A Review of Statistics Finland Quality Descriptions[1]

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Abstract

Statistics Finland carried out a comprehensive review of quality descriptions of all statistics it produces. The study revealed that most products fulfil the quality reporting requirements, while there are also need for improvements with respect to instructions and the contents.

1 Quality reporting at Statistics Finland

Various statistics have provided users with information on quality for decades. Typically, the large surveys have included chapters on quality or quality reports because the first international guidelines for quality reports were made for sample surveys [1]. Probably the most extensive quality reports have been part of the censuses and the household budget surveys. They can be described as comprehensive quality reports mainly for researchers and other colleagues, in current language producer-oriented reports [2].

Systematic quality reporting for all types of statistics is a more recent phenomenon. At Statistics Finland it became an obligation in the late 1980s when the first official guidelines were accepted [3]. The current quality reporting structure dates back to 2004 with a minor change in 2007 when the Board of the Official Statistics of Finland (OSF) accepted generic contents for quality reporting. Those follow the ESS quality reporting standard of 2003 [4, 5]. The quality description is obligatory for every statistics belonging to the OSF and its contents are the following:

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[1]Note: The opinions expressed in this article are those of the author, and they do not necessarily reflect those of Statistics Finland.

Contents of a quality description of the Official Statistics of Finland

- **Name of the producer of the statistics**.
- **Grounds for the compiling of the statistics:** References are made to the possible acts, decrees and recommendations on which the compilation of the statistics is based.
- **Funding basis of the statistics:** The financing of the production of the statistics is specified, especially from the standpoint of the continuity of the production of the statistics.

1. Relevance of statistical information

- A summary of the information content and purpose of use of the statistics. The national comprehensiveness of the data is defined.
- An introduction to the concepts essential for understanding the statistics, and the used classifications, research subject and data providers.
- An account of how the users' perspective is taken into consideration in the development of the statistics.

2. Accuracy and reliability of data

- Proof that the statistics measure the phenomenon they are supposed to measure.
- An account of the research method of the statistics, that is, the population, basic data used, survey design (census or sample survey), (sampling design), data collection method, estimation methods and use of weighting coefficients in sample surveys.
- An account of the issues that can influence the reliability of the statistics. In addition, the main elements that may cause uncertainty, that is, possible sources of error (e.g. non-response or undercoverage), should be reported. Where necessary, parameters related to survey quality are tabulated for estimates by main classifications. For example, in sample surveys they should contain estimates of design-based standard errors and/or confidence intervals, and design effects.
- Descriptions of revision practices and procedures for correcting errors in the statistics.

3. Timeliness and promptness of data

- The release frequency and measurement period of the statistics are indicated.
- A notification is given about whether the data are preliminary or final. Where the statistics are first published as preliminary data, the time when the final data will be available is stated.
- If the data may become revised in future due to, for example, seasonal adjustment, the probability of change must be made explicit to the users of the data.
- The web address where the release calendar can be found is given.

4. Coherence and comparability of data

- The uniformity and coherence of the statistics are assessed relative to other statistics on the same topic. The general classifications and concepts used are identified, and reasons are given if they are not used.
- Information is given about the temporal comparability of the statistics and their comparability with other data. The lengths of the available time series are given for the statistics from whose data comparable time series have been produced.

5. Accessibility and clarity of data

- The publication channels of the statistics and the contact details of the unit producing information services are stated. The publication channels can comprise paper publication, online database, set of html pages, CD-ROM, etc.

- • Information is given on where the description, metadata, and extensive quality and methodological descriptions of the statistics can be found.
- • Procedures concerning the release of micro data are described.

See [6].

The contents above and the template for filling the reports show clearly that the idea was to have shorter user-oriented quality reports while more comprehensive producer-oriented quality reports belong to a category called "methodological descriptions". There is no requirement for any statistics to produce a methodological description nor for the contents of it when compiled.

Statisticians (like all professionals) become easily blind to possible shortcomings in their own work. When it comes to quality reports it is easy to say that all requirements are fulfilled once there is a report to show. However, the contents may not always be compliant with the anticipated requirements. As the ESS is gradually adapting a new quality reporting structure, we felt it necessary to evaluate our own reports and to prepare new tools and instructions for improvements.

2 Aim of the review

The review had three main goals:

1. How well do the existing quality descriptions fulfil the domestic requirements set in by-laws of the Official Statistics of Finland? (see [6]).
2. How well do the existing quality descriptions fulfil the requirements of the ESS quality reporting standard adopted in 2009? (see [7,8])
3. What kind of changes would the proposed Single Integrated Metadata Structure (SIMS) require from the reporting standard and it instructions? (see [9,10]).

The survey was planned according to the Recommendation on Quality Description of the OSF, i.e. all components of the recommendations were checked.

In addition, we were interested to find out whether any of the quality descriptions contain some elements of the extended quality reporting set in the ESS Quality Reporting Standard of 2009. Besides the quality reports, the evaluators were requested to also look at part of other contents of

the home page of the statistics in question, as well as its sub-pages like concepts and classifications, or methodological descriptions.

The home page for each statistics contain the following elements in addition to the most recent release:

Statistics
Domain of statistics
Name of statistics

- Changes in these statistics
- Future releases

- Releases
- Reviews
- Tables
- Figures
- Revisions in these statistics

- Press releases
- Available products and services

- Description
- Quality descriptions
- Methodological descriptions
- Concepts and definitions
- Classifications
- Data content lists

- Further information

Besides the quality descriptions, the methodological descriptions, concepts and definitions and classifications were requested to be evaluated. Often the whole contents had to be looked over. The number of regular statistics produced by Statistics Finland and belonging to OSF was 170 at the time of launching the project. All those statistics were included in the review.

