

Quality measurement in the state information systems and databases

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Content

- Census timetable
- Levels for Quality measurement
- Data quality requirements
- Data quality manual for registers
- Conclusions

Preparatory works 2009–2020

2021–
2022
Census
activities

I STEP 2009-2015 TEST IN 2014

1. Redesigning administrative data for census purposes
2. Data acquisition test from registers (contracts, description of the data set, checks on data quality and the acquisition procedure);
3. Formation of census characteristics, programming of the necessary rules
4. **Register's data quality assesment**

4.-6.10.2017

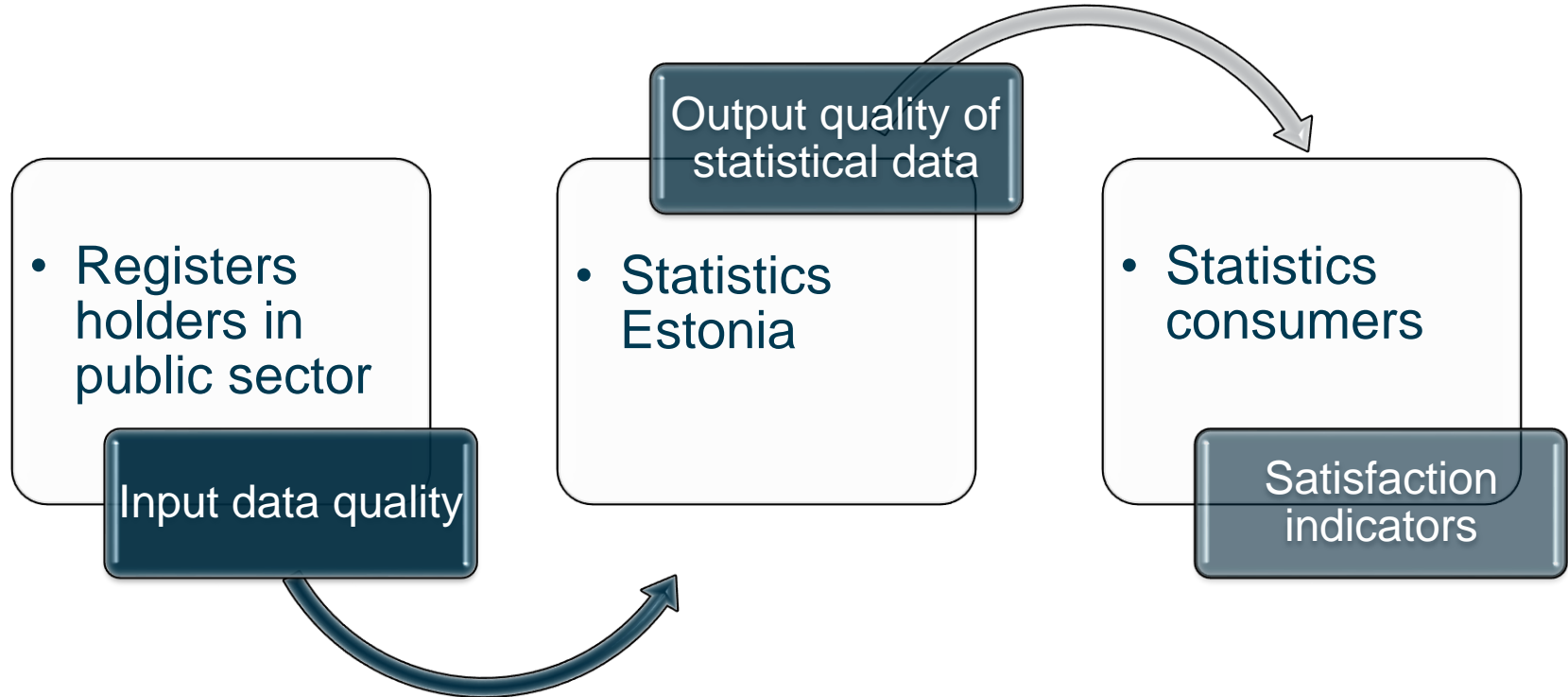
II STEP 2016-2017 I PILOT IN 2016

1. Development of register-based census methodology
2. Set up structures and procedures according the needs of harmonized population statistics
3. Develop a software system for the implementation of big data and its estimation methods
4. **Data quality assesment after the 1-st pilot**

III STEP 2018-2019 II PILOT IN 2019

1. Improvement of register-based census methodology
2. Specification, design and development of software and standards to support statistical production
3. **Improvement of data quality by register holders**
4. **Data assesment after 2-nd pilot in 2019**

