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Topic 4: Quality Management

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Quality management in the Central Statistical Office of Poland – the main areas and results (good practices)

Quality management in the Central Statistical Office (Polish: GUS) is based on a comprehensive approach. It is relevant for proper coordination of the functioning of the entire organization, including its statistical and non-statistical processes, thereby achieving optimum performance and organizational success. The CSO activities in the field of quality cover many areas – from organizational structure, through human resources management, risk management, proper organization and monitoring of statistical processes, communication with external clients, ending with use of IT tools supporting these activities. All these are related to quality planning, its continuous provision, control and improvement in various aspects of the institution's functioning and operation.

Quality management framework

The Office's tasks are performed in accordance with the generally accepted quality management framework, i.e. Fundamental Principles of Official Statistics (UN), European Statistics Code of Practice (CoP), Quality Assurance Framework (QAF) and Regulation (EC) No 223/2009 of the European Parliament and of the Council of 11 March 2009 on European statistics. Additional frameworks include internal regulations and adopted policies such as the internal management of the President of the Central Statistical Office *on measurement, assessment and monitoring of the quality of statistical surveys in official statistics (2011), document defining strategy, mission and vision of organization development - "Development Directions of Polish Official Statistics until 2017" (2012), annual action plan on improving quality of statistical surveys, annual plan of quality reviews.*

Organizational structure vs. quality management

Selected elements of quality management in institutions are reflected in the organizational structure of the office. Quality management system covers all units of official statistics which have appointed roles and tasks in this regard. Examples:

- The CSO Management - setting directions of strategic activities in line with the mission of the office, approving quality action plans on public statistics (including annual plan of quality review);
- *special quality assurance unit* in Methodology, Standards and Registers Department – elaboration of general rules of conduct (guidelines) on issues related to the quality of statistical surveys, preparation of standard tools and measures for quality assessment of statistical surveys, annual action plan on quality, conducting quality reviews of surveys that present anomalies and quality trainings in public statistics, coordinating and monitoring the implementation of the CoP;
- the statistical office in Łódź – supporting the activities of the *quality assurance unit*, including analysis of quality reports of statistical surveys focused on observation of obtained quality measures and co-leading quality reviews, monitoring on improvement actions formulated during these reviews, creation of IT tools for measuring and surveys quality control;
- The Methodological Commission (appointed by the President of the Central Statistical Office, comprises of the representatives of the scientific community) gives an opinion on the methodology of statistical surveys, formulates recommendations, which in turn serves to improve the quality of statistical information, contributes to the preparation of the plan for surveys quality review in a given year;
- Programming and Coordination of Statistical Surveys Department – takes care about the quality of statistical surveys within its organization and monitor the work progress; draws up monthly reports for the management and analyzes reports on the realization of statistical survey developed by lead units;
- regional statistical offices (16) and CSO departments conducting surveys – continuous improvement of their quality in accordance with current quality standards;
- Organization and Personnel Office – among others, raising staff competencies by organizing and coordinating training activities, drawing up a career development program;
- internal audit unit – supporting the Management of CSO in accomplishing set objectives and tasks through systematic assessment of management control and advisory activities, initiating projects aimed at improving quality and effectiveness of CSO as an institution.

Quality tasks, performed by many units, are complementary and form a coherent whole – Total Quality Management.

Sometimes the adopted organizational structure of the office makes it impossible to carry out horizontal tasks – the so-called projects. Then, it is advisable to create temporary organizational "horizontal" (interdepartmental) structures changing the subordination of employees, but only within and for the projects purposes. The most common practice is to assign teams for specific tasks, e.g. the team for profiling enterprises, the national population

and housing census team, the agricultural census team or the team for modernization of CSO publicity policy. Such solution is usually also required when we implement grants.

Applying a flexible approach to the organizational structure of the office resulted in: a better flow of information between the public statistics units (within the central office and between the central office and the regional offices); constant enrichment and providing comprehensive knowledge to the participants as well as so called synergy effect. This helps to build new competencies and provides the opportunity to work out the most optimal solutions for the organization. As a result, people engaged in this kind of work are able to carry out more and more difficult tasks and take on new challenges that often go beyond the tasks performed within a given organizational unit. Besides improving qualifications of individual participants, this approach also supports building positive relationships between the employees of different units, enhances understanding and collaboration.

Current practice shows that application of only rigid vertical structure of the CSO is not sufficient. Only after imposing "task" horizontal organizational structures, optimal results may be achieved both in the quality of the tasks performed and the human resources.

