**A Quality Framework for Official Statistics of Sweden**

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**Abstract**

*Together with the 27 national authorities responsible for official statistics (SAM), Statistics Sweden has during 2016-2018 created a national quality framework for official statistics in Sweden which comprises*

* *Legislation: definition of the quality concept for the development, production and dissemination of official statistics*
* *Legislation: what is meant with the official release of official statistics (quality declaration as a necessary part of the official release)*
* *Legislation: evaluation of the quality of official statistics*
* *Guidelines: what constitutes official statistics*

*When laying out these four puzzle pieces a more comprehensive picture appears where*

* *Official statistics and European statistics become more and more integrated*
* *The Swedish quality concept continues to closely relate to the European quality concept as defined in the ESS Code of Practice*
* *User information needs and Purpose of the statistics are given a prominent place in the quality concept, quality declaration, quality evaluation and in the work to clarify what comprises official statistics*

*In this paper we will share our recent experiences in Sweden to create a common vocabulary for quality in statistics, clarify the purpose of the statistics in relation to user information needs, support the dialogue with users, and ultimately to strengthen the trademark of official statistics and stimulate quality improvements towards the goal that statistics be fit for their purpose.*

***Keywords:*** *quality framework, quality concept, official statistics, purpose*

1. **Introduction**

During the last three years the system of official statistics in Sweden has developed a quality framework consisting of

* Legislation regarding a quality concept
* Legislation of a quality declaration to accompany the official release of official statistics
* Legislation regarding the annual evaluation of the quality in official statistics
* Guidelines for what constitutes official statistics

The purpose of the statistics is the starting point and is emphasised throughout the framework. The quality in the statistics should always relate to the purpose of the statistics. Is the quality fit for its purpose (intended uses)?

How can the users be confident that the quality of a product or service is fit for its purpose? An obvious prerequisite is the existence of a working dialogue between producer and user. Statistics Sweden sees this dialogue as a necessary premise to insure that the quality in statistics is fit for purpose.

1. **Background to the quality framework for official statistics of Sweden**

The Quality definition and recommendations for quality declaration of official statistics (Statistics Sweden, 2001) was a recommendation to the *System of Official Statistics* (SOS). The main quality components were, Contents, Accuracy, Timeliness and punctuality, Accessibility and clarity as well as Comparability and coherence. The quality concept was user oriented: Quality of statistics refers to all aspects of statistics, which are relevant for how well they meet users' needs for statistical information. (Statistics Sweden, 2001, p.31)

The former quality declaration template was also a recommendation to the System of official statistics. In the quality declaration, the producer was to specify the properties of a (statistical) product so that it can be used in a proper way, and inform users about what quality in different respects they can count on.

In 2006, the Council for official statistics in Sweden decided on the guidelines, *Sufficient quality and criteria for official statistics* for the System of official statistics (Statistics Sweden, 2006). These consisted of 20 criteria to determine what sufficient quality is for official statistics in relation to how the statistics are intended to be used (Statistics Sweden, 2006, pp. 11-14). The guidelines also created the possibility for a statistical agency to make an official pledge such that they promise to work in accordance with the criteria. A selection of the criteria, particulary relevant for *fitness for purpose* (i.e. suited for their intended use), are stated below

* The purpose of the statistics is clearly stated
* The most important users and their most important uses and future needs are documented.
* The planned properties of the statistics are based on dialogue with the most important users.
* The survey has been planned and carried out with the objective of attaining the sufficient level of quality, and this is documented.
* Annual follow-up of the quality of statistics is carried out with the most important users and the follow-up is documented.
* The statistics have, in the follow-up, been judged to have achieved the sufficient level of quality.

In short, the 20 criteria listed in these guidelines reflected much of the thinking behind the present quality framework. The difference being that the present framework is regulated.

In 2014, the Council of official statistics recommended that government agencies responsible for official statistics follow the *European Statistics Code of Practice* rather than the guidelines for *Sufficient quality and criteria for official statistics.*

In 2012, Bengt Westerberg was appointed by the government to lead an inquiry with the objective to review Statistics Sweden and the System of Official Statistsics. The inquiry proposed, inter alia, that the most important quality requirements for official statistics should be stated in the Official Statistics Act and should be modelled on the quality criteria stated in the EU regulation (Eurostat, 2009). This was on the premise that the official statistics were of good quality but that they can be improved in certain respects. Measures to improve quality would essentially make a basically well-functioning system even better. (Westerberg, 2012, p. 40)

Subsequently the government amended the Official Statistics Act in 2013 according to the proposal. This was seen by the government as an important signal to the government agencies responsible for statitsics that quality in statistics was important to the government. Another inquiry proposal that the government acted upon, was to give Statistics Sweden the mandate in the Official Statistics Ordinance to issue executional regulations on quality for the System of official statistics.

In 2016, the government appointed Statistics Sweden the National Statistical Institute (NSI) following the amended EU regulation on statistics. At the same time, the government instructed government agencies responsible for statitsics to conduct annual evaluations of the quality of official statistics, each within its statistical area. Statistics Sweden was given the mandate to decide on executional regulations on these annual evaluations, and instructed to analyse the results and submit these to the government in an annual report. Such evaluation activities were also supported by the government inquiry 2012.

