



HELLENIC STATISTICAL AUTHORITY



## Fostering Statistical Literacy in Greece

*Paper by the Hellenic Statistical Authority (ELSTAT)*



statistical  
**LITERACY**

50th session of the United Nations  
Statistical Commission  
5-8 March 2019 New York

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# Fostering Statistical Literacy in Greece

## I. Introduction

Since 2016, the Hellenic Statistical Authority (ELSTAT) has been pursuing an ambitious strategy enshrined in a comprehensive action plan aiming to foster and promote Statistical Literacy in Greece.

The overarching priority set by Athanasios C. Thanopoulos in his vision for ELSTAT upon assumption of duty as President, has been to spread and effectively communicate the value of official statistics to students of all educational levels in Greece along with making a convincing case for fact-based decision-making in their daily lives.

This paper browses through the array of actions and initiatives that have been undertaken during the last three years by ELSTAT in view of this goal. In addition, it explores the responsiveness of key players (i.e., students, teachers, schools, universities and education policy makers) to these initiatives across all stages of the educational process and the extent to which these initiatives lead to desirable outcomes as outlined in the action plan, such as increased engagement by the targeted stakeholders. The paper also highlights the next steps that have been planned for the achievement of this objective.

## II. Objective

**Why promoting Statistical Literacy in Greece?** Taking as a starting point the fact that official statistics is a public good, ELSTAT spares neither effort nor resources in order to promote Statistical Literacy in Greece. The ultimate objective is to foster a solid understanding of the basic methodology and tools used in modern official statistics along with developing a firm awareness of the institutional foundations and core principles of official statistics for the future generations of Greek citizens.

**ELSTAT envisages having a dominant presence in all phases of the “virtuous circle of official statistics”.** The main intervention apparatus of ELSTAT would be to strengthen the Institution’s presence in all phases of a trust-chain typically called “virtuous circle of official statistics”: By educating and informing the young/ future users of statistics, ELSTAT manages to build confidence and trust of the public in its ability to properly handle and technically manage individual data with a view to

producing meaningful and relevant statistics out of it, while fully adhering to the best practices and core principles governing the production and dissemination of official statistics.

**What is the aim of building trust?** Trust would, in turn, increase participation of respondents in the future, be it members of households, entrepreneurs or professionals, to the statistical surveys of ELSTAT, and help form favorable public opinion that would pave the way for easier access to administrative individual data for statistical purposes. This would contribute to a higher value statistical product that would, in turn, make it an easier case to educate the future generations of Greek citizens about the usefulness of official statistics.

**ELSTAT's strategic plan involves a mentoring philosophy with a view to bolstering long-standing relationships with future users.** ELSTAT's long-term strategy involves establishing mentoring relationships with students with the aim to inspire future scientists and professionals that could ideally be employed in the field of official statistics. Raising awareness on the pitfalls of distorted facts, unfounded claims and fake news while at the same time increasing exposure to sound statistical practices is achieved through educating students on proper reading, analyzing and interpreting official statistics as well as on understanding techniques of tracing the authenticity of data sources.

Establishing long-term relationships with students through coaching practices contributes to building and maintaining a broad and in-depth field of interaction while it also reinforces long-standing "trust bonds" of our Institution with future users and decision makers.

At the same time, the continuous monitoring of the effectiveness and appeal that coaching activities have on students throughout time, helps ELSTAT to regularly assess and recalibrate its communication strategy vis-à-vis users' needs.

**A wide range of topics is covered by the project "Fostering Statistical Literacy in Greece".** Typical areas of focus of actions undertaken in the framework of the project "Fostering Statistical Literacy in Greece" include, *inter alia*, applications of statistics in every-day life, scientific tools used in the development, production, dissemination and communication of official statistics, the United Nations Fundamental Principles of Official Statistics and the European Statistics Code of Practice, the protection of personal data, the importance of flagship surveys such as the Population and Housing Census for the life of Greek citizens, the emerging expansion and streamlining in the day-to-day production of official statistics of

alternative data sources, such as big data and data produced by smart devices and sensors, the perspectives they offer and the challenges they entail.

### III. Overview of actions undertaken

**The first round of actions has been successfully completed.** ELSTAT has completed successfully a first round of various actions under the main objective of *“Fostering Statistical Literacy in Greece”*. The strategy includes actions that have been set up to be continuous, as well as one-off actions. Typical examples of actions of both categories include the establishment of an official administrative framework of cooperation, the engagement and interaction with students and teachers of all levels of education, the active involvement of ELSTAT in the educational process, the promotion of the overall project, the organization of competitions and the granting of relevant educational material.

**A second round of actions has been already planned.** At the same time ELSTAT is planning and has started implementing the actions of tomorrow with the aim to broaden their resonance and audience.