Individual Professional Development Programs as a tool for improving employee competencies

The Individual Professional Development Program (IPDP) is a tool supporting the development of the staff of the Central Statistical Office. It is made every 2 years separately for each employee and allows the management to combine the employee's periodic assessment with the annual Statistical Education Plan, which contains information about CSO training activities.

Mainly the conclusions of the periodic assessment, planned career and financial path of each employee, his/her plans and development opportunities as well as the needs and possibilities of the CSO in terms of employment are taken into account when preparing IPDP. Due to the competence model applied by the CSO, when drawing up the IPDP we must also take into account the competence profile assigned to the job position of a person for whom IPDP is created. While defining the areas of knowledge, skills and competences required for an improvement, first of all, the competences included in the competence profile must be taken into consideration. In the case of competencies outside the profile, it is necessary to relate them to additional or planned tasks resulting, e.g. from the intended promotion of the employee.

IPDP is also the basis for directing CSO employees to training. Therefore, the immediate supervisor responsible for creating an employee's IPDP, should prepare it in a reliable manner and fit the appropriate development activities to his/her needs. Additionally, information contained in the approved IPDP is taken into consideration in the development of the Statistical Education Plan for a given year.

Skills upgrading process - Statistical Education System in CSO

The greatest and the most valuable investment of any organization is investing in human resources. Training and team building is an important part of creating an environment in which employees may develop, gain experience and skills and increasingly contribute to the organization's growth and success.

Therefore, the employees of the CSO constantly improve their qualifications, skills and competencies. For this reason the Statistical Education System has been created to organize educational activities for both internal beneficiaries (our employees) as well as for external beneficiaries. Every year financial resources are secured so as to undertake educational activities for employees. They participate in internal and external training as well as conferences and other forms of improving knowledge and skills. Each year, a Statistical Education Plan for the next year is created on the basis of Individual Professional Development Programs, recognition of training needs and priorities of the organization. In addition to the strictly organized learning process, employees are willing to take up their own efforts to improve the quality of their work through self-education. Such an approach is also possible thanks to the assumption introduced in 2013 that the core management model of our institution is the management of employee competencies. This model is constantly present in all areas of employee management – from recruitment, through periodic assessments to planning of his/her development and monitoring it.

According to this concept, in order to avoid stagnation and keep up with information processing, which is especially important in CSO, it is not enough to organize work and manage it – the organization and all its members have to learn. As a result, our training offer is systematically expanded.

In 2014, we implemented an Educational System which includes e-learning training database with trainings available to our employees. Everyone may enroll to any topic at any time. The system also gives users ongoing access to all trainings that are currently being held in the form of spot learning.

Talented, experienced, committed and willing employees are included in our Inner Trainers Resort Program that improves transfer of knowledge between employees and, consequently, the implementation of the concept of learning organization in CSO, considered today the only form of organization capable of adapting to changing conditions.

Modern solutions, as the base for CSO activity, allow to match employee competencies to new challenges which the organization has to face with and to actively react to changing environment. This is especially valuable today. That is why we invest so much in the development of our staff. Our biggest asset is our employees. Full access to the comprehensive offer of high quality trainings improves the performance of tasks on a high level and in a fast manner. Additionally, as our practice shows, investing in the development

of employees brings disproportionate (greater) benefits in relation to the whole costs incurred by the institution.

Each year representatives of the department dealing with quality issues conduct trainings on quality in statistics supported by an e-learning training. Moreover, in 2016 an external coach performed a training course on improvement in quality of statistical and non-statistical processes, familiarization with TQM principles, techniques and tools as well as on practical solutions of TQM implementation in public administration.

Risk management as a part of quality management

In 2015, as part of the streamlining of management in CSO, the implementation of the risk management system was started to ensure the effectiveness of the management control system. It assumes regular control and identification of potential internal and external threats to the planned activities, simultaneously ensuring the flow of information on the subject. Moreover, implemented system enforces site managers to develop a preventative action plan for adverse events and its gradual implementation. It also allows to assess the effectiveness of ongoing activities aimed at eliminating or reducing the identified risk. Finally, the system supports prioritization in response to risk, changes in organizing the work of units and allocation of human resources based on the findings of the Risk Register, thus becoming an important element of quality management in CSO. All the above affects the quality of management at various levels of the CSO's organizational structure.

