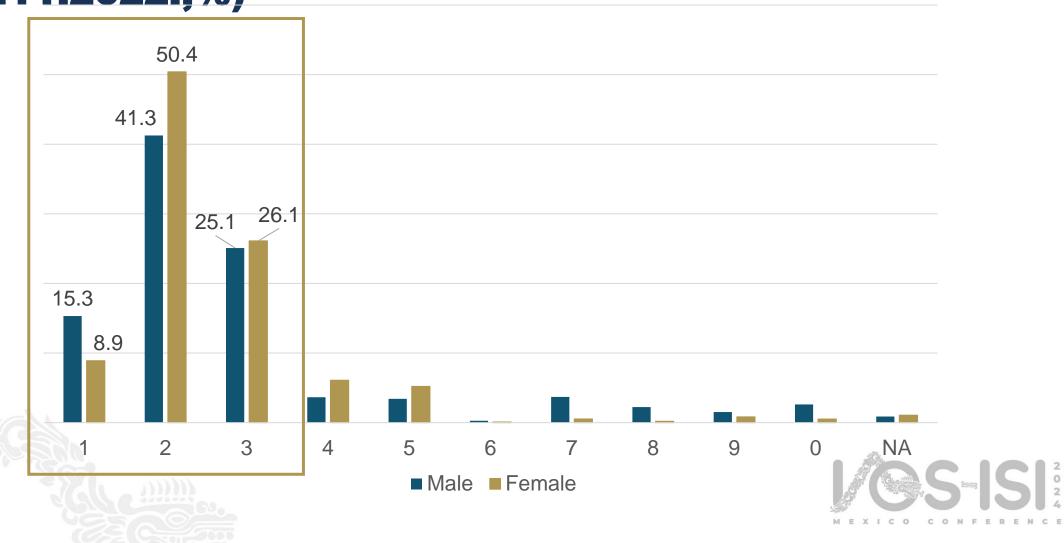


84,2%



Graduates 2017 – occupation by sex (30.11.2022.,%)

