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How national statistical systems adhere to the core values of official statistics

Core values of official statistics and the data revolution – a reflection on challenges and opportunities

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Summary

The document, prepared by Statistics Norway, considers and reflects on how core values of official statistics apply to and simultaneously are challenged by the data revolution driven by new user needs and technology.

The document is presented to the Conference of European Statisticians' session on "How national statistical organisations adhere to the core values of official statistics" for discussion.



I. Introduction

1. This document considers and reflects on how core values of official statistics apply to and simultaneously are challenged by the data revolution driven by new user needs and technology. The following questions are discussed:

- What are the core values?
- Do the core values apply?
- Communication
- Challenges
- The way forward

2. The issues are considered in general, but examples are given from the work on official statistics in Norway.

II. Core values

3. In the preparatory note by Ireland to this topic [1] the core values of an organization are defined as those values which form the foundation on which we perform work and conduct ourselves. In the case of official statistics, this points at conditions linked to the institutions responsible for producing such statistics.

4. Core values of official statistics should be specific, although non-official statistics may comply with some of these values too. Further requirements to the values for official statistics are that they ought to be universal or common for the international statistical community. The values should be anchored in statistical legislation as well as national and international quality frameworks for official statistics.

5. The European Statistics Code of Practice (CoP) [2] is a quality framework that provides requirements for official statistics in the European Statistical System, also named European statistics. Similar frameworks are developed by the UN, the OECD and other regional statistical cooperation bodies, and all are inspired by and built on the UN Fundamental Principles of Official Statistics, UNFPOS [3].

6. Quality frameworks consist of requirements and recommendations on quality related to both the institutional environment, production processes and statistical products. While the CoP itself is self-regulatory, some of its principles linked to the institutional environment are explicitly referenced in the European Statistical law and its amendment [4], and in national statistical laws, and should therefore be considered as stronger requirements than others. These comprise professional independence, coordination, statistical confidentiality and impartiality; values that are considered instrumental for trust in both official statistics and the institutions that produce them. The principles of independence, statistical confidentiality and impartiality are essential in the ethics of statisticians and statistical institutes, as formulated in the International Statistical Institute (ISI) Declaration of Professional Ethics [5].

7. Based on their status, these principles which are linked to the institutional environment should therefore be regarded as core values for official statistics. They are specific for producers of such statistics and anchored in statistical laws worldwide.

8. The principle of professional independence relates to how statistics are produced and disseminated, but not what statistics should be produced. The latter should be determined by user needs ensuring that statistics are “fit for purpose”.

9. The principle of impartiality implies, according to CoP, that all users are treated equally. In practice, this means that official statistics are a public good. There is no common authorized international definition of official statistics, but the UN [6] states that official statistics describe, on a representative basis, economic, demographic, social and environmental phenomena of public interest. Official statistics are developed, produced and disseminated as a public good by the members of the national statistical system in compliance with internationally agreed statistical standards and recommendations.

10. That official statistics are fit for purpose means that they, as formulated in CoP, should be relevant, accurate and reliable, timely and punctual, coherent and consistent, accessible and clear. Relevance is of course crucial here, since without relevance there will be no quality. However, some of the quality dimensions linked to statistical products have to be balanced against each other (e.g. timeliness versus accuracy), and they are hardly specific for official statistics. This means that they might not be regarded as core values individually. But adhering to a quality framework such as the CoP is common for producers of official statistics and could be regarded as a core value linked to the institutional requirement for quality commitment.

11. Some of the principles for product quality are also suitable for distinguishing official statistics from other statistics. An example is coherence and comparability. Official statistics are for example included in accounting systems like national accounts where coherence and comparability between countries and regions and over time by using statistical standards is necessary. Punctuality is linked to the independence and impartiality of the institution producing official statistics, as is also clarity in terms of transparency and accountability.

12. To sum up, the core values reflected on in this paper are foremost principles linked to the institutions responsible for producing official statistics including their commitment to quality. However, some requirements for the individual statistical products qualify for the concept of core value as well.

III. Do the core values apply?

13. Official statistics have developed from statistics for the authorities and their decision-making to a common reference in the public debate. The UNFPOS has been decisive for this development. The different quality frameworks such as CoP and reviews for assuring compliance with these, have contributed to increasing trust in official statistics, even if this varies between countries.

14. The purpose of the Norwegian statistics act [7] is to promote the development, production and dissemination of official statistics with a view to increase public knowledge, and provide a basis for analysis, research, decision-making, and general discussion in society.

15. Trust in official statistics is relatively high in Norway and Statistics Norway has a good reputation.

16. The core values of official statistics are central in new statistical legislation. The European Statistical Law [4] reinforces the independence of national statistical offices (NSOs) and other national authorities responsible for European statistics. The second round of European peer reviews in 2013–2015 for several countries recommended actions linked to legal aspects, to strengthen their professional independence and clarify the content of “official statistics”. For Norway, a recommendation was to amend the statistical legislation.

