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Item 3 of the provisional agenda

Measurement of the quality of administrative sources for use in censuses**Status of ADMIN endeavours pertinent to the Task Force on
measuring the quality of administrative sources for use in
censuses****Note by Eurostat****Summary*

Between 2015 and 2019 Eurostat is hosting the ESS Vision 2020 ADMIN project to promote and improve the use of administrative data sources for official statistics in the European Statistical System. While many topical actions focus on social statistics and especially population/census statistics (ADMIN work packages 5 on register-based frames and 6 on pilots and applications), a dedicated project "Quality of multisource statistics" under ADMIN work package 3 is developing two guidelines with key relevance for this Task Force: Quality Guidelines for Multisource Statistics (preliminary version expected by 10/2018, first complete version by 06/2019) and Quality Guidelines for Frames of Social Statistics (version 1.0 already available).

* Prepared by Fabian Bach.



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I. Introduction

1. In February 2015 the European Statistical System Committee (ESSC) agreed to launch the project, and reviewed it in February 2017. The project is planned to finish at the end of 2019.¹ From the outset it had a dual purpose: to support the EU Member States to reap the benefits (decrease costs and burden, increase of data availability) of using administrative data sources for the production of official statistics, and to support the quality assurance of the output produced using administrative sources, in particular the comparability of statistics required for European purposes.

2. These two main purposes are closely linked to the key challenge of the whole ADMIN project: typically administrative data are available only at the national level, owned by national or sometimes even regional stakeholders (e.g. ministries or municipalities), compiled for a multitude of different (non-statistical) purposes, with varying responsibilities, operational requirements, etc. Consequently, there cannot be simple text-book recipes to fit them all: this is the key challenge of the ADMIN project. Putting this into perspective with the initially expressed dual ADMIN purpose: while reaping the benefits of ADMIN implies (among others) firstly obtaining and formalising access to appropriate data sources at the relevant administrative level (e.g., national, federal, regional) as well as tailor-made methodologies, quality assurance of the output in an ADMIN context often entails the need for assessing quality already at the input level (utility and sustainability of the data source for the desired statistical purpose). Thus, both purposes are intimately connected with national environments and particularities.

II. ESS vision 2020 ADMIN and census statistics

3. The ESS Vision 2020 ADMIN project is structured in seven work packages (WPs):

- WP1 – Access to administrative data sources;
- WP2 – Statistical methods for combining multiple sources;
- WP3 – Quality measures for multisource statistics;
- WP4 – Using administrative data held or designed by the European Commission;
- WP5 – Frames for social statistics;
- WP6 – Pilots and applications;
- WP7 – Methodological support to Member States.

where obviously WP3 is the most relevant for the purposes of this Task Force: this will be elaborated in more detail in chapter III. All WP outputs are being published on the CROS portal as they become available.²

4. From a topical perspective, social statistics and especially census/population statistics is at the heart of the ADMIN project:³ most of the grant resources under WP6

¹ Full business case endorsed by the ESSC: <https://circabc.europa.eu/sd/a/73627652-70ad-4b20-a320-c267490989d6/ESS.VIP%20ADMIN%20-%20business%20case.pdf>.

² https://ec.europa.eu/eurostat/cros/content/ess-vision-2020-admin-administrative-data-sources_en; please note that this is a "living" page which grows, and my still change, with the ADMIN project progress.

³ As extensive developments in business statistics already happened under the auspices of the "Modernisation of European Enterprise and Trade Statistics" (MEETS) programme.

were invested in related topics; moreover there will be a dedicated topical workshop to support the deployment of ADMIN results in social statistics;⁴ and finally two key outputs from WP3 (two guidelines: on frames for social statistics and on quality of multisource statistics in general, details in chapter III) have considerable touching points with censuses.

III. ADMIN WP3 – quality: relevant outputs and timetable

5. ADMIN WP3 aims to develop and promote measures/indicators/guidelines for evaluating the quality of administrative data and of the statistical outputs that use a combination of sources, among which administrative sources (big data being excluded from its scope). All three tasks of WP3:

- *Task 3.1* – Checklists for evaluating the quality of input data;
- *Task 3.2* – Definition of a framework for the quality evaluation of statistical outputs using administrative data;
- *Task 3.3* – Dissemination and practical implementation of main results obtained in tasks 3.1 and 3.2.

are covered by an ESSnet⁵ project "Quality of multisource statistics" (abbreviated KOMUSO⁶). In order to implement this ESSnet cooperation, a framework partnership agreement was signed for a period of four years with a consortium made of national statistical institutes from eight ESS members (DK –coordinator, IE, IT, LT, HU, NL, AT, NO). The agreement foresees cooperation on producing quality measures for statistics that include a combination of sources where at least one source is administrative. It also includes the development of quality measures for frames for social statistics. The agreed objectives to be achieved during the four-year KOMUSO lifetime (08/2015 – 08/2019) are the following:

- (a) Take stock of the existing knowledge on quality assessment and reporting and review it critically in order to produce recommendations on the most suitable approaches;
- (b) Develop new indicators for the quality of the output based on multiple sources;
- (c) Produce a methodological framework for reporting on the quality of output;
- (d) Produce indicators relating to the quality of frames themselves and the data whose production is supported by frames;
- (e) Produce a methodological framework for assessing the quality of the frames used in social statistics; draft a proposal for minimum quality requirements for sampling frames for EU social statistics;
- (f) Produce recommendations on updating the ESS Standard and the ESS Handbook for Quality Reports.

