Implementing a Quality Assurance Framework based on the Code of Practice at the National Statistical Institute of Spain

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Abstract

Quality has always been a constant concern at the National Statistical Institute of Spain (INE). Nevertheless, a more systematic approach has been implemented since the LEG on quality recommendations and especially since the adoption of the Code of Practice. This paper describes INE experiences implementing a Quality Assurance Framework based on the Code of Practice and in the Sponsorship on Quality recommendations.

A quality structure was created, made up of a Quality Unit, a Quality Manager and a Quality Committee. Through this Committee, all INE units are involved in quality, taking decisions that, once approved by the Board of Directors, are adopted throughout the organization. Moreover, implementing a Quality Assurance Framework based on the Code of Practice is an INE project for 2012.

Calculating the indicators of the Barometer of Quality, implementing a reference metadata system including a quality report, implementing a satisfaction survey, and the preliminary steps to adopt the GSBPM as a good practice are some of the actions put in practice.

Keywords: Code of Practice, Quality Assurance Framework, quality reporting, quality indicator, users satisfaction survey, statistical standards.

AMS Classification: 62A62, 62D62

Implementación de un Marco de Garantía de Calidad basado en el Código de Prácticas en el Instituto Nacional de Estadística de España

Resumen

La calidad ha sido siempre una preocupación constante en el Instituto Nacional de Estadística de España (INE). Sin embargo, se ha producido una aproximación más sistemática desde la publicación de las recomendaciones del LEG on Quality, y especialmente desde la adopción del Código de Pácticas. Este documento describe la experiencia del INE en la implementación de un Marco de Garantía de Calidad basado en el Código de Prácticas y en las recomendaciones del Sponsorship on Quality.

Se ha creado una estructura de calidad, compuesta de una Unidad de Calidad, un Gestor de Calidad y un Comité de Calidad. A través de este Comité, todas las unidades del INE están involucradas en el trabajo de calidad, tomando decisiones que, una vez aprobadas por el Consejo de Dirección, son aplicadas sobre toda la organización. Además, la implementación de un Marco de Garantía de Calidad basado en el Código de prácticas es un proyecto del INE para 2012.

El cálculo de los indicadores del Barómetro de Calidad, la implementación de un sistema de metadatos de referencia incluyendo el informe de calidad, la realización de una encuesta de satisfacción de usuario y los trabajos previos para la adopción del GSBPM como buena práctica, son algunas de las acciones realizadas.

Palabras clave: Código de Prácticas, Marco de Garantía de Calidad, informes de calidad, indicadores de calidad, encuestas de satisfacción de usuario, estándares estadísticos.

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1. Introduction

Quality has always been a constant concern in the INE. Since the late eighties some projects based on Total Quality Management (TQM) were introduced [1]. However, a more systematic approach has begun to be implemented from 2000 [2] as recommended by the Expert Group on Quality (LEG on Quality), sponsored by Eurostat, and especially since the adoption in 2005 of the European Statistics Code of Practice [3].

Moreover, in May 2005, the Statistical Programme Committee (SPC) agreed a formula for monitoring the implementation of the Code. During this period Spain, as the different Member States, conducted quality self-assessments, which were contrasted and verified by a Peer Review revision. The result was the development of a series of reports including a list of improvement actions to be implemented by INE.

To follow up the quality inside INE, a group formed by all units was created. Among other works, it carried out self-assessments on every survey using the DESAP tool [4] joint with an internal audit process of some of the main surveys. It also developed a manual of good practice in the production process.

Recently, there have been some steps in monitoring and improving quality. An internal structure has been created consisting of a Unit of Quality, a Quality Manager and Quality Committee. Creating a full-time unit dedicated to quality issues and a Quality Committee, which includes all units of the INE, is a key element for the systematic monitoring of quality, just as to make improvements in the planning, coordination and internal communication.

A marked interest in a systematic quality management and the establishment of an assurance framework has occurred much more recently, during the economic and financial crisis. This interest is manifested in various agreements of the ECOFIN Council and in the Commission Communication 211/2011 "Towards robust quality management for European Statistics [5]. It has also been the origin of the proposal for a regulation amending the Law on European Statistics 223/2009[6], aiming to overcome the weaknesses of the quality management framework and to establish an adoption and strict monitoring of the Code of Practice.