Three Levels Quality Measurement





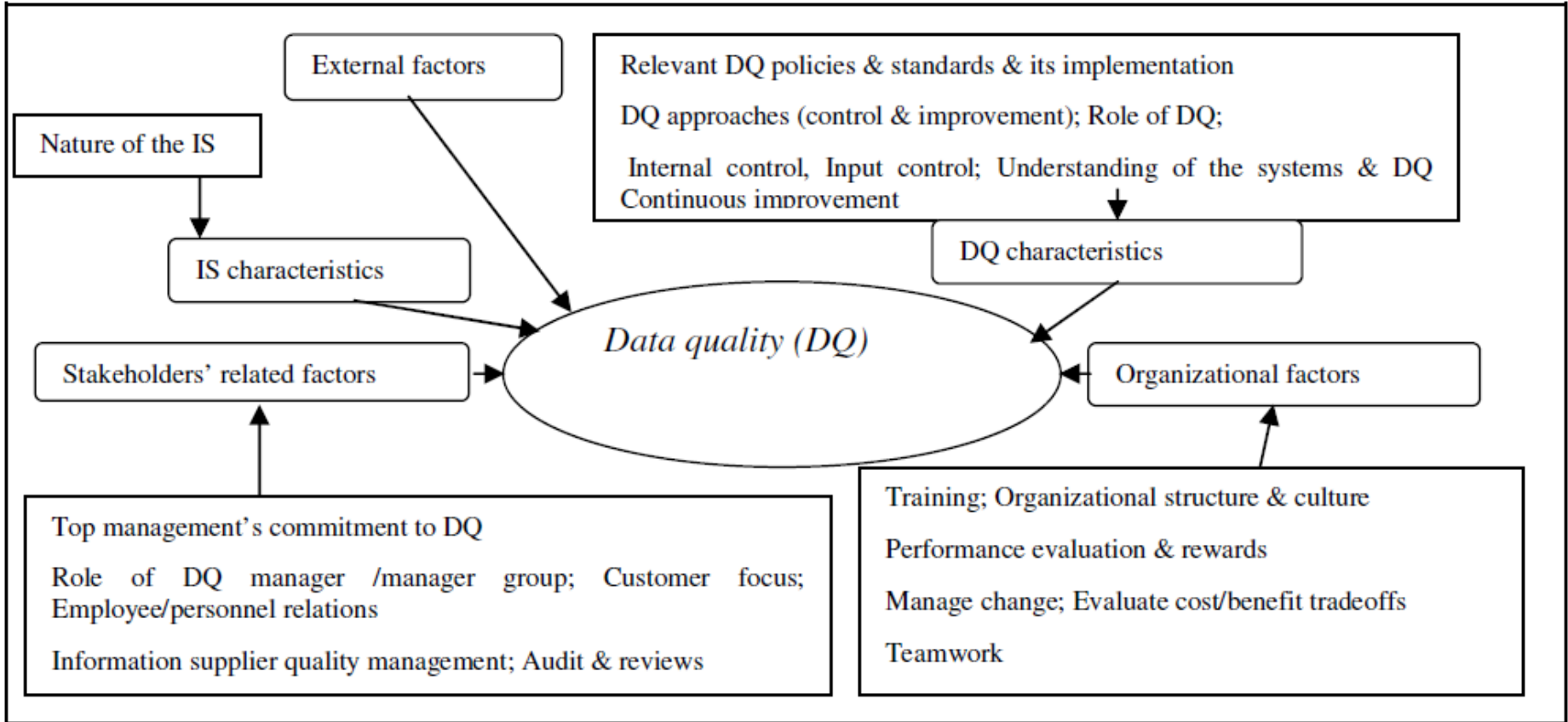
Data quality requirements for register holders presented by the Government in 2016

- At least 97% coverage of the population
- Information on required census characteristics must be regularly updated and this process must be documented
- At least 95% of entries must have an identifier in the standard format
- At least 95% coverage of relevant census characteristics
- The rate of significant or technical errors in the values of relevant census characteristics may not exceed 1%

Data quality manual for registers

- Estonian State Information System Authority (RIA) ordered a study in 2016 with the aim to create a manual of data quality measurement for the **register holders**
- The manual specifies a methodology for managing the monitoring and supervision of database quality and includes recommendations for metrics to be used in data quality monitoring

The Research Model for Factors Influencing Data Quality in Information Systems (modified from Xu et al., 2001, 2002)