17. The new Norwegian Statistics Act was adopted by the Parliament in June 2019. It has been implemented gradually until 2021 when a national multi-annual programme for official statistics was put into effect [8].

18. The core values in the act are included in the requirements to official statistics formulated as:

- Official statistics shall be developed, produced and disseminated in a professionally independent, impartial, objective, reliable and cost-effective manner.
- The development, production and dissemination of official statistics shall be based on uniform standards and harmonized methods.
- The statistics shall be relevant, accurate, timely, punctual, accessible and clear, comparable and coherent.

19. The statistical programme stipulates which statistical activities shall be covered and which public authorities are responsible for the statistics. This means that official statistics are those exclusively covered by the programme. In addition to Statistics Norway, 11 other national authorities (ONAs) are responsible for some of the official statistics. However, in

the role as the NSO, Statistics Norway produces approximately 85 percent of all Norwegian official statistics.

20. The core values have been central in the process of defining and describing Norwegian official statistics. In particular, this concerns professional independence and impartiality for all producers of official statistics. Independence in relation to political and other external influences on the development, production and dissemination of statistics is statutory for Statistics Norway. For other authorities, the requirement for professional independence in this context applies to their production of official statistics.

21. Requirements that support professional independence and impartiality are emphasized in the statistical programme:

- Statistical release dates and times are pre-announced. All users have equal access to statistical releases at the same time. A good practice is a release calendar where the release date is planned at least three months in advance, and a fixed release time.
- Full transparency about data sources and production methods, i.e. clear and visible documentation for the users of the statistics. This includes information on sources of error and uncertainty.

22. Discussions among the producers of official statistics have not been about the core values as such, but rather about how to follow the values in practice. Other institutions than Statistics Norway have other primary tasks than the production of official statistics, and most of them can potentially be instructed by their superior authority in all matters. However, while an administrative body is typically not independent, the unit or persons within these bodies that are responsible for producing official statistics should decide on how to produce and when to disseminate its statistics independently. Even so, this may be a challenge not only due to the possible influence from political authorities, but also because administrative bodies may be managed according to objectives with statistical measures, and certain statistical results could be in their own interest.

23. Even if the statistics producers behave impartially, the public may suspect that they are not impartial if there is a system where their statistics are used to measure their own performance. In the programme for official statistics only authorities, or parts of authorities that can show or substantiate that they are professionally independent and act impartially, are responsible for official statistics.

24. Use of standards is another issue where statistics produced by the owner of administrative registers for their own purposes often differ from corresponding statistics produced by Statistics Norway. Use of internationally harmonized statistical definitions and classifications is necessary for international comparisons. This is something authorities outside the NSO must take into account if they wish to produce official statistics.

25. In the new statistical act, Statistics Norway is given the role to coordinate all development, production and dissemination of official statistics in Norway. Hence, Statistics Norway has a role in promoting the use of statistical standards in the national statistical system. Together with experts from own ranks and from relevant ONAs Statistics Norway will perform quality control of all Norwegian official statistics. A report on its quality will be annually submitted to the Ministry of Finance and for the first time in 2022. The quality control will be based on self-assessments largely of the institutional environment with the core values, supplemented by more detailed quality reviews of statistical domains or selected statistics. The work to ensure quality in official statistics should aim for professional collaboration across different statistics producers, and it will hopefully be mutually beneficial for all the involved entities. The new quality regime for Norwegian Official statistics should not only improve quality for the ONAs, but also for Statistics Norway.

26. Other measures to monitor modern practices based on the core values in response to today's evolving data needs comprise international cooperation. The upcoming European peer reviews constitute an example of where compliance with core values is assessed and innovative practices are documented and shared.

IV. Communication

27. Communicating core values has been an important part of the process of developing a programme for all Norwegian official statistics. This programme has been subject to a public hearing before it was adopted by the Government. The programme has also been used for strengthening the communication of the core values to the different user fora for official statistics. Statistics Norway's new strategy [9] emphasizes that the population shall have trust in Statistics Norway being professionally independent and impartial.

28. Other authorities than Statistics Norway may produce official or other statistics based on data collected and supported by other legal acts than the statistics act. They produce management information which is typically adapted to meet the need to quantify results for a sector, sometimes also results for the government agency that produces such information. As mentioned, this can present challenges in relation to the public's need for independent information. In addition, the content of management information may vary over time depending on short-term user needs. In some domains (e.g. crime and education) Statistics Norway will be the only producer of official statistics included in the first national statistical programme even if there are other producers of statistics for these domains. It has been important to communicate that other relevant statistics will be assessed when the statistical programme is up for update and renewal.

V. Challenges

29. The core values stand strong at NSOs worldwide. Albeit in practice there are challenges such as the balancing of the core values, see Sæbø and Holmberg [10]. Independence, impartiality and even confidentiality versus relevance can be difficult for the statistics producer when a user is looking for analyses to support their own views while also being the funder of the data collection. In addition, users often need more detailed statistics and geographical granularity that might challenge the privacy of data.

