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THE USE OF THE TERM OF DATA IN THE PRACTICE OF STATISTICS AND IN THE TEACHING OF STUDENTS

Keywords*: data, Big Data, Bureau of the Conference of European Statisticians, classification of sources, classification of terms, conference «Teaching Statistics in a Data Rich World», statistics training, official statistics, terminology.*

Term of the date. The term «data» has undergone a huge evolution from the usual time to describe the phenomena, events and facts in any industry to the whole branch in the IT industry.

Data is the results of calculations, measurements, studies, etc., which describe quantitatively and qualitatively certain events and phenomena. Data is specific without meaning. They become information when determining the certainty of an object. Data and information are valuable because they are a resource for processes and decision making in any field of society.

The term «computer science» appeared in France in the 1960s. The term «informatics» (French informatics) comes from the French words informatsion (information) and automatique (automation) and literally means «information automatics». The English-language version of this term is also widespread – «Computer literacy», which literally means «computer science». Data and information have spawned the industry as a whole and a major trend in the global business of the last decade.

Functional Big Data In the recommendations of the Conference of European Statisticians. At its second meeting, which took place on October 21-22, 2013, the Bureau of the Conference of European Statisticians of 2013/2014, which is the governing body of the Economic Commission for Europe (ECE) in the field of statistics, conducted an in-depth study of Big Data [1]. The following main recommendations were made on its findings: the international statistical community should jointly identify the key priority areas for the use of Big Data and take up the development of these areas; and there should be a mechanism for sharing information about the knowledge and experience of using Big Data. The Bureau also approved a project devoted to Big Data which has the following objectives:

(a) identify key features that include Big Data, prepare methodological guidance for statistical organizations, and develop coordinated measures to address the main strategic and methodological issues that arise in the official statistics sector in connection with the use of Big Data;

(b) demonstrate the feasibility of effectively preparing both new statistical products and «traditional» official statistics using the sources of Big Data and the possibility of replicating these approaches in different national circumstances;

(c) Facilitate the exchange of knowledge, technical expertise, tools and methods among organizations for the preparation of statistics using the sources of Big Data.

Sources of Big Data. The sources of the Big Data for official statistics can be classified as follows [2]:

• sources of data related to the implementation of the program, whether it is state or other, such as electronic medical cards, information about the reception of clients by hospitals, accounting insurance documents, accounting bank documents;

• Commercial or operational data sources related to transactions between two parties, such as credit card transactions and online transactions (including those carried out using mobile devices);

• Data sources related to the operation of sensor networks, such as data from satellite images, road sensor data and meteorological data from measuring devices;

• Data sources related to the work of recording devices, such as data recording from the mobile telephone network and the Global Positioning System (GPS);

• Data sources related to user behavior, such as Internet searches (for a particular product, service, or any other type of information) and web page views;

• Data sources related to the expression of users of their opinions, such as data from comments on social networks.

Prospects for Big Data in official statistics. Current official statistics will inevitably apply Big Data, but statisticians are in most cases not ready and unwilling to move on to a new platform for collecting, processing, and interpreting statistics. The above is surely indicative of the fact that Big Data is the future. Therefore, there is a question of training statisticians in working with statistical data in a new way.

When teaching students - future statisticians, special attention should be paid to databases and data warehousing technologies. After all, they are the means of organized and structured data storage. Understanding and working with databases and repositories disciplines specialists for accountability for primary data, provides tools for solving statistical tasks by means of DB and SD (each means for completely different tasks).

The next level of professional awareness and qualification for statisticians should not be a formal acquaintance with Big Data. At the same time, the main ideology of this study is the idea that Big Data is just new opportunities in the new environment. This is the tool that is most suitable for experts in statistics. Big Data is generated by the world around, professionals should only be able to apply them and interpret the results.

The term data at a conference in the Kingdom of Morocco. The word data was most commonly used (in reports and published materials) at the Conference on Teaching Statistics in a Data Rich World in the Kingdom of **Morocco** July 11-14, 2017 (IASE 2017 Satellite Education Teaching Statistics in a Rich World) [3]. Terms and definitions that relate to, in particular, the methods of working with data in current statistics cover the full range of modern methods and tools for working with data presented in the market of IT solutions.

The terms relating to data, applied in the context of modern statistics, can be systematized as follows: general, philosophical and technological, tab.

Thus, technological, applied, practical aspects of Data use dominate the conference.

