

Actions for improving statistical literacy in Slovenia

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Abstract

The Statistical Office of the Republic of Slovenia (SURs) is conducting many activities directing towards the improvement of statistical literacy in Slovenia, either alone or in cooperation with other institutions, such as faculties and the Slovene Statistical Society. The paper outlines the general approach and considerations of SURs when designing actions for advancing statistical literacy in Slovenia. It also describes SURs's practical actions to enable and make easier the access to its data and their use; to educate about the statistical concepts, metadata and methods; and to raise awareness about the availability and possible use of official statistics' data.

Keywords: statistical literacy, statistical communication, statistical education, official statistics

1. Introduction

The traditional function of official statistics is to support the activities of the state. More recently, data provided by official statistics are seen also as means for democratic control and development of democracy. The newest paradigm adds to these purposes the individuals and businesses and their decision-making. Such evolution of official statistics' purposes was stimulated by new thinking in statistical offices and other institutions that compile official statistics. It is no longer considered enough to offer statistical data to clients/users who have a professional interest in statistics. Building bridges to those parts of a society that are not natural clients of statistical offices has become much more important. For these to be realized, a much more active approach is needed, clients need to be searched for and the products of official statistics need to be adapted to them. These processes are seen by statistical offices as an assurance that statistical data will be used on an even greater scale; and consequently, statistical offices and their products will remain relevant for societies and be a value to societies.

Actions aimed at bridging the gap between statistical data and different parts of society are part of the activities for improving statistical literacy. Statistical literacy keeps attracting the interest of the statistical community for quite some time and it is not limited to official statistics. It is a multidimensional issue; it includes many addressers (statistical offices, educational institutions, statistical associations, etc.), addressees (general public, pupils/students, decision-makers, journalists, businesses, etc.) and types of statistics (official statistics, academic statistics, etc.). This paper deals only with activities related to official statistics. It begins with outlining the approach and general considerations which the Statistical Office of the Republic of Slovenia (SURs) is taking into account when designing

actions for improving statistical literacy in Slovenia. It continues in section three with the description of SURS's practical actions to enable and make easier the access to official statistics' data and their use; to educate about the statistical concepts, metadata and methods; and to raise awareness about the availability and possible use of official statistics' data. The final section offers some considerations for the future.

2. General considerations

SURS mentioned the term statistical literacy in its main strategic document for the first time in 2008 [1]. One of the goals within the strategy of dissemination and communication with users was "improvement of statistical literacy". It elaborated that SURS will continue to cooperate with groups of users, and it will place much more emphasis on the general public. Improving statistical literacy in various areas is one of the activities also in the current strategy of Slovene national statistics [2].

There is no formal organizational structure for dealing with statistical literacy in SURS. Instead, activities for improving statistical literacy are divided among many organizational units but concentrated in a unit responsible for communication. The character of these activities is such that it is impossible to separate them from other communication and educational activities. They can be found in almost everything SURS does when it communicates or cooperates with different stakeholders. Similar to quality, activities for enhancing statistical literacy are cross-sectional, they spread through everything that is done in the office, they are day-to-day activity of almost every statistician. In addition, most SURS's activities for enhancing statistical literacy are performed in-house, with own staff, and only rarely are services purchased on the market.

SURS is one of the most important institutions in Slovenia that is working towards the advancement of statistical literacy. However, it cannot assume the whole responsibility for the level of statistical literacy of the Slovene citizens. Even more important is the educational system at all levels of schooling, from primary to tertiary. The third important institution is the Slovene Statistical Society that has statistical education among its area of work. It is a common understanding in Slovenia that the more various institutions cooperate the better the results at improving statistical literacy are [3]. SURS thus cooperates with numerous schools, faculties and the statistical society to exploit the synergies of the efforts that different institutions are investing into enhancing statistical literacy.

When designing actions for increasing statistical literacy official statisticians need to have in mind that potential users are not a homogenous group of people and there is no one-size-fits-all approach. It is necessary to understand that activities need to be user-centred and not statistician-centred. They should be adapted to users' skills, knowledge, interest, age, life situation, etc. Statisticians should talk the language which non-statisticians understand; along the same lines one should not expect the non-statisticians to be on the same level of statistical literacy as statisticians. The best way to understand users, their needs and interest is to communicate, to discuss, to ask, and not to assume. This could also contribute to developing positive self-viewing by users as individuals capable of thinking statistically [4] and to eliminate fear from numbers which can be so often observed.

When the level of statistical literacy raises, users are more conscious of the sources of statistical data, more capable of assessing the quality of data submitted by different suppliers, and preferably appreciate more the service offered by and quality of statistical data produced by official statistics. At the same time, users become more aware of what they can expect from official statistics. They raise their expectations, challenge statistical offices and are no longer satisfied with simple answers. With new users and with better educated users thus come new requirements. This should be seen as an opportunity and new impetus for improvements.

