Quality Assurance in the case of different data sources

Certification of statistical outputs and providers

Portia Molalakgotla - South Africa
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Contents

• Background
• SASQAF Process
• Outputs
SASQAF identifies 9 dimensions of quality.

Each dimension has associated quality indicators, standards and benchmarks.

Chapter 1: Prerequisites of quality

1.1 Description

The prerequisites of quality refer to the institutional and organisational conditions that have an impact on data quality. It defines the minimum set of necessary conditions that have to be met in order to produce good quality statistics. It therefore serves as the foundation on which all other dimensions of data quality should be premised on.

1.2 Key components

- Legal and institutional environment (including Memoranda of Understanding (MoUs) or Service Level Agreements (SLAs)
- Privacy and confidentiality
- Commensurability of resources
- Quality as the cornerstone of statistical work

1.3 Quality indicators, standards and benchmarks

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Standards</th>
<th>Assessment Levels</th>
<th>Acceptable Statistics</th>
<th>Questionable Statistics</th>
<th>Poor Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>1.1.1</td>
<td>A legal arrangement exists that explicitly mandates the production of statistics.</td>
<td>Quality Statistics Level 4</td>
<td>A law or legal arrangement exists that explicitly provides the mandate for the production of statistics.</td>
<td>No law or legal arrangement exists, but an informal agreement exists for statistical production.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acceptable Statistics Level 3</td>
<td>A law or legal arrangement exists that implies that statistical production is part of its mandate.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Questionable Statistics Level 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Poor Statistics Level 1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

stats sa
Department: Statistics South Africa
REPUBLIC OF SOUTH AFRICA
SANSS Phases Of Engagement

1. Problem Identification
2. Diagnostic Assessment
3. Problem Solution (Strategy & Plan)
4. Implement Solution
5. SASQAF Self Assessment
6. SASQAF Independent Assessment

Data quality improvement through technical support

Data quality Accreditation by Independent Assessment Unit
SASQAF Process

Independent Assessment
Procedure for assessing statistics

1. The producer of the statistics applies to the SG to have their statistics declared official.
   The application is referred to the Head of the NSS.

2. The producer of the statistics and the product must meet the three criteria of statistics in order to be assessed.
You need to pass criteria

- The producing agency should be a member of the NSS
- The statistics need to meet user needs beyond those specific and internal to the producing agency; and
- The statistics produced should be part of a sustainable series, not a once-off collection.
If you meet the criteria, we can now proceed
SASQAF training is conducted for the producer of the statistics.

Indicators/standards are pre-selected and agreed upon between the producer of the statistics and the head of DQAT.

The producer will conduct a self-assessment of the statistics based on SASQAF and recommend a score for the product.

The DQAT will do an independent assessment of the product(s) according to SASQAF.
DQAT will recommend the overall SASQAF level of the product to the SG
If the product(s) do not meet the criteria for ‘quality statistics’, the DQAT will advise the producer on areas of improvement.
If the product(s) meets the criteria for ‘quality statistics’, the product will be certified as “Official Statistics” by the Statistician General (SG).

It will be published with the SG’s official seal of quality approval.

The product will then be subject to periodic reviews.

Periodic Review

Assessment at level 4

Yes

Assessment report

Quality Statistics

Certification by SG as “Official Statistics”

No

Acceptable Statistics

Questionable Statistics

Poor Statistics

Produce ‘Quality Statement’ on assessment
DQAT
The Data Quality Assessment Team (DQAT)
Set up according set procedures for SG to designate official statistics

Constituted by the SG, drawn from:
- Statistics South Africa
- Applicant (product owner)
- Subject-matter expert(s) (recommended by product owner and/or the SG)
- Users of the statistical product
- Statistics Council member

Chair of DQAT: Head of the South African National Statistical System
The Data Quality Assessment Team (DQAT)

Newly appointed for each product

Constituted of:

-A core team (technical team)
-An expanded team (moderating team)

Sign terms of reference for the review and an oath of confidentiality
The Assessment

Assessment based on metadata provided by data owner

Scheduled work sessions: technical team

Scheduled work sessions: DQAT
# Example of an assessment

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Standard</th>
<th>Quality Statistics</th>
<th>Acceptable Statistics</th>
<th>Questionable Statistics</th>
<th>Poor Statistics</th>
<th>Findings and recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>1.1.1</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Findings explain the given score</td>
</tr>
<tr>
<td>1.2</td>
<td>1.2.1</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>Recommendations provide areas of improvement needed</td>
</tr>
<tr>
<td>1.2</td>
<td>1.2.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

**Dimension Score** = \( \frac{\text{sum of scores}}{\text{number of standards scored}} \)
### Example of an assessment (cont.)

