



**United Nations Economic Commission for Europe
Statistical Division**

Quality Assurance: UNECE Activities

Steven Vale
UNECE
steven.vale@un.org





No specific framework ...

- ❖ Around 70 member countries of Conference of European Statisticians
- ❖ EU countries use ESS QAF
- ❖ Others use NQAF



... but various quality activities

- ❖ Quality indicators for the GSBPM
- ❖ Quality of Big Data
- ❖ Quality in the context of data integration
- ❖ Quality chapters in various methodological guidelines
- ❖ Likely future topics
 - Quality in national data ecosystems
 - Quality of geospatial information



Quality and the GSBPM

Documentation

- ❖ “The GSBPM provides a structure for organising and storing documentation within an organisation, promoting standardisation and the identification of good practices”



Quality and the GSBPM

Integrating metadata and quality

- ❖ “The common framework provided by the GSBPM can help to integrate international work on statistical metadata with that on data quality by providing a common framework and common terminology to describe the statistical business process”



Mapping SIMS to GSBPM

Quality Management / Metadata Management			
4 Collect	5 Process	6 Analyse	7 Disseminate
4.1 Create frame & select sample	5.1 Integrate data	6.1 Prepare draft outputs	7.1 Update output systems
<ul style="list-style-type: none"> • Sampling frame (S.21.1.1.1) • Data collection (S.21.3) • Sampling procedure (S.21.3.3) • Quality assurance (S.13.1) • <i>Integration of new units and transactions (S.21.3.6)</i> 	<ul style="list-style-type: none"> • Confidentiality - data treatment (S.8.2) • Source data (S.21.1) - <i>reuse</i> • Statistical survey (S.21.1.1) - <i>use</i> • Administrative sources (S.21.1.2) • Other sources (S.21.1.3) • Priority for data sources (S.21.1.4) 	<ul style="list-style-type: none"> • Documentation on methodology (S.12.1) • Derogations (S.20.3) • Adjustments (S.21.6) • Seasonal adjustments (S.21.6.1) • Quality documentation (S.12.2) 	<ul style="list-style-type: none"> • Quality documentation (S.12.2) • Availability of data vintages of revisions (S.20.1.1) • Data revision - practice (S.20.2) • On-line database (S.11.3)
4.2 Set up collection	5.2 Classify and code	6.2 Validate outputs	7.2 Produce dissemination products
<ul style="list-style-type: none"> • <i>Data collection (S.21.3)</i> • Frequency of data collection (S.21.2) 	<ul style="list-style-type: none"> • Classification system (S.4.2) • Checks of coding and data errors in source data (S.21.4.1) • <i>Integration of new units and transactions (S.21.3.6)</i> 	<ul style="list-style-type: none"> • Data validation (S.21.4) • Administrative data checks (S.21.4.2) • Quality documentation (S.12.2) 	<ul style="list-style-type: none"> • News release (S.11.1) • Publications (S.11.2) • Other (S.11.5) • Documentation on methodology (S.12.1) • Inventories and manuals (S.12.1.2) • Quality documentation (S.12.2)
4.3 Run collection		6.3 Interpret & explain outputs	
<ul style="list-style-type: none"> • Questionnaire (S.21.3.2) 			

Eurostat Metadata Task Force



Quality and the GSBPM

Process quality management

- ❖ “If a benchmarking approach to process quality assessment is to be successful, it is necessary to standardise processes as much as possible. The GSBPM provides a mechanism to facilitate this”



GSBPM quality indicators

- ❖ Developed by task team
 - Canada, Hungary, Italy, Turkey, Eurostat, UNECE
- ❖ Generic quality indicators for each GSBPM sub-process
 - Processes based on surveys: 2016
 - Expanded to include administrative data: 2017
- ❖ Consistent with existing frameworks:
 - UN NQAF, ESS Code of Practice / QAF



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modernstats
by HLG - MOS

**Quality Indicators for the Generic Statistical Business
Process Model (GSBPM) - For Statistics derived from
Surveys and Administrative Data Sources**

(Version 2.0, October 2017)

<https://statswiki.unece.org/display/GSBPM/Quality+Indicators>

Uses of the Quality Indicators



- To provide a standard framework / common terminology to support a process-oriented approach to Quality Management
- To rationalise quality work within an NSO
- To define a mid-term quality policy
 - Set quality targets for a 3-5 year period

Example: 4.4 Finalise Collection



Quality Dimension	Indicator
Cost-effectiveness	Discrepancy between planned versus actual collection costs Percentage of collection activities that met requirements (assessed through analysis of paradata)
Accuracy and reliability	Outgoing error rates; estimate of non-sampling error
Accuracy and reliability	The rate of over-coverage: The proportion of units accessible via the frame that do not belong to the target population (are out-of-scope).



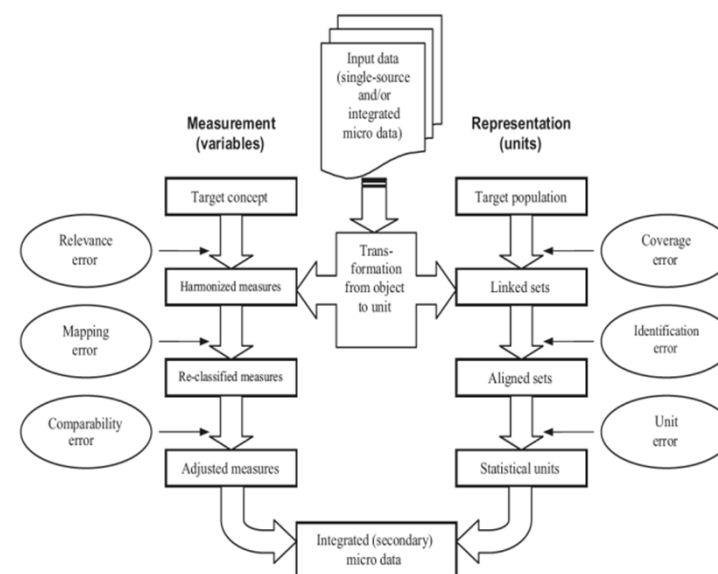
Quality of Big Data

- ❖ “A Suggested Framework for the Quality of Big Data” – December 2014
 - Australia, Canada, France, Italy, Mexico, Netherlands, Poland, Slovenia, UNSD, UNECE
- ❖ “extensions to existing statistical data quality frameworks were needed in order to encompass the quality of Big Data”

<https://statswiki.unece.org/display/bigdata>

Quality in data integration

- ❖ Part of UNECE guidelines prepared by international project
- ❖ Uses Zhang's two-phase life-cycle method model for integrated statistical microdata



<https://statswiki.unece.org/display/DI/Quality>



Looking forwards

- ❖ Quality in national data ecosystems
 - Data integration
 - Statistical / geospatial data – UN-GGIM
- ❖ Subject matter guidelines
 - Quality of administrative data for censuses - new guidelines end of 2020
- ❖ Global assessments / sector reviews
- ❖ Quality in GSBPM / GAMS0