**What is the content of the project *“Fostering Statistical Literacy in Greece”*?** All the above individual actions can be classified into the following groups:

1. Establishing the framework of cooperation with the Ministry of Education
2. Organizing educational visits and presentations addressed to students
3. Establishing the role of ELSTAT as key partner in the educational process
4. Communicating and promoting the project *“Fostering Statistical Literacy in Greece”*
5. Launching competitions
6. Granting educational material

### IV. Listing overview of the completed actions

1. **Establishing the framework of cooperation with the Ministry of Education**  
ELSTAT signed a Memorandum of Cooperation with the Ministry of Education. In March 2018 a Memorandum of Cooperation on fostering statistical literacy was signed, at the highest level, between ELSTAT and the Ministry of Education, Research

and Religious Affairs. The Memorandum provides, *inter alia*, for the introduction of a statistical literacy program in education.

**ELSTAT establishes partnerships in order to communicate its actions more effectively.** Furthermore, ELSTAT can benefit from the existing administrative mechanism of the Ministry when it needs to properly and comprehensively communicate statistical initiatives and actions such as competitions, school visits to its premises, etc.

**A dedicated course in official statistics is going to be introduced in secondary education.** ELSTAT aims to ultimately introduce a dedicated course in official statistics as a core subject in secondary education curricula. To this end, ELSTAT is currently preparing a high-school textbook dealing with the most important notions and tools of official statistics, including important institutional matters.

## **2. Organizing educational visits and presentations addressed to students**

**The President of ELSTAT visits schools all over Greece and discusses with students and professors on official statistics.** Invitations and visits of the President of ELSTAT Athanasios C. Thanopoulos to schools and academic institutions were established. In 2018, Athanasios C. Thanopoulos visited the Experimental High School of Heraklion in Crete, a gold medal winning school in the First Greek Nationwide Statistics Competition organized by ELSTAT in 2017.

The President of ELSTAT was also invited, by the Greek Mathematical Society, to deliver a lecture to researchers of the vibrant academic community in Crete focusing on the current and future uses of scientific tools stemming from various disciplines in modern official statistics. On the occasion of this lecture, he was also interviewed in primetime by the largest broadcasting channel in Crete (Crete TV) about the importance of official statistics for decision making in everyday life and on the current challenges faced by ELSTAT.

Furthermore, the President of ELSTAT visited the 2<sup>nd</sup> Junior High School of Kalamata, on the occasion of the International Conference “*Smart Statistics 4 Smart Cities*” jointly organized by ELSTAT and Eurostat in the city of Kalamata, aiming to bring together researchers from across the world working on new data sources and explore their fitness and readiness for streamlining in today’s official statistics production line.



*Visit of the President of ELSTAT, Athanasios C. Thanopoulos to the Experimental High School of Heraklion in Crete (2018)*



*Interview of Athanasios C. Thanopoulos by the largest broadcasting channel in Crete (Crete TV) (2018)*



*Visit of the President of ELSTAT to the 2<sup>nd</sup> Junior High School of Kalamata (2018)*

**ELSTAT regularly welcomes students from schools at its premises.** The educational visits of students at ELSTAT's premises in Athens and in Thessaloniki continue with a continuously updated content especially geared to different levels of educational attainment. During these visits, young people are informed about the development, production, dissemination and proper communication processes of official statistics. They also become familiar, following a hands-on learning experience, with navigating through the websites of ELSTAT and Eurostat in order to find the information they could be looking for.

In quite a few of these visits at ELSTAT's premises in Athens, the President of ELSTAT welcomes the students, gives them a brief introduction to the mission and tasks of ELSTAT and discusses with them various topics related to official statistics.

**ELSTAT trains and certifies its instructors and enhances the content of the presented material in order to meet the sharp increase in demand for educational visits.** In parallel, the subjects covered in the educational visits at ELSTAT's premises are going to be expanded and enriched with topics related to the current trends in official statistics. An internal mechanism of training, continuous evaluation and certification of new instructors selected amongst the young and competent staff of ELSTAT that will henceforth participate in the pool of instructors responsible for the educational visits, is an on-going process with the aim to respond to the growing



demand for educational visits. The number of visits to ELSTAT premises from schools from all educational levels has tripled during the school year 2017/2018 in comparison with the previous school year.

In parallel, visits of ELSTAT instructors to schools in remote regions have been organized.



*Educational visit of students at ELSTAT's premises in Athens*



*Athanasios C. Thanopoulos welcomes students at ELSTAT's premises in Athens during their educational visit (2019)*



*Athanasios C. Thanopoulos welcomes students at ELSTAT's premises in Athens during their educational visit (2019)*

**ELSTAT engages extensively with students in the framework of the 83rd Thessaloniki International Fair.** Educational presentations to High School students took place in the framework of the participation of ELSTAT in the 83rd Thessaloniki International Fair (September 2018). It is worth noting the impressive presence of schools and students, despite the fact that these events took place during the summer break.



