

QUALITY GUIDELINES

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Abstract

The development of Quality Guidelines is a result of an internal analysis concerning Destatis' fulfilment of the ESS Quality Assurance Framework and was further strengthened by the latest Peer Review. Two improvement actions deal with the topic:

1. To develop Quality Guidelines specifying quality principles and objectives for each part of the statistical production process according to the GSBPM.
2. To develop a strategy for the monitoring of the application of the Quality Guidelines.

In addition to external users of our statistics, the Quality Guidelines are particularly aimed at the staff of the statistical offices of the Federation and the Länder. They identify quality measures for each sub-process of the GSBPM that are to be considered for all statistics. The core elements of these quality measures are then summarised in a verifiable checklist. Thus, the Quality Guidelines have to be as concrete and action-oriented as possible. They go beyond the description of methods and instruments already being used and aim to set the desired quality standards for the process of statistical production and show how these can be met. The Quality Guidelines will not only serve as a reference, but also as an impetus for process improvements and for promoting quality assurance tools not yet being comprehensively used.

Besides the identification of quality principles, the Quality Guidelines outline the institutional and organisational framework as the basis for data quality management and describe how statistics are being produced in the federal statistical system referring also to the Code of Practice and the Quality Assurance Framework.

Even though Quality Guidelines have been in use in different NSIs for a number of years, as far as we know, these do not directly map methods and instruments to the GSBPM sub-processes. This paper presents the German approach, its benefits, challenges and the lessons learnt.

Keywords: Process quality, GSBPM, quality assurance.

1. Introduction: Why do we need quality guidelines?

1.1. Internal motivation: Consolidation of three points of view

When we want to take a look at data quality management, a possible vantage point can be a distinction of three different points of view. All three of these are to be considered when developing quality guidelines.

The first point of view is the strategic level. A great number of quality standards and requirements have their origin in quality documents at the both the European as well as the national strategic level. The EU statistics regulation for example features statistical principles (e. g. impartiality and objectivity). It also establishes quality criteria for our products (e. g. relevance and accuracy) and demands for quality reports to be provided. The Code of Practice on the other hand puts the requirements derived from the regulation in more concrete terms by defining 15 principles for the institutional environment, the statistical processes and products. At the national strategic level the Law on Statistics for Federal Purposes deserves a mention. It describes principles of statistical work (e. g. use of appropriate methods and informational techniques) and establishes the cooperation of the Federal Statistical Office and the 14 statistical offices of the Länder. Quality also plays an important role within the context of Destatis' strategic goals. Six of these goals are concerned with quality issues (e. g. improvement of coherence in our results, methods, concepts and definitions).

The second point of view is the day-to-day practice of statistics production. Without quality playing a key role in this area, even the most ambitious quality goals at the strategic level are worthless. Quality has always been of great importance to official statistics - in Germany as well as all over the world. Thus, it is not surprising that a great number and variety of different quality assurance tools and measures are already being employed. This comprises the use of international classifications as well as the provision of a comprehensive training program, the use of editing and imputation procedures and the dissemination of quality reports for all our

statistics. Many of these tools are widely used. Others have evolved over time and are thus not used systematically.

The third point of view is the process level. Destatis uses a business process model derived from the internationally renowned Generic Statistical Business Process Model (GSBPM) which subdivides the statistical production process into eight phases and 44 sub-processes. Despite the process model featuring an overarching quality management process, the most important steps of quality assurance are taking place within the individual sub-processes. Nevertheless, most of these quality assurance activities are not specifically located in the model itself and its accompanying verbal descriptions.

The open challenge is thus, how to combine these three points of view. How can we merge the manifold quality assurance measures with the process model in order to fulfil the national and European quality standards and requirements? How can we put quality assurance on a sound and systematic basis? How can we provide our subject matter statisticians with action-oriented proposals to improve the quality of their products? How can we define ambitious quality targets for individual statistics? The quality guidelines shall help answering all these questions.