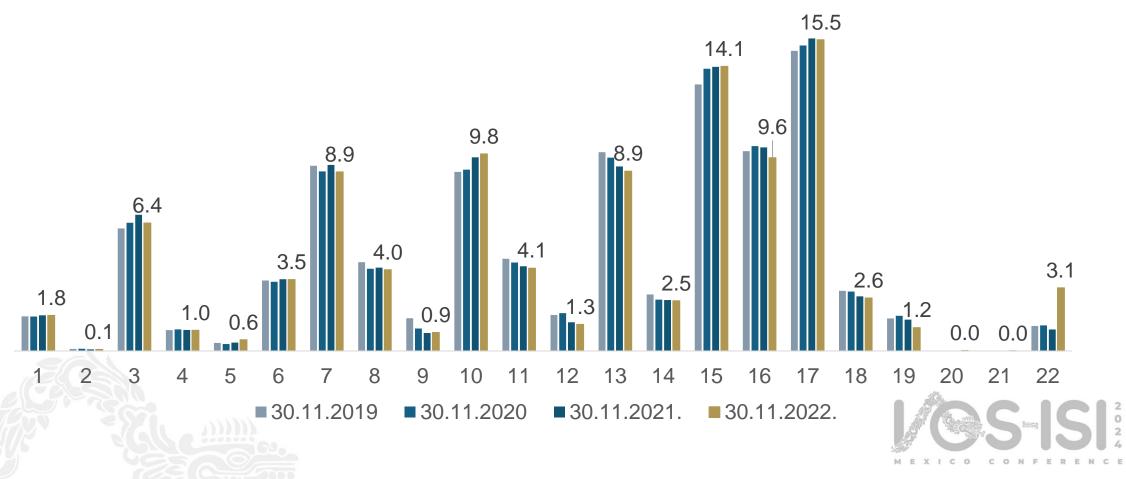
81,7% vs 85,4%







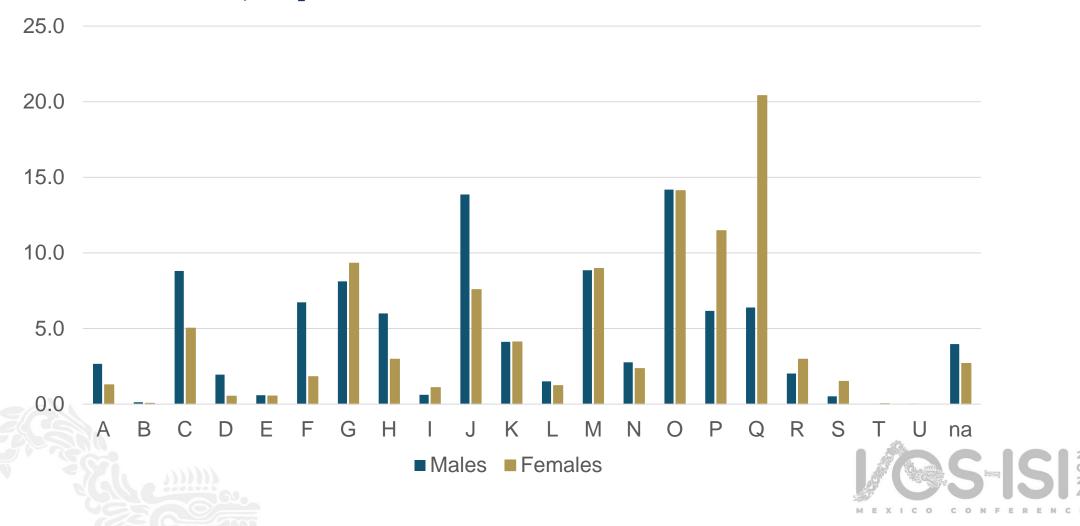
Graduates 2017 – NACE 2 (%)







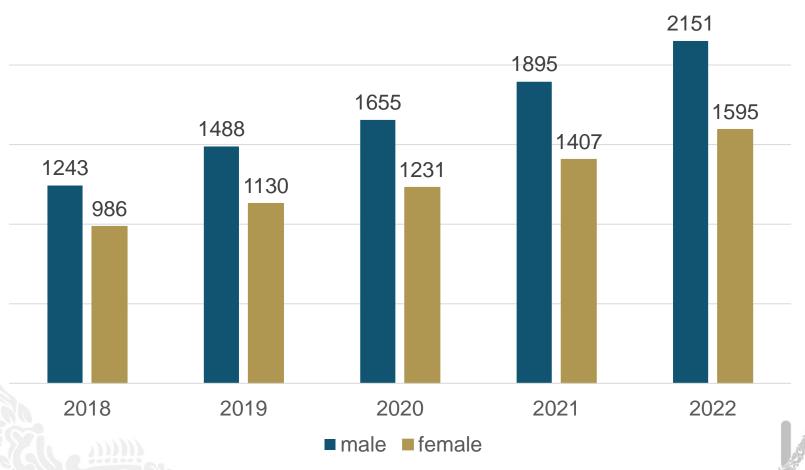
Graduates 2017 – NACE 2 by sex (30.11.2022.,%)







Graduates 2017 – median of gross income per month by sex (EUR)



Country total: Monthly median gross salary 2022 – 1081 EUR







Possibilities

- Data for specific groups age, sex, residence permits
- Data by institutions, level of education, field of education
- Possible, but still pending disability, ethnicity, citizenship
- No further information on foreigners who leave country



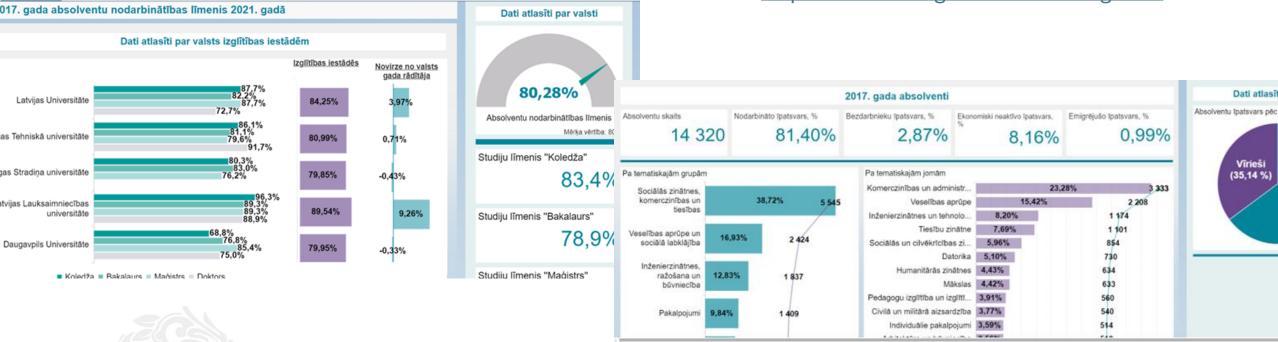
Data availability

- Data provided to Ministry of Economics and Ministry of Education and Science
- Data available as open data
- Detail anonymized data for scientists
- Possible to link with graduates' survey (MoES conducted survey in 2022)



A monitoring tool (MoES)

https://www.viis.gov.lv/monitoringa-riki











Thank you!