3. Putting theory into practice

SURS performs different practical activities directed towards upgrading statistical literacy. They are basically of four types: (1) activities to enable and make easier the access to SURS's data, their understanding and use; (2) activities to educate about the statistical, economic, social and environmental concepts, metadata and methods; (3) activities to raise awareness about the availability and possible use of SURS' data; and (4) activities to improve statistical literacy of SURS's staff and statisticians in other institutions that compile official statistics in Slovenia. Obviously, the first three types are oriented outwards, towards users, and the last one inwards, towards statisticians. This section brings a non-exhaustive list of actions conducted in the recent years, organised according to addresses. Many actions are designed in a multi-layer way and are directed towards different types of addresses. Less demanding users can use them at a general level, more demanding ones at a more detailed level. In order to prevent duplication, they are usually mentioned only once in the following paragraphs.

Political decision-makers/government employees

Political decision-makers and government employees are the most typical client of official statistics. They use statistical data to analyse problems, to design measures, to make decisions and to follow their consequences. SURS supports all these activities by various means, with which it raises awareness about the necessity of using data, about the availability of data and quality, the importance of being familiar with metadata, etc. Examples are:

- active participation at designing documents of strategic importance (e.g. Strategy 2050);
- supporting numerous government and ministries initiatives with data and methodological knowledge;
- all data are published in a statistical database and available free-of-charge [5];
- all data are published accompanied by metadata;
- the serial publication Brochures with detailed analysis of a particular topic [e.g. 6, 7];
- in cooperation with the Government Education Centre trainings are conducted for government employees on the availability of data, methodologies, statistical principles, etc.;
- statistical advisory bodies for individual statistical fields which are forum for discussions among statisticians, data users and data providers on data needs, data sources, methods, etc.;
- the application STAGE which enables the cartographic presentation of statistical data by spatial units, and with informing and educating about its possible use [8].

Journalists

Media are often cited as the fourth estate or a watchdog of democracy. They inform the public on different topics and events in politics, economy and society, and exercise democratic control. Data produced by statistical offices can and should be a tool for such control. In addition, media are the most important channel through which statistical data reach the general public. Nevertheless, it should not be forgotten that media hold not only the politicians accountable, they also hold the statisticians accountable. Examples of SURS's activities in relation to statistical literacy of journalists are:

- First Releases are designed in such a way that they can be easily used by journalists, and with easy to understand text, charts, tables and infographics;
- Special Releases for holidays, world days [e.g. 9], anniversaries [e.g. 10, 11], with more fully-fledged analysis and interactive infographics [e.g. 12];
- the short summary of the releases is used automatically for Twitter and enables re-dissemination of data;

- the social bookmarking service AddThis is integrated into the website and enables re-dissemination of releases;
- ready-made tables and charts that can be downloaded or copied are available in First Releases, and in pdf versions of all other publications;
- ready-made thematic maps are available in the application Thematic Cartography [13];
- in the electronic publication Slovene Regions and Municipalities in Figures downloadable ready-made tables are available and charts can be saved as a picture [14];
- seminars for journalists on the availability and access to data, statistical principles, etc.;
- interviews and statements for media by the SURS employees;
- monthly press conferences with information on the latest data releases and detailed analysis of particular topics (e.g. GDP, government deficit and debt) [15];
- participation with the national broadcast company Radio and Television Slovenia in its weekly podcast Figures [16];
- reactions to misuse or misinterpretation of official statistics by journalists; such (rare) occurrences usually result from the lack of knowledge or information and are an opportunity to educate and improve the understanding of statistics.

While it is important to react to wrong use of statistics, it is also important to exhibit cases where statistics are used correctly [17] as the positive approach often brings more lasting and desired results than the negative one. In Slovenia, the statistical society awards journalists for excellency in using statistical data in media.

Pupils/students

Most people should obtain the most knowledge about statistics within the educational system. There the biggest responsibility for statistical literacy lies with educational institutions. Statistical offices can only have a secondary role in supporting the schools and faculties in their role. For SURS this means in particular:

- traineeship is offered to students;
- topics for themes are provided;
- lectures are conducted at schools and faculties;
- the study programme Applied Statistics which is EMOS certified (European Master of Official Statistics) is supported;
- public-use-files are produced, so students can learn on real data;
- seminars to school teachers are conducted;
- on-demand visits of pupils/students to SURS are offered.