1.2. External motivation: The Peer Review

The development of quality guidelines has also been recognised by the recommendations formulated in the last Peer Review: “The Federal Statistical Office of Germany should adopt quality guidelines which describe in detail the implementation of quality management within the statistical production processes based on the Generic Statistical Business Process Model. These or similar quality guidelines should also be adopted by the Statistical Offices of the Länder and the Other National Authorities producing European statistics. Application of the guidelines and monitoring results are to be reported annually.” Two corresponding improvement actions have been derived from the recommendation:

1. To develop quality guidelines specifying quality principles and objectives for each part of the statistical production process according to the GSBPM.

2. To develop a strategy for the monitoring of the application of the quality guidelines.

As with all other improvement actions from the Peer Review, the progress and implementation of these two actions is being controlled by Eurostat.

2. Addressed audience and involved parties

As described above, the quality guidelines are designed to provide action-oriented and ambitious advice to subject matter statisticians. In addition, we also plan to make the document publicly available to our users (if necessary in a trimmed version). A transparent communication of “we do a lot” is gaining more and more importance in the light of an ever-growing availability of data from a broad variety of sources over the internet.

The quality guidelines will not only serve the Federal Statistical Office itself, but will also be used within the production processes of our 14 statistical offices of the Länder. An expansion towards other national producers of official statistics - the so-called ONAs - is also conceivable in the medium term.

In order to facilitate the acceptance of the quality guidelines, the creation of the document is strongly based on communication and reconciliation. First drafts have been prepared by the Destatis data quality section based on international good practices (e. g. by Statistics Austria, Statistics Canada, Statistics Finland and the UNECE). These drafts have been discussed and refined with selected subject matter statisticians as well as with relevant cross-sectional units (e. g. dissemination unit) within Destatis. A second consolidation round involved the statistical offices of the Länder as it is very important not only to obtain their agreement but also to incorporate their knowledge and points of view as they are responsible for the major part of data collection and processing in the production of German official statistics. Currently - in March and April 2016 - all members of staff both at Destatis and the statistical offices of the Länder have the opportunity to comment on the current version of the quality guidelines. We plan to finalise the document and to obtain the official approval by the management until the end of 2016.

3. Content of the quality guidelines

3.1. General overview

As the quality guidelines are not only addressed to subject matter statisticians but also to our users, they also feature a few chapters of more general character before giving action-oriented advice for the quality assurance of statistical production processes:

Chapter 1: Preface. Short instructions on how to use the document for the different groups addressed (users, statisticians, subject matter experts).

Chapter 2: Introduction and background. Quality as “fitness for use”. Basic description of the division of responsibilities and the cooperation within the German system of official statistics as well as the ESS.

Chapter 3: Fulfilment of the overarching quality principles of the Code of Practice. Description of the situation and major activities.

Chapter 4: Quality assessment and reporting. Presentation of key instruments and channels of quality assessment and reporting as well as of communication on the subject of quality (e. g. quality reports, user surveys, etc.).

Chapter 5: Implementation of the quality principles in the process of statistical production in accordance with the GSBPM.

Chapter 6: Organisational setup of the management of data quality. Overview about the most important bodies dealing with data quality issues in German official statistics.

3.2. A detailed look at chapter 5

Chapter 5 of the quality guidelines is primarily addressing subject matter statisticians. It is thus the most interesting chapter and shall be described in a little more detail here. For each sub-process of the GSBPM, chapter 5 lists quality principles and a checklist with quality targets.

The quality principles are a collection of concrete quality assurance measures and activities for each of the 44 GSBPM sub-processes. This comprises not only comprehensively used

measures like the production and dissemination of quality reports for each of our statistics. Many of the tools and activities listed constitute ambitious development goals for the majority of our subject matter areas. Each of the measures and activities should - if appropriate and taking the prevailing conditions into account - be applied in each subject matter statistic.

