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Would you like to take part in a European Statistics Olympics!?

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1. INTRODUCTION

The support for statistical literacy is part of the project Digital communication, User analytics and Innovative products (DIGICOM), which is one of the eight projects from the ESS Vision 2020. The DIGICOM aims to modernise communication and dissemination of European statistics. This will be achieved by exploring and developing innovative dissemination products and services based on experiences within the ESS and concrete needs of European statistics users. The DIGICOM consists of four work packages and the INE Spain was, along with other eleven ESS NSIs, actively involved in the Work Package 4 "Communication and promotion". This work package deals with statistical literacy, addressing the Vision objective of activities targeting the public at large to enhance statistical literacy.

The term "Statistical literacy" appears several times in the ESS Vision 2020:

- *We will make sure we deliver information in an interactive and easily comprehensible way, and **improve the statistical literacy** of European citizens and institutions by guiding them through the deluge of data and information from various origins.*
- *… we will develop ways to disseminate 'nice to know' statistical facts to increase the public profile of official statistics and **raise statistical literacy**.*
- *We will invest in educating our users to **increase their statistical literacy**, in particular to mitigate the risk of improper and unjustified use of our statistical products and services.*
- *One part of these activities targets the public at large to guide them through the pitfalls of statistics and **enhance statistical literacy.** It includes "nice to know" statistics to strengthen our exposure. These products will contain less text and figures, but more graphs, maps, images and videos. Another part of these activities targets special interest groups.*

Therefore, under the DIGICOM project, Eurostat and voluntary national statistical institutes (NSIs) plan to launch the European Statistics Olympics (ESO).

2. WHAT IS THE EUROPEAN STATISTICS OLYMPICS (ESO)?

The ESO is a new annual competition organized by Eurostat and volunteering NSIs to promote statistical literacy, curiosity and interest in official statistics among students and teachers. This

initiative is based on a successful practice conducted by INE Spain. (There are other NSIs, such as the Statistical offices of Italy and Poland that also organize a Statistics Olympics).

The main objectives of the ESO are to promote curiosity and interest in statistics among students, to encourage teachers to use new materials for teaching statistics by promoting the use of real data provided by official statistics and search for applications of acquired statistical knowledge. Moreover, it aims to show the role of statistics to students and teachers in various aspects of society, and to promote teamwork and collaboration among students to achieve common goals.

The competition will be structured in two parts, the national competition followed by the European final. The finalists of the national competition of each country will take part in the European final. The language of the national competition will be the local language while the European competition would be in English.

It is proposed to kick off and promote the competition on European Statistics Day on 20 October 2017. The national competition will take place during the school year 2017/2018 with the European final in May 2018.

3. PARTICIPATION

The competition targets 2 categories of participants, 14-16 years old and 16-18 years old. Their ages may vary slightly from country to country depending on the national educational system. Participation is free of charge.

Students are entitled to take part, irrespective of what they are studying. They are not required to study statistics at their schools. The purpose of the competition is not to teach statistics as a science but rather to promote statistical literacy and also to promote official statistics. The target group includes therefore not only math/statistics teachers but also teachers of social sciences, citizenship, and so on.

Students should work in teams of a maximum of 3. Each team should come from the same school and have a teacher/tutor to accompany them and supervise their work. The composition of the team should not be changed during the competition unless required by extraordinary circumstances, such as illness.

4. A COMPETITION IN TWO STEPS

The ESO competition consists of two steps, a national competition and a European final.

- **Step 1: National competitions organized by volunteering NSI in the local language**

National competitions will follow in principle the structure and content inspired by the experience of INE Spain. However, in countries where another competition has already been organized before, the competition can run on a different basis, if the age group is respected.

The national competition consists of two separate phases – a quiz and an assignment. Both phases could be done online using a single platform for all competing teams.

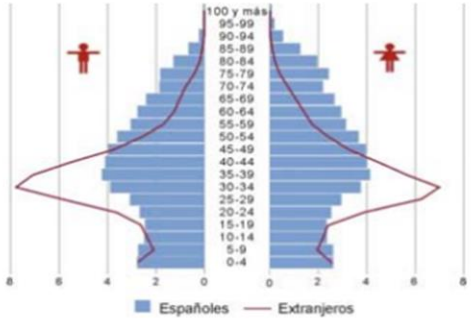
The quiz will consist of three parts with 10 closed questions in each part. Participants need to answer questions on basic knowledge, the use of official statistical data sources (search and interpretation of information from Eurostat and/or national websites about official statistics) and the interpretation of statistical reports or publications (for example “Men and Women in Europe”).