The aim of the Communication 211/2011 cited above is to establish a strategy to provide the EU with a quality assurance framework for statistics related to the coordination of economic policies, including the mechanisms that ensure the high quality of the statistical indicators. Although specific reference is made to the statistics regarding the excessive deficit procedure, the scope extends to all statistics on the European Statistical System. It is intended to establish a common understanding of quality management as a formal framework to implement the principles and indicators of the Code through procedures and tools.

The INE has taken some recent steps in monitoring and improving quality. The Quality Committee has met regularly since 2011 to design a quality assurance framework. At the same time, the INE has been part of the European Sponsorship on Quality, whose mandate was to update the Code of Practice and define a Quality Assurance Framework.

In this context, there have been in 2011 the first steps towards the introduction of the Quality Assurance Framework, following the European guidelines. The Quality Unit, based on the work of the Sponsorship on Quality, and in collaboration with all units of the INE through the Quality Committee, has conducted several studies to allow introducing such a framework. These works include the study of quality indicators, quality reports and satisfaction surveys, the introduction of quality in the production process model, the communication of quality to users and the systematic monitoring of the standards implementation.

In the following section, the main principles of the new INE Quality Assurance Framework are introduced. Classical quality tools, such as quality indicators, quality reporting and satisfaction surveys are described in sections 3, 4 and 5, respectively. Standards and good practices followed are presented in section 6 and the adoption of the GSBPM [7] as a standard in section 7. The paper ends with some final remarks.

2. Quality Assurance Framework main points

The European Statistics Code of Practice defines the key principles that both governance and statistical authorities in Member States are committed to uphold, to ensure public trust in European statistics. Logically, these principles are quite general and do not provide a useful model to implement in practice. The Quality Assurance Framework (QAF) [8] identifies possible activities, methods and tools that provide evidence for the implementation of the Indicators of the Code of Practice and is a guiding tool to assist the implementation of the Code.

Currently, the Quality Unit and the Quality Committee are working in a quality project to be presented to the Board of Directors (*2012 Project on improving quality*). As core of the project INE tries to adapt to the recommendations adopted in the ESSC of September 2011 to support the implementation of Principles 4 and 7 to 15 of the European Statistics Code of Practice. Different recommendations are being checked. As an example, quality activities are as followed for Principle 4 (Commitment to Quality) and Indicator 4.1: (Quality policy is defined and made available to the public. An organizational structure and tools are in place to deal with quality management).

(1)   A Quality Commitment Statement is made publicly available, laying out principles and commitments related to quality in statistics which are consistent with the goals set out in the Mission and Vision statements. It was a proposal of the Quality Committee and was approved by the Board of Directors in January 2012. The work is scheduled for December 2012.

(2)   There is a clear organizational structure for managing quality within the statistical authority. An internal structure has been created consisting of a Unit of Quality, a Quality Manager and Quality Committee. Adopted in 2010.

(3)   Guidelines are defined on how to implement quality management within the statistical production process, comprising: a description of the statistical production process and the identification of documentation for each stage, following the Business Process Model for Statistics, and a description of the methods to monitor the quality of each stage of the statistical production process. The GSBPM has been proposed by the Quality Committee and the Standards' Unit and approved as standard in January 2012. The work is scheduled for December 2012.

(4)   Quality guidelines are made available to external users at least in a summary version. The work is scheduled for December 2012.

(5)   An appropriate infrastructure is in place in order to ensure updated documentation on quality. The work is scheduled for December 2012.

(6)   Specific training courses support the quality policy and are available to relevant staff on a regular basis. The official Statistics School organizes periodic courses on quality, at least once a year.

3.　Calculating the indicators of the Barometer of Quality

The Quality Committee, in their first meeting, took a set of decisions to begin with a systematic and corporative-wide quality work. It was agreed that some indicators should be calculated to monitor the quality of the statistical operations, as a first step to systematize the quality work in the office, and to generalize it over all the statistical operations.