The checklist summarises the most important and at the same time controllable elements from the collection of principles for each sub-process. The items on the checklist are to be considered - where relevant - mandatory quality targets.

In the following we will draw on an example from sub-process 4.3 “Run collection” to illustrate the content and interaction of the quality principles and the checklist.

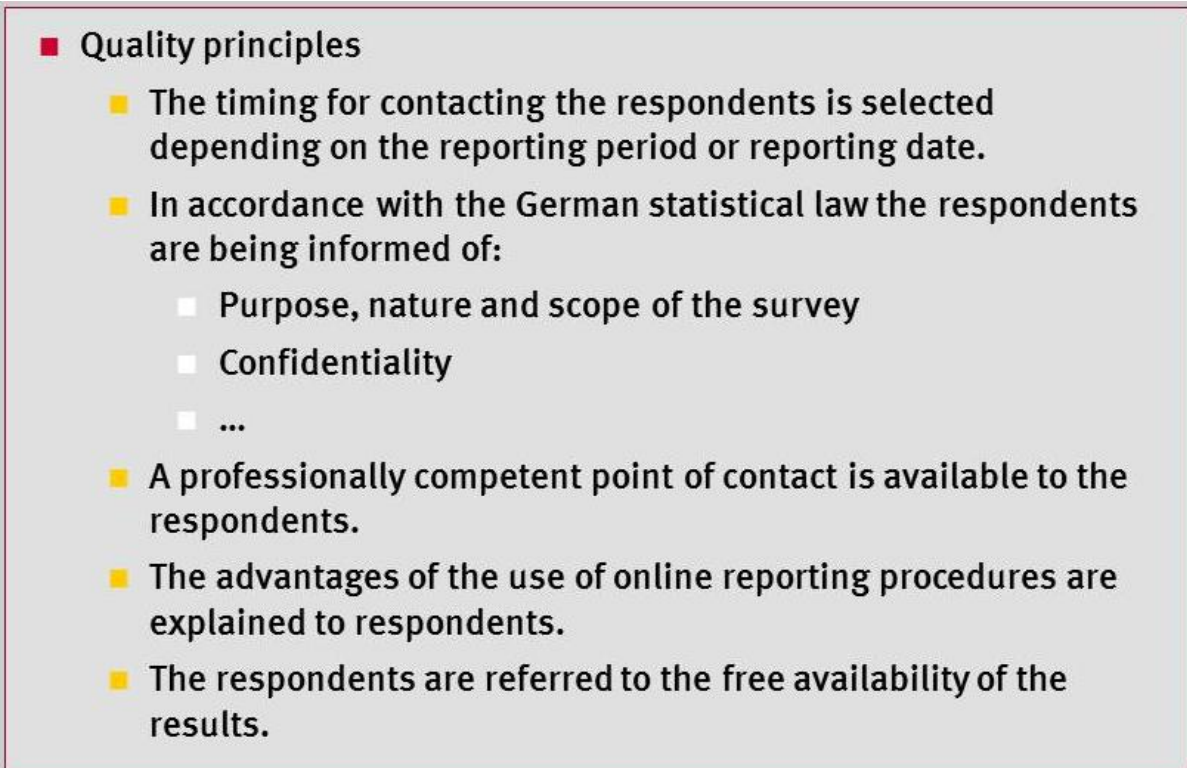
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- **Quality principles**
 - **The timing for contacting the respondents is selected depending on the reporting period or reporting date.**
 - **In accordance with the German statistical law the respondents are being informed of:**
 - **Purpose, nature and scope of the survey**
 - **Confidentiality**
 - **...**
 - **A professionally competent point of contact is available to the respondents.**
 - **The advantages of the use of online reporting procedures are explained to respondents.**
 - **The respondents are referred to the free availability of the results.**

Fig. 1: Quality principles for GSBPM 4.3

The illustration shows an example of five quality principles for sub-process 4.3 “Run collection”. Please note that the illustration is abbreviated. In the quality guidelines the

principles are being described in more detail. The current draft of the guidelines features a total of 15 quality principles for this sub-process.