Innovative methods of producing and communicating SDG data disaggregation in Poland

Renata Bielak Statistics Poland







Polish SDG Platform





statistics

SDG Reports -



sdg.gov.pl









































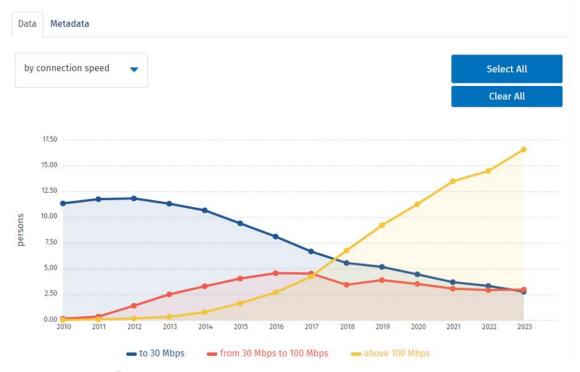


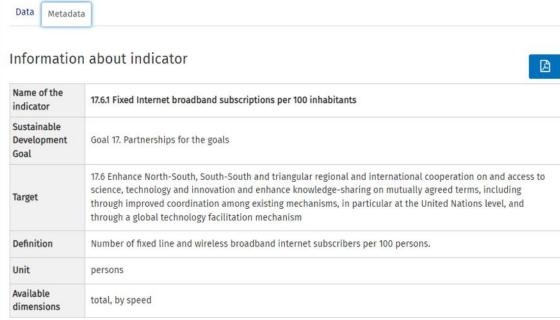




Global and national SDG indicators

Indicator 17.6.1 - Fixed Internet broadband subscriptions per 100 inhabitants









Digital SDG Reports

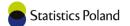




Women on the way to sustainable development







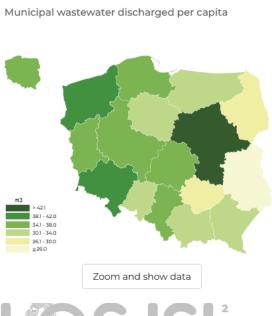


Report 2022

Poland on the way to SDGs

Environmentally sustainable development









Data innovations in Statistics Poland

Data Science Academy















EOs for statistics













EOs for bridging SDG data gaps

Global Reporting Status



Overall Reporting Status







67% Reported online





Experimental SDG statistics

Welcome to the experimental SDG statistics website

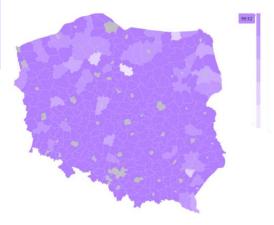
Here you can find indicators that we calculate using innovative methods and integrated data sources. They do not constitute official data but supplement the results of statistical research. Experimental indicators allow us to obtain a fuller picture of the implementation of sustainable development in Poland.

Follow our website – we will soon be adding further results of the experimental work for other SDG indicators.

Click Goal to continue:







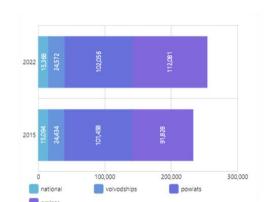






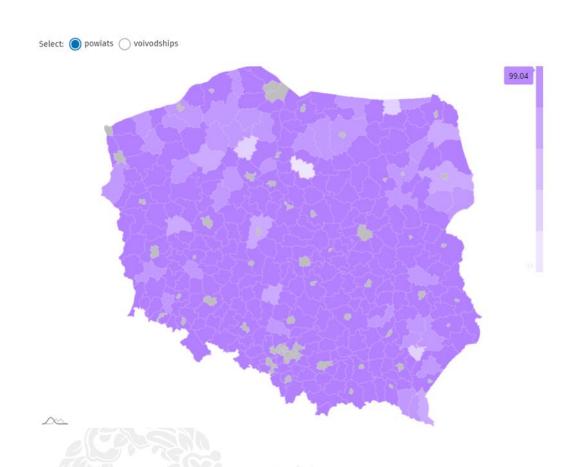


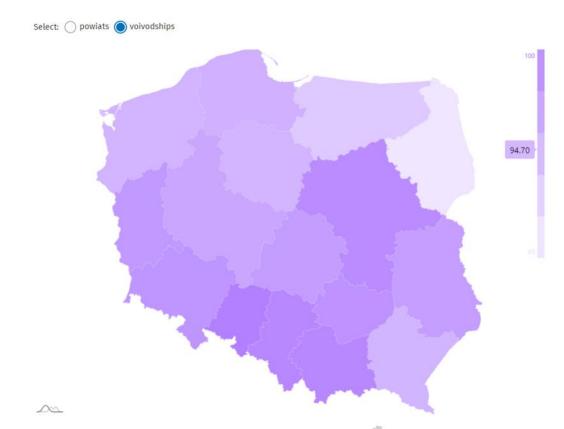






9.1.1 Proportion of the rural population who live within 2 km of an all-season road

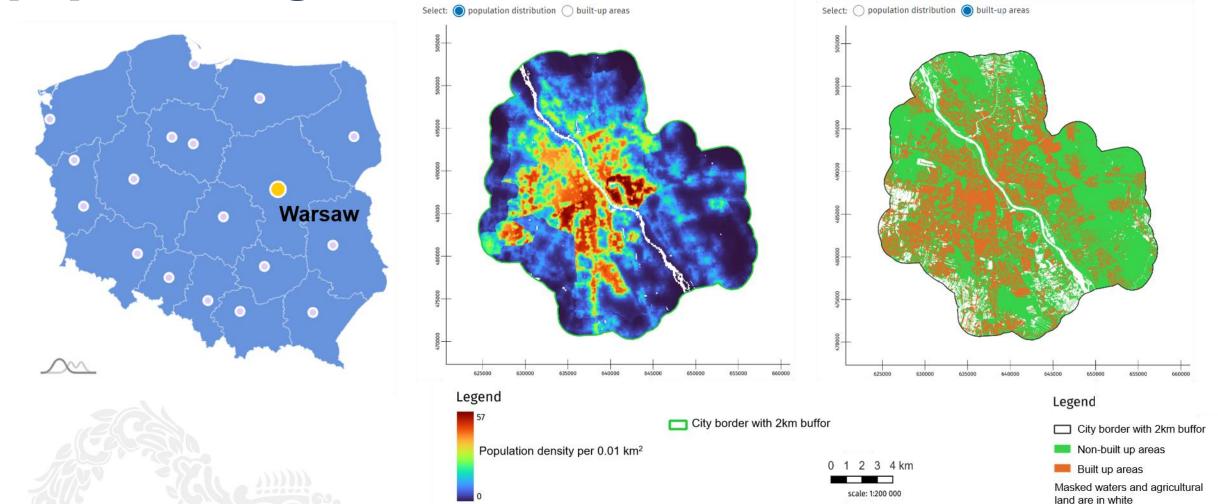






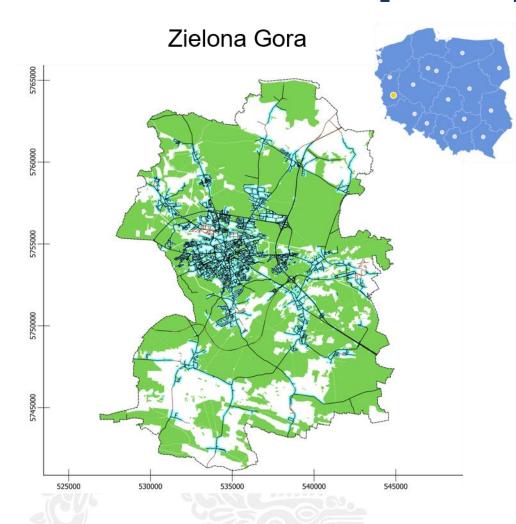


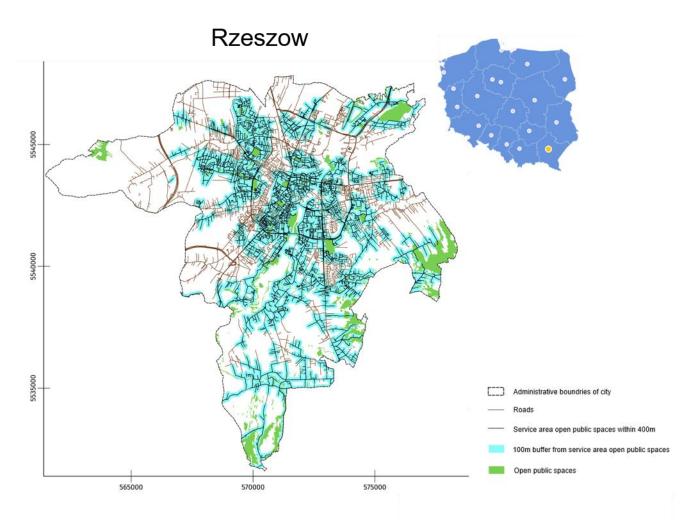
11.3.1 Ratio of land consumption rate to population growth rate





11.7.1 Average share of built-up area of cities that is open space for public use for all







Forthcoming







Sustainable agriculture (2.4.1)



More granular data for local level – Access to all-season road (9.1.1)



Access to public transport (11.2.1)



Terrestrial & freshwater biodiversity (15.1.2) Mountain biodiversity (15.4.1)

SDG indicators for Polish regions











Thank you









Engaging young minds

Analyzing the importance of bringing official statistics to children

Dr. Alfredo Mendoza-Gonzalez

INEGI







Fostering a more inclusive and participatory society





Civic Participation

"Refers to active involvement in community, societal, and governmental processes"

- Importance: Vital for democracy, social cohesion, and political accountability.
- **Examples**: Voting, volunteering, activism, community engagement, political involvement, online advocacy, civil discourse.
- **Benefits**: Strengthens democracy, promotes social justice, fosters community cohesion, empowers individuals.
- Call to Action: Encourage active civic participation to shape a better future for communities and societies.





Trends in Civic Participation

- Digital Engagement: Increasing use of online platforms and social media for activism and advocacy.
- Youth-Led Initiatives: Growing involvement of young people in grassroots movements and community organizing.
- Intersectional Activism: Emphasis on addressing interconnected social issues and promoting inclusivity.
- Global Collaboration: Cross-border alliances and solidarity movements for collective action on global challenges.