6. These objectives are being delivered in three distinct work stages (related to the specific funding structure of this ESSnet), whose contents and outputs will be outlined in

⁴ Tentatively scheduled for spring 2019: experts from ESS and other countries/institutions will be welcome to participate; Eurostat will keep this Task Force informed.

⁵ An ESSnet project consists of a network of several European Statistical System (ESS) organisations aiming to provide results that will be beneficial to the whole ESS.

⁶ <https://en.wikipedia.org/wiki/Komus%C5%8D>.

the following three sections. The KOMUSO also maintains a dedicate CROS portal presence⁷ where progress and outputs are being documented – a concise overview of all relevant KOMUSO documents incl. a CROS link or expected publication date is shown in the Annex.

A. KOMUSO Stage 1: preparatory work

7. The work started at the end of 2015 and ended in April 2017, and all KOMUSO members were involved. The specific objectives were:

(a) Review current practices on input quality assessment (where the input is an administrative source). The aim is to review critically the current practices and recommend the best approach(es), to structure the knowledge and to store them on the CROS portal in a logical and accessible way;

(b) Take stock of the existing knowledge on quality assessment and reporting of the final output based at least partially on administrative sources and to review it critically; to produce recommendations on the most suitable approaches; to structure the knowledge and store it on the CROS portal in a logical and accessible way; to investigate whether new approaches can be developed and to propose a possible theoretical framework that will serve as a basis for future actions for measuring the quality of multisource statistics;

(c) Review the existing quality measures used for measuring the quality of the statistical output; provide a gap analysis and develop new measures for the quality of the output based on multiple sources where at least one source is administrative;

(d) Review existing practices concerning the evaluation of the quality of frames for social statistics; provide a gap analysis and produce measures relating to the quality of frames themselves and the data whose production is supported by the frames.

8. In order to keep all stakeholders involved and informed, a first workshop on quality of statistics using administrative sources (21–22 April 2016 in Budapest). The aim of the workshop was to allow the consortium to validate their approach with the other Member States and to present experiences and good practices. All documentation related to the workshop is available on the CROS portal.⁸ This work stage is now completed and the following reports were produced and published on CROS:

(a) Checklists for evaluating the quality of input data;⁹

(b) Framework for the quality evaluation of statistical output based on multiple sources;¹⁰

(c) Quality measures and indicators of frames for social statistics.¹¹

9. One of the key conceptual outcomes from stage 1 was a classification of *six basis data source configurations* including at least one administrative data source for the purpose of the whole KOMUSO:

(a) Complementary microdata sources;

(b) Overlapping microdata sources;

⁷ https://ec.europa.eu/eurostat/cros/content/essnet-quality-multisource-statistics-komuso_en.

⁸ https://ec.europa.eu/eurostat/cros/content/2016-workshop-access-administrative-sources_en.

⁹ https://ec.europa.eu/eurostat/cros/system/files/essnet_wp1_report_final_version4.pdf.

¹⁰ https://ec.europa.eu/eurostat/cros/system/files/final_report_wp3.pdf.

¹¹ <https://ec.europa.eu/eurostat/cros/system/files/wp2-framequality-finalreport.pdf>.

- (c) Overlapping microdata sources with under-coverage;
- (d) Microdata and macrodata;
- (e) Only macrodata;
- (f) Longitudinal data.

see section 2.2 of the framework report (footnote 9). These basis data configurations form the reference scenarios for the guidelines on quality of multisource statistics that are currently being developed – see section B.

B. KOMUSO Stage 2: quality guidelines

10. This work stage started in May 2017 and will last until September 2018. The purpose is to produce the following:

(a) *Quality measures and indicators* that continue the work done in stage 1: simplify some proposed measures, extend the range of situations where they can be applied (revised version including all measures/indicators foreseen under stage 2 by 09/2018);

(b) *Quality Guidelines for Multisource Statistics (QGMSS)*: a table of contents¹² and a sample section¹³ are already available, while revised guidelines including all sections foreseen under KOMUSO stage 2 are expected by 09/2018;

(c) *Quality Guidelines for Frames of Social Statistics (QGFSS)*: version 1.0 established this May.¹⁴

11. With the QGFSS v1.0, a key KOMUSO output has recently become available. Even though it is mainly about using administrative sources to establish and maintain frames for social statistics, it has relevance for this Task Force: as (statistical/population) registers used as frames can also be used for direct tabulations on entire population and thus for censuses – see for instance section 2.3 of the QGFSS.