Following this aim, it was decided to begin with a restricted set of quality indicators that should be calculated for all the statistical surveys going to be disseminated each year. The INE, as it was established in its "2010 Activities Report" has a main strategy: to follow policies, actions and tools recommended by the European Statistical System. Due to that, this restricted set of indicators was fixed as the ones of the Restricted Quality Barometer established by the Working Group of Quality in Statistics in 2008. The Indicators of the Quality barometer are:

R1. - Data completeness - rate

A1. - Sampling error – indicators: Coefficient of variation

A3 . - Unit non-response - rate

A7 . - Data revision - average size

T1.   - Time lag - first results/ final results

AC2.- Number of on-line consultations to the data tables

AC3.- Metadata completeness - rate

CC1.- Length of comparable time series

There were several advantages for that decision:

− It contributes to fill in the Reference Metadata in Euro SDMX Metadata Structure (ESMS)[9] template sent to EUROSTAT with the metadata of any statistical operation. Within it, priority quality indicators are collected.

− The quality metadata of the ESMS, together with the quality indicators, are a user oriented Quality Report.

− The ESMS has been set as a standard by the INE, to show in the web page a homogeneous methodological description of any statistical operation carried out.

In the year 2011, all the INE production units were asked to provide the Quality Barometer indicators for the statistical operations going to be disseminated during the year. The units provided them, but the request has produced some questions about the methods of calculating them. To solve those questions, it is planned that some small working groups will study the problematic issues, following Eurostat guidelines. Some contacts have been already maintained with Eurostat.

The next step will be to improve the indicators gathered during 2011, by setting the method of calculation to be used. And finally, we will progress in the same way with the rest of indicators, until to achieve all the Quality and Performance Indicators calculated for all statistical operation disseminated every year by the INE.

4.   Quality reporting through a reference metadata system

One of the three main task of the Sponsorship on Quality was to make recommendations on "Communication with users and other stakeholders", developing strategies to communicate to users on compliance with the Code of Practice and the quality of European statistics.

To achieve that aim, the Sponsorship on Quality makes several recommendations [10]. Among them and related with the subject we can mention the following ones:

Firstly, it is recommended that the quality reports aimed at users and those aimed at producers should be based on specific and different needs:

– Producer oriented quality reports are usually more detailed and comprehensive and focus more on the statistical process.

– User oriented quality reports are usually much more concise, less technical and focus more on the statistical output. They are normally prepared in the form of a subset of information in the ESMS metadata structure (which contains 9 quality concepts).

Secondly, there is a clear need for the reduction and simplification of the different documents and templates, which determine the rules of quality reporting. In order to streamline and rationalise quality reporting in the ESS, it is recommended that a single metadata structure should be used to derive both producer-oriented and user-oriented quality reports.

And finally, it is recommended that the national user-oriented quality reports should be available on the websites of National Statistical Institutes and of other national statistical authorities. In the longer term, national user-oriented quality reports in English should be accessible via the Eurostat website, together with the European level reports for important selected statistical domains at least.

Currently, the Task Force on Quality Report is working in the complet development of the Soponsorship on Quality recommendations related to quality reporting, updating the ESS Standard and Handbook for Quality Reports, and developing of a metadata structure to ensure that both producer-oriented and user-oriented quality reports can be derived from a single metadata structure for quality. Once this target is achieved, the INE is planning to apply them in its quality reporting policy . But in the mean time, taking into account the recommendations and looking for synergies among the different dimensions of the work in quality, we are using the ESMS metadata template to obtain, first, a homogeneous methodological description of the statistical operations, and including the restricted quality barometer indicators, a user oriented quality report for every statistical operation.

During last year, a standardized tool has been developed to help INE production units to fill in the ESMS template, getting that way a methodological description and a user oriented quality report for any Estatistical operation. The units will begin to use such tool next September, and every new statistical operation going to be disseminated must provide such template. That information will be shown in the web, for the users to know the quality of the data they are using, and how the NSI of Spain comply its commitment with Quality.