- Innovative Approaches: Adoption of new tools and strategies, such as crowdsourcing, participatory budgeting, and digital storytelling, to engage diverse audiences.



Efforts to Foster Civic Participation

- **Promoting Civic Education**: Governments and associations can encourage civic education in schools and communities to ensure citizens understand their rights, responsibilities, and the importance of active citizenship.
- Creating Participation Opportunities: Governments and associations can establish formal mechanisms like town hall meetings, public hearings, and advisory boards for citizen input on policy decisions and community issues.
- Facilitating Access to Information: Governments and associations must ensure citizens have access to accurate, timely, and transparent information about government activities, policies, and decision-making processes.
- Encouraging Diversity and Inclusion: Governments and associations should actively promote diversity and inclusion in civic participation efforts to ensure all voices are heard and represented.



Data-Informed Decision Making





Data for wiser choices

- Data-informed decision making emphasizes the importance of using data as a foundation for decision making.
- It involves not only collecting data but also ensuring that the data is relevant and reliable.
- Relevant data is directly related to the decision at hand, while reliable data is accurate, trustworthy, and free from biases or errors.
- By using such data, decision makers can make choices and decisions that are based on evidence rather than intuition or guesswork, leading to more effective and impactful outcomes.







Process for Data-informed Decisions

- 1. Data Collection: Gather relevant data from various sources.
- 2. Data Analysis: Analyze data to identify trends and patterns.
- 3. Understanding Current Conditions: Gain insights into the current context.
- 4. Identifying Trends and Patterns: Identify key insights from data analysis.
- 5. Evaluating Potential Options: Assess benefits, risks, and costs of options.
- 6. Assessing Likely Outcomes: Determine likely outcomes based on data analysis.