The following are examples of quizzes used in the Spanish Statistics Olympics:

The basic knowledge test

1. **The final grades of an exam have been: 9,7 – 9,8 – X – 8,6 – 9,7. If the average of these grades is 9,2, what is the missing value of X?**
   a. 8,4
   b. 9,8
   c. 8,2

2. **In the Spanish Population Pyramid, according to the last census,**



   in which age group is the most foreign women?
   a. From 50 to 54 years
   b. From 30 to 34 years
   c. From 90 to 94 years

3. **Find the wrong statement:**
   a. The variance is always higher than the arithmetic mean
   b. The arithmetic mean is a set of values that is always higher than or equal to the minimum of those values
   c. The standard deviation is a measure of dispersion

4. **The math grade of a teenager is located in the percentile of 95 in his class. This means:**
   a. He has obtained a grade higher than 95% of his class mates
   b. He has not failed
   c. He has obtained a grade that is equal to or higher than 9,5.

The use of official statistical data sources test

1. **What is the unemployment rate in the fourth trimester of 2012 in Spain, according to the Active Population Survey?**
   a. 12,40
   b. 26,02
   c. 20,20

2. **The population of Spain in 2011, according to the Population and Dwelling Census was:**
   a. Higher than 47 million inhabitants
   b. Between 46 and 47 million inhabitants
   c. Lower than 45 million inhabitants

3. **What is the most frequent name among babies born in 2011:**
   a. Alejandro
   b. Lucía
   c. Pablo

The assignment, only for the teams qualified in the first phase in each category, will consist of analysis of a given dataset (national or European) and delivery of a written presentation (maximum of 8 slides).

National jury and prizes are the responsibility of the NSI.

- **Step 2: European final organized by Eurostat with the support of the coordinator of the competition and participating NSIs**

A maximum of 3 winning teams per country and category will take part in the European final. The language of the competitions is English. It will be organized in a remote/digital way using relevant technology.

The award ceremony of this phase will possibly be linked to the Q2018 conference in Krakow, Poland. The detailed content and organization still needs to be decided. The winning teams of both categories will receive awards. The jury might be composed of staff from Eurostat, members of the DIGICOM Steering Group and/or ESAC members.

5. TIMELINE

The proposed timeline of the ESO is as follows:

1) Preparatory work April-September 2017, indication of participation by mid – June 2017
2) Final confirmation of volunteering NSIs: latest on 1st of September for the organizational part of the European final, but national preparation needs to start earlier
3) Promotional activities kick-off and announcement of the competition: 20 October 2017 (European Statistics Day)
4) National competition (including registration period): November 2017 – March 2018
5) Registration period for the European part: (starts after national competitions' winners are announced – end of March 2018)
6) European final: April 2018 – end of May

6. PROMOTION

The promotion of the ESO will require careful planning and a systematic approach as it is going to be the first time to organize such a competition. It is essential to develop a clear promotional strategy, identifying the target group, messages and communication channels in order to achieve a broad participation.

Volunteering NSIs that will organize the national competition for the first time could learn from the experience (methods similar to the ones that) of the INE Spain in promoting the Spanish national competition. The INE achieved great results using various methods, such as: sending introductory emails to all schools and teacher associations in Spain, introducing the competition at school visits and courses organized for teachers at various INE locations, extensive use of social media, just to name a few.

7. CONCLUSION

In these times of data revolution, with many other data providers and sources of information, making people aware of the importance of official statistics and its quality becomes a crucial task of all providers of official statistics. Therefore, any investment in statistical literacy will increase the awareness of the values official statistics and will empower people to use it in decision making.

For several years INE Spain and other NSIs such as the Statistical offices of Italy and Poland were successfully organizing the Statistics Olympics, a national statistical competition. In the case of INE, it

aimed at the promotion of official statistics and an increase of the statistical literacy and the visibility of the INE among young people. The competition achieved excellent results; therefore, members of the DIGICOM Work Package 4 decided it could be a good idea to replicate the competition and organize a similar one at the European level.

By participating in this competition, students will deepen their understanding of European official statistics and the cooperation between NSIs and Eurostat will rise. As a result, the ESO will increase the visibility of NSIs and the ESS among students and teachers and promote the value of European Statistics. Therefore the ESO is in line with the ESS Vision 2020. The ESO can also be used as a marketing tool that, in a user friendly way, helps create and increase awareness of important concepts and values of official statistics to a wider audience.

Who is going to be the first winner of the ESO? We will know next June!

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