12. While the finalisation of the QGMSS is tentatively planned for the 3rd and last KOMUSO work stage, a preliminary and not yet complete draft version (stage 2 closing version, consulted for the first time with the relevant ESS Working Groups and the ADMIN network of ESS members) will be published on the CROS portal at the end of stage 2 (10/2018).

C. KOMUSO Stage 3: completion of guidelines and communication actions

13. During work stage 2, the KOMUSO partners and Eurostat discussed the remaining work for the *QGMSS* incl. indicators/measures and hands-on examples. Work stage 3, envisaged to start work in 10/2018, is tentatively dedicated to the completion of these guidelines and pertaining quality measures/indicators. Finalisation of this last stage and all its deliverables is currently planned for 06/2019.

14. Moreover, this last stage foresees communication/deployment actions to promote both guidelines in the ESS. A key component will be a dedicated *workshop on multisource quality* tentatively scheduled towards the end of 2018: it will focus on the first (incomplete)

¹² https://ec.europa.eu/eurostat/cros/system/files/essnet_sga2_deliverable_d1_0.pdf.

¹³ https://ec.europa.eu/eurostat/cros/system/files/essnet_sga2_wp1_deliverable_d2_1.pdf.

¹⁴ <https://ec.europa.eu/eurostat/cros/system/files/qgfss-v1.0.pdf>.

version of the QGMSS after finalisation of work stage 2, including a consultation of the expert audience and first feedback on the available guidelines as well as measures/indicators and hands-on examples. Findings from this workshop will be a key input to the finalisation of the QGMSS during work stage 3. *Experts from ESS and other countries/institutions will be most welcome to participate; Eurostat will keep this Task Force informed.*

15. Some minor work is foreseen in stage 3 to implement comments received on the QGFSS v1.0 and thus establish a more mature version 1.1 by early 2019.

16. Finally, Eurostat tentatively plans for stage 3 extensive consultations and communication actions in order to refine the output guidelines, involve all ESS members and thus promote acceptance and implementation. In particular, both QGFSS (already done, see section B) as well as QGMSS (planned) will be published on the CROS portal after consultations with the ESS Working Groups on Quality and Methodology, with the entire network of ADMIN contacts among ESS members, and approved by the ADMIN Steering Group. Further relevant communication actions, such as conference presentations or dedicated trainings, are tentatively foreseen as well under stage 3.

IV. Conclusions

17. Quality, both of administrative input data as well as output statistics derived from them, is at the core of the ESS Vision 2020 ADMIN project (under work package 3), with several relevant contact points to censuses. To this end, an ESSnet project "Quality of multisource statistics" (KOMUSO) was established in 2015 and will continue its work into 2019. Key KOMUSO outputs are quality measures and indicators for the measurement of multisource quality as well as two dedicated guidelines: the *Quality Guidelines for Multisource Statistics* (QGMSS, preliminary version expected by 10/ 2018 and first complete version by 06/ 2019), and the *Quality Guidelines for Frames of Social Statistics* (QGFSS, version 1.0 already available). See the Annex for all relevant KOMUSO output documents on the CROS portal.

18. Eurostat and the KOMUSO team explicitly welcome further comments and feedback, also from this Task Force, on public guidelines versions on the CROS portal. Furthermore, there are two upcoming ADMIN workshops with core relevance for this Task Force: a workshop on multisource quality hosted by the KOMUSO (towards the end of 2018, date to be decided) and a workshop on the use of administrative sources for social statistics with a focus on population/census statistics (spring 2019, date to be decided). Eurostat will keep the Task Force informed.

Annex

Overview of key documents produced by the ESSnet KOMUSO

<i>Stage</i>	<i>Title</i>	<i>Link or timing</i>
1	Checklists for evaluating the quality of input data	https://ec.europa.eu/eurostat/cros/system/files/essnet_wp1_report_final_version4.pdf
	Framework for the quality evaluation of statistical output based on multiple sources	https://ec.europa.eu/eurostat/cros/system/files/final_report_wp3.pdf
	Quality measures and indicators of frames for social statistics	https://ec.europa.eu/eurostat/cros/system/files/wp2-framequality-finalreport.pdf
2	Quality guidelines for frames of social statistics (QGFSS)	https://ec.europa.eu/eurostat/cros/system/files/qgfss-v1.0.pdf
	Quality Guidelines for Multisource Statistics (QGMSS)	preliminary (incomplete) version 10/2018
	Multisource quality measures and indicators	preliminary (incomplete) version annexed to QGMSS 10/2018
3	Quality Guidelines for Multisource Statistics (QGMSS)	<i>final version 06/2019</i>
	Multisource quality measures and indicators	<i>final version annexed to QGMSS 06/2019</i>