Businesses

Businesses encompass all types of business subjects, from companies, financial institutions, entrepreneurs, non-profit institutions, trade unions, business associations, etc. They are both: respondents to statistical surveys and users of statistical data. This determines the SURS's activities and products, for example:

- one of the Statistical Day Conferences was devoted to the discussion on the enterprises' expectations towards the statistical office. The conference aimed primarily at decreasing a disproportion between the obligations of enterprises as survey respondents and the amount of statistical data they utilize [18];
- presentations at businesses conferences;
- the Call Centre for answering requests on statistical data;
- seminars on topics of interest to businesses;
- supporting negotiations between social partners with data and methodological knowledge;
- informing about the purpose of data collection by survey questionnaires;

- the website for survey respondents with information on surveys [19];
- returning results to survey respondents;
- including interesting statistical data on accompanying documents sent to survey respondents;
- playing interesting statistical data on telephone while callers are waiting for a free line.

Ordinary citizens

This term denotes an extremely heterogeneous group of citizens who have no professional interest in official statistics' data. They do not need them neither for work nor for school. As such, they are the most challenging to attract and be maintained among the users. For them it is most important to communicate in an easy, understandable and interesting way, without unnecessary details, metadata, etc. Examples of SURS's activities and products to influence the statistical literacy of ordinary citizens:

- the application Names and Birthdays is by far the most popular SURS's product [20];
- other popular applications, such as Place Names [21], Population Pyramid [22] and Recalculation of Monetary Values [23];
- infographics to present the sometimes complex topics in an easy way [e.g. in 24, 25, 26];
- communication via Twitter: @StatSlovenia;
- articles on the Wikipedia [e.g. 27];
- Open Day when participants have, among others, an opportunity to conduct some parts of the statistical process by themselves (for example interviewing);
- leaflets presenting products [e.g. 28];
- leaflets for individuals as respondents to statistical surveys [e.g. 29, 30];
- personal cards and t-shirts with statistical data.

SURS's employees and statisticians in other institutions that compile official statistics

Finally, the knowledge of all aspects of official statistics should be concentrated in statistical offices and other institutions that develop, produce and disseminate official statistics. Therefore, the first and foremost priority should be given to statistical literacy of official statisticians. Having well-educated, capable and competent staff is a necessary condition for all activities of upgrading statistical literacy in other parts of the society. The required knowledge and competences are very wide; they range from pure statistical/scientific ones (concepts, sources, methods, processes, etc.) to the ability to communicate, educate and explain difficult topics in an easy way, to soft skills, such as being benevolent to the needs of other people. It would go well beyond the purpose of this paper to describe in detail what SURS is doing for constantly enhancing the capabilities of its staff. Only some activities are mentioned here:

- recruitment of graduates from relevant academic disciplines;
- internal training programme with obligatory and voluntary courses on statistics, information technology and other general and specific expertise; courses are offered also to statisticians in other institutions of official statistics;
- internal rotation is encouraged;
- the internal conference Statistical Beat where employees present results of their work to their colleagues;
- active participation at national and international conferences is encouraged;
- participation at courses of the European Statistical Training Programme;
- participation at seminars, conferences, courses, etc.;
- participation in as many task forces, working groups, etc. in the international statistical community as possible (learning by doing).

We, the statisticians are communicating, educating and informing about statistical data not only when on duty but also in our free time in contacts with our family members and friends.

Sometimes we are not even aware that we are contributing to better statistical literacy. And even if some of us leave the office, he/she is usually the best ambassador of official statistics.

4. Conclusion

Despite of not having the management of statistical literacy institutionalized, SURS is very active and conducts many and diverse activities for promoting and upgrading statistical literacy in the Slovene society. The activities can be found in each of the strategies to meet the needs of different users as identified by the UN Economic Commission for Europe (raising awareness, developing strategic partnership, increasing access to information, developing and delivering training, providing support services) [31]. This implies that it is not that much important whether statistical literacy is dealt with separately from communication and educational activities or whether it is considered as a natural by-product or outcome of these activities.

There are, of course, still unexploited opportunities. Currently, two seem the most relevant to SURS. The first one is to include statistical topics in the curriculum at all school levels, particularly the lower ones. Young age is a period when new knowledge is obtained easier, so it would be the best time to build foundations for the statistical literacy of future users. Secondly, much more emphasis would need to be invested in analysing what problems statistical data can solve for potential users and what life situations they can address. This would also bring the answer to an eternal question: what products and activities to offer, and make promotion easier. Currently, the promotional side of our work is still inferior to the production side.

Last but not least, statisticians will have to become more market-oriented and base decisions on products and activities on facts. Despite many actions, there is a feeling that the general level of statistical literacy in the society is not improving significantly. We will have to find ways to measure the results of our work. We are good at measuring inputs (hours worked) and outputs (lectures given, applications developed, etc.) but we are still poor in measuring outcomes (the level of statistical literacy). Developing the outcome measures and conducting surveys might not be a task for statisticians in statistical offices but we would only then be sure that we are doing (or not) the right things.

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