Benefits of informed decisions

- Definition: Data-informed decision making involves using relevant and reliable data to guide informed choices and strategic decisions.
- **Process**: Decision makers use data and evidence to understand conditions, identify trends, evaluate options, and assess outcomes.
- Enhanced Efficiency: Data-informed decisions lead to more efficient resource allocation, based on clear understanding of priorities.
- Stakeholder Engagement: Involving stakeholders fosters collaboration, as
 decisions are based on shared understanding and evidence.
- Risk Mitigation: Data-informed decisions help identify and mitigate risks, guiding development of contingency plans.





Children Participation and Statistical Literacy





Participation Initiatives

- •Youth Councils and Parliaments: Cities and towns are establishing youth councils or parliaments for teens to discuss local issues and propose solutions.
- •Service-Learning Programs: These programs combine academic learning with community service, allowing students to volunteer on projects benefiting their communities.
- •Social Entrepreneurship Programs: Encourage youth to develop businesses solving social problems, teaching valuable skills and making a positive impact.
- •Civic Education Programs: Schools and nonprofits offer programs teaching youth about citizenship rights and responsibilities, including government, voting, and advocacy.
- •Digital Participation Platforms: Initiatives create online platforms for teens to discuss issues, brainstorm solutions, and vote on local matters.





Targeting a Young Audience

- •Interactive Data Visualization: Offices create user-friendly, interactive visualizations, replacing dry tables with colorful charts and infographics.
- •Social Media Engagement: Statistics offices use platforms like Instagram and TikTok to share interesting facts and data in ways that resonate with young people.
- •Educational Resources: Some offices develop games, quizzes, or lesson plans to teach young people about social and economic issues using data.
- •Youth Advisory Groups: Forward-thinking offices form youth advisory groups to get input on making data and products more relevant and accessible.
- •Data Challenges and Competitions: Offices host challenges or competitions where young people use creativity and analytical skills to explore datasets and find insights.





Statistical Literacy

- •Empowers children with critical thinking skills that are essential for navigating an increasingly complex and data-driven world.
- •Children develop the ability to question information, evaluate evidence, and draw logical conclusions.
- •Helps children make informed decisions by enabling them to understand and interpret the data that surrounds them.
- •Being able to discern reliable sources, identify biases, and evaluate the significance of data empowers children to make informed choices in their personal lives, academic endeavors, and future careers.





National Statistics Offices Initiatives





Kids Oriented Content

- **1.Tailoring Content to Age and Developmental Stage**: NSOs develop content that is age-appropriate and tailored to the developmental stage of children.
- **2.Using Interactive and Multimedia Formats**: NSOs utilize interactive and multimedia formats, such as videos, games, quizzes, and animations, to make statistical concepts come to life and engage children in active learning experiences.
- **3.Making Content Fun and Engaging**: NSOs create content that is fun, entertaining, and visually appealing to capture children's interest and motivate them to explore statistical concepts further.
- **4.Offering Diverse and Inclusive Content**: NSOs develop content that reflects the diversity of children's backgrounds, experiences, and interests, ensuring that all children feel represented and included.



Kids Oriented Content









¡Te damos la bienvenida a INEDUCA!













WELCOME TO THE NCES KIDS' ZONE!























Educational Resources

- •Workbooks and Activity Sheets: Many offices offer downloadable workbooks and activity sheets geared towards different age groups.
- •Teacher Guides and Lesson Plans: Some offices provide curriculum-aligned lesson plans and teacher guides for educators to integrate official statistics into their classrooms.
- •Comic Books and Cartoons: Statistics offices are increasingly using creative formats like comic books and cartoons to present data in a child-friendly way.
- •Interactive Games and Quizzes: Many offices have developed online games and quizzes that make learning about statistics fun.
- •Data Visualization Tools: Some offices offer interactive data visualization tools specifically designed for children.





Educational Resources





About Statistics in Schools



Teacher-designed. Teachers helped create and review each activity to make sure it is valuable and engaging.



Easy to use. Materials are free, easily customized, and supportive of existing lesson plans.



Valuable. SIS enhances learning, boosts statistical literacy, and prepares students for a datadriven world.



// Census.gov / Our Surveys & Programs / Statistics in Schools / About Statistics in Schools (SIS) / Teachers' Guide to Data Access Tools for Students

Teachers' Guide to Data Access Tools for Students















statističkim izazovima!