**3. The Swedish quality framework for official statistics as it relates to fitness for purpose**

The present Swedish quality framework entered into force in 2017 and 2018. It comprises

* legislation regarding a quality concept(Statistics Sweden, 2016a),
* a quality declaration to accompany the official release of official statistics (Statistics Sweden, 2016b),
* a questionnaire for the annual self-evaluation of the quality in official statistics (Statistics Sweden, 2017), amended by SCB-FS 2018:17 (Statistics Sweden, 2018a) and
* included in the quality framework are guidelines for what constitutes official statistics (Statistics Sweden, 2018c).

The quality concept itself aims at creating a unified approach to quality in official statistics and setting out a common vocabulary on quality for the 28 statistical agencies. In the development, production and dissemination of official statistics the quality of the statistics shall be described using the quality concept. (Statistics Sweden, 2016a, Section 3)

An important feature of the quality framework as a whole is the starting point in the Swedish quality concept where *Purpose and information* *needs*, along with *Content of the statistics,* are identified as subcomponents of the first of the five main quality components, *Relevance*. (Statistics Sweden, 2016a, Section 3.)

The *Purpose of the statistics* is defined in the regulation, as referring to the primary objective and area of use of the disseminated statistics. (Statistics Sweden, 2016a, Section 9.)

Under *Purpose of the statistics* in the quality declaration, the main objective of the disseminated statistics is to be stated as well as the area of use.

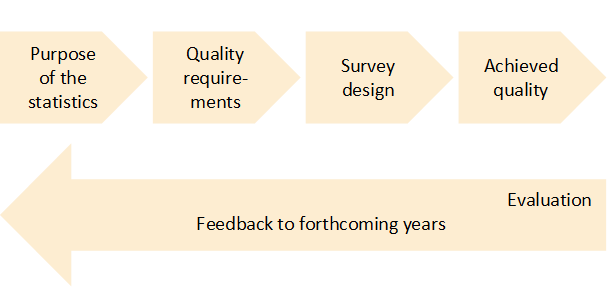
In the evaluation of the quality of official statistics, the achieved quality is set in relation to the purpose of the statistics (Statistics Sweden, 2018a).

The guidelines for what constitute official statistics were subsequently issued to ensure that the term ‘official statistics’ is applied consistently across the system of official statistics. The objective of the guidelines is to make users of statistics more aware of the distinction between official statistics and other government statistics. The guidelines state that recurrent statistics financed by appropriations are official statistics and recurrent European statisticsare defined as official statistics.

**4. How does the quality framework support the fitness for purpose perpective?**

Statistics Sweden regards a cyclical procedure, which can be compared to the common Plan-Do-Check-Act approach, as a fundamental line of thought to support the fitness for purpose perspective. Following a regular cyclical procedure to evaluate statistics can potentially increase their fitness for purpose.

The process for the evaluation of quality of official statistics is quite evident in the order of the questions in the annual self-evaluation questionnaire (Statistics Sweden, 2018a). It is also further elaborated in the accompanying handbook which supports the government agencies in their self-evaluations. The process is shown below in figure 1.



**Figure 1. Cyclical procedure of the annual self-evaluation**

**of the quality of official statistics (Statistics Sweden 2018, p 11)**

As seen in the figure, the purpose of the statistics, as stated in the quality declaration, is an important starting point for the evaluation. The purpose of the statistics, quality requirements, survey design and the achieved quality can be seen as four links in a chain where the achieved quality builds on the earlier links.

The purpose of the statistics i.e. which information needs are to be met by the statistical survey and its statistical product(s), is formulated by the statistical agency following a dialogue with important users. This results in the objectives of the statistics regarding the target characteristics regarding population(s), units, variables, reference times, etc.

The purpose of the statistics gives rise to **quality requirements** regarding the quality components. Objectives are not only formulated for the content (the statistical target characteristics) but also for other quality components. Priorities generally contain a great deal of considerations with regard to quality requirements. When society changes, new or changed variable definitions are in demand. At the same time, the same or other users may require long time series. The accuracy that is required (or sufficient) is one of the topics that the statistical agency should discuss with the users and take a position on. The discussions and the ensuing position should also consider other quality requirements.

The **survey design**, in principle, should be such that the quality requirements are satisfied. Considerations are made regarding target population, units and variables as well as reference times, data sources, data collection methods, data processing, editing, the estimation procedure as well as for comparability and coherence.

The **achieved quality**, in principle, should reflect the objective of the survey design. The design should be followed when the survey is conducted but deviations can occur, such as delays, when the planned resources are not available or due to changes in the survey environment. This can have the effect that the achieved quality can be different to what was planned from the start.

The **achieved quality is evaluated regularly** after production rounds. **Findings and conclusions are used in coming production rounds**. The statistical agency may need to make adjustments in the purpose of the statistics, quality requirements and the survey design due to the results of the evaluation or as a result of changes in information needs.

The thinking behind the above cyclical procedure largely reflects the previous guidelines for official statistics, *Sufficient quality and criteria for official statistics,* mentioned in Section 1. During the period in which they were effective, 2006-2014, they proved to be useful for several of the statistical agencies.

As noted above, in following this cyclical annual procedure which relates the quality of the statistics to its purpose, producers should note findings that have bearing on the quality of the statistics and draw conclusions. These can be used to act upon in coming production rounds. Stepping through this process should also better equip producers to describe the quality of the statistics for users. Users are thereby provided with more support in their own assessments of whether the statistics are fit for their purpose.

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