Improving statistical processes – examples

Improvement of statistical processes quality is based on continuous streamlining ensuring user satisfaction, respondents and public statistical service burden reduction, as well as statistical production costs reduction. The actions taken in the CSO in this matter are of a different nature.

The measurement, evaluation and monitoring of the quality of statistical surveys use, among others, standardized quality reports and quality reviews, i.e. reviews aimed at verifying the degree to which the quality policy is implemented in statistical surveys, identifying strengths and weaknesses and formulating improvement actions. They are an important measure to identify problems within a given statistical survey and to increase the efficiency of the statistical production process.

The reviews are regularly conducted by a specially appointed team on the basis of a plan adopted by the office management. The basis for surveys selection on quality reviews is the assessment of the surveys quality reports and accompanying metadata (made by the review team) as well as the proposals submitted by the units conducting the surveys.

Statistical surveys selected for reviews are evaluated according to different quality components. Accuracy, respondent burden and study costs are the criteria analyzed in the statistical process. Criteria for evaluating a statistical product are related to the suitability analysis of surveys and data developed on its basis, timeliness, punctuality, comparability and consistency. A review of a particular survey is always preceded by a special training for review participants in order to carry it out smoothly.

In accordance with the adopted procedure, all units carrying out the statistical surveys shall prepare a quality report. These reports are provided in a specially created *database of quality reports.*

The review includes not only units which are involved at different stages of statistical process, but also internal and external data users as well as IT services supporting the implementation of the survey. This ensures the full flow of information on the survey and the ability to find optimal solutions to the identified problems. The following aspects of the study are most often assessed during the review :

- completeness, rules of unit selection for the survey, including sample selection methods, methodological and organizational solutions used for the optimization of the sample,
- possibility of reducing the respondents burden,
- data processing efficiency using modern data collection techniques – CAPI1 and CAII2, and their impact on completeness of the survey (attention paid to data transmission and error correction problems);
- possibility to improve the timeliness and punctuality of statistical surveys and resulting data developed on their basis,
- subjective and objective scope of survey in terms of reduction of coverage and measurement errors, improvement of data collection process and improvement of scope and type of metadata provided,
- possibility of integrating statistical questionnaire in selected areas based on their comparability and coherence,
- communication with respondents and users.

During the review, which usually takes about 2 days, the whole statistical process of the survey is analyzed, its strengths and weaknesses are defined, the recommendations are formulated and the corrective action plan is prepared. This plan may include both the improvement of the particular survey or recommendations for statistical system as a whole. During the review, good practices are also identified and made available to the public statistics staff via intranet as they may be a source of inspiration for the units carrying out their surveys. Then the reviewers draw up a report which is made available in a specially created database. The implemented recommendations are continuously monitored.

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[1] CAPI (computer assisted personal interview)-a research method involving interviewing respondents using mobile devices on which answers are recorded.

[2] CAII (computer assisted Internet interview)-a research method involving interviewing respondents using the Internet.

For the purposes of quality reviews two bases were established as supporting tools:

‒ *a database of quality reports*, which collects quality reports from all statistical surveys, filled on-line by the authors; this database enables the analysis, evaluation and qualitative comparisons of conducted surveys as well as selecting surveys for review on the basis of deviations of the measurements and disturbing values;

‒ *a database of quality review reports*, which collects the accompanying documents, together with the reports prepared after the review; this database also provides the possibility to monitor implementation of recommendations.

Improving statistical processes means not only monitoring the quality using measures and reports or quality reviews. Another example is the creation and implementation of an IT tool - the Statistics Metadata System - to ensure the consistency and standardization of metadata at every stage of the statistical process. This system with Metadata Repository enables:

‒ creation and modification of structures to describe metadata and their mutual interrelations,

‒ collection of metadata by many users in different models (areas),

‒ integration of metadata, their unification, organization (priorities) and avoiding redundancy,

‒ management of metadata used not only by CSO, but also by all other ministries conducting surveys within the framework of official statistics,

‒ publishing selected content on the CSO website (e.g. terms used in official statistics).

In the end, the repository will include many types of metadata: definitional, survey and methodological, structural, operational, process and quality. This database is easily available for every statistician and for statistical information systems. It ensures coherence conceptual, categorical and methodological between surveys, including existing conceptual and classification standards of the European Statistical System. This tool contributes to improving the coordination and standardization of statistical processes. It enables to collect quality information on products and processes at every stage of statistical production facilitating the introduction of improving measures.