From a quality point of view, each of these five quality principles is reasonable and should be considered by each subject matter statistic. But not all of them are of equal importance. And not all of them are controllable equally well. In this case, the resulting checklist features two quality targets derived from the five above measures and activities.

■ Checklist	
■ Respondents are being informed according to the statistical law.	<input checked="" type="checkbox"/>
■ In each statistical office involved in the data collection a specially trained contact point is available to the respondents for further inquiries.	<input type="checkbox"/>

Fig. 2: Checklist for GSBPM 4.3

The wording of each quality target on the checklist facilitates its controlling. For each of our statistics we should be able to clearly check if we have implemented a certain measure and thus fulfill the quality target or not. For further illustration a few more examples of quality targets for sub-process 4.3 are shown below. Each of them should be clearly controllable.

■ For any breach of the obligation to provide information enforcement proceedings are initiated.	<input checked="" type="checkbox"/>
■ If survey participation is voluntarily reminders will be sent when pre-determined response rates are not being met.	<input checked="" type="checkbox"/>
■ All information needed for the calculation of the quality indicator "Unit non-response rate" are being captured.	<input type="checkbox"/>

Fig. 3: Checklist - additional quality targets for GSBPM 4.3

3.3. Integration and position in relation to the European quality framework

When developing quality guidelines it has to be clear from the very beginning that this new document will have and has to have strong connections to the existing quality framework documents on the European level. Thus, the quality guidelines - and more specifically the quality principles and the checklist - are a consequent advancement and further specification of the Code of Practice and the accompanying Quality Assurance Framework. The quality guidelines shift the focus to the quality assurance measures to be employed within day-to-day statistics production. Thus it is only consequent to also shift the structuring of their presentation to the process model GSBPM.