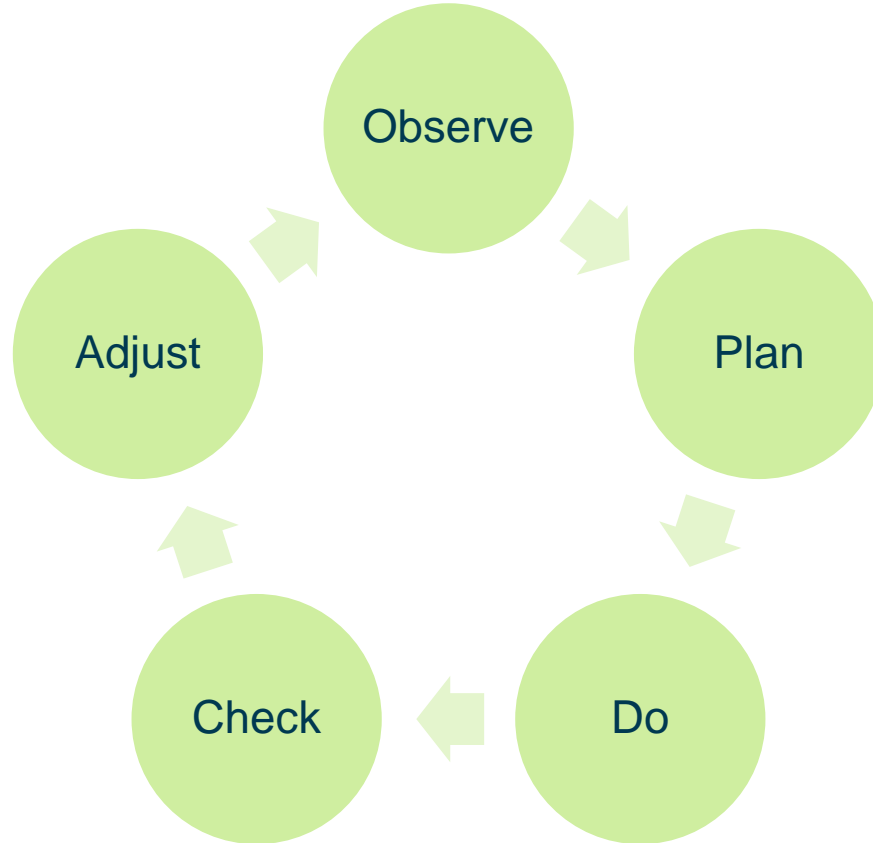




The developed framework for data quality management includes three elements:

- Data quality maturity model
- Set of data quality indicators
- Framework for data quality management

Data quality management model



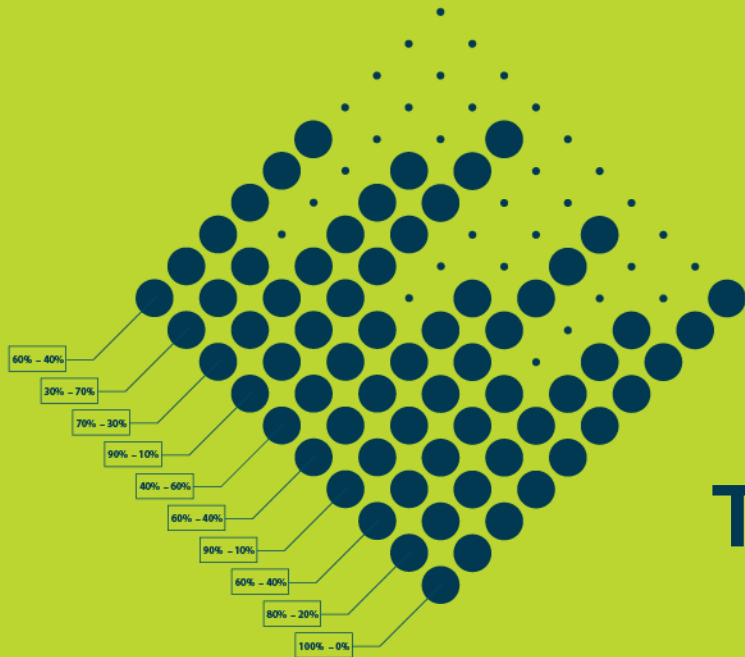
Results of the pilot study - data quality assurance maturity levels

Maturity category	RIHA	PR (1)	PR (2)	ADS
1.Management and planning	1	1	3	5
2.Organisation and responsibilities	1	3	3	5
3.Processes	1	1	4	5
4.Knowledge and competencies	1	2	5	5
5.Technical tools	1	5	5	5
Aggregate maturity rating	1.0	2.4	4.0	5.0

Population Register (PR), Address Data System (ADS),
Administration system for the state information system (RIHA)

Conclusions

- Quality management is important issue and not only for NSI
- Key conclusions for the use of the data quality manual
 - Recognition of the importance of data quality by the management
 - Creation of a continually operating sustainable system
 - Clear division of responsibilities and coverage assurance



Thank you!