Workshops and Events

- •Statistical Workshops for Schools: NSOs host workshops specifically designed for school groups, where children can participate in hands-on activities, interactive demonstrations, and data analysis exercises. These workshops provide a practical understanding of statistical concepts and their relevance to everyday life.
- •Youth Statistical Conferences: Some NSOs organize youth statistical conferences or summits that bring together students, educators, and experts to explore statistical topics and share ideas. These conferences often feature keynote speakers, panel discussions, and workshops on data literacy, statistical research, and data-driven decision-making.
- •Data Science Camps: NSOs organize data science camps or boot camps aimed at introducing children to the field of data science and statistical analysis. These camps typically include coding workshops, data visualization sessions, and collaborative projects that allow children to explore real-world datasets and develop their analytical skills.
- •Statistics Fairs and Expos: NSOs participate in statistics fairs and expos held in schools, communities, and public venues, where children can interact with statisticians, explore statistical exhibits, and engage in hands-on activities. These events showcase the importance of official statistics in various fields and encourage children to learn more about data analysis and interpretation.
- •School Competitions: NSOs sponsor school competitions focused on statistical literacy and data analysis, such as poster contests, data visualization challenges, and statistical problem-solving competitions. These competitions motivate children to apply their statistical skills creatively and compete with their peers in a supportive environment.



Workshops and Events











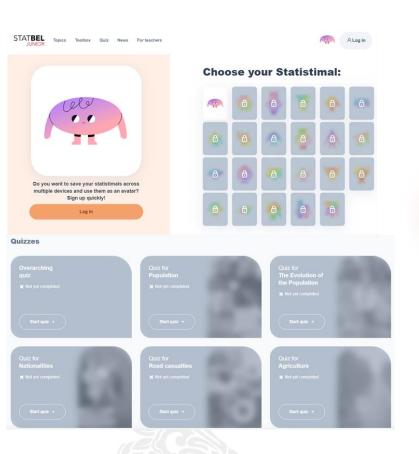
Competitions and Challenges

- •Drawing and photo contests: drawing or photo contests organized by NSOs offer a creative and inclusive platform for children to explore statistical concepts, express their ideas, and contribute to the promotion of statistical literacy in a visually engaging way.
- •Statistical Storytelling Competitions: These competitions ask children to use official statistics to create a story or presentation. This could involve writing a short story, designing a poster, or even creating a video.
- •Quizzes and Online Contests: Some NSOs offer online quizzes and contests with questions based on official statistics. These can be individual or team-based competitions, making learning about statistics fun and competitive.
- •Social Media Challenges: NSOs launch social media challenges that encourage children to share their insights, data visualizations, or statistical analyses on platforms like Twitter, Instagram, or TikTok.



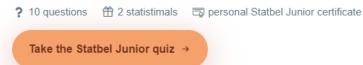


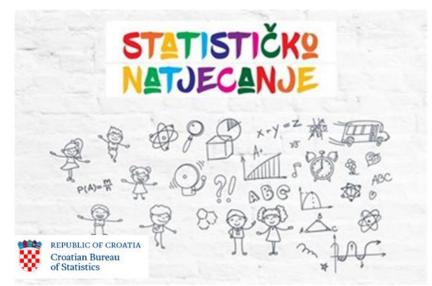
Competitions and Challenges



Are you a genius in statistics?

Have you gone through our topics and become a pro in statistics? We challenge our quiz and earn Statistimals.











Social Media Engagement

- •Interactive Content: Many NSOs use social media platforms to share engaging and interactive content like polls, quizzes, and infographics related to statistics.
- •Data Visualization: Social media is a great platform to showcase data in visually appealing ways using charts, graphs, and short videos.
- •Behind-the-Scenes Look: NSOs can use social media to offer a behind-the-scenes look at how data is collected and analyzed.
- •Challenges and Contests: Social media can be a great platform to announce and promote competitions and challenges related to statistics, like data visualization contests or photo contests with specific themes.
- •Partnerships: Some NSOs might collaborate with educational institutions or social media influencers to create content that resonates with children.
- •Live Q&A Sessions and Webinars: NSOs host live Q&A sessions and webinars on social media platforms, where children can interact with statisticians and data experts in real-time.