*Educational presentation to High School students  
83<sup>rd</sup> Thessaloniki International Fair (September 2018)*

### **3. Establishing the role of ELSTAT as key partner in the educational process**

**ELSTAT participates in vocational mentoring and traineeship programs.** Traineeships of students from the Vocational Institute for Graphic Design have been inaugurated at ELSTAT's premises.

In 2018, the participation of ELSTAT in the summer program on vocational guidance started. This program is addressed to students of the first and second grade of the High School of the Athens College.

**A Greek University masters program was awarded for the first time with the EMOS label.** The integration process of Greece into the network of postgraduate programs in the field of official statistics at European level has been successfully completed, with the award of the prestigious “European Masters in Official Statistics” (EMOS) label for the period 2019-2023 to the “Masters program in Mathematics with a specialization in Statistics and Modeling” of the Mathematics Department of the Aristotle University of Thessaloniki.

**ELSTAT establishes cooperation and synergies with Academia on designing state-of-the-art sampling methodologies.** The cooperation of ELSTAT by virtue of a Memorandum of Cooperation with the department of Electrical and Electronic Engineering of the Aristotle University of Thessaloniki has been established, aiming to jointly develop sampling methodologies for “smart statistics”, benefiting from data produced by sensors and individual “smart” devices.

#### **4. Communicating and promoting the project “Fostering Statistical Literacy in Greece”**

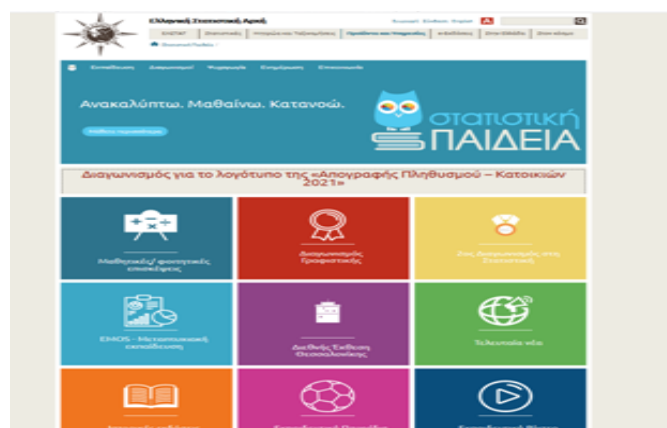
**“Fostering Statistical Literacy in Greece” was promoted in the framework of the 83rd Thessaloniki International Fair in 2018.** The project “Fostering Statistical Literacy in Greece” was the main subject of the 83rd Thessaloniki International Fair in 2018. Hundreds of students from schools in the region of Thessaloniki received invitations to visit the ELSTAT stand and attended specially targeted lectures on the mission and actions of ELSTAT.



*The stand of ELSTAT at the 83<sup>rd</sup> Thessaloniki International Fair in 2018*

**ELSTAT offers an intuitive digital portal for users to gain easy access to its actions and initiatives on Statistical Literacy.** A dedicated webpage on Statistical Literacy was created which is the main channel for informing stakeholders.

**<http://www.statistics.gr/el/edu>**



*Snapshot of the home page of the dedicated webpage on Statistical Literacy of ELSTAT*

**Educational material from the webpage of Eurostat is now available in Greek.** The subsections “Population” and “Statistical Concepts” from the section “statistics4beginners” in the official webpage of Eurostat were translated in Greek.

**ELSTAT issues its flyer on Statistical Literacy.** A special flyer was issued, both in Greek and in English, presenting the actions of ELSTAT on fostering Statistical Literacy in Greece in an easily accessible manner, with rich photographic material.



*Flyer of ELSTAT on Statistical Literacy*

## 5. Launching competitions

**A Greek Nationwide Statistics Competition runs for two consecutive years.** In 2017, the Nationwide Statistics Competition was established at national and European level. The 1<sup>st</sup> Greek Nationwide Statistics Competition brought together 236 teams from 81 schools from all over Greece. The registrations of teams for the 2<sup>nd</sup> Greek Nationwide Statistics Competition have been completed in early February 2019 and the participation recorded an increase of 50% for the teams and 20% for the educational units, since 355 teams from 97 schools responded to the call of the new competition.



*The advertising banner of the 2<sup>nd</sup> Greek Nationwide Statistics Competition of 2019*

In May 2018, the awards ceremony of the first 10 ranked teams (5 teams from Junior High Schools and 5 teams from High Schools), that stood out in the first Greek Nationwide Statistics Competition, was held at ELSTAT premises in Athens.



