



DRŽAVNI ZAVOD ZA STATISTIKU
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Implementation of quality management models and strategies in Croatian CBS

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Quality in CBS (in general)

- long tradition in producing data of good quality
- oriented towards production of relevant statistics by following quality requirements prescribed by the Regulation on European statistics.

CBS as producer and its users are aware that there are many definitions of quality, taking into account different aspects like:

- fit for purpose;
- satisfying user requirements; or
- getting it right first time



Quality pillars of CBS

CBS understands the quality policy as a corporate culture with five basic quality pillars (major elements), mutually linked with the modern management tools. These pillars are:

1. **Independent national statistics** (only a professional and politically independent and reliable statistics is relevant to the customers)
2. **Data users and data providers** (user satisfaction survey / reducing response burden)
3. **The quality of statistical products and services** (act in accordance with the standard definition of quality and principles of the European Statistics CoP)
4. **Process orientation** (*GSBPM*)
5. **Human resources development** (training of employees in order to increase the quality of statistical products and services)



The project 'Technical Assistance in Business Statistics and Quality Documentation'

Activities regarding quality component, as well as their estimated level of completion after year and a half of the project:

- ***Activity 1: Establishing quality management documentation system***
 - goal - establish the widely accepted general framework for quality assessment within the CBS by two sub-activities:
 - 1.1 Choosing the best available models for quality management for the CBS quality (80%)
 - 1.2 Defining Data Quality Assessment Methods and Tools (85%)
- ***Activity 2: Selecting five surveys for testing quality and establishing links to CROMETA***
 - to enable applicability and usability of the tools developed, all the developments should be carried out with the strong connection to the survey practice through 2 sub-activities:



The project 'Technical Assistance in Business Statistics and Quality Documentation' (continued)

2.1 Establishing quality charters for selected surveys (100%)

2.2 Drafting procedure handbooks for each selected survey (100%)

- **Activity 3: Training a number of CBS staff in preparing quality reports**
- almost carried out through two sub-activities:

3.1 On the job transferring of knowledge and skills to 20 members of CBS staff (85%)

3.2 Carrying out of one three-day seminar and one three-day workshop (100%)



Establishing quality management documentation system (Activity I)

1.1. The best available models for quality management framework for the CBS quality management documentation system chosen

➤ *TQM strategic document*

CBS accept TQM approach as the general model for quality management, quality assessment and quality improvement through following main cornerstones of the TQM model:

- High quality statistical processes and products
- User satisfaction
- Professional orientation of the employees
- Efficiency of the processes
- Reduction of the response burden



Establishing quality management documentation system (Activity I) - continued

1.2. Data Quality Assessment Methods and Tools defined

➤ *Glossary of the quality terms*

The first version of glossary of the terms from the quality area was created and approximately 300 terms are included in the glossary.

➤ *Database of quality information*

- planned to become a key tool for quality assessment, quality documentation and quality reporting for CBS surveys
- established on the exhaustive list of quality information based on two widely accepted ESS structures - ESMS and ESQRS
- all the information in the database can roughly be divided in two parts:
 1. *Numerical information (quality indicators)*
 2. *Descriptive (textual) information*



Database of quality information

CBS experts defined requirements for the output functionalities of the *database of quality information* and they can be summarized as follows:

1. *User authorization*
2. *Formatting of the quality indicators into the readable (formatted) form*
3. *Filling up the template for standard quality report*
4. *Development of the basic analytical tool for comparative analyses of quality indicators*
5. *Creating XML for the NRME – export from one system to another*
6. *Supplementation of the information in the database (Documentation)*
7. *Integration with metadata repository “CROMETA”*
8. *Development of the advanced analytical tool for comparative analyses of quality indicators*



Database of quality information

Advanced analytical tool for comparative analyses of quality indicators enables two types of comparative analyses for the particular quality indicator:

1. Analyses through time

- by using the starting and ending reference period application provides the time series of the selected quality indicator

2. Analyses between domains.

- application enables two different domain comparisons:

- Comparisons of the values of the certain indicator, for the certain survey and certain reference period between the indicators values for chosen domain
- Comparison of the values of the certain indicator for certain reference period between the different (selected) surveys



1.2. Data Quality Assessment Methods and Tools defined (sub-activity) - continued

➤ *Methodological handbook on quality indicators*

- to assure the more standardized methodology of calculation of quality indicators in CBS surveys. For each of the quality indicators the following sections are provided:

- Definition of the indicator
- Calculation procedure
- Example(s)

➤ *Standard list of response statuses*

- to enable standardized calculation of the above mentioned quality indicators
- two separate lists were drafted: one for business surveys and one for social surveys (Responding units; Non-responding units; Ineligible units)



Selecting six surveys for testing quality and establishing links to CROMETA (Activity II)

2.1. Quality charters for selected surveys established

- as developed tools for quality assessment should primarily be applicable and usable, six pilot were chosen in the first phase to test all these tools:
 - Survey on Income and Living Conditions (EU-SILC)
 - Monthly Survey on Industrial Production
 - Structural Business Statistics of Enterprises (SBS)
 - Annual Survey on Information and Communication Technology Usage in Enterprises (ICT-ENTR)
 - Final Energy Consumption in Households
 - Services Producer Price Indices for Cleaning Activities
- divided in two groups:
 1. already existing surveys and carried out for a long time (1st – 4th)
 2. planned to be developed in the other components of the project (last two)



Selecting six surveys for testing quality and establishing links to CROMETA (Activity II)

2.2. Drafting procedure handbooks for each selected survey

➤ **Template for quality report**

- a standard template, with the list of quality information, which should be part of the quality reports, was created
- The list is for now divided in two parts:
 1. information which will have to be part of the report and;
 2. the information with lower priority
- further developed by taking into account comments and suggestions for improvements from survey managers of the pilot surveys



Training a number of CBS staff in preparing quality reports (Activity III)

3.2. On the job transfer of knowledge and skills to 20 members of CBS staff carried out

- The core working group is educated permanently through the development of the tools and methods for quality assessment and quality management

3.3. One three-day seminar and one three-day workshop carried out for at least 10 participants



Seminar on Quality Management and Quality Assessment Frameworks

The three days seminar was prepared for 25 participants coming from different CBS working areas and following topics were covered:

- Definition of quality both in a generic sense and statistical context;
- Statistical quality and European Statistical System (ESS) quality measures;
- European influences on quality in official statistics;
- History of quality models from start of last century. Linked to statistical quality initiatives;
- Current practices within CBS measured against ESS;
- History of TQM and key TQM measurements;
- Top 10 quality hassles within participants own business areas;
- Statistic value chain and importance of quality throughout processes; and
- Strategies for improving and maintaining the quality of official statistics.



Workshop on Quality assessment Methods and Tools

Participants were from different CBS working areas, representing subject matter as well as infrastructure departments. At the workshop the following topics were covered:

- Definition of Quality in Statistics and Quality management;
- European Statistics Code of Practice and Quality Assessment. Introduction to methods and tools for data quality assessment;
- Measuring quality of statistical process and products;
- Quality reporting and Eurostat standards for quality reporting;
- Users and user satisfaction surveys; and
- Tools for quality assessment.



Conclusion and future developments

- for all outputs there will be full documentation and an active approach to the training of the CBS in the quality procedures developed in the project
- CBS will continue to deliver and possibly exceed in some quality areas
- resource requirements of the new quality work put in place must match the resources CBS are able to devote to this work
- range of reports and data that has to be prepared, often by the CBS, to support the sustainability of the quality work (e.g. quality indicators)



Conclusion and future developments

- the outputs produced by the CBS staff have to be actively studied by management and have some impact on management decisions concerning the organisation and allocation of CBS resources – to ensure sustainability
- pressure for more development work on Quality Database – especially in terms of outputs from the system
- in future, focus will be on drawing the activities to a close and to the full satisfaction of the CBS



Thank you for your attention!

Questions?

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