5. User Satisfaction surveys

User satisfaction surveys are traditional tools for quality management. The Code of Practice consider these tools in two indicators, Indicator 4.3: (Product quality is regularly monitored, assessed with regard to possible trade-offs, and reported according to the quality criteria for European Statistics) and Indicator 11.3: (User satisfaction is monitored on a regular basis and is systematically followed up)

INE has carried out satisfaction surveys since 1991 on some specific statistical products. In 2007 and 2010 corporative-wide satisfaction surveys were carried out. These surveys were intentional surveys directed to the main or qualified users. The questionnaire had three sections: quality assessment following the Code of Practice product quality (11-15), assessment of the coverage of users needs, and assessment of the different dissemination media. It was sent to main users, known because their relationship with INE. The users belonged to business or academic environment, other government offices and the media. The questionnaire was sent and returned by e-mail.

A new satisfaction survey is being designing. The purpose is to reach different target population, wider, and not so close related to the statistical world.

To that aim, the next questionnaire will be sent through the Internet. In this way the cost of the survey will be reduced to a minimum, as the human and technological resources are owned by the INE. The population will be the users of the INE´s web.

The questionnaire is now being designed. It will have three sections; the first one with a set of general questions to fix the characteristics of the respondent. The second one is aimed to any kind of user. In this part we want to measure till what point the customers think the INE fulfils the principles of the Code of Practice (11-15). In addition, some more questions will be asked about quality of dissemination and needs uncovered, and respondents can give suggestions. Going a bit beyond, a third part with questions related to the statistical process carried out by the INE will be asked following some of the phases of the Generic Statistical Business Process Model, in which users can provide valuable information: Specify needs (need of information), Design (data collection methodology), Collect (response burden) Analyse (outputs, disclosure control) Disseminate (dissemination products, manage user queries) Archive (access to data and metadata) and Evaluate (feedback from users in others phases or sub process). From the answers to that questions it can come up ideas to improve the production process

Our purpose is to elaborate a steady and low-cost procedure that, in one hand, will allow studying the evolution of user satisfaction with the products and services of the INE, and in the other hand, to get feedback from them to improve the quality of products and services.

6. Standards and good practices following

The INE, as many other statistical offices, has started the transition from the numerous stovepipe-like chains of production to more standardized production processes in line with the principles of the "Vision for the next decade"[11]. The new production model

is based on a single standardized production line for all surveys and is supported by metadata systems and generic and standardized tools. In this context, standards are of the utmost importance. The INE has adopted several standards during the last two years and the Quality Committee is in charge for monitoring their use.

The Code of Practice considers the use and monitoring of standards in Indicator 7.1: (The overall methodological framework used for European Statistics follows European and other international standards, guidelines, and good practices) and 7.2. (Procedures are in place to ensure that standard concepts, definitions and classifications are consistently applied throughout the statistical authority).

Benchmarking and good practices are long-established tools in quality management. Other of the missions of the Quality Committee is to publicise the good practices, which being used by some particular unit, and due to the existing model of stovepipes, are not known by the rest of units. To disseminate them all over the organization, all the units have been requested to send to the Quality Unit at least one good practice (in the statistical process, in communication with users, IT, and so on) that could be used by others units, to improve, streamline their work. Stocktaking has been made with them, and now they are being studied, to begin implementation all over the organization.

7. Adopting the GSBPM as a standard

In recent years, INE is making great efforts to transform the existing production model based on stovepipe processes to a more industrialized and integrated model based on internationally recognized standards (in particular the GSBPM and the GSIM [12]). The new architecture enables configurable, rule-based and modular ways of producing statistics.

The GSBPM is in close connection to quality management, providing a framework for quality assessment. If a benchmarking approach to process quality assessment is to be successful, it is necessary to standardize processes as much as possible.

The GSBPM has recently been adopted as a standard on a proposal from the Committee on Quality. To begin with its implementation, during 2012 each production unit in the INE is using it to describe the statistical process of at least one of its statistical operations. At the end of the year, the results of the process is going to be studied to establish a schedule, to apply the standard throughout the organization.

8   Final remarks

The European Statistics Code of Practice defines the key principles to ensure public trust in European statistics. Logically, these principles are quite general and do not provide a useful model for practical implementation. According with our experience, the ESS Quality Assurance Framework identifies possible activities, methods and tools that help in the implementation of the Code.

Moreover, it can substantially contribute to the promotion of a common view and understanding of quality management within the ESS. Somehow, it can be considered as other international standars, such as the GSBPM or the GSIM.

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