Social Media Engagement





U.S. Census Bureau Statistics in Schools

census.gov/schools · Educate your students about the value and everyday use of statistics. The SIS program provides resources for teaching and learning with real life data.

uscensusbureau











Teacher Training Programs

- •Workshops and Seminars: NSOs might offer workshops or seminars for teachers on how to integrate official statistics into their curriculum.
- •Online Training Modules: Some NSOs might offer online training modules that teachers can complete at their own pace.
- •Curriculum Resources and Lesson Plans: In conjunction with teacher training programs, NSOs might develop curriculum resources and lesson plans that align with national education standards.
- •Certification Programs: NSOs collaborate with education authorities to develop teacher certification programs that include modules on statistical literacy and data analysis.
- •Resource Centers and Libraries: NSOs establish resource centers and libraries that provide educators with access to educational materials, research publications, and multimedia resources related to statistical literacy and data analysis.





Teacher Training Programs

La estadística en tu vida diaria

Guía para la(el) docente



Que las y los estudiantes conozcan qué es la estadística y cómo está presente en su vida diaria.



Nivel escolar: 1º de secundaria

Duración aproximada: 45 minutos.

Recursos v materiales

- Artículo y trivia para secundaria La estadística en tu vida diaria (www.cuentame.inegi.org.mx /sabiasque/DME).
- Actividad para el estudiante.



Para iniciar (10 min)

Comience el ejercicio realizando las siguientes preguntas a las y los estudiantes y escuche atentamente sus participaciones: ¿alguna vez se han preguntado cómo se obtiene el número de personas que viven en México?, ¿la cantidad de mujeres y hombres que hay?, ¿qué número de niñas y niños asisten a la escuela?, ¿cuántas personas usan celular o practican algún deporte? Mencione que dicha información se obtiene con avuda de la estadística.

Desarrollo (30 min)

Comente brevemente al alumnado que:

- La estadística nos ayuda a reunir datos sobre un tema, organizarlos y representarlos para entenderlos mejor y compararlos.
- También, que la estadística está presente en su vida diaria; por ejemplo, cuando ven en la televisión o en internet el pronóstico del

tiempo; a los y las comerciantes les ayuda a saber la cantidad de productos que deben tener en sus tiendas para satisfacer las necesidades de sus clientes; y a las y los deportistas, para medir su desempeño.

- Asimismo, es importante que en cada país se conozca cuántas personas hay, qué edad tienen, dónde viven, cuántas estudian y cuántas trabajan para saber cuáles son sus necesidades y atenderlas.
- Es por eso, que en los países hay oficinas de estadística que se encargan de contar y ordenar los datos y difundirlos para que cualquier persona pueda utilizarlos. En México, la encargada de generar y difundir datos estadísticos sobre la población y la economía es el Instituto Nacional de Estadística y Geografía, mejor conocido como INEGI.

Página 1





TRAMO 1 3, 4 y 5 años

Descargar

TRAMO 2 1ero y 2do año

Descargar

TRAMO 3 3er a 4to año

Descargar

TRAMO 4 5to y 6to año

Descargar



Descargar



Descargar







Challenges and Future Work





Challenges

- **1.Complexity of Statistical Concepts**: Statistics can be inherently complex, and simplifying these concepts for children while maintaining accuracy and relevance can be challenging.
- **2.Age Appropriateness**: Tailoring statistical content to different age groups and developmental stages of children can be difficult.
- **3.Limited Resources**: NSOs may face constraints in terms of human, financial, and technological resources available for developing and disseminating kids-oriented content.
- **4.Educator Training and Support**: While NSOs can provide resources for children, educators play a crucial role in facilitating learning and integrating statistical concepts into the classroom.
- **5.Access and Equity**: Ensuring equitable access to statistical education for all children, regardless of socioeconomic background, geographic location, or cultural identity, can be challenging.
- **6.Engagement and Retention**: Maintaining children's interest and engagement in statistical content over time can be challenging, particularly in a world filled with competing distractions.





Final Thoughts

- •By providing them with a solid foundation in statistical literacy, NSOs empower children to become active participants in shaping the future, making evidence-based decisions, and addressing pressing social, economic, and environmental challenges.
- •As future citizens and leaders, children who are proficient in statistical literacy are better equipped to participate in democratic processes, advocate for evidence-based policies, and address pressing challenges facing their communities and the world at large.
- •NSOs play a crucial role in promoting statistical literacy among children by developing educational resources, organizing outreach programs, collaborating with educators and communities, conducting research, providing data access and training, and advocating for the importance of statistical literacy in society.











Thank you

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