Communication with users – modern techniques and forms of communication

Taking care of streamlining communication with users of statistical data and CSO publications and taking into account rapid development of e-reality and the latest trends in content reception (the growing role of graphics/video), CSO is further improving ways of sharing information. For this purpose social media, such as Twitter and You Tube, are used primarily. In the near future, it is also planned to launch an institutional website on Facebook. Social media are used by the Office to inform about its publications and surveys carried out by

public statistics services, the results of such survey, international cooperation, CSO events and the social involvement of the CSO employees.

The CSO account @GUS_stat on Twitter now has 1900 followers (since October 2016), including many public institutions, business entities, and individuals who are interested in data provided by CSO. Twitter is a perfect tool to announce briefly the latest data and publications of the CSO and refer to the full content of surveys and studies in the Information Portal. Selected information is presented in an accessible form – the great majority of entries are accompanied by brief graphic information; time series are used to stand out changes over the time for different indicators. The hashtags, providing the content scope and infographics, are used to easily identify the issue to which the entry relates. Twitter posts sometimes take a lighter form of communication, such as quiz questions and correct answers to them. Working adults who are interested in public statistics are the target group on Twitter. Simultaneously to Polish account, CSO conducts the account in English: @CSO_POLAND.

Youtube - CSO account currently has 59 subscribers (since February 2016). Promotional spots and recordings of CSO are published on the channel "Central Statistical Office CSO". At the same time the local (regional) statistical offices are encouraged to produce and submit to post videos of interesting events such as competitions, lectures, open days. It is said that a film means more than a thousand words, so further development of this form of informing Internet users about the activities of public statistics is expected to be continued.

This year we plan to set up a CSO account on Facebook. This will allow us to include texts longer than 140 characters and enhance interactivity with our users (employee videos, expert chats, surveys and contests encouraging to react). The main objective of our appearance on Facebook will be to increase the number of visits on CSO Information Portal as well as presenting the "human face" of the office. The mission of the website is to show that knowledge of statistics is useful in everyday life, and CSO (also as employer) is a modern and reliable office.

In addition, during the year occasional infographics are prepared on the basis of the adopted schedule or current analysis of information needs. The infographics concern selected holidays/days and are published in the Central Statistical Office Information Portal. They are visually attractive and often contain interesting facts on a chosen subject. The light graphic-text form makes them easy to interpret by the mass audience. They are not of expert nature and their understanding does not require specialized knowledge. Infographics are very popular - only the section "Infographics" of the Information Portal has been opened almost 50,000 times since the beginning of 2017 and selected infographics or their parts are posted ("reprinted") on various web sites. After adjusting to the needs and specifics, the modified infographics are also posted on Twitter. Selected Infographics (on average one a month) are also translated into English and forwarded to the European Union Statistical Office (Eurostat) for publication on the European Statistics website on Facebook, which promotes interesting statistical information from EU Member States.

In addition to the aforementioned forms, communication with users is easier also thanks to the creation of call centres and "scientist" work place, development and modernization of information services in all voivodships in the country (at regional statistical offices), implementation of helpline, development of the Information Searching System (a tool providing easy access to statistical information resources available in other offices and institutions in Poland and to some extent in the world), annual consultations on the statistical survey program, inclusion of data users to participate in quality reviews of statistical surveys, development of public databases (e.g. STRATEG - *strateg.stat.gov.pl*), current and frequent organization of meetings, conferences, seminars and thanks to extensive cooperation with the scientific community. An example of the scientific community involvement in the dialogue is creation of the Methodology Commission (the opinion-advisory body of the President of CSO) in 2008, consisting of 11 professors specializing in various fields (areas) of statistics. As part of its activities, the Commission verifies the methodology of the planned new surveys as well as the existing ones (currently carried out) or modified, thus increasing the quality of the executed surveys. Besides the substantial support provided by its members to the statisticians, this form of collaboration additionally enables the representatives of the scientific community to comment on and provide feedback on data provided by CSO.

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Quality management is an effort of the whole organization and is reflected in satisfaction of all stakeholders (customers and staff). The activities of the CSO on the implementation of TQM elements concern all areas of its activity. It may not be sufficiently complete yet, but the organization continues to improve the quality of all its products, services and own employees. Over the past 5 years these activities have been extremely dynamic.

We are aware that quality is "an ideal which cannot be achieved, but which we have to strive for", so quality management in the organization will probably be an endless process that we will strive to continually improve.