<table>
<thead>
<tr>
<th>Quality dimension</th>
<th>Assessment Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: Pre-requisites of quality</td>
<td>3.76</td>
</tr>
<tr>
<td>2: Relevance</td>
<td>4</td>
</tr>
<tr>
<td>3: Accuracy</td>
<td>3.5</td>
</tr>
<tr>
<td>4: Timeliness</td>
<td>4</td>
</tr>
<tr>
<td>5: Accessibility</td>
<td>4</td>
</tr>
<tr>
<td>6: Interpretability</td>
<td>4</td>
</tr>
<tr>
<td>7: Coherence and Comparability</td>
<td>4</td>
</tr>
<tr>
<td>8: Methodological soundness</td>
<td>3.5</td>
</tr>
<tr>
<td>9: Integrity</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total Score (out of 36)</strong></td>
<td><strong>34.76</strong></td>
</tr>
<tr>
<td><strong>Average Score (out of 4):</strong></td>
<td><strong>3.86</strong></td>
</tr>
<tr>
<td>Indicator</td>
<td>Standard</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>The responsibility for producing statistics is clearly specified</td>
<td>A legal arrangement exists that explicitly mandates the production of statistics</td>
</tr>
</tbody>
</table>
# Example of an improvement plan

<table>
<thead>
<tr>
<th>Agreement</th>
<th>Specific task</th>
<th>Due date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agreement 1:</td>
<td><em>Put in place a new memorandum of understanding between X and Y detailing not only mandate of data production but also ownership with regards to the data:</em>  &lt;br&gt; X and Y to sign a MoU that clearly defines the mandate of the Survey, each party’s roles and responsibilities, as well as its dominion</td>
<td>16 August 2011</td>
</tr>
<tr>
<td>Agreement 2:</td>
<td><em>Develop and adopt a statistical value chain (svc) and related policies:</em>  &lt;br&gt; X has to adapt the standard SVC to bits data production process and develop related policies to each of the process</td>
<td>21 March 2011</td>
</tr>
</tbody>
</table>
Outputs of the Assessment
Assessment report

- Confidential document, not circulated or published
- Contains details outlining findings and recommendations by the DQAT
- Contains scores by standards, dimensions and overall
Quarterly Labour Force Survey

Data Quality Assessment Report

15 February 2017
Data quality report

- Public document, available both online and hard copy
- Contains quality statement about the product
- Contains agreed upon areas of improvement
- Signed by both SG and data owner
SASQAF Quality Assessment Report

General Household Survey
Statistics South Africa

Assessment Report - 5
September 2015
Statistical Release

• Published with the SG’s seal of approval

• Contains a foreword by the SG
National Survey of Research & Experimental Development (R&D)  
2006/07

Centre for Science, Technology and Innovation Indicators (CeSTII)  
Human Sciences Research Council  
for  
the Department of Science and Technology

March 2009
## Assessment plan

<table>
<thead>
<tr>
<th>Activity</th>
<th>Meetings Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt; Core-DQAT review meeting</td>
<td>05 - 06 December 2016</td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Core-DQAT review meeting</td>
<td>08 February 2017</td>
</tr>
<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Core-DQAT review meeting</td>
<td>11 December 2017</td>
</tr>
<tr>
<td>DQAT review meeting</td>
<td>13-14 March 2018</td>
</tr>
<tr>
<td>Final Assessment report</td>
<td></td>
</tr>
<tr>
<td>Core-DQAT Quality planning meeting</td>
<td></td>
</tr>
<tr>
<td>DQAT Quality planning meeting</td>
<td></td>
</tr>
<tr>
<td>Quality plan and draft quality statement report</td>
<td></td>
</tr>
<tr>
<td>Final quality statement report</td>
<td></td>
</tr>
<tr>
<td>Publication of quality statement report</td>
<td></td>
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</tbody>
</table>
Thank you