New ideas of teaching statistics. Big data age, Data Rich World, Statistical Data analysis, Data skills, African data initiative. As an example of how the data can be used, presenters demonstrated how to build indicators to measure the progress toward the United Nations «2030 Agenda for Sustainable Development» (SDGs). The SDGs are comprised of 17 global goals and 169 targets. At least 10 goals and more than two dozen targets can be measured using the data available in IPUMS-

International and IPUMS-DHS. Integrated Public Use Microdata Series (IPUMS) is the world's largest individual-level population database. The latest achievements of statistical science and the best world practices were presented at the conference.

Table

Classification of data terms in conference materials in the Kingdom of Morocco

Signs	Disclosure of content	Use in conference materials in the Kingdom of Morocco
General	refer to existing values that are subject to processing and meaningful interpretation. General terms about data mean everything you can say «how many», «what», «why»	Data, Real Data sets, Text Data, Spatial Data, Data sets, Summary Data, Such Data, Amounts Data, Data becoming Growing Data, Official Data
Philosophical	Data about the surrounding world, reality filled with data, revolution in data, etc. Philosophical signs have all the terms relating to the existence of people in the environment, their emotions and thoughts.	Understand Data, Data revolution, Data are conveniently arranged, Multilevel Data Ideas, Data of school, Data driven, Data scientists
Technological	Data storage and processing - for example, big data, open data set, data clusters). Technological terms regarding data require special attention	Data visualization, Structured Data, Data clusters, Data curation, African Data initiative, Embedding Data Manipulation, Preparation Data, Data entry, Data handling skills, Data pertaining, Gathered Data, Datasets, reception on Data, «data & chance for primary school», in a data-rich material world, data collection, of their own data, processes to the data, use of data in real-world problem-solving, data on mortality and disability, data were collecting using a 10-item scale, Tool for Data collection, Data submission

Governments in an increasing number of countries recognize the importance of Big Data and create a community of practitioners and working groups to explore the issue of their use and obtain potential returns from them. The statistical community is gradually aware that a qualitative leap breaks up. Analyzing data can be fun!

Conclusions and recommendations.

1. The potential use of Big Data for the preparation of official statistics is recognized by the statistical community. Therefore, in order to take advantage of the Big Data, between regional initiatives within the world statistical community, it is necessary to establish an exchange of methodological developments, best practices in solving strategic issues and learning opportunities, including in dealing with issues related to legislative basis, privacy, finance, management, methodology and technology.

2. The solution to the problems associated with the use of Big Data involves the modernization of the statistical system - it will be necessary to strengthen the research sector of the statistical system, to increase the information and technological capabilities, to conduct a structural reorganization of human resources through the involvement of computer scientists and to establish partnerships with the private sector in the region the exchange is automatically generated by the information in a digital format in conditions that adhere to the principles of privacy and respect the rights Salt of privacy. Despite the dominance of technological aspects, due attention should be paid to general and philosophical approaches.

3. Big Data and the upgrading of statistical systems make for most countries very similar problems and opportunities. Therefore, a similar exchange of experience, practical methods and decisions can be established between the national statistical offices.

4. Ukrainian experts in the industries involved (statistics and IT) should be interested in the possibility of non-commercial use of Big Data. In order to introduce Big Data into official statistics there should be a state program. There should be a solution to a set of problems: legal, technical and technological. The transition to the use of Big Data in official statistics will facilitate the implementation of Ukrainian statistics to the world statistical community.

References

1. Conference of european statisticians. Second Meeting of the 2013/2014 Bureau Geneva (Switzerland), 21-22 October 2013 IN-DEPTH REVIEW OF BIG DATA [Електронний ресурс]. – Режим доступу : ECE/CES/BUR/2013/OCT/2
2. Єршова О. Л. Великі дані (BIG DATA) і модернізація національних систем офіційної статистики / О. Л. Єршова, Т. В. Томашевська // Прикладна статистика: проблеми теорії та практики. Збірник наукових праць. Вип. 17. – К. : НАСОА, 2015. – С. 45-53.
3. IASE 2017 Satellite Conference Teaching Statistics in a Data Rich World [Електронний ресурс]. – Режим доступу : https://iase-web.org/conference/satellite17/
4. Прогнозування фінансових ринків: сучасні концепції та нові підходи: монографія / О. Л. Пластун. – Суми : ДВНЗ «УАБС НБУ», 2014. – 401 с.
5. Фінансова безпека підприємств і банківських установ [Текст] : монографія / за заг. редакцією д-ра екон. наук, проф. А. О. Єпіфанова, [А. О. Єпіфанов, О. Л. Пластун, В. С. Домбровський та ін]. – Суми : ДВНЗ «УАБС НБУ», 2009. – 295 с.