3 Survey operations

The contents of the review was planned by four experts who share the leading tasks in quality management and assurance. The data collection mode was a web-survey with a structured questionnaire with some open-ended questions to obtain better understanding of the contents and evaluators' opinions of the quality of the description in general.

Two junior statisticians were recruited for the evaluation under the instruction of quality management professionals. They can be described as average data users, i.e. having basic understanding of some statistics but no profound knowledge of data processes in statistics production. The evaluators were instructed on the work, regular meetings were arranged, questions/answers were provided by emails, and opinions on difficult cases were exchanged. The evaluators also cross-checked their evaluations.

The evaluation took place from February to April 2013 and the final report was made by the end of May.

4 Main results

4.1 General

All but one statistics actually had a quality description[2], and the evaluators stated that the common structure makes it easier for any user to go through and compare their contents. The main contents, like graphs and tables, most important concepts and classifications were generally well explained in the releases, as well as in the quality descriptions. Additionally, Internet links are useful for obtaining more in-depth information.

Unfortunately, there were relatively common problems, too. The biggest problem was the uneven quality of the descriptions. The statistics with the best descriptions have very long experience in compiling quality reports like the LFS, while the cases with the biggest problems tended to concentrate on the same domains of statistics. We can assume there is also personal factors involved.

Some examples of very general type of missing items were:
- date of foundation of the statistics missing (25%)
- purpose of the foundation of the statistics in question missing almost always
- missing reference to legislation[3] and/or agreement which lays the basis for the statistics (65%)

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[2] The one with the missing declaration has not been published recently and may be discontinued in the future.
[3] Reference to the Statistics Act of Finland or the Act on European statistics was not considered exact enough.

- the main standards used (concepts and classifications) were missing in 65% of cases.

These were considered to be serious problems and further action was taken immediately.

The extra entries of the 2009 ESS quality reporting standard [7] compared to the 2003 version [4] were in general not found in the quality descriptions, the same applied to most quality indicators which were not specifically requested in the OSF standard. However, some statistics had calculated those indicators and provided them for the Eurostat database.

4.2 Relevance

The statistical area to which the statistics belongs was described well. However, in some statistical areas the usability of statistics was not described at all, or too vaguely for an ordinary user. Some problems were also related to describing the restrictions of use and generalisability to target population. Thus the main function of the statistics cannot always be inferred well enough.

4.3 Accuracy and reliability

Overall accuracy was described well enough in two-thirds of all statistics. Various sources of error were put forward in less than 20% of statistics. There were large differences in how the user was informed about error sources: notably some household surveys provided more exact information than, e.g. statistics based on administrative data. The best information was obtained from revisions. At least some standard quality indicators were missing from many statistics.

4.4 Timeliness and punctuality

Timeliness and punctuality are generally well described. These issues are carefully followed by the whole organisation as one of the performance indicators. Thus, the exact dates of releases and publications are available in administrative data but not necessarily in quality descriptions. In some short-term statistics it was difficult to infer whether the release was preliminary or final.

4.5 Coherence and comparability

Two-thirds of the statistics provide information on comparability and coherence. Information on time series was regarded as best, whereas other forms of comparability (e.g. regional, other related statistics or national accounts, etc.) were not always good enough. More attention to internal consistency is also required.

4.6 Accessibility and clarity

Even though the statistics normally tell users about different ways to obtain data reasonably well there are also needs to improve. Especially the "third-party" dissemination paths are missing in almost one-half of the statistics, like mentioning of the Eurostat as one of the distributors. Also, some more references and links would be useful, and the links should be checked regularly to avoid them being broken.

4.7 Other findings

The review also considered the comprehensibility and language used. Sometimes, the quality descriptions (also releases) were judged to be too general in contents and the language too complicated for laymen. Thus, all texts should be read before the actual publication by peers for checking, proof-reading and commenting.

5 Conclusions

The review of all quality descriptions was a useful exercise. The results show that differences and shortcomings exist even when a relatively highly structured content is required for quality reporting. Information of the problems will be used for developing a new and improved quality reporting standard. Such a standard must be accompanied with proper and clear instructions. Thus, people who plan the documentation contents must prepare to write good instructions and give statisticians

appropriate training and advice. A specific template must also be made, which will specifically request the most important information to be provided. Additionally, the contents of various home-page elements must be designed so that each information item is clearly devoted to one place only.

The most critical problems were discussed by the review team, and a decision was made to intervene in altogether about 30 statistics. They were sent a specific letter listing the problems and some advice on how to make improvements. In most cases, the problems were corrected in the following release.

As the new quality reporting structure for the ESS was approved, Statistics Finland will decide on a new quality reporting standard. The process will consider how to combine it with SIMS. The new standard should be user-friendly: the text should be easy to understand and properly proof-read, technical details explained and links to other sources must be improved. It may ultimately lead to the creation of a new metadata database, which combines most needs in metadata provision and quality reporting.

6 References

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[9] Eurostat. (2014a). ESS Handbook for Quality Reports 2014. http://epp.eurostat.ec.europa.eu/portal/page/portal/quality/documents/ESS_Handbook_for_Quality_Reports_2014.pdf

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