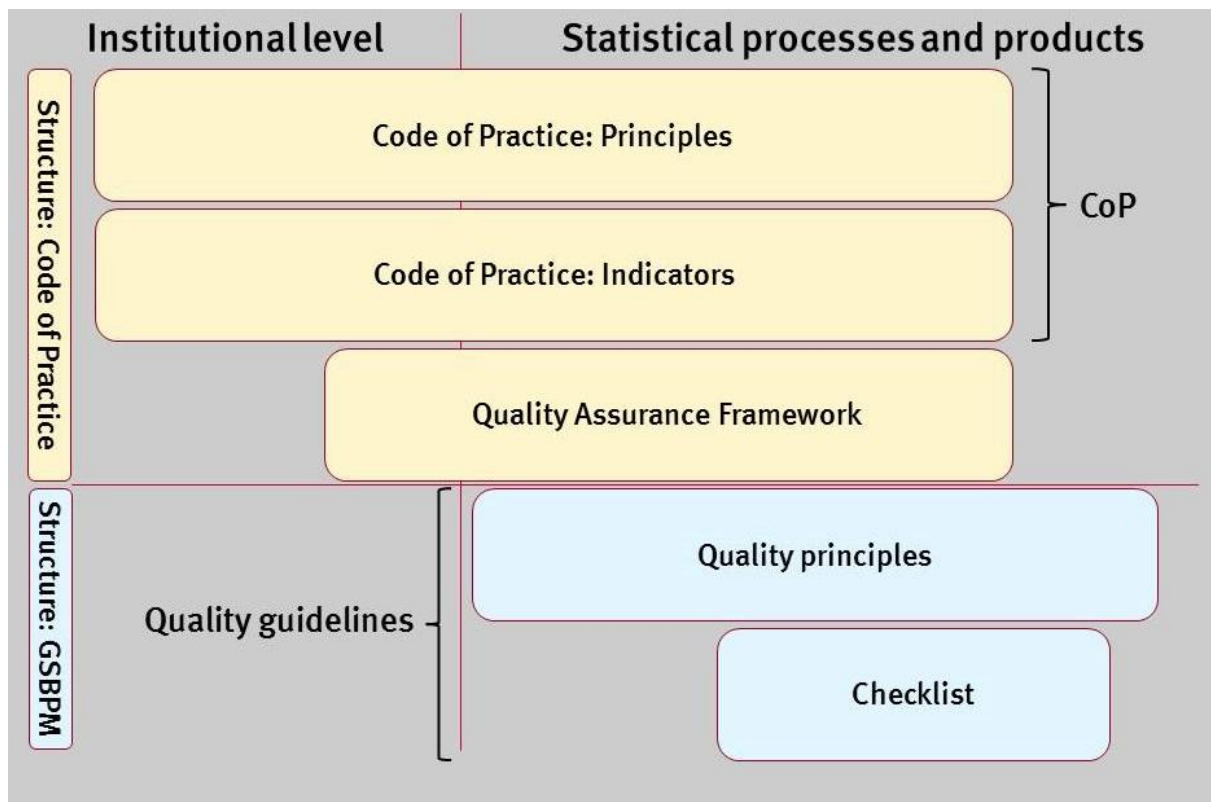


Fig. 4: Integration and position in relation to the European quality framework

4. Communication and promotion

The formal approval by the top management of the Statistical offices of the Federation and the Länder can only be a first step for implementing the quality guidelines. The document touches the core processes of day-to-day statistics' production and will thus have an influence on the work of most subject matter statisticians. Hence, extensive communication and promotion activities will be needed both internally within Destatis as well as externally for the 14 statistical offices of the Länder. The planned activities include:

- a promotion tour through each department of the Federal Statistical Office,
- a promotion tour through each statistical office of the Länder involving the respective director general and the quality representative,
- intranet communications, staff presentations and training courses,
- the distribution of printed copies of the quality guidelines,
- presentations at the annual expert meetings of the subject matter statistics.

5. Controlling of the implementation

As mentioned above, the second improvement action derived from the Peer Review recommendations specifically asks for a controlling of the implementation of the quality guidelines. The detailed concept for this controlling has to be developed until the end of 2017 so that a first controlling round can start in 2018. First ideas that are currently being discussed include:

- Stage 1: Self-assessments based on the checklist for all statistics without the need to justify measures that are not implemented. Production of an annual report for the top management (e. g. level of compliance for each process phase).
- Stage 2: Self-assessments with justification of measures that are not implemented.
- Stage 3: Additional internal audits by the data quality unit.

6. Conclusion

Even though Quality Guidelines have been in use in different NSIs for a number of years, as far as we know, these do not directly map methods and instruments to the GSBPM sub-processes. After widely implementing the GSBPM model by making it the universal process guideline for the core processes of statistical production, the German approach of bringing together the process model and the action oriented quality guidelines is the logical next step. Our subject matter experts need to be able to find practical information on how to measure, assure and improve the quality of both their processes as well as their products in the same logical order based on the process model's sub-processes.

The development of the quality guidelines also marks an important change in the understanding and implementation of data quality management in the German system of official statistics. The last decade saw the development of many important foundations, tools and guidelines. We implemented quality reports, published error and revision policies and implemented DESAP self-assessments among others. Additionally there are dozens of methods and tools developed by other cross-sectional as well as subject matter departments. The quality guidelines are an attempt to bring everything together to depict the full picture of quality management for statistical production. The message can only be that we have many tools at our disposal - now is the time to use them in a systematic and comprehensive way.

The second shift accompanying the quality guidelines is the emergence of a controlling or even auditing at a later stage. In the above mentioned years of concept and tool development the data quality section's job was considered complete once the concept was approved or the tool made available. The next era will be an era of systematic assessment and controlling of implementation. Our users expect us to not only claim that "we do a lot" for assuring quality but that we really do it - and proof it if need be. The quality guidelines will form the most important basis to satisfy these expectations.