*Presentation of prizes and certificates for the winners of the 1st Greek Nationwide Statistics Competition of 2018*



*Family photo from the awards ceremony of the first 10 top-ranked teams  
in the 1st Greek Nationwide Statistics Competition of 2018  
(ELSTAT premises in Athens - May 2018)*

**The work of ELSTAT is made known by launching other types of “special purpose” competitions.** In October 2018, a competition on the design of the logo of the 2021 Population and Housing Census was launched. Graphic design students as well as students from related disciplines were invited to participate in the competition.



*Invitation for the competition for the design  
of the logo of the 2021 Population and Housing Census*

## **6. Granting educational material**

**What kind of material is ELSTAT providing?** The educational material prepared and created by ELSTAT, with the form of books, exercise workbooks, videos, etc is regularly renewed and updated. In particular, three types of exercise workbooks

have been issued. The first type is addressed to children attending the early primary school classes and focuses on the introduction of a first contact with statistical data. The second type is addressed to students of the last class of the primary educational level and to the first two classes of the secondary level and aims at making them familiar with infographics and at identifying the information contained therein. This exercise workbook also includes two games with questions and answers, the content of which is based on real data from statistical surveys, as well as a presentation of the normal distribution and its applications to every-day life. The third type of exercise workbook currently at the design phase, is a continuation of the workbook of the second type. It is addressed to students of the secondary educational level and includes exercises in statistics, as well as origami craft applications.



*Exercise Workbook type I*



*Exercise Workbook type II*

ELSTAT has established the practice of granting graphical stationary material and electronic equipment to selected schools, for educational purposes, when this equipment/ material is about to be replaced by new equipment. In this way, the useful lifecycle of the equipment is extended in a constructive way. Educational printed material (e.g. from the Thessaloniki International Fair, Eurostat, etc) gets forwarded to school libraries, along with infographics posters in order for them to be displayed in school rooms.

## **V. Actions planned by ELSTAT for the coming period**

### **1. Organizing educational visits and presentations addressed to students**

- Thematic one-day conferences addressed to teachers and professors are organized.

### **2. Establishing the role of ELSTAT as key partner in the educational process**

- A handbook on official statistics addressed to the tertiary education level is being authored. The next step would be the creation of a corresponding textbook for High School students with the aim to present the basic concepts of official statistics in a simple and clear manner.
- The project “*Fostering Statistical Literacy in Greece*” is included in the configuration of the concept of the so-called “Thematic Week” of Junior High Schools and of the so called “Flexible Zone” of primary schools. These sessions are taking place for a given time duration within the school year and are meant to include topics that are out of the coverage of the standard school program, but still lie within the interests of students.
- The elaboration of postgraduate dissertations on official statistics topics is established. These topics would be selected after the cooperation of ELSTAT with the corresponding degree granting Universities.
- Webinars for students of primary and secondary educational levels are created.
- Traineeships at ELSTAT’s premises for students from Universities from all over Greece and Schools of Artistic Studies and Technical Applications are initiated.
- ELSTAT participates in the program “*Filoxenia*”, funded by the Hellenic Parliament Foundation. This program is granting short-term accommodation in Athens to students of remote secondary schools from all over Greece in order for them to participate in various cultural and educational activities.

### **4. Communicating and promoting the project “*Fostering Statistical Literacy in Greece*”**

- The electronic platform “*Census at School - Census@School*” is operating. This platform provides educational material and instructions on the process and the practical conduction of a statistical census survey at the level of the school unit. In this way, students are involved in the collection and analysis of statistical data and they identify similarities or differences at the level of the school unit.
- An educational web game, which will be hosted in a dedicated place of ELSTAT’s website, is created.



## **VI. Evaluation of the project so far**

The response to the project "*Fostering Statistical Literacy in Greece*", and the feedback recorded by ELSTAT, so far, are very positive, encouraging and, therefore, inspiring for the intensification, expansion and enrichment of the next steps that ELSTAT is planning.

The response is positive both from the side of the participants and interacting stakeholders coming from the educational institutions (students, professors, etc) but also from the side of the management of education at the political level (Ministry of Education, Research and Religious Affairs). Both parties embraced the actions of ELSTAT with their continuously increasing participation. An important factor that contributed significantly to the positive outcomes that have been recorded so far has to do with the enthusiasm and engagement exhibited by ELSTAT's staff.

Enthusiasm and cooperation among all involved parties is an essential ingredient for the establishment and evolution of the project that would enhance statistical literacy in Greece in a sustained way.



More information concerning  
**“Fostering Statistical Literacy  
in Greece”**  
is available at:



[www.statistics.gr/el/edu](http://www.statistics.gr/el/edu)



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