30. Globalisation, technology, competition and in particular the recent pandemic have led to a demand for new data and statistics, but also provided new possibilities in terms of new data sources. The development has been referred to as a data revolution, see Steve MacFeely [11], and the abundance of data can be characterized as an infodemic, see for example Radermacher [12]. Data is not the same as statistics for knowledge and sound decisions, but this is often disregarded in the public debate.

31. There have been discussions on if and how the emergence of new data sources challenges the existing quality frameworks for official statistics. New data also denoted big data are characterized by their size and complexity of the data sets, but also by being real-time or very timely data.

32. The quality frameworks for official statistics are based on the purpose and use of these statistics for their users. The frameworks with requirements as such should therefore not be affected by new input data, but there are new aspects and challenges linked to the use of these data. This is demonstrated by Rozkrut et al. who have mapped the UNFPOS against new and big data sources [13].

33. De Broe et al. have discussed new quality criteria for integrating new data and methods in official statistics [14]. New data in particular have weaknesses when it comes to accuracy, reliability, coherence, comparability and clarity. But their conclusion is that the ESS quality principles as laid down in the CoP, do not need to be adapted to the emergence of new data sources. However, there should be a need to further develop quality criteria for using big data as input to the statistical production process, as has been done earlier for administrative data used for statistics.

34. What we draw from this is that there should be no need to change the core values for official statistics because of new data sources. Nevertheless, we need to look at how to ensure trust in official statistics in the future operating environment.

35. There are challenges linked to access to new data. The Norwegian statistics act provides wide access to data, also privately held data. However, this can be difficult in practice due to the commercialization of data which often are owned by global companies outside the reach of national laws. Cooperation and collaboration are necessary to overcome these challenges. But this may threaten the principle of equal treatment (of partners, see [10]).

36. However, there is probably no alternative to sticking to the core values which should be looked upon and communicated as the comparative advantage of official statistics. It is still a question how this should be done in practice to avoid that official statistics will be obsolete.

VI. The way forward

37. Challenges faced in adhering to the core values of official statistics comprise balancing the values and adjust statistics production to new user needs and technology. How NSOs meet competition from producers of statistics that do not comply with these values, but which produce statistics that are more relevant by quickly addressing new user needs is a crucial question.

38. Possible answers could be improved quality, in particular relevance and timeliness, coordination and cooperation. Extended cooperation regards both within and outside the national statistical system, e.g. with fact checkers and open data movement in addition to data owners.

39. Cooperation is also the key to access and efficiently use new data and new data sources to produce official statistics. In order to take full advantage of these new data, statistical legislation should include access to data from holders of administrative sources and third-party data from private companies under the condition that the data are solely used for the purpose of official statistics. A challenge from a national perspective is the limited access to data held by global companies outside the reach of national laws, which in turn calls for common international initiatives and legislation such as the European Data Governance Act [15].

40. There are discussions in the international statistical community about possible new roles of the NSOs and in the direction of a data stewardship. A recent UN paper considers different approaches to this role [16].

41. A full role as a data steward for a society implies that attention for the NSO is not only on the production and dissemination of official statistics, including the coordination of other producers of such statistics, but on data used for other purposes in addition to statistics. Some aspects linked to this are relevant also for the production of statistics. This regards data quality, and much of the thinking and the systematic treatment of quality and quality components used in statistics probably apply also for data for other purposes. Analysis is an issue on the other end of the production chain for statistics. Other possible roles for an NSO in the direction of a data steward include advisory and training, in particular when it comes to statistical methodology, statistical literacy and numeracy, something the corona crises has demonstrated a need for.

42. However, as also discussed in the international statistical community, going beyond the core tasks of an NSO, implies a risk for compromising the core values of official statistics by being too close to politics or breaking confidentiality rules.

43. Finally, funding is an issue as well. Official statistics are a public good. Even so, parts of Statistics Norway's official statistics are funded directly by the users, normally other departments or directorates and not by the ordinary government budget through the Ministry of Finance. Some user funding is an advantage since it ensures relevance of statistics. However, it may represent a challenge for independence if it is large. It may also shift from one year to another.

44. The normal funding of official statistics by ordinary government budgets provides more stable conditions for production. However, government budgets are often reduced for many NSOs over the years. This emphasizes the need for improved productivity in addition

to quality, by using new data and developing new competence. Cooperation can also contribute here.

45. Regardless of improvement work, cooperation and extended roles of the NSOs the core values of official statistics need to remain, be communicated and branded.

46. Radermacher [12] concludes that official statistics with its values are as important as ever, but that the future of such statistics depends on sufficient funding, good institutions and competence. As for the role of the NSOs he proposes that it should be extended to advisory for other producers of statistics and those who interpret statistics. The corona crisis has clearly shown the need for the latter. This is very much in line with the conclusions of this paper. The crucial question is if this is realistic.

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